



Social Capital and Firm Performance: The Resiliency of Corporate Social Responsibility to COVID-19

Joana Martins

152419040

Dissertation written under the supervision of Professor Diana Bonfim

Dissertation submitted in partial fulfilment of requirements for the MSc in
Finance, at the Universidade Católica Portuguesa, January 2021.

Social Capital and Firm Performance: The Resiliency of Corporate Social Responsibility to COVID-19

Joana Martins

Abstract

The COVID-19 pandemic caught the entire globe unprepared. The quick viral spread, the stringent lockdowns, and the dramatic response of capital markets have perturbed the economic and social order on an unprecedented scale and lightning speed. This Dissertation investigates the impact of social capital, measured by corporate social responsibility (CSR), on the financial performance of U.S. firms during the pandemic-induced market turmoil (March-July 2020). The results show that high-CSR firms experienced lower risk exposure and superior operating profit margins relative to low-CSR firms. However, there is no evidence that CSR provided such resilient power for the performance of mean returns. The collected wisdom points to a clear stock return underperformance associated with very low CSR scores, but refutes the idea that excelling in CSR offers the highest returns. Another prominent result is the fact that investing in CSR is especially fruitful in periods of crisis; the effect is weaker or even null outside the crisis.

Keywords: COVID-19, corporate social responsibility, financial performance.

Social Capital and Firm Performance: The Resiliency of Corporate Social Responsibility to COVID-19

Joana Martins

Resumo

A pandemia de COVID-19 surgiu inesperadamente. A rápida disseminação viral, os rigorosos isolamentos sociais e a resposta drástica dos mercados de capitais perturbaram o contexto económico e social em escala e ritmo inéditos. Esta Dissertação investiga o impacto do capital social, medido através da responsabilidade social empresarial (RSE), no desempenho financeiro de empresas dos Estados Unidos durante a crise desencadeada pela pandemia (março-julho 2020). Os resultados demonstram que empresas com elevada RSE experienciaram menos exposição ao risco e maiores margens de lucro operacional relativamente a empresas com baixa RSE. Contudo, não existe evidência de que a RSE tenha proporcionado tal poder de resiliência no desempenho dos retornos médios. Verifica-se que retornos baixos estão associados a níveis baixos de RSE, mas não é possível constatar que uma excelente RSE propicia os retornos mais elevados. Outro resultado importante é que investir em RSE é especialmente benéfico em períodos de crise; o efeito é atenuado ou até mesmo nulo fora da crise.

Palavras-chave: COVID-19, responsabilidade social empresarial, desempenho financeiro.

Acknowledgements

Cheers to the end of an extraordinary journey and to the help, support, and encouragement received from a wonderful group of people.

I would like to sincerely thank my supervisor, Professor Diana Bonfim, for the wise insights and feedback given throughout the Dissertation process. Her dedication, strong commitment, and caring attitude were a major source of inspiration and motivation for me.

A special word of appreciation to the Professors from Católica Lisbon SBE and University of Minho for providing me the solid education and valuable foundations to successfully complete my academic path. I would also like to acknowledge the financial support of FCT.

My deepest gratitude to those special humans with whom I have shared moments of profound anxiety, but also of great excitement. To my friends for their kind words and sense of humor. To my family for their precious advices and unconditional love. Thank you for always backing me up, no matter what.

Table of Contents

- I. Introduction..... 1
- II. Literature Review 4
 - A. Corporate Social Responsibility 4
 - B. Impact of Corporate Social Responsibility on Firm Performance 5
 - C. Trust and Social Capital Aspects of CSR..... 7
 - D. Value of Social Capital in Periods of Crisis..... 8
- III. Data and Methodology 9
 - A. Sample and Summary Statistics 9
 - B. Empirical Design 11
- IV. Results..... 13
 - A. The Level of Stock Returns 13
 - B. The Volatility of Stock Returns..... 19
 - C. The Operating Performance of Firms 21
 - D. Robustness Tests 22
- V. Conclusion..... 23
- References 25
- Appendix 30

List of Tables

Table I – Summary Statistics.	11
Table II – Crisis-Period Returns and CSR	15
Table III – Nonlinearity between Crisis-Period Returns and CSR	16
Table IV – Returns Inside and Outside the Crisis	18
Table V – Crisis-Period Volatility and CSR	19
Table VI – Volatility Inside and Outside the Crisis	20
Table VII – Operating Performance and CSR.	22

List of Figures

Figure I – COVID-19 and Stock Market.....	3
---	---

List of Abbreviations

CSR	Corporate Social Responsibility
GFC	Global Financial Crisis
Fed	Federal Reserve
ESG	Environmental, Social, and Governance
SIC	Standard Industrial Classification
FE	Fixed Effects

I. Introduction

The general recognition of ethics, moral values and corporate social responsibility (CSR) as integral parts of corporate culture and decision-making is not new. The global interest in CSR has emerged as a response to the growing awareness over economic, environmental, and social problems. As times goes by, the underlying trends behind corporate competitiveness have changed at a fast pace. Doing business with the sole purpose of generating profit is no longer enough. The new paradigm is forcing firms to dive into governance areas that cover stakeholders other than shareholders. Firms are expected to conduct themselves in an ethical and sustainable manner, with honesty and a clear commitment to support the society. CSR has become a mainstream strategic prerequisite and not just a potential competitive advantage for firms.

As a catalyst for future growth and wealth creation, the rewards of investing in CSR can go far beyond the charities and causes that these investments aspire to support. Done properly, a solid CSR preposition can be the bridge between firms and the society in which they operate in. The notion of CSR as a resilience factor relies on the premise that socially responsible initiatives help to build trust and social capital in the firm, which encourages stakeholders to remain loyal and cooperative (Putnam and Leonardi (1993)), especially when facing tough times. The social spotlight has gained even more track since the 2008-2009 global financial crisis (GFC). This massive financial trauma was widely perceived as a wakeup call for firms and stakeholders to improve their CSR records. Socio-economic drivers have triggered an ever-increasing demand and pressure for proactive actions from the public. More than ever, CSR initiatives have been fiercely debated as an attempt to assert what firms' social role ought to be. Today's investors and consumers are betting on socially responsible businesses with their attention and wallets, mainly the millennials. The results of recent surveys show that a considerable number of millennials assume being willing to make personal sacrifices to positively impact the things they most care about (Harvard Business Review (2019)).

At the heart of the current frenetic debate, the real question on managers' minds is whether it financially hurts or benefits firms to excel in CSR activities. Are socially friendly stocks outperforming the market? Can firms truly committed to CSR better overcome adverse events? Do investors ultimately guide their decisions on firm-level social capital? Answering these questions is important because market participants are eager to find out whether investing in CSR offers any sort of “goodwill refund”. Although there is a clear relationship between CSR

and financial performance, the real challenge is to identify the direction of causality and the mechanisms behind it. For instance, investing in CSR activities may lead to better financial performance, but it can also be the case that firms with superior financial performance can more easily afford to invest in such activities. Without any exogenous variation in firms' level of social capital, it is difficult to infer whether changes in financial performance can be attributed to changes in social capital. Instead, the focus shifts to the resiliency of socially responsible firms to severe and unexpected shocks. This Dissertation undertakes a series of analyses to shed some light on the topic in the context of the recent COVID-19 outbreak. This extraordinary episode is used to study how social capital, built through CSR activities, conditioned the response in terms of stock returns, stock return volatility and operating performance.

The health emergency caused by COVID-19 rapidly spurred a huge wave of fear and panic worldwide. The devastating human implications have obliged managers and investors to rethink on social issues like never before. Investors seek authentic and transparent firms that protect all stakeholders' rights and treat them fairly. The COVID-19 outbreak represents an exogenous and unparalleled shock that undermined everyone's life, the ideal setup for studying the link between social capital and financial performance. The reasoning behind the former statement is quite simple. If social capital fosters stakeholder cooperation and trust (Putnam and Leonardi (1993)), it must pay off when being trustworthy becomes more valuable. From the shareholder perspective, investors are expected to place a valuation premium on socially responsible firms, since these firms are seen as more reliable (Guiso, Sapienza, and Zingales (2008)). From the stakeholder perspective, stakeholders are expected to help the firm rise above the obstacles, as a retribution for all the effort and caring attitude displayed towards them in the past. The COVID-19 shock affected investors' attitude towards risk and led to an impressive stock market sell-off. If investors really prefer stocks tied to social good, then the price of these stocks should not decline and fluctuate as much relative to other stocks.

In the middle of the worst economic downturn since the Great Depression (Gopinath (2020)), the peculiar behavior of stock markets during the pandemic deserves close attention. Even though it was predictable that markets would react to the novel Coronavirus, the time it took to occur was quite surprising. Until early February, financial markets seemed to be insensitive and immune to the exponential growth of COVID-19 cases and deaths. The stock market was performing well and the S&P 500 index even reached a remarkable peak of 3386 on February 19. However, the calm scenario did not last long. After initially ignoring the surrounding panorama, stock markets went into a downward spiral. February marks the first month of

successive market plunges widely attributed to the pandemic. On February 23 (Sunday), the Italian authorities placed over 50,000 people under strict lockdown to control the viral spread, after registering the first death from COVID-19 in Europe. The effort acted as a signal of the extreme importance of COVID-19 to the Western world and respective economies. According to recent studies, pandemic-related news were the main driver of major jumps on the U.S. stock market from late February onwards (Capelle-Blancard and Desroziers (2020)). The sharp and consecutive drops inevitably led to an unprecedented stock market crash, with S&P 500 index losing one-third of its value in just a single month. It is worth noting that the massive daily moves on stock prices oscillated in both directions. Despite the humanitarian chaos in the United States, stock prices bounced back strongly due to regular interventions of the Federal Reserve (Fed). The Fed has stepped in with a range of radical actions designed to soften the stress in financial systems and stock markets started to respond positively as soon as shareholders realized that a stimulus package was likely to be approved. In fact, March 24 registered the best one-day performance since 2008. The S&P 500 index declined abruptly, but it also rose 30% from its lowest point by the last trading day of April. Figure 1 depicts the reaction of S&P 500 index to the public health crisis.

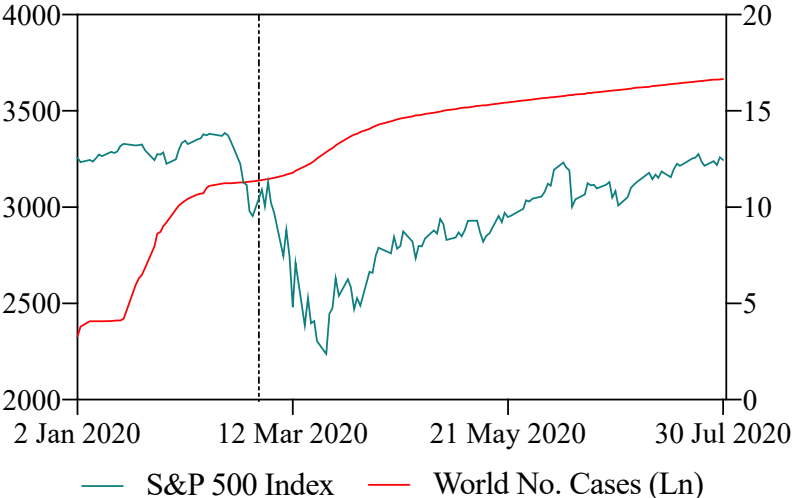


Figure I – COVID-19 and Stock Market. This figure shows the S&P 500 index (left scale) and the world's total number of reported COVID-19 cases in log (right scale) from January 2, 2020 to July 31, 2020. The vertical line marks March 2, 2020. Sources: Thomson Reuters and JHU.

To test whether social capital, measured by CSR, pays off during an unexpected crisis, this study examines the behavior and response of 1,385 nonfinancial firms to COVID-19 over the period from March 2, 2020 to July 31, 2020. The main findings can be described succinctly. First, the takeaways look inconclusive with respect to the performance of mean returns. Market participants seem to be sensitive to very low levels of social capital, but there is no robust

evidence that having the highest levels yields the highest returns. These excess returns relative to the worst CSR scores are only limited to the March-July period, which confirms that social capital is especially beneficial during severe economic downturns (Lins, Servaes, and Tamayo (2017)). Second, while market volatility surged and fears about the pandemic grew, social capital acted as an insurance against firm risk. Firms with high CSR scores face lower exposure to risk inside and outside the crisis relative to other firms, with a greater avail in times of market turbulence. Third, high-CSR firms also exhibit higher operating profit margins, despite the decline in their sales.

The remainder of this Dissertation is structured as follows. Section II addresses in more detail the literature and theoretical motivation. Section III describes the data and methodology used to conduct the analyses. Section IV reports and discusses the empirical results. Section V concludes.

II. Literature Review

A. Corporate Social Responsibility

The concept of CSR emerged in the 1950s, when Howard R. Bowen first stated that businesses are obliged to carry on initiatives, decisions and actions that are favorable for the values and goals of the overall society (Bowen (1953)). Since then, a vast literature has focused on the nature and role of CSR within different contexts. The discussion has rapidly evolved, with many sceptics arguing that CSR strategies do not target social and environmental concerns, but risk management procedures instead. Especially when dealing with adverse events, CSR serves as a reputation insurance, preserving firm value and avoiding regulatory or social scrutiny (Minor (2015)).

The Stakeholder Theory was later introduced by Edward Freeman and it asserts that managers owe an ethical duty to all stakeholders, not just shareholders. Firms should embrace social responsibility and assure the welfare of all individuals at stake, including customers, employees, suppliers, and surrounding community (Freeman (1994)). This view contradicts the Shareholder Theory of Milton Friedman, which states that firms' sole responsibility is to maximize profits and value for shareholders (Friedman (1970)). Despite being two distinctive concepts, the Stakeholder Theory reinforces the importance of CSR as a core element of corporate strategy.

The World Business Council for Sustainable Development (2000) defines CSR as the “commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life.” CSR entails a voluntary attitude to incorporate environmental and social issues in corporate activities and interactions with stakeholders (European Commission (2011)). Although there are numerous interpretation and implementation processes for CSR, all of them recognize CSR as an essential determinant for firm survival and success.

B. Impact of Corporate Social Responsibility on Firm Performance

Social responsibility has demonstrated to be an interesting topic to dive into, especially within the corporate context. Extensive investigation work has been done to assess the relationship between socially responsible behavior and financial performance, but results seem to be imprecise and inconsistent. Most studies report a positive impact of CSR on profitability and firm value (Deng, Kang, and Low (2013), Servaes and Tamayo (2013), Kruger (2015), Dimson, Karakas, and Li (2015)). However, a few scholars postulate a negative relationship (Friedman (1970)) or the lack of a significant relationship between these two dimensions (Aupperle, Carroll, and Hatfield (1985)). For instance, Margolis, Elfenbein, and Walsh (2009) found positive but very weak association between CSR and financial performance. According to these authors, social performance seems to have little or no influence on the economic and financial functioning of firms. Hong, Kubik, and Scheinkman (2012) go even further and reveal an inverse relationship, whereby well-performing firms are more likely to engage in CSR activities (pointed as “doing good by doing well”). The time frame between costs and benefits of CSR practices is believed to explain some part of the divergence in results. While investing in CSR implies immediate costs, its benefits may take longer to realize. As a consequence, the attitude of investors towards CSR policies will depend on their maturity preferences (Tsoutsoura (2004)).

Several researchers have exploited other hypothetical outcomes of CSR. Both levels of idiosyncratic risk (Lee and Faff (2009)) and systematic risk (Albuquerque, Koskinen, and Zhang (2019)) were already proven to be lower for socially responsible firms. El Ghouli, Guedhami, Kwok, and Mishra (2011) and Goss and Roberts (2011) confirm that highly CSR-focused firms benefit from lower riskiness perception and therefore lower equity capital financing. Moreover, well-performing CSR strategies induce superior stakeholder engagement, less agency costs and more transparency, which results in better access to funding (Cheng,

Iannou, and Serafeim (2014)). Whilst poorly performing firms may find it difficult to make investments in traditional CSR activities, firms with fewer financial constraints can more easily spend resources to achieve long-horizon strategic effects. Porter and Kramer (2006) assert that efficient allocations of these resources to meet the expectations of stakeholders may result in improvements in reputation and competitive levels. A study conducted by Edmans (2011) also supports the importance of covering social concerns by showing that the overall satisfaction and motivation of employees is positively related to long-term stock returns. CSR can be used to avoid financial distress by matching the interests of stakeholders and shareholders (Minor (2015)). Godfrey, Merrill, and Hansen (2009) add that investing in CSR to help the society at large, and not just specific targets, yields stronger insurance protection, risk management advantages, and stability against potential upcoming challenges.

The Agency Theory represents an alternative perspective against CSR investments. Some sceptics affirm that managers may opt to increase firms' CSR scores in order to strengthen their personal reputation. These CSR investments are paid by shareholders, which may lead to agency conflicts between shareholders and managers, and subsequent value destruction (Cheng, Hong, and Shue (2013)). Following another line, Lys, Naughton, and Wang (2015) state that firms only invest in CSR when they foresee superior financial performance in the future. The positive effect of CSR on financial performance documented in most studies only occurs due to causality links. As a consequence, increased expenses on CSR activities can be seen as a way of communicating firms' financial expectations.

Despite all investigation efforts, it is still difficult to explain the variation in CSR across firms, industries or countries. For example, since CSR is expected to somehow increase firm value, why do some firms invest in CSR to a greater extent than others? Or, why do firms in a particular industry or country engage more in CSR activities relative to firms in other industries or countries? It should be clear that most hypotheses discussed in academic literature assume CSR as a voluntary initiative. The model developed by Baron (2001) indicates that firms should grab opportunities related to CSR strategies in the same way as they grab market opportunities to increase profitability. CSR practices require direct costs, but they also alter the competitive positions in the market. Firms that consistently pursue socially responsible actions are set apart from the ones that maintain or even reduce these actions. Not surprisingly, the wider body of literature shares the perception of CSR as a strategic way to differentiate firms in competitive environments. Most experts believe that firms deeply committed to address stakeholders' needs

are more likely to be successful (Donaldson and Preston (1995)) by integrating their insights into CSR decisions (Barnett (2007)).

C. Trust and Social Capital Aspects of CSR

CSR comprises multiple dimensions and acts as a driver of firms' principles and actions to address different events and externalities. The exhaustive pursuit of links between CSR and financial performance is often done by considering only one outcome of CSR, such as environmental protection (Porter and van der Linde (1995)), consumer satisfaction (Servaes and Tamayo (2013)), employee satisfaction (Edmans, Li, and Zhang (2014)) or even corporate philanthropy (Masulis and Reza (2015)). For firms facing adverse and volatile scenarios, it is particularly important to embrace socially responsible behaviors to simply create trust and social capital (Lins, Servaes, and Tamayo (2017)).

Exploring the theoretical and empirical features of trust and social capital has been a hot topic for financial and economic matters. Trust is widely perceived as individuals' expectation that another individual (or institution) will act in a way that is beneficial, or at least not detrimental, to them independently of their ability to oversee those actions, so that they are more predisposed to cooperate (Gambetta (2000)). It represents one of the main pillars of social capital. There is no undisputed and clear meaning for social capital, which makes it a broader and more challenging term to define and measure for statistical purposes. In 1995, Fukuyama described social capital as humans' capacity to achieve common objectives by working together in groups or institutions. According to an OECD report, social capital can be understood as the “networks together with shared norms, values and understandings that facilitate cooperation within or among groups”. Its interpretation of social capital encompasses four major categories: (i) personal relationships, (ii) social network support, (iii) civic engagement, and (iv) trust and cooperative norms (Scrivens and Smith (2013)). The approach used to empirically measure social capital relies on the last two dimensions, just as in most finance and economics academic research (Knack and Keefer (1997), Lopez-de-Silanes, La Porta, Shleifer, and Vishny (1997), Guiso, Sapienza, and Zingales (2004, 2008)). Although the concept of social capital is hard to specify, all attempts have in common the idea that economic progress and well-functioning societies entail trust and norms of civic cooperation (Knack and Keefer (1997)).

Investing in CSR activities is believed to be among the most helpful ways to build trust and social capital. Although more in-depth investigation work is needed, Sacconi and Antoni (2011) have already provided ample evidence of higher levels of trust and social capital upon CSR

investments. Recent research even highlighted that CSR activities foster stakeholders' willingness to cooperate. Indeed, high-CSR firms are more likely to set up comprehensive and long-term oriented processes to engage with stakeholders (Eccles, Ioannou, and Serafeim (2014)). Previous studies also reveal that stakeholder engagement improves financial performance and may represent the basis for competitive advantage. By adopting socially beneficial processes, managers are more likely to create a form of goodwill and subsequent firm value (Brown, Helland, and Smith (2006)). Superior financial performance and growth prospects are sustained through stronger relationships with stakeholders, such as employees, customers, regulators, suppliers and creditors. Especially after suffering negative shocks, firms with high social capital face relatively more positive attitudes and less judgements from stakeholders. This goodwill built through CSR activities represents an insurance protection against adverse occurrences (Godfrey, Merrill, and Hansen (2009)). These norms of reciprocity are documented in various studies of social capital and consistent with prior evidence of outperformance in firms perceived as trustworthy by customers (Servaes and Tamayo (2013)) and employees as well (Guiso, Sapienza, and Zingales (2015)).

D. Value of Social Capital in Periods of Crisis

Stakeholders and firms are mostly linked by incomplete or implicit contracts, which participants may not honor during a crisis. Social capital can ease up these contractual relationships by boosting trust and cooperation (Lins, Servaes, and Tamayo (2017)). Indeed, highly trusted societies face lower costs in economic transactions that involve some individuals to depend on future actions of others. Not only social capital fosters individuals to spend less on protecting themselves from opportunism, but it also decreases the necessity for formal contracts (Knack and Keefer (1997)). For instance, firms with high social capital are deemed by stakeholders as less likely to violate contracts once a crisis hits due to their solid reputation and shared values. Similarly, stakeholders are more willing to cooperate and help the firm to better withstand a crisis, as a retribution for all the effort and caring attitude displayed towards them in the past (Putnam and Leonardi (1993)).

A lot of research has been carried out to explore whether CSR played any significant role in the context of the GFC. A recent study developed by Lins, Servaes, and Tamayo (2017) suggests that social capital is particularly beneficial when the overall level of trust declines unexpectedly. They show that high-CSR firms had superior levels of stock returns relative to low-CSR firms during the GFC, but the relationship becomes insignificant afterwards. Just focusing on U.S.

commercial banks, Cornett, Erhemjamts, and Tehranian (2016) add that socially responsible banks also performed better. Their results exhibit a positive and significant relationship between CSR and return on equity, which means that banks seem to be rewarded for investing in CSR. Another statistical investigation proves that the effects of CSR on volatility may depend on market conditions, that is, whether it is a pre-crisis, crisis or post-crisis period. During the financial crisis, risk was negatively related to social performance and CSR strengths were the main tool for the risk reduction (Boushal, Kryzanowski, and M'Zali (2018)).

Despite much work is still in progress, recent analyses have already delivered results regarding the relationship between environmental, social and governance (ESG) scores and stock prices during the COVID-19 outbreak. Considering data of the first quarter of 2020, Ding, Levine, Lin, and Xie (2020) found that declines in stock prices caused by the pandemic were milder for high-CSR firms. For the same time period but looking at U.S. data instead, Albuquerque, Koskinen, Yang, and Zhang (2020) assess the influence of environmental and social scores on firms' reaction to the pandemic. Their results show that high-rated stocks also performed better. Contradicting all these inferences, one empirical article manifests that ESG scores did not protect firms against declining stock prices during the COVID-19 pandemic. The authors argue that other variables such as accounting-based measures of intangible assets produced internally and financial flexibility, market-based measures and industry affiliation are the ones that explain crisis' returns (Demers, Hendrikse, Joos, and Lev (2020)).

III. Data and Methodology

A. Sample and Summary Statistics

The information on firms' CSR performance is gathered from the DataStream dataset in Thomson Reuters' Refinitiv ASSET4 ESG database, which provides ESG ratings covering 80% of the global market capitalization. This database offers reliable and comprehensive ESG information that has been employed in various studies focused on impacts of CSR on firm performance (Dyck, Lins, Roth, and Wagner (2019) and Cheung, Tan, and Wang (2020)). The reported ESG data is updated annually according to publicly available information on corporate annual reports, CSR reports, nongovernmental organizations, media sources, and stock exchange filings. Refinitiv measures firms' relative performance and commitment to the three ESG pillars based on the following categories: (i) resource use, emissions, and innovation for environment scores; (ii) workforce, human rights, community, and product responsibility for

social scores; and (iii) management, shareholders, and CSR strategy for corporate governance scores. The overall ESG score comprises the full set of categories. The scoring process involves 450 firm-level ESG metrics, of which 186 are comparable measures of particular relevance for each industry group. The score of each individual pillar is the sum of its category weights, which depend on firms' industry for factors 'E' and 'S', and country for factor 'G'. All scores are scaled from 0 to 100, whereby 100 is the highest possible score a firm can achieve. Consistent with prior work on social capital, the social pillar score, expressed as a percentage, is used as a proxy for CSR performance, the main explanatory variable under study. It translates how well firms treat their workforce, how freely the human rights can be exercised, to what extent firms are supporting the society, and where do products position with respect to social responsibility. The CSR score is measured at year-end 2018, the last reporting year available in Refinitiv database for most firms before the COVID-19 crisis.

Stock prices are obtained from Thomson Reuters' Refinitiv DataStream and accounting data from Compustat. Accounting variables are measured at the end of December of 2019, or as close as possible for firms with a different fiscal year-end. Besides just including U.S. data, certain cleaning data steps are essential to prepare the dataset for the empirical analysis that follows. As in Lins, Servaes, and Tamayo (2017), all financial firms are excluded due to their great tendency to receive government support in periods of crisis. Stocks with market capitalization below \$250 million as of year-end 2019 are also removed from the sample. Especially when the market is down, micro-cap stocks are more likely to face liquidity problems, high bid-ask spreads and trading pressure on their prices.

The stock market reactions to the pandemic have triggered a spike in academic publications on COVID-19. The insane timeline of events has led to sound heterogeneity on the choice of crisis-period among these publications. Contrarily to event studies that focus on the price adjustments to a clear event date, the context here features a series of news on the infectious disease. It would be difficult to assume whether a particular change in price occurred due to information incorporated on that day or continual (or reversal) adjustments on earlier days. For simplification purposes, this study considers the period from March 2, 2020 to July 31, 2020. The month of February is excluded from the analysis due to the huge degree of uncertainty underlying this month. Starting the sample period in March assures that, worldwide, it was abundantly clear that the new disease was not an exclusive problem of China.

After matching the datasets and removing firms with insufficient data coverage, the resulting sample consists of 1,385 nonfinancial firms. Table I contains the summary statistics for the

variables employed in the main analyses. The detailed descriptions and correlation matrixes are presented in Tables A.I and A.II in the Appendix, respectively.

Table I – Summary Statistics. The sample comprises 1,385 firms. *CSR* is measured at year-end 2018 and ranges from 0 to 1. *Return* is the natural logarithm of daily return over the March-July period. *Abnormal Return* is the natural logarithm of daily return minus the expected return over the March-July period. *Idiosyncratic Risk* is the daily residual standard deviation from the market model estimated over the March-July period. *Total Risk* is the daily return standard deviation estimated over the March-July period. *Daily Price Range* is the high price minus low price of the stock divided by its average price over the March-July period. ΔROA , ΔOPM and ΔAT refer to the changes in return on assets (operating income before depreciation divided by total assets), operating profit margin (operating income before depreciation divided by total revenue), and asset turnover (total revenue divided by total assets) for the first semester of 2020, respectively. The accounting data for the control variables is measured at the last quarter of 2019. *Leverage* is the long-term debt plus debt in current liability divided by total assets. *Cash Holdings* is the cash and marketable securities divided by total assets. *Profitability* is the net income divided by total assets. *Momentum* is the daily return over the one-year period ending in January 31, 2020. *Historical Volatility* is the daily residual standard deviation from the market model estimated over the one-year period ending in January 31, 2020. *Book-to-Market* is the equity book value divided by equity market value. *Size* is the total assets in millions of dollars. *Tobin's Q* is the total assets minus equity book value plus equity market value divided by total assets. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels.

	Mean	SD	Skewness	Kurtosis	25 th Perc.	Median	75 th Perc.
<i>CSR</i>	0.4116	0.2122	0.6053	2.5625	0.2412	0.3731	0.5492
<i>Return</i>	0.0002	0.0539	-0.2968	4.9997	-0.0249	0.0016	0.0271
<i>Abnormal Return</i>	-0.0031	0.0424	-0.1086	5.2531	-0.0226	-0.0024	0.0171
<i>Idiosyncratic Risk</i>	0.0439	0.0324	7.0435	87.8160	0.0271	0.0366	0.0507
<i>Total Risk</i>	0.0582	0.0325	6.8343	87.5054	0.0415	0.0516	0.0663
<i>Daily Price Range</i>	0.0404	0.0368	4.9386	67.4302	0.0197	0.0297	0.0477
ΔROA	-0.0079	0.0290	-0.5048	8.9721	-0.0177	-0.0043	0.0038
ΔOPM	-0.1470	0.6357	-5.5145	36.0222	-0.0691	-0.0076	0.0270
ΔAT	-0.0371	0.0593	-1.0655	5.4361	-0.0610	-0.0241	-0.0015
<i>Leverage</i>	0.3357	0.2105	0.5503	3.2215	0.1818	0.3279	0.4636
<i>Cash Holdings</i>	0.1666	0.1996	1.8458	6.0515	0.0323	0.0848	0.2134
<i>Profitability</i>	0.0028	0.0386	-2.2407	11.0948	-0.0027	0.0092	0.0196
<i>Momentum</i>	0.2538	0.3555	0.0687	4.1453	0.0592	0.2521	0.4465
<i>Historical Volatility</i>	0.0240	0.0241	6.9728	59.8863	0.0144	0.0194	0.0264
<i>Book-to-Market</i>	0.4248	0.4233	1.7623	7.3151	0.1552	0.3126	0.5707
<i>Size</i>	10702	32694	8.2479	94.1177	923	2371	7151
<i>Tobin's Q</i>	2.5048	1.8891	2.0813	7.5655	1.2690	1.8411	2.9916

B. Empirical Design

To explore whether CSR played any significant role during the COVID-19 outbreak, diverse regression specifications are developed along the way. The research question under consideration requires a thorough investigation, with special attention to the prevailing outlook before and after the market shock. For these purposes, this study relies on the analysis of cross-sectional and difference-in-differences regression estimates. The programming software used to obtain the empirical output is Stata.

The baseline results derive from cross-sectional methods, with the most complete specification expressed as follows:

$$Performance_i = b_0 + b_1CSR_i + b_2X_i + IndustryDummies + e_i \quad (1)$$

where CSR_i is the social pillar score measured at year-end 2018, X_i is the vector of control variables measured at the last quarter of 2019 and $IndustryDummies$ is the control variable for industry fixed effects. $Performance_i$ refers to firms' financial performance and it can assume three different metrics: stock returns, stock return volatility (total and idiosyncratic risks), and operating performance (return on assets, operating profit margin, and asset turnover). For market-based tests, the dependent variable relies on daily figures from March 2, 2020 to July 31, 2020. For accounting-based tests, the dependent variable relies on quarterly figures for December 2019 and June 2020.

The exceptional, but sadly dramatic, COVID-19 crisis offers the proper setting to take a fresh look at firm-level dynamics and compare it with pre-existing trends. As previously mentioned, it is fundamental to conduct a differences-in-differences analysis to more clearly identify the effect of COVID-19 on stock performance. The difference-in-differences model is based on a panel of daily data from January 31, 2019 to July 31, 2020 and specified as follows:

$$StockPerformance_{it} = b_0 + b_1CSR_{(treated)i} \times CovCrisis_t + b_2X_i + b_3FirmFE_i + b_4TimeFE_i + e_i \quad (2)$$

where $CSR_{(treated)i}$ is a dummy variable set to one for firms in the treatment group at year-end 2018 and zero otherwise, $CovCrisis_t$ is a dummy variable set to one from March 2, 2020 to July 31, 2020 and zero otherwise, and X_i is the vector of control variables measured at the last quarter of 2019. The terms $FirmFE_i$ and $TimeFE_i$ aim to control for firms' average return over the entire period and time-series dependencies or patterns in overall returns, respectively. The normal period refers to the time span of one year from January 31, 2019 to January 31, 2020. The month of February 2020 is excluded from this analysis for consistency purposes. This specification studies the behavior of stock returns and stock return volatility, where volatility is assessed by *Daily Price Range* (daily high price minus daily low price of the stock over its average price).

IV. Results

A. The Level of Stock Returns

The focal point here is firms' stock returns as a function of their pre-existing social capital level and various control variables. The models are estimated using a panel of daily returns from March 2, 2020 to July 31, 2020, where *Return* is the natural logarithm of daily return. Complementarily, regression estimates of *Abnormal Return* (natural logarithm of daily return minus the expected return) as a function of *CSR* are presented in Table A.III in the Appendix. In line with the most conventional approach, the market model is estimated over the one-year period ending in January 31, 2020 using data from Kenneth French's website.

Table II reports the results from the baseline model. As a starting point, the first specification examines solely *Return* as a function of *CSR*. Column (1) shows that CSR scores are positively related to stock returns, albeit weakly so. However, the absence of controls may lead to an erroneous outcome due to confounding factors. Since returns may vary across industries, industry dummies defined at the two-digit SIC code level are added to all estimation models from now on. Their inclusion also guards against the possibility that some industries may have been more vulnerable to pandemic-induced impacts than others. Another control is firms' factor loadings based on the momentum factor plus the Fama-French three-factor model. These four factor loadings are estimated over the one-year period ending in January 31, 2020, using factor returns gathered from Kenneth French's website. Column (2) presents the output of the initial model after including these controls. The regression coefficient is slightly lower but remains positive and statistically significant at 10% level.

One concern is that results may arise due to other omitted variables correlated with CSR and not only CSR itself. For instance, the pre-existing financial conditions of firms can be the reason why some of them were able to better withstand the economic downturn than others. To prevent any form of bias, the following models include controls for financial health and other corporate characteristics that may influence stock returns (Lins, Servaes, and Tamayo (2017)). Bearing in mind the tremendous disruption and instability during this period, the methodology applied takes a more cautious approach. The control variables are added by groups to avoid jumping to hasty conclusions. The initial set of controls measures firms' financial health and, therefore, their capacity to overcome an adverse shock in the economy. The proxies assigned are *Leverage* (long-term debt plus debt in current liabilities over total assets), *Cash Holdings* (cash and marketable securities over total assets) and *Profitability* (net income over total assets). Prior

research supports the idea that greater cash reserves and fewer debt obligations can mitigate the risks of shorter maturity debt and reduce investment cuts. The income aspect covers the possibility of profitable firms having fewer financial constraints and less need of large cash balances for precautionary ends (Duchin, Ozbas, and Sensoy (2010) and Harford, Klasa, and Maxwell (2014)). The results in column (3) show that high-CSR firms performed better during the COVID-19 crisis, even after controlling for their financial health. Regarding the control variables, as expected, firms with better financial health before the pandemic (lower debt, more cash holdings and higher profitability) exhibit higher stock returns.

Because corporate risk and growth opportunities may affect stock returns as well, the next regressions also include market-based measures. Two of these measures are *Momentum* (return over the one-year period ending in January 31, 2020) and *Historical Volatility* (idiosyncratic risk measured by the residual variance from the market model estimated over the one-year period ending in January 31, 2020). The choice of *Momentum* is consistent with findings that prior prices influence stock performance (Jegadeesh and Titman (1993)). The control for idiosyncratic risk aims to undo the potential relationship between price volatility and returns in the stock market (Goyal and Santa-Clara (2003)). In line with previous results, column (4) confirms that high-CSR firms have higher returns relative to the others. Despite the small increment, this evidence of superior financial performance associated with higher levels of social capital coincide with existing literature.

Given that value perception tends to be highly correlated with stock performance (Daniel and Titman (1997)), the variable *Book-to-Market* (book value of equity over market value of equity) is added as well. The last control used is *Size* (natural logarithm of total assets) to take into account firms' dimension. The results of this more fully specified model are displayed in column (5). Once these controls are considered, the effect of *CSR* on *Return* during the COVID-19 crisis is no longer statistically significant at any conventional level. One could reasonably argue that regression coefficients may not be precisely estimated due to multicollinearity problems. However, specifications with just *CSR* and one of these measures yield similar results. The absence of statistical significance on *CSR* indicates that, within firms with similar growth prospects or size, the level of social capital is not an important determinant for stock return performance. Regarding the coefficient on *Book-to-Market*, according to Fama and French (1992), high book-to-market stocks should earn higher returns, given the increased risk associated with higher likelihood of financial distress. However, the estimates indicate the opposite. *Return* and *Book-to-Market* are negatively and statistically significantly related at 1%

level, which means that firms with better growth prospects, or more unrecognized intangible assets, performed better during the market downturn.

Table II – Crisis-Period Returns and CSR. This table presents the regression estimates of stock returns as a function of the continuous measure of CSR and control variables. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

	Return (1)	Return (2)	Return (3)	Return (4)	Return (5)
<i>CSR</i>	0.00072** (0.00036)	0.00055** (0.00033)	0.00068** (0.00033)	0.00060* (0.00034)	0.00005 (0.00046)
<i>Leverage</i>			-0.00116** (0.00050)	-0.00115** (0.00051)	-0.00187*** (0.00052)
<i>Cash Holdings</i>			0.00112** (0.00053)	0.00114** (0.00053)	0.00059 (0.00054)
<i>Profitability</i>			0.00577** (0.00288)	0.00541** (0.00286)	0.00382 (0.00287)
<i>Momentum</i>				0.00006 (0.00028)	-0.00016 (0.00028)
<i>Historical Volatility</i>				-0.00499 (0.00453)	-0.00530 (0.00497)
<i>Book-to-Market</i>					-0.00112*** (0.00033)
<i>Size</i>					0.00012 (0.00008)
Four-factor loadings	No	Yes	Yes	Yes	Yes
Industry dummies	No	Yes	Yes	Yes	Yes
N	1,385	1,385	1,385	1,385	1,385
Adj. R ²	0.0023	0.1486	0.1621	0.1629	0.1750

In Panel A of Table III, the previous models are re-estimated, but now using CSR quartile dummies as the explanatory variable. The firms are split into quartiles according to their CSR score and dummies for quartiles 2, 3 and 4 (intercept represents quartile 1) are created. The coefficient values for CSR quartiles are interpreted relative to the omitted variable, the worst quartile (*CSR1*). The aim is to test whether the impact CSR on stock returns is more intense at very low or very high levels of CSR. Surprisingly, the link between crisis-period returns and CSR scores is highly nonlinear. Firms in the best quartile (*CSR4*) have higher returns relative to the worst quartile (*CSR1*), but the increment is lower when compared to the second quartile (*CSR2*). The difference in returns between the second and worst quartiles, pointed by the coefficient on *CSR2*, is the greatest and remains statistically significant whether firm characteristics are omitted or included in the model. In fact, when controlling for firm characteristics, no significant difference can be reported between quartile 1 and quartiles 3 and

4. These results suggest that firms with the lowest levels of social capital would benefit the most by slightly increasing their CSR scores.

Assuming a linear relationship between firms' stock returns and their level of social capital is a simplifying but relatively restrictive way of testing it. As previously shown, the effect of CSR on stock returns seems to be more complex in the context of COVID-19. The evidence of a nonlinear set-up calls for further investigation on its features. Panel B of Table III depicts the estimation output of a nonlinear quadratic model. The point of adding a squared CSR to the model is to check if the relationship between *CSR* and *Return* wears off after a certain threshold. The coefficients reveal an inversely U-shaped relationship during this period, which can be interpreted in light of the law of diminishing marginal returns in microeconomics. The negative sign of the squared term suggests that, after a certain level of CSR is reached, the marginal extent of its contribution to stock returns starts to diminish. These results offer interesting insights, even though the statistical significance of the inversely U-shaped relationship cannot be confirmed after controlling for the full set of firm characteristics.

Table III – Nonlinearity between Crisis-Period Returns and CSR. This table presents the regression estimates of stock returns as a function of non-continuous measures of CSR and control variables. Panel A reports the results using dummy variables for CSR quartiles, with *CSR2* set to one if the firm is in the second CSR quartile and zero otherwise, *CSR3* set to one if the firm is in the third CSR quartile and zero otherwise, and *CSR4* set to one if the firm is in the fourth CSR quartile and zero otherwise. Panel B reports the results using a quadratic model for CSR, such that *CSR* is the linear term and *CSR*² is the squared (quadratic) term. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

Panel A: Dummies for Quartiles of CSR Score			
	Return (1)	Return (2)	Return (3)
<i>CSR2</i>	0.00091*** (0.00025)	0.00060*** (0.00023)	0.00053** (0.00023)
<i>CSR3</i>	0.00060** (0.00026)	0.00019 (0.00024)	0.00012 (0.00026)
<i>CSR4</i>	0.00062*** (0.00023)	0.00044** (0.00021)	0.00016 (0.00027)
Firm characteristics	No	No	Yes
Four-factor loadings	No	Yes	Yes
Industry dummies	No	Yes	Yes
N	1,385	1,385	1,385
Adj. R ²	0.0108	0.1525	0.1788

Panel B: Non-linear (Quadratic) Model			
	Return (1)	Return (2)	Return (3)
<i>CSR</i>	0.00353** (0.00159)	0.00085* (0.00144)	0.00094 (0.00148)
<i>CSR</i> ²	-0.00296** (0.00152)	-0.00032* (0.00142)	-0.00096 (0.00140)
Firm characteristics	No	No	Yes
Four-factor loadings	No	Yes	Yes
Industry dummies	No	Yes	Yes
N	1,385	1,385	1,385
Adj. R ²	0.0044	0.1486	0.1752

The above findings are in sharp contrast to evidence of greater excess returns for higher CSR scores during the GFC (Lins, Servaes, and Tamayo (2017)). Although the scale of disruption is eerily similar to the GFC, it should be clear that COVID-19 emerged and hit the world in a very different way. Contrarily to the GFC, the public health crisis is not rooted in any socio-economic origins. Rather, the viral tornado arose suddenly with painful implications that go beyond the scope of prior crises, whether political, psychological, social or even human. The far-reaching and volatile nature of the pandemic precipitated a 'state of shock' among investors like never before. The stock prices were extremely vulnerable to the deteriorating conditions of the health and economic systems as well as the actions of monetary and fiscal authorities. There were waves of excessive pessimism and excessive optimism in short periods of time, which jeopardizes any comparisons with other crises.

As discussed in Section III, the cross-sectional analysis is complemented with a difference-in-difference analysis to capture the tighter link between the COVID-19 outbreak and the financial performance of firms with relatively high CSR scores. The effect of *CSR* on *Return* is now tested inside and outside the crisis-period. Table IV shows the results considering two different treatment groups of firms. Panel A refers to firms with a CSR score above the median and Panel B refers to firms with a CSR score above quartile one. The control variables are the full set of firm characteristics employed in Tables II and III. Column (1) omits fixed effects and column (2) controls for firm and time fixed effects. Looking at Panel A, even though the coefficients on $CSR_{TopM} \times CovCrisis$ and CSR_{TopM} are positive, none of them is statistically significant. There is no evidence that firms in the top median of CSR score had higher stock returns before and during the COVID-19 crisis relative to other firms. Such findings are understandable, since firms in the second quartile of CSR score exhibit the highest returns (Panel A of Table III). Not surprisingly, the game changes when the control group only includes firms in the worst quartile

of CSR score. As illustrated in Panel B, firms with a CSR score above the worst quartile performed better during the COVID-19 crisis relative to other firms; before the crisis, the relationship is insignificant. As in Lins, Servaes, and Tamayo (2017), the positive effect of CSR on stock returns is only significant in periods of crisis.

Table IV – Returns Inside and Outside the Crisis. This table presents the regression estimates of the difference-in-differences analysis for stock returns, using a panel of daily data from January 31, 2019 to July 31, 2020 (the month of February 2020 is excluded). In Panel A, the treatment group is firms with a CSR score above the median, where CSR_{TopM} is a dummy variable set to one for these firms and zero otherwise. In Panel B, the treatment group is firms with a CSR score above quartile one, where CSR_{Top3Q} is a dummy variable set to one for these firms and zero otherwise. $CovCrisis$ is a dummy variable set to one from March 2, 2020 to July 31, 2020 and zero otherwise. All variables, except CSR , are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

Panel A: Top Median of CSR Score		
	Return (1)	Return (2)
$CSR_{TopM} \times CovCrisis$	0.00012 (0.00020)	0.00012 (0.00016)
CSR_{TopM}	-0.00016 (0.00012)	
$CovCrisis$	0.00022 (0.00014)	
Firm fixed effects	No	Yes
Time (daily) fixed effects	No	Yes
Control variables	Yes	Yes
N	1,385	1,385
Adj. R ²	0.010	0.3723
Panel B: Top Three Quartiles of CSR Score		
	Return (1)	Return (2)
$CSR_{Top3Q} \times CovCrisis$	0.00058*** (0.00024)	0.00058*** (0.00019)
CSR_{Top3Q}	-0.00009 (0.00013)	
$CovCrisis$	-0.00015 (0.00020)	
Firm fixed effects	No	Yes
Time (daily) fixed effects	No	Yes
Control variables	Yes	Yes
N	1,385	1,385
Adj. R ²	0.010	0.3724

B. The Volatility of Stock Returns

CSR policies are expected to help build stock resilience in the form of superior performance of mean returns and lower volatility of returns. To address the latter possibility, the focus is now on whether CSR acts as an insurance against firm risk or not. The ultimate goal is to observe how the pre-existing level of social capital may be related to stock return volatility during the period of crisis. The investigation relies on two types of risk measures: total risk and idiosyncratic risk. *Total Risk* affects stock volatility in a broad sense and is computed as the standard deviation of the daily stock returns over the March-July period. *Idiosyncratic Risk* derives from specific characteristics of the firm and is computed as the standard deviation of the daily residuals from the market model estimated using daily excess returns over the March-July period. The control variables employed are *Leverage* (long-term debt plus debt in current liabilities over total assets), *Cash Holdings* (cash and marketable securities over total assets), *Profitability* (net income over total assets), *Book-to-Market* (book value of equity over market value of equity), and *Size* (natural logarithm of total assets). Table V contains the results. All specifications display negative and statistically significant coefficients on *CSR*, which means that firms with higher CSR scores are less exposed to total and idiosyncratic risks. Turning to the controls, *Size* and *Profitability* are negatively related to total and idiosyncratic risks, whereas the opposite can be observed for *Leverage* and *Book-to-Market*.

Table V – Crisis-Period Volatility and CSR. This table presents the regression estimates of stock return volatility as a function of CSR and control variables. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

	Total Risk (1)	Total Risk (2)	Idiosyncratic Risk (3)	Idiosyncratic Risk (4)
<i>CSR</i>	-0.02264*** (0.00377)	-0.01038* (0.00575)	-0.02684*** (0.00373)	-0.01150** (0.00585)
<i>Leverage</i>		0.03906*** (0.00392)		0.03904*** (0.00439)
<i>Cash Holdings</i>		0.00426 (0.00566)		0.00905 (0.00573)
<i>Profitability</i>		-0.14761*** (0.04364)		-0.14425*** (0.04189)
<i>Book-to-Market</i>		0.01862*** (0.00307)		0.02005** (0.00303)
<i>Size</i>		-0.00217*** (0.00086)		-0.00269*** (0.00088)
Industry dummies	Yes	Yes	Yes	Yes
N	1,385	1,385	1,385	1,385
Adj. R ²	0.1328	0.2677	0.1325	0.2725

Just like with stock returns, a similar difference-in-differences test is performed to find out if the resiliency of high-CSR firms to stock volatility is unique to periods of crisis or is common to most periods. The stock volatility, *Daily Price Range*, is now estimated using a range-based measure computed as daily high price minus daily low price of the stock over its average price. The control variables applied are the full set of firm characteristics also considered for *Total Risk* and *Idiosyncratic Risk*. As in Table IV, the first panel of Table VI refers to firms with a CSR score above the median. There is statistically significant evidence that range-based volatility for these firms is relatively lower in both periods. Panel B extends the investigation, whereby the treatment group refers to firms ranked in the top quartile of CSR score instead. Once again, high-CSR firms face reduced daily volatility on their stock prices relative to other firms, with a greater effect during the crisis. The protection against firm risk is not limited to specific times, but it is definitely more pronounced when the market is unstable.

Table VI – Volatility Inside and Outside the Crisis. This table presents the regression estimates of the difference-in-differences analysis for daily stock price range, using a panel of daily data from January 31, 2019 to July 31, 2020 (the month of February 2020 is excluded). In Panel A, the treatment group is firms with a CSR score above the median, where CSR_{TopM} is a dummy variable set to one for these firms and zero otherwise. In Panel B, the treatment group is firms with a CSR score in the top quartile, where CSR_{TopQ} is a dummy variable set to one for these firms and zero otherwise. $CovCrisis$ is a dummy variable set to one from March 2, 2020 to July 31, 2020 and zero otherwise. All variables, except CSR , are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

Panel A: Top Median of CSR Score		
	Daily Price Range (1)	Daily Price Range (2)
$CSR_{TopM} \times CovCrisis$	-0.00434*** (0.00019)	-0.00434*** (0.00015)
CSR_{TopM}	-0.00050* (0.00060)	
$CovCrisis$	0.03649*** (0.00013)	
Firm fixed effects	No	Yes
Time (daily) fixed effects	No	Yes
Control variables	Yes	Yes
N	1,385	1,385
Adj. R ²	0.2701	0.4055

Panel B: Top Quartile of CSR Score		
	Daily Price Range (1)	Daily Price Range (2)
$CSR_{TopQ} \times CovCrisis$	-0.00594*** (0.00022)	-0.00594*** (0.00018)
CSR_{TopQ}	-0.00070* (0.00074)	
$CovCrisis$	0.03579*** (0.00011)	
Firm fixed effects	No	Yes
Time (daily) fixed effects	No	Yes
Control variables	Yes	Yes
N	1,385	1,385
Adj. R ²	0.2705	0.4073

C. The Operating Performance of Firms

Stock returns are a good tool to assess firms' ability to surpass unexpected challenges. While stock prices quickly reflect the information available on the market, accounting numbers take more time to fully incorporate it. Here, the operating performance of firms is evaluated as a function of their pre-existing CSR scores. This preliminary analysis is just a starting point for a more complete study as further data becomes available.

The change in operating performance refers to the period from December 2019 to the second quarter of 2020. The analysis considers the time span of one semester and not just one quarter, because accounting records are slower at incorporating the information. For accuracy purposes, firms with a fiscal year-end different from December are excluded from the sample. The sample size decreases to 1,192 firms due to missing reported data for June 2020 or no fiscal year ending in December. The accounting performance metrics are return on assets (operating income before depreciation over total assets), operating profit margin (operating income before depreciation over sales), and asset turnover (sales over total assets). The first specification only includes *Tobin's Q* (total assets minus equity book value plus equity market value over total assets) as control variable to check for the growth and value aspects of firms. The controls for *Leverage* (long-term debt plus debt in current liabilities over total assets) and *Cash Holdings* (cash and marketable securities over total assets) are added later. All models also contain industry dummies defined at the two-digit SIC code level. The regression estimates are presented in Table VI. Columns (3) and (4) show evidence of superior levels of operating profit margins for firms with high CSR scores. Interestingly, as illustrated in columns (5) and (6), the change in asset turnover is negatively and statistically significantly related to CSR during this

period. These results suggest that high-CSR firms improved their operating profit margins, even as sales decreased. In line with Servaes and Tamayo (2013), one possible explanation is that socially responsible firms took advantage of their customer loyalty and increased prices (or simply preserved the high profit margins) despite the decline in demand. Regarding the change in return on assets, no statistical evidence is found that CSR affected the return on assets of firms during the first semester of 2020.

Table VII – Operating Performance and CSR. This table presents the regression estimates of change in return on assets, change in operating profit margin, and change in asset turnover as a function of CSR and control variables. All variables, except CSR, are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

	ΔROA (1)	ΔROA (2)	ΔOPM (3)	ΔOPM (4)	ΔAT (5)	ΔAT (6)
<i>CSR</i>	-0.00183 (0.00360)	-0.00109 (0.00366)	0.09122* (0.08222)	0.08633* (0.08470)	-0.00368* (0.00747)	-0.00139* (0.00759)
<i>Tobin's Q</i>	0.00059 (0.00059)	0.00032 (0.00063)	0.00428 (0.00771)	0.00976 (0.00862)	-0.00110 (0.00105)	-0.00201* (0.00114)
<i>Leverage</i>		0.00119 (0.00525)		-0.21072** (0.09612)		0.00840 (0.00917)
<i>Cash Holdings</i>		0.00713 (0.00723)		-0.21802* (0.12136)		0.02558*** (0.00971)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1,192	1,192	1,192	1,192	1,192	1,192
Adj. R ²	0.0783	0.0797	0.0938	0.0990	0.0750	0.0792

D. Robustness Tests

In this section, further analyses are carried out to test whether the main findings are robust. When selecting the proxy for social capital, the goal is to capture firms' social credentials in terms of the 'S' in ESG. The choice relies on Thomson Reuters' criteria for the social component. However, some scholars extend the notion of social capital and also include environmental aspects (Lins, Servaes, and Tamayo (2017)). To tackle this issue, the main cross-sectional analyses are repeated, but now using the equally weighted average of the social pillar and environment pillar scores at year-end 2018 to measure firm-level social capital. Table A.IV in the Appendix shows that results continue to hold, except for the change in asset turnover. The coefficient on ΔAT alters from negative to positive and becomes statistically insignificant.

The next robustness test aims to assess whether the decision to exclude firms with equity market capitalization below \$250 million from the sample jeopardizes the results. Micro-cap firms tend to have very low liquidity in stock markets, which could represent downside factor. In Table

A.V in the Appendix, the models are re-estimated with these firms. This table shows that the findings persist when micro-cap firms are added back to the sample.

It is also possible that evidence on stock returns and volatility arise due to lack of trading for high-CSR stocks. To explore this hypothesis, the difference-in-differences analysis is repeated, but now using *Trading Volume* (number of shares traded for the stock on a daily basis, expressed in millions) as dependent variable. Table A.VI in the Appendix shows that high-CSR stocks have significantly greater trading volume relative to other stocks during the COVID-19 crisis, which discards the possibility of thin trading.

V. Conclusion

The COVID-19 outbreak provides an unfortunate, but certainly valuable opportunity to grasp useful insights on the social side. The health emergency plausibly serves the turmoil requisite, especially after witnessing the odd behavior of the U.S. stock market: the calm waters before the storm, followed by the fastest collapse ever and then an extraordinary rebound.

The above findings signal mixed evidence of how social capital, measured by CSR, affected stock returns during the COVID-19 crisis. In the cross-sectional regression that controls for the full set of firm characteristics and risk factors, there is no robust evidence that high-CSR firms performed better during the crisis. Particularly, the relationship between CSR and stock returns seems to be highly nonlinear after dividing firms into quartiles of CSR score (the second quartile exhibits the highest returns). Evidence of excess returns is only found in models that use the worst quartile of CSR score as control group, which cannot be statistically confirmed before the crisis. While a positive impact of social capital on stock returns seems to appear, yet, this remark is still fragile. Investors were mostly concerned when firms had very low CSR scores, but they do not seem to favor firms with the highest scores when compared to reasonable scores. Turning to risk, the volatility of stock returns is lower for firms with high CSR scores inside and outside the crisis, with a greater avail in times of market turbulence. High-CSR firms also display higher operating profit margins and lower asset turnovers in the first semester of 2020 relative to the last figure of 2019 vis-à-vis other firms. These firms seem to be able to improve their operating profit margins, even when their sales decline. This contribution is especially relevant in light of the progressive rate at which the society is evolving combined

with the booming interconnectedness of the world economy, trends that experts believe will trigger other global crises in the times ahead.

A few caveats are in order. First, it is possible that firms' scores fail to reflect their actual CSR actions and effort. Even though the results persist after considering environmental aspects, there may be alternative ways through which firms can fuel social capital. This drawback is common to most studies focused on CSR, since there is no clear definition or straightforward measurement. Second, the data used are tied to a period of overwhelming volatility and results appear to be inherently vulnerable to the way data are treated.

This study calls into question the strength of CSR, but also challenges further research. An avenue for future work could be extending the analysis to the European landscape, since Europe has very different political and regulatory approaches from the United States. It would be also interesting to explore potential differential effects within industries depending on CSR. COVID-19 has hit harder specific industries such as travel and tourism, and most of them may take longer to recover or even not be able to make up their losses.

References

- Albuquerque, R., Koskinen, Y. and Zhang, C., 2019. Corporate social responsibility and firm risk: Theory and empirical evidence. *Management Science*, 65(10), pp.4451-4469.
- Albuquerque, R., Koskinen, Y., Yang, S. and Zhang, C., 2020. Resiliency of environmental and social stocks: An analysis of the exogenous COVID-19 market crash. *The Review of Corporate Finance Studies*.
- Aupperle, K.E., Carroll, A.B. and Hatfield, J.D., 1985. An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of management Journal*, 28(2), pp.446-463.
- Barnett, M.L., 2007. Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. *Academy of management review*, 32(3), pp.794-816.
- Baron, D.P., 2001. Private politics, corporate social responsibility, and integrated strategy. *Journal of Economics & Management Strategy*, 10(1), pp.7-45.
- Bouslah, K., Kryzanowski, L. and M'Zali, B., 2018. Social performance and firm risk: impact of the financial crisis. *Journal of Business Ethics*, 149(3), pp.643-669.
- Bowen, H.R., 2013. *Social responsibilities of the businessman*. University of Iowa Press.
- Brown, W.O., Helland, E. and Smith, J.K., 2006. Corporate philanthropic practices. *Journal of corporate finance*, 12(5), pp.855-877.
- Cai, Y., Jo, H. and Pan, C., 2012. Doing well while doing bad? CSR in controversial industry sectors. *Journal of Business Ethics*, 108(4), pp.467-480.
- Capelle-Blancard, G. and Desroziers, A., 2020. The stock market is not the economy? Insights from the COVID-19 crisis. *Insights from the COVID-19 Crisis (June 16, 2020)*. CEPR Covid Economics.
- Cheng, B., Ioannou, I. and Serafeim, G., 2014. Corporate social responsibility and access to finance. *Strategic management journal*, 35(1), pp.1-23.
- Cheng, I.H., Hong, H. and Shue, K., 2013. *Do managers do good with other people's money?* (No. w19432). National Bureau of Economic Research.
- Cheung, Y.L., Tan, W. and Wang, W., 2020. Where do Banks Value Corporate Social Responsibility More? Evidence on the Role of National Culture. *Journal of Banking & Finance*, p.105810.

- Cornett, M.M., Erhemjants, O. and Tehranian, H., 2016. Greed or good deeds: An examination of the relation between corporate social responsibility and the financial performance of US commercial banks around the financial crisis. *Journal of Banking & Finance*, 70, pp.137-159.
- Daniel, K. and Titman, S., 1997. Evidence on the characteristics of cross sectional variation in stock returns. *the Journal of Finance*, 52(1), pp.1-33.
- Demers, E., Hendrikse, J., Joos, P. and Lev, B., 2020. ESG Didn't Immunize Stocks Against the Covid-19 Market Crash. *Available at SSRN 3675920*.
- Deng, X., Kang, J.K. and Low, B.S., 2013. Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of financial Economics*, 110(1), pp.87-109.
- Dimson, E., Karakaş, O. and Li, X., 2015. Active ownership. *The Review of Financial Studies*, 28(12), pp.3225-3268.
- Ding, W., Levine, R., Lin, C. and Xie, W., 2020. *Corporate immunity to the COVID-19 pandemic* (No. w27055). National Bureau of Economic Research.
- Donaldson, T. and Preston, L.E., 1995. The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review*, 20(1), pp.65-91.
- Duchin, R., Ozbas, O. and Sensoy, B.A., 2010. Costly external finance, corporate investment, and the subprime mortgage credit crisis. *Journal of financial economics*, 97(3), pp.418-435.
- Dyck, A., Lins, K.V., Roth, L. and Wagner, H.F., 2019. Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*, 131(3), pp.693-714.
- Eccles, R.G., Ioannou, I. and Serafeim, G., 2014. The impact of corporate sustainability on organizational processes and performance. *Management Science*, 60(11), pp.2835-2857.
- Edmans, A., 2011. Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial economics*, 101(3), pp.621-640.
- Edmans, A., 2012. The link between job satisfaction and firm value, with implications for corporate social responsibility. *Academy of Management Perspectives*, 26(4), pp.1-19.
- Edmans, A., Li, L. and Zhang, C., 2014. *Employee satisfaction, labor market flexibility, and stock returns around the world* (No. w20300). National Bureau of Economic Research.

El Ghoul, S., Guedhami, O., Kwok, C.C. and Mishra, D.R., 2011. Does corporate social responsibility affect the cost of capital?. *Journal of Banking & Finance*, 35(9), pp.2388-2406.

European Commission, 2011. A renewed EU strategy 2011-14 for corporate social responsibility. *Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*.

Fama, E.F. and French, K.R., 1992. The cross-section of expected stock returns. *the Journal of Finance*, 47(2), pp.427-465.

Freeman, R.E., 1994. The politics of stakeholder theory: Some future directions. *Business ethics quarterly*, pp.409-421.

Friedman, M., 1970. A Friedman doctrine: The social responsibility of business is to increase its profits. *The New York Times Magazine*, 13(1970), pp.32-33.

Fukuyama, F., 1995. *Trust: The social virtues and the creation of prosperity* (Vol. 99). New York: Free press.

Gambetta, D., 2000. Can we trust trust. *Trust: Making and breaking cooperative relations*, 13, pp.213-237.

Godfrey, P.C., Merrill, C.B. and Hansen, J.M., 2009. The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic management journal*, 30(4), pp.425-445.

Gopinath, G., 2020. The great lockdown: worst economic downturn since the Great Depression. IMF Blog, April 2020.

Goss, A. and Roberts, G.S., 2011. The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking & Finance*, 35(7), pp.1794-1810.

Goyal, A. and Santa-Clara, P., 2003. Idiosyncratic risk matters!. *The Journal of Finance*, 58(3), pp.975-1007.

Guiso, L., Sapienza, P. and Zingales, L., 2004. The role of social capital in financial development. *American economic review*, 94(3), pp.526-556.

Guiso, L., Sapienza, P. and Zingales, L., 2008. Trusting the stock market. *the Journal of Finance*, 63(6), pp.2557-2600.

Guiso, L., Sapienza, P. and Zingales, L., 2015. The value of corporate culture. *Journal of Financial Economics*, 117(1), pp.60-76.

- Harford, J., Klasa, S. and Maxwell, W.F., 2014. Refinancing risk and cash holdings. *The Journal of Finance*, 69(3), pp.975-1012.
- Hong, H., Kubik, J.D. and Scheinkman, J.A., 2012. *Financial constraints on corporate goodness* (No. w18476). National Bureau of Economic Research.
- Jegadeesh, N. and Titman, S., 1993. Returns to buying winners and selling losers: Implications for stock market efficiency. *The Journal of finance*, 48(1), pp.65-91.
- Knack, S. and Keefer, P., 1997. Does social capital have an economic payoff? A cross-country investigation. *The Quarterly journal of economics*, 112(4), pp.1251-1288.
- Krüger, P., 2015. Corporate goodness and shareholder wealth. *Journal of financial economics*, 115(2), pp.304-329.
- Lee, D.D. and Faff, R.W., 2009. Corporate sustainability performance and idiosyncratic risk: A global perspective. *Financial Review*, 44(2), pp.213-237.
- Lins, K.V., Servaes, H. and Tamayo, A., 2017. Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis. *The Journal of Finance*, 72(4), pp.1785-1824.
- Lopez-de-Silanes, F., La Porta, R.F., Shleifer, A. and Vishny, R.W., 1997. Trust in Large Organizations. *The American Economic Review*, 87(2), pp.333-338.
- Lys, T., Naughton, J.P. and Wang, C., 2015. Signaling through corporate accountability reporting. *Journal of Accounting and Economics*, 60(1), pp.56-72.
- Margolis, J.D., Elfenbein, H.A. and Walsh, J.P., 2009. Does it pay to be good... and does it matter? A meta-analysis of the relationship between corporate social and financial performance. *And does it matter*.
- Masulis, R.W. and Reza, S.W., 2015. Agency problems of corporate philanthropy. *The Review of Financial Studies*, 28(2), pp.592-636.
- Minor, D., 2015. The value of corporate citizenship: protection. *Harvard Business School Strategy Unit Working Paper*, (16-021).
- Porter, M.E. and Kramer, M.R., 2006. The link between competitive advantage and corporate social responsibility. *Harvard business review*, 84(12), pp.78-92.
- Porter, M. and van der Linde, C., 1995. Green and competitive: Ending the stalemate. *Harvard Business Review*, 120-134.

Putnam, R.D. and Leonardi, R., 1993. *Making democracy work: Civic traditions in modern Italy*. Princeton university press.

Sacconi, L. and Antoni, G., 2011. *Social capital, Corporate social responsibility, economic behaviour and performance*. Palgrave Macmillan, London.

Salzmann, O., Ionescu-Somers, A. and Steger, U., 2005. The business case for corporate sustainability:: literature review and research options. *European Management Journal*, 23(1), pp.27-36.

Scrivens, K. and Smith, C., 2013. Four interpretations of social capital: An agenda for measurement. *OECD Statistics*.

Servaes, H. and Tamayo, A., 2013. The impact of corporate social responsibility on firm value: The role of customer awareness. *Management science*, 59(5), pp.1045-1061.

Tsoutsoura, M., 2004. Corporate social responsibility and financial performance.

Watts, P., 2000. *Corporate social responsibility: making good business sense*. World Business Council for Sustainable Development.

Appendix

Table A.I – List of Variables. This table presents the description of all variables employed in this study.

Variable	Description
Abnormal Return	Natural logarithm of daily return minus the expected return from March 2, 2020 to July 31, 2020. The market model is estimated using daily excess returns from February 2, 2020 to January 31, 2020. Thomson Reuters' Refinitiv and Kenneth French's website.
Book-to-Market	Equity book value divided by equity market value (last quarter of 2019). Compustat.
Cash Holdings	Cash and marketable securities divided by total assets (last quarter of 2019). Compustat.
CSR	Social pillar score expressed as a percentage (2018). Thomson Reuters' Refinitiv ASSET4 ESG.
Historical Volatility	Standard deviation of the daily residuals from the market model estimated using daily excess returns from February 2, 2020 to January 31, 2020. Thomson Reuters' Refinitiv and Kenneth French's website.
Idiosyncratic Risk	Standard deviation of the daily residuals from the market model estimated using daily excess returns from March 2, 2020 to July 31, 2020. Thomson Reuters' Refinitiv and Kenneth French's website.
Leverage	Long-term debt plus debt in current liabilities divided by total assets (last quarter of 2019). Compustat.
Momentum	Daily return from February 2, 2020 to January 31, 2020. Thomson Reuters' Refinitiv.
Profitability	Net income divided by total assets (last quarter of 2019). Compustat.
Return	Natural logarithm of daily return from March 2, 2020 to July 31, 2020. Thomson Reuters' Refinitiv.
Size	Natural logarithm of total assets (last quarter of 2019). Compustat.
Tobin's Q	Total assets minus equity book value plus equity market value divided by total assets (last quarter of 2020). Compustat.
Total Risk	Standard deviation of the daily returns from March 2, 2020 to July 31, 2020. Thomson Reuters' Refinitiv.
Trading Volume	Number of shares traded for the stock on a daily basis, expressed in millions. Thomson Reuters' Refinitiv.
ΔAT	Change in asset turnover for the first semester of 2020 (value of June 2020 minus value of December 2019). Asset turnover is the total revenue divided by total assets. Compustat.
ΔOPM	Change in operating profit margin for the first semester of 2020 (value of June 2020 minus value of December 2019). Operating profit margin is the total operating income before depreciation divided by total revenue. Compustat.
ΔROA	Change in return on assets for the first semester of 2020 (value of June 2020 minus value of December 2019). Return on assets is the operating income before depreciation divided by total assets. Compustat.

Table A.II – Correlation Matrixes. This table presents the correlation matrixes for the main analyses. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels.

Panel A: The Level of Stock Returns								
	<i>CSR</i>	<i>Return</i>	<i>Leverage</i>	<i>Cash H.</i>	<i>Profit.</i>	<i>Mom.</i>	<i>H. Vol.</i>	<i>B/M</i>
<i>Return</i>	0.0028							
<i>Leverage</i>	0.0656	-0.0077						
<i>Cash Holdings</i>	-0.1272	0.0109	-0.3493					
<i>Profitability</i>	0.1294	0.0038	-0.0489	-0.3372				
<i>Momentum</i>	-0.0284	0.0086	-0.0089	0.1624	0.0541			
<i>Hist. Volatility</i>	-0.1656	-0.0074	0.0409	0.1367	-0.2619	-0.0811		
<i>Book-to-Market</i>	-0.1136	-0.0161	-0.0899	-0.2851	-0.1089	-0.3447	0.3010	
<i>Size</i>	0.3581	-0.0007	0.0278	-0.0941	0.0844	-0.0339	-0.0943	-0.0046

Panel B: The Volatility of Stock Returns							
	<i>CSR</i>	<i>Idio. Risk</i>	<i>Total Risk.</i>	<i>Leverage</i>	<i>Cash H.</i>	<i>Profit.</i>	<i>B/M</i>
<i>Idiosyncratic Risk</i>	-0.2007						
<i>Total Risk</i>	-0.1746	0.9832					
<i>Leverage</i>	0.0656	0.1879	0.2092				
<i>Cash Holdings</i>	-0.1272	-0.0467	-0.0889	-0.3493			
<i>Profitability</i>	0.1294	-0.2797	-0.2602	-0.0489	-0.3372		
<i>Book-to-Market</i>	-0.1136	0.3184	0.3130	-0.0899	-0.2851	-0.1089	
<i>Size</i>	0.3581	-0.1029	-0.0608	0.0278	-0.0941	0.0844	-0.0046

Panel C: The Operating Performance of Firms						
	<i>CSR</i>	ΔROA	ΔOPM	ΔAT	<i>Tobin's Q</i>	<i>Leverage</i>
ΔROA	-0.0051					
ΔOPM	0.0520	0.5638				
ΔAT	-0.0020	0.5303	0.2269			
<i>Tobin's Q</i>	-0.0277	0.0939	0.0691	0.0458		
<i>Leverage</i>	0.0552	0.0001	-0.0496	-0.0125	-0.1699	
<i>Cash Holdings</i>	-0.1192	0.1012	0.0228	0.1266	0.5275	-0.3417

Table A.III – The Level of Abnormal Stock Returns. This table presents the regression estimates for the main analyses using abnormal returns as the dependent variable. Panel A uses the cross-sectional model of abnormal returns as a function of the continuous measure of CSR and control variables. Panels B and C use the difference-in-differences model for abnormal returns. The treatment group is firms with a CSR score above the median in Panel B and firms with a CSR score above quartile one in Panel C. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels.

Panel A: Crisis-Period Abnormal Returns and CSR			
	Abnormal Return (1)	Abnormal Return (2)	Abnormal Return (3)
<i>CSR</i>	0.00095*** (0.00037)	0.00031* (0.00032)	0.00007 (0.00045)
Firm characteristics	No	No	Yes
Four-factor loadings	No	Yes	Yes
Industry dummies	No	Yes	Yes
N	1,385	1,385	1,385
Adj. R ²	0.0039	0.2035	0.2237
Panel B: Abnormal Returns Inside and Outside the Crisis: Top Median of CSR Score			
	Abnormal Return (1)	Abnormal Return (2)	
<i>CSR_{TopM} x CovCrisis</i>	0.00018 (0.00017)	0.00019 (0.00017)	
<i>CSR_{TopM}</i>	-0.00028 (0.00010)		
<i>CovCrisis</i>	0.00552 (0.00012)		
Firm fixed effects	No	No	
Time (daily) fixed effects	No	Yes	
Control variables	No	Yes	
N	1,385	1,385	
Adj. R ²	0.011	0.0833	
Panel C: Abnormal Returns Inside and Outside the Crisis: Top Three Quartiles of CSR Score			
	Abnormal Return (1)	Abnormal Return (2)	
<i>CSR_{Top3Q} x CovCrisis</i>	0.00057*** (0.00020)	0.00057*** (0.00019)	
<i>CSR_{Top3Q}</i>	-0.00022 (0.00011)		
<i>CovCrisis</i>	0.00519 (0.00017)		
Firm fixed effects	No	No	
Time (daily) fixed effects	No	Yes	
Control variables	No	Yes	
N	1,385	1,385	
Adj. R ²	0.011	0.0834	

Table A.IV – Robustness Test for the CSR Score. This table presents the regression estimates of stock returns, stock return volatility (total and idiosyncratic risks), and operating performance (change in return on assets, change in operating profit margin, and change in asset turnover) as a function of ES (average of environmental and social scores and control variables). The control variables for firm characteristics differ accordingly. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

	The Level of Stock Returns	The Volatility of Stock Returns		The Operating Performance of Firms		
	Return (1)	Total Risk (2)	Idio. Risk (3)	Δ ROA (4)	Δ OPM (5)	Δ AT (6)
CSR	0.00004 (0.00046)	-0.01454*** (0.00596)	-0.01513*** (0.00605)	0.00040 (0.00345)	0.06198* (0.08951)	0.00302 (0.00734)
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	No	No	No	No	No
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1,385	1,385	1,385	1,192	1,192	1,192
Adj. R ²	0.1750	0.2703	0.2748	0.0796	0.0986	0.0793

Table A.V – Robustness Test for the Sample. This table presents the regression estimates of stock returns, stock return volatility (total risk and idiosyncratic risk), and operating performance (change in return on assets, change in operating profit margin, and change in asset turnover) as a function of *CSR* and control variables. The sample also includes micro-cap firms (firms with equity market capitalization below \$250 million). The control variables for firm characteristics differ accordingly. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

	The Level of Stock Return	The Volatility of Stock Returns		The Operating Performance Of Firms		
	Return (1)	Total Risk (2)	Idio. Risk (3)	Δ ROA (4)	Δ OPM (5)	Δ AT (6)
CSR	0.00006 (0.00046)	-0.01116** (0.00564)	-0.01155** (0.00569)	-0.00211 (0.00396)	0.28141** (0.13413)	-0.00178* (0.00752)
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	No	No	No	No	No
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1,485	1,485	1,485	1,246	1,246	1,246
Adj. R ²	0.1181	0.2679	0.3130	0.0876	0.0683	0.0832

Table A.VI – Robustness Test for Thin Trading. This table presents the regression estimates of the difference-in-differences analysis for daily stock trading volume, with a panel of daily data starting in January 31, 2019 and ending in July 31, 2020. *Trading Volume* is the number of shares traded for the stock on a daily basis, expressed in millions. *CSR_{TopQ}* is a dummy variable set to one for firms ranked in the top quartile of CSR score and zero otherwise. *CovCrisis* is a dummy variable set to one from March 2, 2020 to July 31, 2020 and zero otherwise. All variables, except *CSR*, are winsorized at the 1st and 99th percentile levels. Standard errors are robust to heteroscedasticity and presented in parentheses. ***, **, and * denote the significance level at 1%, 5%, and 10%, respectively.

	Trading Volume (1)	Trading Volume (2)
<i>CSR_{TopQ}</i> x <i>CovCrisis</i>	1.73117*** (0.02858)	1.73116*** (0.02842)
<i>CSR_{TopQ}</i>	2.6871*** (0.35039)	
<i>CovCrisis</i>	0.69354*** (0.01427)	
Firm fixed effects	No	Yes
Time (daily) fixed effects	No	Yes
N	1,376	1,376
Adj. R ²	0.0574	0.0574