The impact of the pre-crisis CSR scores on Firm Performance during times of crises. A comparison between the 2008-2009 Financial Crisis and the Covid-19 market crash.

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Abstract

The impact of Corporate Social Responsibility (CSR) on firm performance has been widely debated in recent times. This paper examines how the pre-crisis CSR scores impacted stock returns during two distinct crises: the 2008-2009 Financial Crisis and the Covid-19 crisis and it presents a comparative analysis of the results. Empirical evidence reveals that, during both crises, firms with higher CSR scores outperformed those with lower scores in terms of stock performance by at least 0.0010 percentage points in the former crisis and by at least 0.0318 percentage points in the latter. Moreover, the positive impact of pre-crisis CSR scores on Abnormal Returns was found to be greater than that on Raw Returns, during both crises. Additional analyses suggest that, for both crises, the impact of pre-crisis CSR scores on stock returns might be contingent upon the CSR score exceeding a specific threshold and that accounting for the highest-value firms weakened this impact. The study also indicates that trust might be the underlying mechanism explaining the positive impact of pre-crisis CSR scores on stock returns. Besides, the comparative analysis reveals that the impact of pre-crisis CSR scores on firm performance differed between the two crises due to the extent of the impact felt, being greater for the Covid-19 crisis. In conclusion, evidence suggests that, by building trust, pre-crisis CSR scores served as a hedging tactic against the detrimental effects of crises.

Keywords: Corporate Social Responsibility (CSR), Stock Returns, The 2008-2009 financial crisis, The Covid-19 crisis, Trust, Hedging tactic.

Title: The impact of the pre-crisis CSR scores on Firm Performance during times of crises. A comparison between the 2008-2009 Financial Crisis and the Covid-19 market crash.

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Resumo

O impacto da Responsabilidade Social Empresarial (RSE) no desempenho das empresas tem sido amplamente debatido nos últimos tempos. Este estudo analisa como as pontuações de RSE pré-crise afetaram os retornos das ações durante duas crises distintas: a crise financeira de 2008-2009 e a crise do Covid-19, apresentando uma análise comparativa dos resultados. A análise empírica indica que, em ambas as crises, empresas com pontuações mais elevadas de RSE obtiveram retornos superiores às empresas com pontuações mais baixas em pelo menos 0,0010 pontos percentuais na primeira crise e em pelo menos 0,0318 pontos percentuais na segunda. O estudo indica, também, que, em ambas as crises, a RSE teve um impacto superior nos retornos anormais do que nos retornos brutos. Análises adicionais sugerem que, em ambas as crises, o

impacto das pontuações de RSE pré-crise nos retornos pode depender de o seu valor exceder um determinado valor e que a inclusão da variável de controlo para as empresas de maior valor enfraqueceu o impacto da RSE nos retornos das ações. Os resultados indicam que a confiança foi, possivelmente, o mecanismo subjacente que explicou o impacto positivo da RSE nos retornos das ações. Para além disso, a análise comparativa revela que o efeito das pontuações RSE pré-crise no desempenho das empresas diferiu entre as duas crises, devido à magnitude do impacto, sendo este superior durante a crise do Covid-19. Em suma, os resultados indicam que, ao gerar confiança, a RSE serviu como estratégia defensiva contra os efeitos negativos das crises.

Palavras-chave: Responsabilidade Social Empresarial (RSE), Retorno das Ações, Crise Financeira de 2008-2009, Crise do Covid-19, Confiança, Estratégia Defensiva.

Título: O impacto das pontuações de Responsabilidade Social Empresarial (RSE) pré-crise no desempenho das empresas durante momentos de crise. Uma comparação entre a crise financeira de 2008-2009 e a crise do Covid-19.

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Résumé

L'impact de la responsabilité sociale des entreprises (RSE) sur leurs performances a été largement débattu ces dernières année. Ainsi, cette étude a pour but d'examiner comment les scores RSE avant la crise ont affecté les rendements des actions pendant deux crises distinctes: la crise financière de 2008-2009 et la crise de Covid-19, en présentant une analyse comparative des résultats. L'analyse empirique indique que pendant les deux crises, les entreprises ayant des scores RSE plus élevés ont obtenu des rendements plus élevés que les entreprises ayant des scores plus faibles d'au moins 0,001 point de pourcentage dans la première crise et d'au moins 0,0318 point de pourcentage dans la seconde. L'impact RSE a été plus important sur les rendements anormaux que sur les rendements bruts. En outre, l'analyse suggère que dans les deux crises, l'impact des scores RSE sur les rendements peut dépendre du fait que leur valeur dépasse un certain seuil et que l'inclusion de la variable de contrôle pour les entreprises qui sont les plus valorisées ont affaibli l'impact RSE sur les rendements boursiers dans les deux crises. L'analyse suggère aussi que la confiance pourrait être le mécanisme responsable de l'explication de l'impact RSE sur les rendements boursiers. De plus, l'analyse comparative montre que l'effet positif de la RSE diffère entre les deux crises, étant plus important pour la crise de Covid-19.

En somme, les résultats indiquent que la RSE, en générant de la confiance, a servi de stratégie défensive contre les effets néfastes des crises.

Mots-clés: Responsabilité Sociétale des Entreprises (RSE), Rendements des Actions, Crise Financière de 2008-2009, Crise de la Covid-19, Confiance, Stratégie Défensive.

Titre: L'impact des scores de Responsabilité Sociale des Entreprises (RSE) pré-crise sur la performance des entreprises en période de crise. Une comparaison entre la crise financière de 2008-2009 et la crise du Covid-19.

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Introduction

The ongoing debate surrounding whether corporations should prioritize stakeholder welfare over maximizing shareholder profit has been ignited by Milton Friedman's article published in the New York Times. According to Friedman (1970), profit maximization should be the primary objective of firms since any deviation from this goal would result in a decline in the economic system's efficiency. As a result, he asserted that social responsibility should not be a priority for enterprises. However, in recent times, companies are surpassing their legal obligations to tackle social and environmental challenges, and to enhance their interactions with stakeholders. This suggests that firms are increasingly integrating Corporate Social Responsibility (CSR) into their business strategies.

There are various factors that underpin the growing focus of companies on CSR. Firstly, socially responsible investors (SRI) have emerged (Scalet Thomas F. Kelly (2009)), and, according to the Global Sustainable Investment Review (2020), sustainable investments account for 35.9% of all assets under management (AuM) globally and 33.2% in the United States. Moreover, the rising number of long-term investors (Nguyen et al., 2020) has also been a contributing factor. Finally, the firms' commitment to reaching the Sustainable Development Goals (SDGs), because of the growing relevance of Sustainable Development as noted by Xia, Olanipekun, Chen, Xie, and Liu (2018), has also played a role in the upsurge of CSR.

Therefore, it is imperative to investigate how CSR impacts firms' performance, given its rising importance. In the field of finance, extensive research has been conducted on this topic with earlier research examining this relationship for both non-crisis and crisis times. However, there remains the opportunity to make a valuable contribution to this subject. Specifically, there is a gap in the existing literature regarding contrasting the impacts observed in different crises as well as exploring the underlying causes of the discrepancies.

To address this gap, the study examined the impact of pre-crisis CSR scores on firm performance during two distinct periods of crisis: the 2008-2009 Financial crisis and the Covid-19 crisis and, subsequently, compared the results for these two crises. Thus, the Research Question was formulated as: **Did the impact of pre-crisis CSR scores on firm performance differ between the 2008-2009 Financial crisis and the Covid-19 market crash?**

Before delving into the Research Question, a thorough literature review was conducted. It was revealed that, during the financial crisis, the implementation of CSR policies instilled trust, which had a positive impact on firm performance (Guiso, Sapienza, and Zingales (2008)). In

addition, Eccles, Ioannou, and Serafeim (2014) found that, during this crisis, high-CSR firms were more likely to receive financial support from various stakeholders, which positively impacted their stock and financial performance. Moreover, Karl V. Lins, Henri Servaes, and Ane Tamayo (2017) found that firms with higher CSR scores achieved greater stock returns, profitability and engaged in more capital raising activities.

On the other hand, research conducted for the Covid-19 crisis indicated that firms with higher ES scores experienced higher operating profit margins and stock returns than those with lower ones (Rui Albuquerque, Yrjo Koskinen, Shuai Yang, Chendi Zhang (2020)). Moreover, Kee-Hong Bae, Sadok El Ghoul, Zhaoran Gong, and Omrane Guedham (2021) found no significant relationship between CSR scores and stock returns, particularly when the CSR policies were not consistent with a firm's actions. However, the impact of CSR scores on firm performance lacks sufficient research and consensus.

To investigate the Research Question, two distinct samples were used. For the 2008-2009 financial crisis, a sample comprising 366 non-financial firms listed on the NYSE index was utilized and the stock returns were collected for the period spanning from August 2008 to March 2009. For the Covid-19 crisis, a sample of 1,302 non-financial firms listed on the NYSE index was selected, with stocks returns collected over the period from February-March 2020.

The Research Inquiry involves comparing two crisis periods. Thus, a consistent methodology with four hypotheses was applied to both periods. The first three hypotheses aimed to examine, for both crises, how the pre-crisis CSR scores impacted Raw and Abnormal returns (H1). Besides, they sought to investigate whether the impact was more pronounced for companies with high CSR levels (H2) and whether accounting for highest-value firms strengthened this impact (H3). Therefore, these hypotheses intended to gain a comprehensive understanding of the CSR's impact and identify potential factors that could affect it. On the other hand, the last hypothesis seeks to determine if the trust was the underlying mechanism explaining the impact of pre-crisis CSR scores on returns by examining whether firms with higher CSR scores engaged in more capital raising activities (H4).

Overall, the results indicate that companies with higher CSR scores outperformed those with lower ones in terms of stock performance by at least 0.0010 percentage points throughout the financial crisis and by at least 0.0318 percentages points during the Covid-19 crisis. However, the findings reveal that, for both crises, the impact of the pre-crisis CSR scores on stock returns was weakened when accounting for the highest-value enterprises, albeit remained positive and

statistically significant. Besides, the results identified trust as the underlying mechanism that might explain the positive impact of CSR on returns. Finally, the comparative analysis suggested that the impact differed between the two crises due to the magnitude, being greater for the Covid-19 crisis.

This paper is of interest to academics as it contributes to the ongoing debate concerning the relationship between CSR and firm performance. The study builds upon prior research in two critical ways. Firstly, by conducting a comparison between two distinct crisis periods, it offers a deeper understanding of how the impact of CSR on firm performance varies depending on the characteristics and timeframe of the crisis, which has not been previously explored. Secondly, the paper examines whether accounting for the highest-value firms strengthened the impact of the pre-crisis CSR scores on stock returns. This fills a gap in the literature because it has not been thoroughly examined the extent to which a firm's value affect this impact.

The paper is structured in the following manner. The first part explores the theoretical concepts that underlie the investigations, by providing an in-depth description of CSR and its related concepts, along with an overview of previous research conducted on this subject. The second part presents the Research Question, the hypotheses, the sample construction, the methodology employed, and the descriptive statistics. The third part presents the results of the tested hypotheses for both crisis periods, along with a comparative analysis of the obtained results for the two crises. The outcomes of the robustness tests are also displayed in this part. The last part acknowledges the paper's limitations, provides an overview of potential avenues for future research, highlights the study's managerial implications, and summarizes its main findings.

Part 1: Theoretical Concepts & Literature Review

A. CSR Definition

The field of CSR has grown significantly in recent years, encompassing a diverse array of theories and terminology such as corporate citizenship, business ethics, community involvement, sustainability, amongst others. According to Angeloantonio Russo, Francesco Perrini (2010), CSR is built on the principles of stakeholder theory, which suggests that in addition to generating profits, businesses have a duty to treat all stakeholders fairly, the premise which should guide their operations (Donaldson and Preston, 1995).

Over time, many people have broadened the definition of CSR. The first one was presented by Bowen (1953), who claimed that CSR can be defined as businesses' obligation to uphold the

sustainable aims and values of society. Afterwards, in 2000, the World Business Council for Sustainable Development stated that CSR is "the commitment of a business to contribute to sustainable economic development (…).". Then, the European Commission, in 2002, argued that CSR is the voluntary incorporation of social and environmental concerns into business operations while acting ethically and fostering economic growth.

Nowadays, implementing CSR policies is crucial for firms to develop and endure in the market. In fact, it contributes to efficiency improvement and strengthens a company's reputation and trust (Barney 1991). As a result, it helps businesses cultivate closer connections with customers (Brown and Dacin, 1997) and with employees (Turban and Greening, 1997), enhancing revenue growth and consequently profitability (Lev, Petrovits, and Radhakrishnan, 2006).

A.1 Carroll's CSR Definition

According to Carroll (1979) CSR encompasses "the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time". These dimensions are not mutually exclusive, but interconnected, affecting how well the corporations perform in terms of CSR. In 1991, Carroll summarized this concept as a pyramid, emphasizing that companies should strive to achieve their legal and economic requirements before aspiring to fulfill their ethical and discretionary obligations. The *economic responsibility* is at the bottom of the pyramid as it is a prerequisite for conducting business. Companies must operate in a profitable manner to generate value for all stakeholders. Secondly, businesses must abide by laws that govern their operations to fulfill the "social contract" between organizations and society (*legal responsibility*). Thirdly, companies must be fair while avoiding or minimizing harm to all stakeholders (*Moral responsibility*). Finally, businesses should behave as good corporate citizens, by carrying out charitable activities, as stated by Fombrun, Gardberg, and Barnett (2000) (*Philanthropic responsibility)*.

A.2 The Role of CSR in Advancing Sustainable Development.

According to Xia, Olanipekun, Chen, Xie, and Liu (2018) CSR may significantly aid in achieving sustainable development. Additionally, the World Business Council for Sustainable Development (2000) stated that CSR is the business contribution to sustainable development. In fact, businesses are fostering sustainable development when adopting CSR policies, especially if these practices are aligned with the Sustainable Development Goals (SDGs) (a collection of 17 objectives defined by the United Nations in 2015*)*. However, CSR is merely one strategy that can be employed to accomplish Sustainable Development.

B. CSR Rating Agencies

CSR Rating Agencies assess the company's CSR performance and summarize it in a score. According to Steven Scalet and Thomas F. Kelly (2009), the steps required consist of data collection, followed by the development of evaluation standards (criteria) and, lastly, the integration of the data with the criteria to get the final score. Examples of data sources include interviews, sustainability reports, media reports, and meetings with the rated firms. Moreover, there are a wide range of methodologies for integrating the data with the criteria, making it challenging to compare the final scores between rating agencies.

Some well-known CSR rating agencies include MSCI, Sustainalytics, Vigeo, Ethical Investment Research Services (EIRIS), RobeccoSAM, and the Refinitiv ESG database.

For the empirical part of this paper, the Refinitiv's ESG database was used to obtain the CSR scores. In the second part of this article, the rationale for this selection will be presented.

B.1 The Growing Relevance of CSR Ratings Agencies

Rating businesses based on their CSR performance has gained popularity recently. According to Steven Scalet Thomas F. Kelly (2009), it has been fueled by the growth of socially responsible investors (SRI). In fact, the Global Sustainable Investment Review (2020) stated that sustainable investments account for 33.2% of AuM in the United States. Moreover, these investments constitute 35.9% of AuM globally, a rise of 160.18% from 2012.

The growing importance of CSR rating agencies is further highlighted by the larger sample used for the Covid-19 crisis compared to the smaller one used for the 2008–2009 financial crisis. Specifically, by the end of 2019, 1,302 companies (listed on the NYSE Index) had publicly disclosed their CSR scores, which is a considerable rise from the 366 companies that did so by the end of 2006.

C. Literature Review

Within this part, an examination of the existing literature concerning the impact of CSR on firm performance during non-crisis periods will be conducted. Following that, the same topic will be examined for two crisis periods, namely the 2008-2009 financial crisis and the Covid-19 stock market crash.

C.1 Impact of CSR on Firm Performance during non-crisis times

CSR is a crucial concept in the domain of finance. Therefore, the impact of CSR on firm performance has been the subject of extensive research.

George Serafeim, Ioannis Ioannou, and Robert G. Eccles (2014) investigated the impact of social and environmental policies on firm performance. They identified 90 high sustainability businesses that implemented a considerable number of environmental and social policies and utilized propensity score-matching to find 90 comparable businesses that adopted nearly none of these policies. After comparing them from 1993 to 2009, they concluded that both in terms of stock performance and accounting performance, high sustainability enterprises consistently outperformed low sustainability firms. By using a four-factor model to consider differences in the risk profiles of the two groups, they concluded that the annual abnormal return was higher for the high sustainability group. Moreover, they discovered that high sustainability firms had higher Return on Equity (ROE) and Return on Assets (ROA). Finally, they found that high sustainability businesses, in contrast to low sustainability firms, are consistently undervalued by the market in terms of their potential profitability.

Philipp Kruger (2014) studied how the stock market responds to good and bad news regarding the company's CSR. He concluded that investors reacted significantly adversely to negative CSR news, particularly when it involves communities and the environment. He also found that investors' reactions to positive CSR news were weaker and less systematic. Moreover, he showed that when positive CSR news came from businesses that were less likely to encounter agency problems and that made managerial efforts to correct for prior corporate social irresponsibility, investors reacted more favorably, resulting in an increase in the value of the company's stock.

Xin Deng, Jun-koo Kang, and Buen Low (2013) investigated whether CSR generates value for the shareholders who acquire other corporations using a sample of mergers in the US. They found that high CSR acquirers outperformed low CSR acquirers in terms of merger announcement returns, value-weighted portfolios of both acquirer and target, and post-merger long-term performance. Moreover, they discovered that mergers involving high-CSR acquirers had a lower failure rate. These findings demonstrated that CSR impacts merger performance with this relationship being robust to a variety of alternative specifications.

C.2 Impact of CSR on firm performance during the 2008-2009 Financial Crisis

According to Angel Gurria (2009), the financial crisis harmed the public trust in institutions and in the stock market. Thus, the impact of CSR on stakeholders' trust, and, and the resulting impact on business performance, has been the subject of extensive investigation.

Guiso, Sapienza, and Zingales (2008) found that when adopting CSR policies, companies are viewed as being more trustworthy, so investors placed a premium on their valuations when the overall corporate trust declines. Also, Putnam (1993) showed that CSR helped in fostering stakeholder cooperation and trust, thereby improving the company's performance. Furthermore, Eccles, Ioannou, and Serafeim (2014) found that high-CSR companies were more likely to receive financial support from various stakeholders, due to their long-term engagement with them. These findings demonstrate that, during this crisis, implementing CSR policies aided in the cultivation of trust which, consequently, had a positive impact on firm performance. Nevertheless, a more thorough investigation must be conducted to comprehend the main performance indicators in which this is reflected. Therefore, some examples of such investigations are presented below.

Karl V. Lins, Henri Servaes, and Ane Tamayo (2017) showed that, after controlling for some firms' characteristics and risk factors, companies with high CSR scores experienced higher stock returns in comparison to firms with low CSR scores, during the financial crisis. Furthermore, they demonstrated that high-CSR firms had higher profitability, gross margins, and engaged in more capital raising activities. However, they found that, in the post-crisis period, there was no difference in stock return performance between companies with high and low CSR scores, since the CSR-related gains, during non-crisis periods, are factored into the company's share price. Finally, this research found that CSR was especially beneficial during this crisis since the general level of trust in corporations was low. To perform this study, researchers gathered CSR data from the MSCI ESG Stats Database.

Marcia Millon Cornett, Otgontsetseg Erhemjamts, and Hassan Tehranian (2016) studied the relationship between banks' CSR scores and their performance during the financial crisis. The researchers found that banks were rewarded for undertaking social initiatives since ROE and CSR scores were positively and significantly related. Furthermore, they discovered that larger banks more actively promoted socially responsible initiatives, such as lowering deposit costs and enhancing services to low-income regions. Finally, it was demonstrated that these findings remained valid even when considering different CSR definitions.

C.3 Impact of CSR on firm performance during the Covid-19 crisis.

According to Rui Albuquerque, Yrjo Koskinen, Shuai Yang, Chendi Zhang (2020), the 2008-2009 financial crisis and the Covid-19 market crash were distinct because of the nature and speed of the shock. Firstly, contrary to the financial crisis, the shock caused by the Covid-19 crisis was instigated by public health concerns, rather than financial factors. Secondly, it was an unexpected shock, not allowing companies to prepare themselves against its adverse effects.

Considering that the Covid-19 market crash was an unexpected shock, it can be inferred that a company's performance during the crisis might be associated with its prior performance indicators, including those related to CSR performance. Therefore, comprehending the degree to which the pre-crisis CSR scores impacted the performance of firms during the crisis is intriguing research. Some examples of prior research on this subject are presented below.

Kee-Hong Bae, Sadok El Ghoul, Zhaoran Gong, and Omrane Guedham (2021) investigated the relationship between CSR and stock returns during the Covid-19 pandemic and the post-crisis period. They obtained the CSR data from MSCI ESG Stats and from the Refinitiv ESG database. They found no significant relationship between CSR scores and stock returns for both periods. However, in the cross-sectional research, they discovered a positive relation between CSR and returns, when CSR was consistent with the firms' actions. As a result, they concluded that the ineffectiveness of CSR in safeguarding shareholder wealth from adverse effects can be attributed to the discrepancy between a company's CSR scores and its actual operations.

Researchers Shuai Yang, Chendi Zhang, Yrjo Koskinen, and Rui Albuquerque (2020) investigated how ES business policies affected the stock performance during the Covid-19 crisis. The ES performance was obtained from Refinitiv ESG database and daily stock returns were retrieved from Capital IQ North America Daily. They showed that, during the Covid-19 crisis, returns for firms with higher ES ratings were higher than for those with lower ES ratings. Furthermore, they found that investors that hold stocks that are more ES-oriented experienced reduced return volatility during the crisis. Finally, they found that, after incorporating firm fixed effects and other control variables, the positive impact of ES ratings on returns persisted and was statistically significant.

The lack of research coupled with the absence of consensus regarding the impact of CSR on firm performance during this crisis can be attributed to the fact that the Covid-19 pandemic is a recent event. Therefore, additional research is required to fully comprehend this relationship.

Part 2: Research Question, Hypothesis, Sample, Methodology and Summary Statistics

A. Research Question

Upon carefully reviewing prior studies, the Research Question was formulated with the intention of identifying areas for advancing the existing knowledge base. As previously examined, research has been conducted to explore the impact of CSR on the firm performance during periods of crisis. Nevertheless, there is a gap in the literature regarding contrasting the impacts experienced in various crises as well as investigating the underlying reasons of the discrepancies. As a result, the Research Inquiry was formulated as follows: **Did the impact of pre-crisis CSR scores on firm performance differ between the 2008-2009 Financial crisis and the Covid-19 crisis?**

B. Hypothesis

To investigate the Research Question, four hypotheses were formulated and tested for both crisis periods: The 2008-2009 Financial crisis and the Covid-19 Market Crash.

- **Hypothesis 1 (H1):** Of the companies with a CSR score, those that have higher pre-crisis CSR scores achieved higher Raw and Abnormal returns.
- **Hypothesis 2 (H2):** The impact of the pre-crisis CSR scores on Raw and Abnormal returns was more pronounced at high CSR levels.
- **Hypothesis 3 (H3):** Accounting for the highest-value firms strengthened the impact of the pre-crisis CSR scores on Raw and Abnormal returns.
- **Hypothesis 4 (H4):** Of the companies with a CSR score, those that have higher pre-crisis CSR scores engaged in more capital raising activities.

C. Sample Construction

This part describes how the samples were constructed. Firstly, only firms listed on NYSE were included. Secondly, I retrieved financial and accounting data from the Refinitiv Database (DataStream). Thirdly, CRSP was used to get raw returns, Fourthly, the market-risk premium, risk-free return and the three Fama-French factors were collected from the Kenneth French Data Library. Finally, the Refinitiv ESG database was used to construct the CSR score.

Following the rationale of Karl V. Lins, Henri Servaes, and Ane Tamayo (2017), financial firms should be excluded from the sample as they are significantly supported by the government during a crisis. As a result, they were disregarded, by identifying them using the General Industry Classification retrieved from DataStream. Moreover, micro-cap stocks were removed (those with market capitalization lower than $250 million at the end of 2007 for the financial crisis and at the end of 2019 for the Covid-19 crisis). The decision to exclude these enterprises was based on the concern that their poor liquidity would hinder the ability to accurately assess the impact of other factors on returns during a crisis.

Following Lins, Volpin, and Wagner's (2013) logic, the months from August 2008 to March 2009 were defined as the period of the financial crisis. August 2008 was chosen as the starting point since Lehman Brothers declared bankruptcy in September of that year. Moreover, as the S&P 500 reached its lowest point of the crisis in March 2009, that month was chosen for the end of this crisis period. According to Sapienza and Zingales (2012), this time span was the one with the most significant fall in trust. For the Covid-19 market crash, the period from February to March 2020 was used, because according to the BBC, it presented the “worst slide since 1987" in the American stock market and since it is in accordance with the approach adopted by Kee-Hong Bae, Sadok El Ghoul, Zhaoran (Jason) Gong and Omrane Guedhami (2021).

Following the rationale of Karl V. Lins, Henri Servaes, and Ane Tamayo (2017), for the 2008-2009 financial crisis, CSR scores of the end-year 2006 were used to guard against the likelihood that enterprises may have adjusted their CSR policies in anticipation of the crisis in 2007. On the other hand, since the Covid-19 crisis was an unexpected shock, CSR scores of the end-year 2019 were used, since they accurately reflect the CSR score before the crisis.

After combining the data from the different data sources, I obtained two different samples corresponding to the two different crises analyzed. For the 2008-2009 Financial Crisis, a sample comprising 366 non-financial firms listed on the NYSE index was utilized. For the Covid-19 crisis, a sample of 1,302 non-financial firms listed on the NYSE index was selected.

C.1 The Refinitiv ESG Database

Due to its accessibility and methodology, the Refinitiv ESG database was chosen to construct the CSR score. Since 2002, it has been publishing ESG scores, nowadays providing scores for more than 12,000 companies. The score is computed using 630 company levels metrics, grouped into 10 categories, thereby forming a final score that is based on three pillars (environment, social, and governance). The final ESG score offers a comprehensive evaluation

of a company's ESG performance, considering industry and company biases. The outcome is a number that ranges from 0 to 100, where 0 indicates the lowest level and 100 indicates the highest one, and whose figures are updated yearly in February. In fact, the Refinitiv ESG database have been used in the prior literature by Ferrell, Liang, and Renneboog (2016) and Kee-Hong Bae, Sadok El Ghoul, Zhaoran Gong, and Omrane Guedham (2021), for instance.

C.2 Constructing the CSR Score with the Refinitiv ESG Database

Orlitzky, M., F. L. Schmidt, and S. L. Rynes (2003) found that businesses that scored high on ESG also performed well in terms of CSR metrics. In fact, both are focused on assessing how company's activities affect society and the environment. As a result, constructing the CSR score using the Refinitiv ESG database seems to be a reliable method.

The ESG score is composed of three pillars (environmental, social and governance). However, according to Karl V. Lins, Henri Servaes, and Ane Tamayo's (2017), the governance pillar should be excluded when calculating the CSR score because it often falls outside of the company's CSR mission. This position is also supported by the European Commission (2002) which defined CSR as the voluntary integration of social and environmental concerns into business operations, thereby implying the omission of the governance score.

Therefore, to compute the CSR score, the scores for each pillar (E, S, G) were collected separately. Subsequently, only the environment and social scores were used, giving each one equal weight, in accordance with the methodology employed by Kee-Hong Bae, Sadok El Ghoul, Zhaoran (Jason) Gong, and Omrane Guedham (2021). As a result, the final score is the average of the social and environmental scores, giving rise to a score that spans from 0 to 100, with 0 denoting the lowest level and 100 denoting the highest.

D. Methodology

To investigate the Research Question, four hypotheses were developed and tested for both the 2008-2009 Financial crisis and the Covid-19 crisis. To accomplish this, a regression analysis was employed. Thus, the criteria for OLS regressions including multicollinearity, heteroskedasticity, autocorrelation, and normal distribution were presumed to have been met for the purposes of this paper. Below is a description of each hypothesis along with the corresponding methodology employed for each one.

D.1 Impact of the pre-crisis CSR scores on Raw and Abnormal returns

The first hypothesis aims to investigate how the pre-crisis CSR scores impacted stock returns during the two crises. More specifically, it seeks to examine whether firms with higher CSR scores outperformed those with lower ones in terms of stock performance.

To test this hypothesis, two dependent variables were used: monthly Raw Return (Holding Period Return) and Abnormal Return. For the financial crisis of 2008-2009, the Raw Return was collected for the period from August 2008-March 2009 and the Abnormal Crisis-Period Return was computed by subtracting the expected return from the Raw Return. The expected return was estimated with the CAPM model applying an estimation window of 60-months ending in July 2008 to compute the Beta. For the Covid-19 crisis, the monthly Raw Return was retrieved for the period between February-March 2020 and the Abnormal Return was computed by subtracting the expected return, which was also derived using the CAPM model with an estimation window of 60 months ending in January 2020, from the raw return. To mitigate the impact of outliers, stock returns were minorized at the 1% level. Besides, the independent variable was the firm's pre-crisis CSR score measured at 2006 end-year for the financial crisis and at the 2019 end-year for the Covid-19 crisis.

In addition, to isolate the effect of pre-crisis CSR on stock performance, control variables were added. For the financial crisis, they were retrieved from the 2007 end-quarter, and for the Covid-19 crisis they were collected from the 2019 end-quarter. According to Duchin, Ozbas, and Sensoy (2010), Almeida et al. (2012), and Harford, Klasa, and Maxwell (2014), during a crisis, firms that are more profitable, have higher cash balances and less debt are better positioned to achieve superior performance as they have the financial resources to continue investing. As a result, the study controlled for Cash Holdings (*cash and short-term investments divided by total assets*), Short-Term Debt (*short-term debt divided by total assets*), Long-Term Debt (*long-term debt divided by total assets*), and Profitability (*operating income divided by total assets*). Moreover, following the logic proposed by Daniel and Titman (1997), controls for firm Size (*log total assets*), Book-to-Market (*book value of equity divided by market capitalization*) and Momentum (*firm's annual holding period over the period that includes the year prior to the crisis*) were also added. Besides, as some industries invest more in CSR policies than others, Industry Dummies (generated based on the General Industry Classification) to account for industry effects were included. Finally, to control for the firm's factor loadings, the three Fama-French factors were incorporated. All control variables were also minorized at 1%

D.2 Impact of pre-crisis CSR scores on Raw and Abnormal Returns: Utilizing CSR Score Quartile Dummies

The aim of the second hypothesis is to determine whether higher CSR levels have a more pronounced effect on stock returns. In other words, it seeks to determine if the impact of pre-crisis CSR scores on returns depends on the CSR score exceeding a predetermined threshold.

To test it, the same dependent and control variables of the first hypothesis were used. However, the independent variable (CSR) was stratified into quartiles, using dummies for quartiles 2-4 with the intercept capturing quartile 1's impact. The dummy variables CSR2, CSR3, and CSR4 were used to indicate whether the firm's CSR score fell within the second, third, and fourth quartiles, respectively. Thus, CSR2 takes a value of one if the firm's CSR is in the second quartile, and zero otherwise. The same reasoning applies for both CSR3 and CSR4.

D.3 Impact of pre-crisis CSR scores on Raw and Abnormal Returns when accounting for highest-value firms.

Prior studies have suggested that firm value, as measured by market capitalization, can influence stock performance, as noted by Daniel and Titman (1997). However, the extent to which firm value affects the impact of CSR on stock performance has not been thoroughly examined yet. Thus, the third hypothesis aims to address this gap and, specifically, it seeks to determine whether accounting for highest-value firms strengthened this impact.

To examine it, the 1st hypothesis was re-estimated with two additional control variables. The first control variable is the Firm's Value (log market capitalization) and it was retrieved at the end-quarter of 2007 for the financial crisis and at the end-quarter of 2019 for the Covid-19 crisis. The second one is a Dummy Variable that takes the value of one for the 100 highest-value firms and zero otherwise. In fact, by comparing the results obtained with and without the inclusion of these two additional control variables, it is possible to comprehend how the impact of pre-crisis CSR scores on stock returns altered when accounting for the firm's value.

D.4 Impact of pre-crisis CSR scores on Capital Raising Activities

The purpose of this hypothesis is to identify the underlying mechanism that could explain the impact of pre-crisis CSR scores on returns. According to Guiso, Sapienza, and Zingales (2008) firms that implement more CSR policies are perceived as more trustworthy which encourages investors to participate more in the stock market. Following this rationale, it can be inferred that trust might be the underlying mechanism.

To explore it, this hypothesis focuses on investigating whether CSR can foster trust, by examining its impact on the firm's ability to issue debt. This approach was adopted as the willingness of financial intermediaries to offer funding is contingent on their faith in a firm's ability to fulfill its financial obligations.

To test it, the pre-crisis CSR score was used as an independent variable. Following the rationale of Karl V. Lins, Henri Servaes, and Ane Tamayo's (2017), Long-Term Debt Issuance (%assets) was used as dependent variable. The data for this variable was gathered on a quarterly basis from August 2008-March 2009 for the financial crisis, and from February-March 2020 for the Covid-19 crisis. Moreover, several control variables were included namely Size (*Log of total assets*), Cash Holdings (*cash and marketable securities divided by total assets*), Total Debt (*total debt divided by total assets*), and Profitability (*operating income divided by total assets*). Industry dummies were also added to account for the industry impact. The control variables were collected at the end-quarter of 2007 for the financial crisis and at the end-quarter of 2019 for the Covid-19 crisis.

E. Descriptive Statistics

E.1. CSR Scores: 2008-2009 Financial Crisis

For the 2008-2009 Financial Crisis, a sample comprised of 366 companies listed on the NYSE index was used. It should be noted that the sample size was relatively limited since at the 2006 end-year, only a small portion of firms had disclosed their social and environmental scores.

Figure 1- Distribution of CSR Scores Prior to the 2008-2009 Financial Crisis.

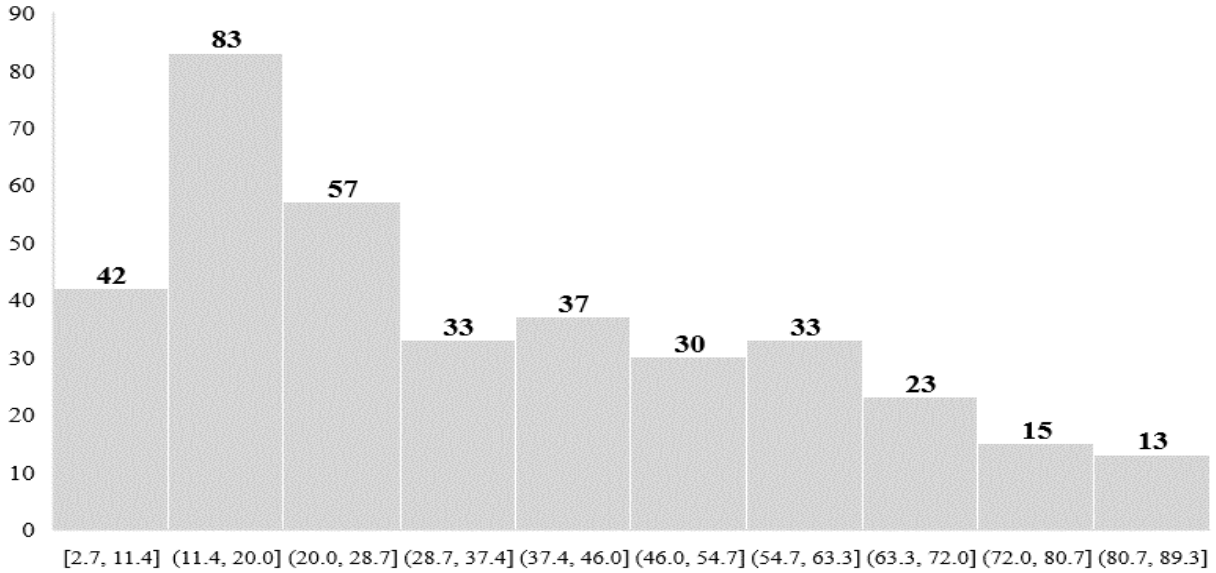


Figure 1 presents an overview of the distribution of the sample across various ranges of the 2006 end-year CSR scores with the value presented at the top of each column denoting to the total number of firms that possess a CSR score falling within the range specified on the x-axis. It highlights that most companies received low CSR scores, with 125 firms scoring between 2.7 and 20, and only 28 companies scoring between 72 and 89.3.

According to the findings, it can be inferred that, at the 2006 end-year, CSR was not one of the firms' primary concerns, considering that few companies disclosed their social and environmental scores and that most of the published scores were low.

Table 1- Summary Statistics of CSR Scores Prior to the 2008-2009 Financial Crisis

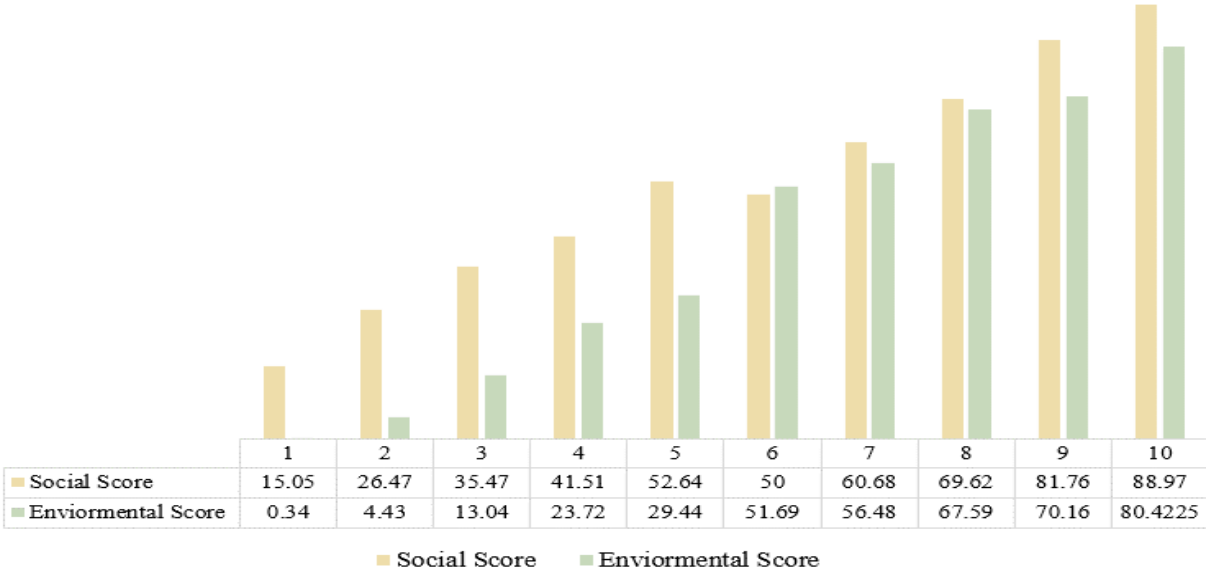
	Mean	SD (Std Dev)	25th perc.	Median	75th perc.
CSR	35.132	22.424	16.115	28.963	52.925
Social Score	42.722	22.046	24.580	39.475	58.910
Environmental Score	27.541	27.075	0.000	23.960	49.540

Table 1 summarizes the descriptive statistics for 2006 end-year CSR scores and for its components, which according to Karl V. Lins, Henri Servaes, and Ane Tamayo's (2017), are only the Social and the Environmental pillars, as the governance one diverges from the CSR main purpose.

Consistent to what was found in Figure 1, the mean and median CSR scores were relatively low, with values of 35.132 and 28.963, respectively. Moreover, regarding its components, the mean and median values of the Social Scores were higher than the CSR scores, registering 42.722 and 39.475, respectively. This suggests that the social component helped in augmenting the CSR scores. On the other hand, the Environmental Scores revealed a lower mean and median values, displaying 25.541 and 23.960, respectively, demonstrating that the CSR score was negatively impacted by this factor. Moreover, the environmental score's 25th percentile was 0, indicating that, in that year, some companies may not have implemented any environmental policies.

Overall, the results suggest that at the 2006 end-year, businesses prioritized social issues over environmental ones, which can be related to a greater awareness towards social policies as opposed to environmental ones.

Figure 2- Social and Environmental Score contributions for the 2006 CSR Score



	1	2	3	4	5	6	7	8	9	10
Social Score	15.05	26.47	35.47	41.51	52.64	50	60.68	69.62	81.76	88.97
Enviormental Score	0.34	4.43	13.04	23.72	29.44	51.69	56.48	67.59	70.16	80.4225

Figure 2 provides a more comprehensive understanding of how the Social Score and the Environmental Score contribute to the final CSR score. To analyze it, the sample of firms was stratified into 10 groups based on the different ranges of CSR scores displayed in Figure 1. Subsequently, the average Social and Environmental Score for each group were computed. Although this approach has limitations, since it relies on groups of companies rather than an individual analysis of each firm, it offers insightful information about how each component contributes to the final CSR score.

According to the findings, only one group of companies (those with CSR scores ranging from 46 to 54.7) had an average Environmental Score greater than the Social Score. Additionally, the results demonstrate that that for lower CSR score levels, the gap between the average Social and the average Environmental Score was greater. More precisely, the difference between the average scores of the two components was 14.71 for the businesses with lower CSR scores, compared to 8.55 for those with the higher ones.

In conclusion, the results suggest that the social component pushed the CSR score upwards while the Environmental Score lowered it. Nonetheless, as the disparity between the mean scores for social and environmental components was less pronounced among firms with the high-CSR, it is reasonable to assume that, for these firms, both components were positively contributing to the final CSR score.

E.2 CSR Scores: Covid-19 Crisis

For the Covid-19 crisis, a sample of 1,302 companies listed on the NYSE index were utilized.

Figure 3- Distribution of CSR Scores Prior to the Covid-19 Crisis

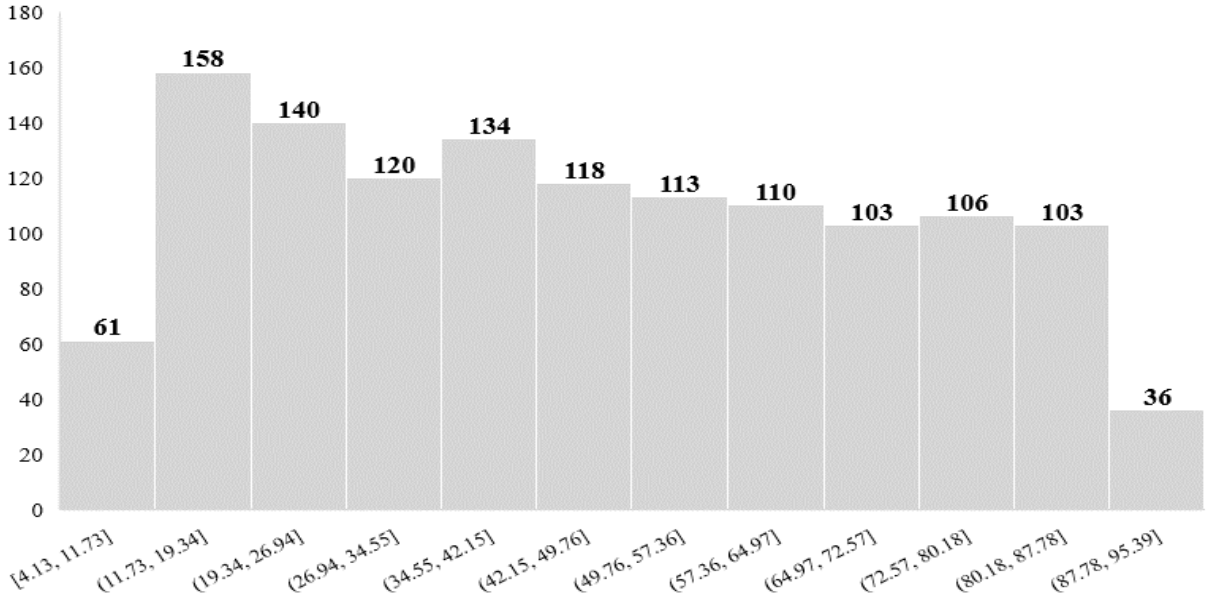


Figure 3 shows that, at the 2019 end-year, companies were evenly distributed across the various ranges of CSR scores, except for the lowest and highest categories, which included a lower number of enterprises. This suggests that there was no clear trend where all businesses invested extensively or minimally in CSR since different firms adopted CSR policies at varied levels.

In addition, the results demonstrate that despite the uniform distribution, there were still more low-CSR companies than high-CSR ones (i.e., more firms have CSR scores between 4.13 and 34.55 than between 64.97 and 95.39, according to the figure).

Nevertheless, in comparison to the analysis conducted for 2006 end-year CSR scores, there has been an increase in the number of companies that have both disclosed their CSR scores and achieved higher CSR scores.

Table 2- Summary Statistics of CSR Scores Prior to the Covid-19 Crisis

	Mean	SD (Std Dev)	25th perc.	Median	75th perc.
CSR	46.318	24.062	25.010	44.170	66.740
Social Score	52.519	21.925	34.820	50.770	71.260
Environmental Score	40.113	28.931	13.300	38.165	64.740

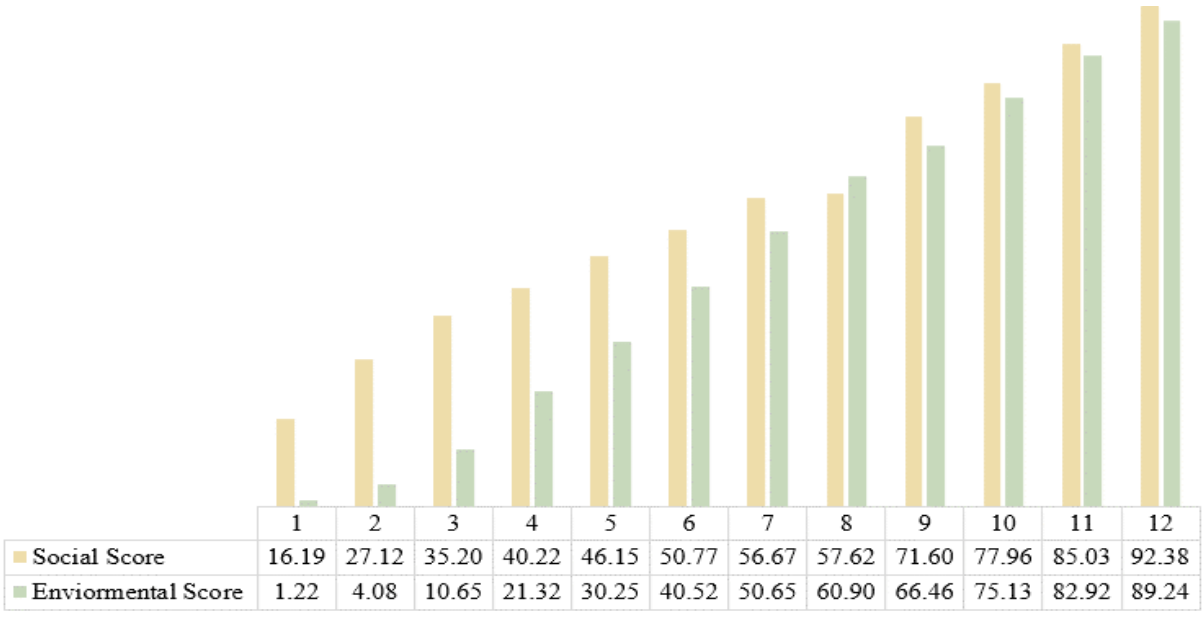
The descriptive statistics for the 2019 end-year CSR score and its components are displayed in Table 2.

Based on Figure 3, which displayed an even distribution of companies across all CSR score ranges, it can be inferred that the mean CSR score is expected to be approximately 50 (given that CSR score ranges from 0 to 100). In fact, the descriptive statistics support this argument, as the average CSR score was computed to be 46.316.

Moreover, the mean and median Social Score values, which were 52.519 and 50.770 respectively, were higher than the CSR scores, suggesting that the CSR score was being positively impacted by the social component. Conversely, the mean and median values of the environmental score were lower, indicating the environmental element was adversely affecting the CSR score.

Overall, the Social Pillar appeared to be of greater concern than the Environmental one, as more enterprises received higher scores in the former component. This finding is consistent with what was concluded for the financial crisis.

Figure 4- Social and Environmental Score contributions for the 2019 CSR Score



	1	2	3	4	5	6	7	8	9	10	11	12
Social Score	16.19	27.12	35.20	40.22	46.15	50.77	56.67	57.62	71.60	77.96	85.03	92.38
Enviornmental Score	1.22	4.08	10.65	21.32	30.25	40.52	50.65	60.90	66.46	75.13	82.92	89.24

According to Figure 4, only one group of companies (those with CSR scores between 57.36 and 64.97) had an average Environmental Score higher than the Social Score. Additionally, there was a larger disparity between the average Social and Environmental Scores for businesses with lower CSR scores. Specifically, the difference between the average scores for firms with low CSR scores was 14,97, whereas for companies with high CSR scores, it was 3.14.

To sum up, it can be inferred that the conclusion reached during the financial crisis remains unchanged, meaning that firms with lower CSR scores experienced a rise in their CSR score

due to the social component, while the environmental one contributed to its decline. In addition, for firms with the higher CSR scores, both components positively contributed to the CSR Score, as the gap between the two average scores shrank substantially.

E.3 Comparative Analysis of CSR scores between the two Crisis Periods

By comparing Figure 1 and Figure 3, which depict the distribution of pre-crisis CSR scores for the financial crisis and the Covid-19 crisis, respectively, it is evident that the CSR's relevance increased from 2006 to 2019. In fact, during the financial crisis, most companies received poor CSR scores and only a small portion of companies disclosed them. Conversely, during the Covid-19 crisis CSR scores were evenly distributed across all levels with more businesses having high CSR scores and disclosing their scores. The descriptive statistics (Table 1 and 2) also reinforce this trend since the mean CSR, social, and environmental scores were higher in 2019 when compared to 2006.

Several factors might have contributed to the increased prominence of CSR from 2006 to 2019. Firstly, according to Scalet Thomas F. Kelly (2009) this occurred due to the emergence of socially responsible investors (SRI), who forced companies to raise their investment in CSR. Moreover, according to Nguyen et al. (2020), long-term investors also pressured businesses to adopt more CSR policies. Finally, the firms' commitment to reaching the Sustainable Development Goals (SDGs), because of the growing relevance of Sustainable Development as noted by Xia, Olanipekun, Chen, Xie, and Liu (2018), has also fueled CSR's growth.

Furthermore, the mean and median Social scores, for both crisis periods, were greater than their corresponding CSR values, whereas the mean and median Environmental scores were lower. As a result, for both crisis periods, the social pillar exerted a positive impact on CSR scores, while the environmental pillar had a negative effect.

Moreover, it is evident from Figure 2 and 4 that, during both crisis periods, enterprises with lower CSR scores had a greater gap between the average Social Score and the average Environmental Score. However, as the CSR level increased, the difference between the two averages diminished, particularly during the Covid-19 crisis. This pattern can be explained by the fact that companies with lower CSR scores might have less experience in implementing social and environmental policies and end up prioritizing one pillar over the other (companies primarily focused on the social component). However, as companies advance in their CSR journey, they increasingly recognize the importance of equally prioritizing social and

environmental aspects, resulting in a reduced disparity between the average scores of these two components.

E.4 Descriptive Statistics of the Main Variables during the 2008-2009 Financial Crisis

Table 3- Summary Statistics of the Main Variables: 2008-2009 Financial Crisis

	Mean	SD (Std Dev)	25th perc.	Median	75th perc.
CSR	35.132	22.397	16.115	28.963	52.925
Raw Return	-0.368	0.237	-0.537	-0.401	-0.242
Abnormal Return	0.082	0.451	-0.209	0.016	0.281
Size	7.184	0.594	6.750	7.115	7.555
Long-term Debt	0.210	0.185	0.090	0.180	0.332
Short-term Debt	0.026	0.058	0.000	0.007	0.033
Cash Holdings	0.075	0.075	0.020	0.041	0.103
Profitability	0.042	0.047	0.017	0.035	0.053
Book-to-Market	0.330	0.193	0.217	0.280	0.483
Momentum	-0.072	0.349	-0.243	-0.080	0.128

The first line displays the descriptive statistics of the 2006 end-year CSR scores. As previously mentioned, the pre-crisis CSR scores were relatively low, indicating that businesses may have underinvested in it. This aligns with Deng, Kang, and Low (2013) that found that CSR, during this crisis, was perceived as bringing more concerns than strengths to firms.

The Raw Returns had a significantly negative mean and median value of -36.8% and -40.1%, respectively. These findings indicate that there existed a low level of trust in the market and a sense of risk aversion among investors, suggesting that all stakeholders had grave concerns regarding the companies' survival. This finding aligns with the research of Sapienza and Zingales (2012) who found that this crisis experienced the most severe decline in trust.

Regarding the Abnormal Returns, it had a mean of 8.2% and a median of 1.6%, suggesting that, on average, returns exceeded investors' expectations. This may be attributed to the fact that investors had anticipated the crisis, resulting in lower return expectations. In fact, according to Rui Albuquerque, Yrjo Koskinen, Shuai Yang, Chendi Zhang (2020), the 2008-2009 financial crisis was an expected shock, providing opportunity to anticipate it.

The variable Momentum, which represents the average return over the year preceding the crisis, had a negative mean of -7.2%. Once more, the market's anticipation of the crisis can be used to explain this value. In fact, when market participants foresee a crisis, they instantly adjust their investing decisions, which are ultimately reflected in the returns.

Table 4- Correlation Matrix of the Main Variables: 2008-2009 Financial Crisis

	CSR	Raw Return	Abn Return	Size	LT Debt	ST Debt	Cash Hold	Profitability	B/M
Raw Return	0.03								
Abnormal Return	0.05	0.65							
Size	0.13	0.02	0.01						
Long-term Debt	-0.07	-0.09	-0.06	0.08					
Short-term Debt	0.04	-0.08	-0.02	0.10	0.03				
Cash Holdings	0.05	0.11	0.08	0.01	-0.39	-0.25			
Profitability	0.06	0.15	0.06	0.26	-0.05	-0.06	-0.12		
Book-to-Market	-0.08	0.01	0.01	-0.23	-0.07	0.06	-0.23	-0.15	
Momentum	-0.01	-0.02	-0.10	0.07	-0.09	-0.02	-0.05	0.09	-0.10

Table 4 displays the outcomes of the correlation matrix analysis. The results indicate that Long, Short-term Debt and Momentum were negatively correlated with returns, whereas CSR, Cash Holdings and Profitability were positively correlated with them. Thus, it can be inferred that returns might increase in response to upsurges in cash balances, profitability, and CSR, and decline in response to rises in short and long-term debt levels. This is in line with Duchin, Ozbas, and Sensoy (2010), Almeida et al. (2012), and Harford, Klasa, and Maxwell (2014) who discovered that profitability and cash had a positive impact on firms' stock performance during this crisis. Furthermore, these findings are also supported by Karl V. Lins, Henri Servaes, and Ane Tamayo's (2017) who suggested that debt exhibited a negative impact on returns.

Moreover, the magnitude of the correlation coefficients indicates that Cash Holdings and Profitability had the strongest relationships with returns. Consequently, even though CSR and returns were positively correlated, their relationship was comparatively weaker.

E.5 Descriptive Statistics of the Main Variables during the Covid-19 crisis

Table 5- Summary Statistics of the Main Variables: Covid-19 crisis

	Mean	SD (Std Dev)	25th perc.	Median	75th perc.
CSR	46.318	24.057	25.010	44.170	66.740
Raw Return	-0.350	0.160	-0.512	-0.320	-0.170
Abnormal Return	-0.030	0.340	-0.240	-0.020	0.214
Size	6.785	0.676	6.310	6.720	7.210
Long-term Debt	0.289	0.211	0.140	0.280	0.410
Short-term Debt	0.036	0.063	0.000	0.010	0.061
Cash Holdings	0.108	0.140	0.020	0.110	0.150
Profitability	0.031	0.040	0.012	0.032	0.057
Book-to-Market	0.350	0.171	0.221	0.434	0.479
Momentum	0.250	0.350	-0.200	0.312	0.582

The first line displays the CSR scores' descriptive statistics from the 2019 end-year. As previously stated, when compared to the financial crisis, CSR score values increased. However,

they continued exhibiting growth potential, given that CSR scores range between 0 to 100, and both mean and median values were below 50.

The Raw Returns displayed a negative mean of -35.0%. This aligns with Rui Albuquerque, Yrjo Koskinen, Shuai Yang, Chendi Zhang (2020) who stated that this crisis led to a substantial drop in stock prices, with prices dropping by almost 30%.

The Abnormal Returns had a negative mean and median value of -3% and -2%, respectively indicating that investors expected to earn higher returns than the ones they obtained. It can be attributed to the unexpectedness of the crisis, which prevented investors from factoring it into their return expectations. This aligns with the argument presented by Rui Albuquerque, Yrjo Koskinen, Shuai Yang, and Chendi Zhang (2020), who argued that Covid-19 was an unexpected shock that caught investors off guard.

Moreover, the variable Momentum, which represents the average return over the year preceding the crisis, had a mean of 25%. This finding supports the previous assertion that this crisis was unforeseen. In fact, as investors did not anticipate the crisis, the returns prior to the crisis did not accurately reflect the returns that would be realized during the crisis. This supports Ramelli and Wagner's (2020) argument that the public health crisis was not recognized until it emerged.

Table 6- Correlation Matrix of the Main Variables: Covid-19 crisis

	CSR	Raw Return	Abn Return	Size	LT Debt	ST Debt	Cash Hold	Profitability	B/M
Raw Return	0.05								
Abnormal Return	0.08	0.58							
Size	0.50	0.01	0.01						
Long-term Debt	0.07	-0.04	-0.02	0.09					
Short-term Debt	0.05	-0.07	-0.04	0.08	0.05				
Cash Holdings	-0.19	0.15	0.12	-0.13	-0.18	-0.08			
Profitability	0.13	0.05	0.02	0.14	0.08	0.03	-0.17		
Book-to-Market	-0.04	-0.09	-0.06	-0.12	-0.20	-0.02	-0.05	0.10	
Momentum	-0.01	0.06	0.04	-0.01	0.06	-0.01	0.14	-0.03	-0.07

Table 6 presents the results of the correlation matrix analysis. They indicate that Long and Short-term Debt, as well as Book-to-Market were negatively correlated with returns, whereas CSR, Momentum, Cash holdings, and Profitability were positively correlated with them. Thus, it can be inferred that rises in Cash Balances, Profitability, CSR, and Momentum might result in upsurges in returns, while rises in Short, Long-term Debt and Book-to-market might lead to declines in returns. This aligns with Ramelli and Wagner's (2020) who stated that, during this crisis, Cash had a positive impact on firm performance while leverage exhibited a negative effect.

Furthermore, Cash Holdings and CSR were the variables that display the strongest relationships with returns, as reflected by the magnitude of the correlation coefficients.

E.6 Comparative Analysis of the Descriptive Statistics of Main Variables between the Two Crisis Periods

By comparing the descriptive statistics of the two crises, one can observe that the mean value of Raw Return in both crises was similar in magnitude with both displaying highly negative values (-36.8% in 2006, as opposed to -35.0% in 2019). Despite the two crises differing in nature and speed, according to Rui Albuquerque, Yrjo Koskinen, Shuai Yang, Chendi Zhang (2020), both led to severe stock market declines. In fact, during both crises, there was an upsurge in uncertainty that eroded public trust. According to Paolo Sapienza and Luigi Zingales (2012), trust is the most critical asset for the proper functioning of the market, so it is logical that the stock market experienced a downturn in both crises, despite their distinct nature.

Moreover, the mean value of Abnormal Return differed between the two crises, with its value reaching 8.2% during the financial crisis and -3% during the Covid-19 crisis. Besides, there were disparities in the mean values of Momentum, with a mean of 25% during the Covid-19 crisis and a mean of -7.2% during the financial crisis. These discrepancies can be ascribed to the fact that the Covid-19 crisis was unexpected, while the financial crisis was anticipated. Consequently, during the financial crisis, investors adjusted their returns' expectations and their investment strategies prior to the crisis, leading to positive Abnormal Returns and negative Momentum values. Conversely, during the Covid-19 crisis, investors did not alter their returns' expectations and investment tactics before the crisis, resulting in negative Abnormal Returns and positive Momentum.

Additionally, CSR, Cash holdings, and Profitability were positively correlated with returns whereas Short and Long-term debt exhibited a negative relationship with them, in both crises. However, the strength of the variables' relationships varied between the two crises. During the 2008-2009 Financial crisis, Cash holdings and Profitability exhibited the strongest correlation with returns. However, in the Covid-19 crisis, Cash Holdings and CSR were the variables with the strongest relation with returns. Moreover, from 2006 to 2019, the strength of the correlation between stock returns and CSR increased, as evidenced by the larger magnitude of the correlation coefficient.

Part 3: Results, Comparative Analysis and Robustness Tests

A. Results & Comparative Analysis

In this section, the results of the regression analysis performed to investigate the four hypotheses are presented, along with the results of an additional study conducted to verify whether CSR was a proxy for the Governance Score. To aid in interpretation of the coefficients, the regressions were run using the returns and certain control variables expressed as percentages. Besides, a comparison of the results for the two crises is also displayed in this part.

A.1 Impact of the pre-crisis CSR scores on Raw and Abnormal returns

Panel A displays the results for the First Hypothesis which examines how pre-crisis CSR scores impacted stock returns during the crisis. The independent variable is the pre-crisis CSR score collected at the 2006 end-year for the financial crisis and at the 2019 end-year for the Covid-19 crisis. The dependent variables are Raw Return (columns (1) and (3)), and Abnormal Return (columns (2) and (4)). Columns (3) and (4) incorporate control variables to account for other firms' characteristics that can impact stock returns. Industry dummies were included to account for the industry effects. Also, to control for the firms' factor loadings, the three Fama-French factors were incorporated.

A.1.1 Outcomes of the 2008-2009 Financial Crisis

Panel A.1 - CSR: Raw and Abnormal Returns – 2008-2009 Financial Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0022***	0.0206***	0.0010***	0.0187***
	(0.0036)	(0.0135)	(0.0033)	(0.0125)
Cash Holdings			0.0936**	0.0751*
			(0.0310)	(0.0223)
Short-Term Debt			-0.0640*	-0.0281
			(0.0215)	(0.0178)
Long-Term Debt			-0.0750***	-0.0656***
			(0.0243)	(0.0230)
Size			0.0021	0.0011
			(0.0045)	(0.0041)
Profitability			0.1791***	0.0602*
			(0.0445)	(0.0207)
Momentum			-0.0048	-0.0135**
			(0.0057)	(0.0102)
Book-to-Market			0.0131	0.0173
			(0.0107)	(0.0120)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.1081***	-0.0947***	-0.0787**	-0.0715**
	(0.0029)	(0.0036)	(0.0309)	(0.0284)
Observations	2,928	2,928	2,928	2,928
Adjuested R-squared	0.06	0.10	0.09	0.12

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The results presented in columns (1) and (2) exhibit that firms with higher pre-crisis CSR scores outperformed those with lower scores during the financial crisis, both in terms of Raw and Abnormal returns. Although both coefficients had a low magnitude, both are statistically significant at the 1% level. As a result, the findings are consistent with the research conducted by Karl V. Lins, Henri Servaes, and Ane Tamayo (2017) which suggested that firms with higher CSR scores experienced higher stock returns, during the crisis.

Additionally, by comparing the magnitude of the coefficients, one can observe that the impact of the pre-crisis CSR scores on Abnormal Returns was greater than that on Raw Returns. Specifically, a one-unit increase in pre-crisis CSR score was associated with a 0.0022 percentage points rise in Raw Returns, and a 0.0206 percentage points increase in Abnormal Returns. This is consistent with the findings of George Serafeim, Ioannis Ioannou, and Robert G. Eccles (2014), which showed that adopting sustainable practices had a more substantial impact on Abnormal Returns.

In columns (3) and (4), control variables were added. The findings corroborate the argument that, during the financial crisis, companies with higher pre-crisis CSR scores achieved higher stock returns. However, the impact of the pre-crisis CSR scores on the firms' stock returns declined, albeit it remained statistically significant at the 1% level.

By examining the coefficients of the control variables, it was observed that during the crisis, firms with bigger cash balances, higher profitability, and lower debt levels experienced higher stock returns. These findings align with previous studies conducted by Duchin, Ozbas, and Sensoy (2010) and Almeida et al. (2012) which demonstrated that firms exhibiting such characteristics tended to have higher stock returns during times of crisis. According to the results in column (3), a one percentage point increase in Long-term Debt, Cash holdings, and Profitability was linked to a 0.075 percentage points fall, a 0.0936 percentage points rise, and a 0.1791 percentage points increase in Raw Returns, respectively.

Overall, considering the positive and statistically significant impact of pre-crisis CSR scores on returns, it can be inferred that implementing CSR policies benefited firms in terms of stock performance during the crisis.

A.1.2 Outcomes of the Covid-19 crisis

Panel A.2: CSR: Raw and Abnormal Returns – Covid-19 Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0401***	0.0952***	0.0318***	0.0815***
	(0.0195)	(0.0268)	(0.0174)	(0.0242)
Cash Holdings			0.1730***	0.1241***
			(0.0432)	(0.0353)
Short-Term Debt			-0.0845***	-0.0436***
			(0.0291)	(0.0209)
Long-Term Debt			-0.0459***	-0.0171*
			(0.0208)	(0.0125)
Size			0.0011	0.0053
			(0.0061)	(0.0078)
Profitability			0.0454*	0.0347
			(0.0192)	(0.0195)
Momentum			0.0381***	0.0292***
			(0.0187)	(0.0115)
Book-to-Market			-0.0894	-0.0634
			(0.0276)	(0.0231)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.0507***	-0.0775***	-0.0750**	-0.0923**
	(0.0076)	(0.0088)	(0.0374)	(0.0389)
Observations	2,604	2,604	2,604	2,604
Adjuested R-squared	0.11	0.16	0.15	0.19

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Columns (1) and (2) demonstrate that the pre-crisis CSR scores had a positive and statistically significant impact on Raw and Abnormal returns during the Covid-19 crisis. Specifically, a one-unit increase in pre-crisis CSR score was associated with a 0.0401 percentage points rise in Raw Returns and a 0.0952 percentage points upsurge in Abnormal Returns. This is consistent with a prior study conducted by Shuai Yang, Chendi Zhang, Yrjo Koskinen, and Rui Albuquerque (2020) who found that companies which scored high on environmental and social metrics achieved higher stock returns during the Covid-19 crisis. Besides, it is also aligned with the McKinsey's 2019 Global Survey which found that firms with more ESG policies implemented were able to increase shareholder value during the crisis.

Furthermore, the results of columns (3) and (4) confirm that, during the crisis, firms with higher pre-crisis CSR scores experienced better stock returns, although the coefficients' magnitude was relatively smaller. Specifically, a one-unit increase in pre-crisis CSR score was linked to a 0.0318 percentage points rise in Raw Returns, and a 0.0815 percentage points increase in Abnormal Returns.

Through the incorporation of control variables, it was revealed that cash reserves had a positive influence on stock returns during the crisis, while debt levels had a negative impact. In column

(4), the results indicate that a one percentage point increase in Long-term Debt, Short-term Debt and Cash Holdings was associated with a 0.0171 percentage points fall, a 0.0436 percentage points drop and a 0.1241 percentage points rise in Abnormal Returns, respectively. This is in accordance with the study performed by Ramelli and Wagner (2020) which found that throughout this crisis, companies with bigger cash balances and lower debt achieved an improved stock performance. Besides, one can observe that Momentum had a positive and statistically significant impact on both Raw and Abnormal Returns during the crisis.

To summarize, the implementation of CSR policies was advantageous for enterprises in terms of stock performance. In column (4), one can observe that only Cash Holdings displayed a coefficient with both the same statistical significance and a larger magnitude compared to CSR, thereby suggesting that CSR was one of the most significant factors impacting returns.

A.1.3 Comparative Analysis of Results between Two Crisis Periods

It is evident by comparing the two crises' results that, during both, the pre-crisis CSR scores had a positive and statistically significant impact on both returns. Furthermore, during both crises, the impact of pre-crisis CSR scores on Abnormal Returns was greater than that on Raw Returns.

Moreover, there were differences in the magnitude of the CSR coefficients between the two crises, with the Covid-19 crisis displaying larger ones. This variation can be ascribed to two factors. Firstly, the increasing prominence of CSR in recent years led investors to prefer investing in firms which had more CSR policies implemented. Secondly, the crisis's origin, specifically the Covid-19 crisis being a public health crisis, instigated investors to place greater value on companies that prioritized the support of stakeholders throughout the crisis. According to the research conducted by Kee-Hong Bae, Sadok El Ghoul, Zhaoran Gong, and Omrane Guedham (2021), the pandemic increased investors' attention to CSR issues, with the social and environmental pillars serving as the basis for recovery strategies in many countries. Both factors aided high CSR businesses in gaining a competitive edge, which enhanced their market growth potential and led to higher returns.

Besides, the values obtained for the coefficient of the variable Momentum were another distinction between the outcomes of the two crises. For the financial crisis, the coefficient was not statistically significant. However, for the Covid-19 crisis, its coefficient was positive and statistically significant at the 1% level. The speed of the Covid-19 crisis might be the reason for the difference. In fact, it was an unforeseen event that caught investors by surprise, so the

returns prior to the crisis remained unaffected by any anticipation of the crisis. Consequently, the stocks' past performance had a positive and significant impact on their respective returns during the crisis.

Additionally, there were significant variations in the profitability coefficients. In fact, one can observe that the financial crisis' coefficients were higher and more statistically significant. The distinction can be traced to the fact that the origins of Covid-19 were related to public health issues, whereas the origins of the financial crisis were related to economic factors (Rui Albuquerque, Yrjo Koskinen, Shuai Yang, Chendi Zhang, (2020)). In fact, in the financial crisis, profitability was a critical factor for investors when evaluating the trustworthiness of businesses and deciding where to invest. As a result, it had a substantial impact on returns. Conversely, in the case of the Covid-19 crisis, since it was not caused by financial factors, profitability had a diminished impact on returns with investors considering more factors when making their investment decisions. For instance, as evidenced by the results, investors started emphasizing factors such as the companies' investments in CSR.

A.2. Impact of pre-crisis CSR on Raw and Abnormal Returns: Utilizing CSR Score Quartile Dummies

Panel B displays the outcomes for the Second Hypothesis that is a re-estimation of the First Hypothesis in which the explanatory variable, that is the CSR, is stratified into quartiles. Thus, the independent variable is represented by dummy variables (quartiles 2-4). By employing this method, one can observe whether the pre-crisis CSR scores had a higher impact on returns at high or low pre-crisis CSR levels. As in Panel A, the dependent variables are Raw Return (columns (1) and (3)) and Abnormal Return (columns (2) and (4)). Besides, the same control variables utilized in the first hypothesis were employed.

A.2.1 Outcomes of the 2008-2009 Financial Crisis

Panel B.1: Dummies for CSR scores Quartiles: Raw and Abnormal Returns – 2008-2009 Financial Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR 2	0.0011	0.0140	0.0002	0.0121
	(0.0042)	(0.0108)	(0.0009)	(0.0105)
CSR 3	0.0016	0.0165	0.0005	0.0143
	(0.0049)	(0.0116)	(0.0004)	(0.0111)
CSR 4	0.0021***	0.0202***	0.0008***	0.0175***
	(0.0033)	(0.0128)	(0.011)	(0.0123)
Cash Holdings			0.0948**	0.0755**
			(0.0312)	(0.0226)
Short-Term Debt			-0.0650**	-0.0275
			(0.0220)	(0.0174)
Long-Term Debt			-0.0762***	-0.0659***
			(0.0248)	(0.0228)
Size			0.0022	0.0013
			(0.0045)	(0.0042)
Profitability			0.1801***	0.0605***
			(0.0452)	(0.0208)
Momentum			-0.0049	-0.0133**
			(0.0057)	(0.0101)
Book-to-Market			0.0129	0.0170
			(0.0106)	(0.0121)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.0872***	-0.0835***	-0.0756**	-0.158***
	(0.0041)	(0.0038)	(0.0337)	(0.0311)
Observations	2,928	2,928	2,928	2,928
Adjusted R-squared	0.05	0.09	0.08	0.11

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The results in columns (1) and (2) support the results of the first hypothesis, as they indicated that, during the financial crisis, the pre-crisis CSR scores had a positive impact on both Raw and Abnormal returns, with the impact on Abnormal Returns being greater. However, only the CSR coefficients of the fourth quartile were statistically significant, suggesting that the positive impact of pre-crisis CSR scores on returns might be contingent upon the CSR score exceeding a particular threshold. The findings suggest that the Raw Return increased by 0.0021 percentage points, and the Abnormal Return increased by 0.0202 percentage points when the pre-crisis CSR scores changed from the third to the fourth quartile. Moreover, as the second and third CSR quartiles were not statistically significant, it cannot be affirmed that changes in pre-crisis CSR scores from the first to the second quartile or from the second to the third quartile were linked to a rise in returns. This is in line with earlier research by Karl V. Lins, Henri Servaes, and Ane Tamayo (2017) which discovered that high levels of CSR had a greater impact on stock performance during the crisis than low levels of CSR.

Columns (3) and (4) show that the impact of pre-crisis CSR scores on stock returns remained statistically significant for the CSR's fourth quartile even after controlling for other variables,

whereas it remained insignificant for the second and third quartiles. Besides, as demonstrated by the size of the CSR4 coefficient, the pre-crisis CSR's impact on stock returns shrank. Moreover, similar outcomes to the first hypothesis were found regarding the impact of the control variables on returns, as shown in columns (3) and (4).

A.2.2 Outcomes of the Covid-19 crisis

Panel B.2: Dummies for CSR scores Quartiles: Raw and Abnormal Returns – Covid-19 Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR 2	0.0239	0.0511	0.0191	0.0482
	(0.0121)	(0.0210)	(0.0105)	(0.0196)
CSR 3	0.0335	0.0818	0.0246	0.0645
	(0.0144)	(0.0234)	(0.0128)	(0.0218)
CSR 4	0.0392***	0.0920***	0.0311***	0.0782***
	(0.0176)	(0.0251)	(0.0162)	(0.0233)
Cash Holdings			0.1720***	0.1245***
			(0.0430)	(0.0355)
Short-Term Debt			-0.0842***	-0.0441***
			(0.0288)	(0.0210)
Long-Term Debt			-0.0455***	-0.0174*
			(0.0206)	(0.0127)
Size			0.0013	0.0051
			(0.0062)	(0.0075)
Profitability			0.0457*	0.0344
			(0.0195)	(0.0192)
Momentum			0.0380***	0.0291***
			(0.0186)	(0.0115)
Book-to-Market			-0.0888	-0.0641
			(0.0274)	(0.0224)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.0391***	-0.0765***	-0.0756**	-0.103***
	(0.00825)	(0.00826)	(0.0337)	(0.0385)
Observations	2,604	2,604	2,604	2,604
Adjusted R-squared	0.10	0.15	0.14	0.18

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Columns (1) and (2) reveal that pre-crisis CSR scores, during the Covid-19 crisis, had a positive impact on Raw and Abnormal returns. However, similarly to what was discovered for the financial crisis, only the CSR coefficients of the fourth quartile were statistically significant, indicating that the positive impact of pre-crisis CSR scores on stock performance might conditioned on CSR exceeding a particular value. In fact, the transition from the third to the fourth quartile of pre-crisis CSR scores was associated with a 0.0392 percentage points rise in Raw Returns and a 0.0920 percentage points increase in Abnormal Returns.

In Columns (3) and (4), the results suggest that the statistical significance of the CSR's fourth quartile persisted after the addition of control variables, though the magnitude of its impact decreased. The third and second quartile coefficients continued to be non-significant

statistically. Besides, the impact of the control variables on stock returns was comparable to that found for the first hypothesis.

A.2.3 Comparative Analysis of Results between Two Crisis Periods

After comparing the results from the two crises, one can observe that only the CSR coefficients of the fourth quartile were statistically significant for both crises. As a result, there may be a threshold effect, wherein the beneficial impact of pre-crisis CSR scores on stock returns was reliant on CSR reaching a specific threshold. Additionally, the findings also support the idea that pre-crisis CSR scores had a greater impact on stock returns at higher score levels.

Additionally, there were discrepancies in the CSR coefficient sizes between the two crisis periods, with the Covid-19 crisis displaying larger coefficients. This is consistent with the results of the first hypothesis. Besides, the differences between the two crises in how the control variables affect the returns also matched those suggested by the first hypothesis. The rationale for both findings is given in section A.1.3 of Part 3.

According to earlier studies (Di Giuli and Kostovetsky (2014)), sales, general, and administrative (SG&A) costs significantly rise as CSR scores move from the first to the fourth quartile. This suggests that companies would need to be willing to bear these costs to fully benefit from the positive and statistically significant impact of CSR on stock returns.

A.3 Impact of the pre-crisis CSR on Raw and Abnormal Returns when controlling for Corporate Governance

According to previous research conducted by Lins, Volpin, Wagner (2013) and Nguyen and Yin (2015), firms with higher governance scores exhibited superior resilience during periods of crisis. Hence, despite Karl V. Lins, Henri Servaes, and Ane Tamayo (2017) suggestion to exclude the governance pillar when computing the CSR score, it is crucial to conduct an analysis for both crises to assess whether the impact of pre-crisis CSR scores on stock returns persisted after accounting for governance metrics.

In this analysis, the First Hypothesis was re-estimated using the same independent (CSR), dependent (Raw and Abnormal Returns), and control variables, with the addition of a new control variable, that is the Governance Score. The data for governance score was retrieved from the ESG-Refinitiv Database and collected from the 2006 end-year for the financial crisis and from the 2019 end-year for the Covid-19 crisis.

Panel C displays the results of this analysis. Columns (1) and (3) present the results for the Raw Returns, whereas columns (2) and (4) exhibit the findings for the Abnormal Returns.

A.3.1 Outcomes of the 2008-2009 Financial Crisis

Panel C.1: CSR: Raw and Abnormal Returns with Corporate Governance Control – 2008-2009 Financial Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0021***	0.0202***	0.0010***	0.0181***
	(0.0036)	(0.0133)	(0.0033)	(0.0123)
Governance Score	0.00013	0.00025	0.00012	0.00023
	(0.00011)	(0.00095)	(0.00010)	(0.00092)
Cash Holdings			0.0947**	0.0758*
			(0.0313)	(0.0225)
Short-Term Debt			-0.0655**	-0.0264
			(0.0218)	(0.0173)
Long-Term Debt			-0.0742***	-0.0649***
			(0.0241)	(0.0228)
Size			0.0027	0.0010
			(0.0045)	(0.0040)
Profitability			0.1799***	0.0601*
			(0.0446)	(0.0207)
Momentum			-0.0044	-0.0142**
			(0.0056)	(0.0104)
Book-to-Market			0.0137	0.0180
			(0.0108)	(0.0122)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.1052***	-0.1033***	-0.0811***	-0.0785***
	(0.0054)	(0.00488)	(0.0313)	(0.0285)
Observations	2,928	2,928	2,928	2,928
Adjusted R-squared	0.07	0.11	0.10	0.13

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The findings displayed in columns (1), (2), (3), and (4) indicate that the coefficient of the Governance Score lacked statistical significance. Therefore, it cannot be claimed that a one-unit increase in the governance score was associated with a rise in returns during the crisis.

Besides, the outcomes from columns (1) and (2) are in line with the results of the First Hypothesis, indicating that, during the financial crisis, pre-crisis CSR scores had a positive and statistically significant impact on stock returns, with the impact on Abnormal Returns being greater. Moreover, one can observe that incorporating governance metrics as a control variable only slightly reduced the CSR coefficients' magnitude, without affecting their statistical significance. This suggests that CSR did not act as a mere substitute for the governance score. This is in line with earlier research conducted by Karl V. Lins, Henri Servaes, and Ane Tamayo (2017), which demonstrated that the positive impact of pre-crisis CSR scores on returns remained unchanged when controlling for governance factors.

In columns (3) and (4), other control variables were included. The findings suggest that the CSR coefficients' statistical significance persisted, albeit with smaller coefficient magnitudes. Moreover, similar outcomes to the First Hypothesis were obtained in terms of the impact of the control variables on stock returns during the crisis.

A.3.2 Outcomes of the Covid-19 crisis.

Panel C.2: CSR: Raw and Abnormal Returns with Corporate Governance Control – Covid-19 Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0386***	0.0910***	0.0297***	0.0767***
	(0.0190)	(0.0256)	(0.0168)	(0.0236)
Governance Score	0.00436	0.00825	0.00368	0.00774
	(0.00145)	(0.00162)	(0.00137)	(0.00151)
Cash Holdings			0.1711***	0.1229***
			(0.0429)	(0.0351)
Short-Term Debt			-0.0830***	-0.0455***
			(0.0288)	(0.0213)
Long-Term Debt			-0.0463***	-0.0175*
			(0.0209)	(0.0125)
Size			0.0017	0.0069
			(0.0061)	(0.0080)
Profitability			0.0422*	0.0352
			(0.0187)	(0.0196)
Momentum			0.0374***	0.0287***
			(0.0185)	(0.0117)
Book-to-Market			-0.0900	-0.0652
			(0.0278)	(0.0235)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.0343***	-0.0623***	-0.0678*	-0.0821**
	(0.0104)	(0.0286)	(0.0376)	(0.038)
Observations	2,604	2,604	2,604	2,604
Adjusted R-squared	0.12	0.18	0.16	0.21

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The results presented in the four columns indicate that the Governance Score coefficients were not statistically significant.

Additionally, the results in columns (1) and (2) revealed that stock returns during the Covid-19 crisis were positively and statistically significantly impacted by pre-crisis CSR scores. Specifically, a one-unit rise in the pre-crisis CSR scores was linked to a rise in Abnormal Returns and Raw Returns of 0.0910 and 0.0386 percentage points, respectively. Therefore, it can be inferred that CSR was not just reflecting the impact of the governance score on stock returns because accounting for governance metrics did not alter the statistical significance of the CSR coefficients and did not substantially diminish their magnitude. This aligns with a previous study conducted by Rui Albuquerque, Yrjo Koskinen, Shuai Yang, Chendi Zhang

(2020) which discovered that the positive impact of environmental and social scores on stock returns during the crisis was not attributed to corporate governance.

In columns (3) and (4), the statistical significance of the CSR coefficients endured, despite the inclusion of control variables, but with smaller coefficient magnitudes. Furthermore, the results from testing the First Hypothesis were nearly replicated regarding the impact of the other control variables on stock returns.

A.3.3 Comparative Analysis of Results between Two Crisis Periods

When the outcomes of the two crises were compared, it was found that both crises' CSR coefficients remained positive and statistically significant even after the governance control variable was included into the analysis. Meanwhile, the governance score had no statistically significant impact on either Raw or Abnormal returns, throughout both crises.

Moreover, the sizes of the CSR coefficients for the Covid-19 crisis were greater than those for the financial crisis, thereby supporting the results of the First Hypothesis. Additionally, the variations between the two crises in terms of how the control variables impacted returns agreed with the findings of the First Hypothesis. Section A.1.3 of Part 3 has the justification for both these findings.

According to earlier research by Gompers et al. (2016), investors are becoming increasingly interested in investing in companies with well-established governance policies. The findings of this analysis are consistent with this idea, since although the impact of the governance score on returns was not statistically significant during either the 2008-2009 Financial Crisis or the Covid-19 crisis, its coefficient had a larger magnitude during the latter crisis.

A.4 Impact of pre-crisis CSR on Raw and Abnormal Returns when accounting Highest-value firms

Panel D exhibits the findings for the Third Hypothesis that seeks to examine whether accounting for highest-value firms strengthened the impact of pre-crisis CSR scores on returns. As a result, the first hypothesis was re-estimated using two new control variables: The Firm’s Value and a Dummy Variable that takes the value of one for the 100 highest-value firms and zero otherwise. The findings when only the firm's value control variable was included are shown in columns (1) and (2), while the results when both additional control variables were included are shown in columns (3) and (4).

A.4.1 Outcomes of the 2008-2009 Financial Crisis

Panel D.1: CSR scores: Raw and Abnormal Returns when controlling for Highest-Value Firms – 2008-2009 Financial Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0010***	0.0186***	0.0009***	0.0157***
	(0.0033)	(0.0124)	(0.0033)	(0.0118)
Cash Holdings	0.0941**	0.0749*	0.0948**	0.0752*
	(0.0312)	(0.0221)	(0.0314)	(0.0221)
Short-Term Debt	-0.0644**	-0.0284	-0.0657**	-0.0291
	(0.0217)	(0.0179)	(0.0220)	(0.0180)
Long-Term Debt	-0.0748***	-0.0654***	-0.0740***	-0.0660***
	(0.0244)	(0.0229)	(0.0243)	(0.0229)
Size	0.0028	0.0013	0.0039	0.0024
	(0.0047)	(0.0042)	(0.0048)	(0.0043)
Profitability	0.1795***	0.0599*	0.1814***	0.0576*
	(0.0446)	(0.0205)	(0.0448)	(0.0204)
Momentum	-0.0049	-0.0141**	-0.0035	-0.0139**
	(0.0057)	(0.0106)	(0.0055)	(0.0106)
Book-to-Market	0.0135	0.0171	0.0147	0.0183
	(0.0109)	(0.0120)	(0.0110)	(0.0124)
Firm Value	0.0034	0.0192	0.0046	0.0168
	(0.0032)	(0.0128)	(0.0034)	(0.0127)
High-Value Dummy			0.0215*	0.0703*
			(0.0128)	(0.0313)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.0795**	-0.0667***	-0.0889**	-0.0915***
	(0.0364)	(0.0291)	(0.0381)	(0.0346)
Observations	2,928	2,928	2,928	2,928
Adjuested R-squared	0.09	0.12	0.09	0.12

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The results in columns (1) and (2) demonstrate that, during the financial crisis, the pre-crisis CSR scores had a statistically significant and positive impact on both Raw and Abnormal returns, even after controlling for firm value. Besides, when compared to the results obtained in the absence of this control variable (first hypothesis), the CSR coefficients for Raw Returns remained unchanged and only marginally declined in magnitude for Abnormal Returns. Furthermore, the results reveal that the coefficients for Firm Value were not statistically significant, suggesting that it is not possible to affirm that a rise in Firm's Value was associated with an upsurge in returns.

Columns (3) and (4) include a Dummy Variable for the top 100 highest-value companies, and the findings reveal that being one of these companies had a statistically significant and positive impact on Raw and Abnormal returns throughout the crisis. Specifically, the Raw Returns for these enterprises were 0.0215 percentage points higher, and the Abnormal Returns were 0.0703 percentage points higher than those of other firms. Furthermore, the results reveal that the positive and statistically significant impact of the pre-crisis CSR scores on both returns

persisted even after accounting for these firms. However, the magnitude of the CSR coefficient diminished for Abnormal Returns.

In conclusion, one can observe that accounting for the highest-value firms slightly lowered the positive impact of pre-crisis CSR scores on returns. This can be attributed to the fact that these firms, probably, had solid reputations, and thus relied less on CSR to enhance their market credibility, attract new investors, and achieve higher returns. Therefore, while the inclusion of the Firm Value control did not alter the impact of pre-crisis CSR scores on returns, it did have an effect when accounting for the most valuable firms.

A.4.2 Outcomes for the Covid-19 crisis

Panel D.2: CSR scores: Raw and Abnormal Returns when controlling for Highest-Value Firms - Covid-19 Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0315***	0.0814***	0.0267***	0.0762***
	(0.0173)	(0.0242)	(0.0167)	(0.0231)
Cash Holdings	0.1709***	0.1225***	0.1692***	0.1211***
	(0.0426)	(0.0351)	(0.0425)	(0.0346)
Short-Term Debt	-0.0853***	-0.0440***	-0.0856***	-0.0424***
	(0.0293)	(0.0210)	(0.0293)	(0.0207)
Long-Term Debt	-0.0449***	-0.0168*	-0.0417***	-0.0151*
	(0.0206)	(0.0125)	(0.0202)	(0.0123)
Size	0.0017	0.0045	0.0015	0.0041
	(0.0061)	(0.0076)	(0.0061)	(0.0075)
Profitability	0.0488*	0.0354	0.0465*	0.0340
	(0.0197)	(0.0195)	(0.0190)	(0.0193)
Momentum	0.0392***	0.0303***	0.0388***	0.0273***
	(0.0189)	(0.0121)	(0.0189)	(0.0114)
Book-to-Market	-0.0881	-0.0628	-0.0846	-0.0626
	(0.0275)	(0.0229)	(0.0271)	(0.0229)
Firm Value	0.0321*	0.0085*	0.0313*	0.0044*
	(0.0135)	(0.0036)	(0.0134)	(0.0032)
High-Value Dummy			0.0634**	0.0801**
			(0.0261)	(0.0322)
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Constant	-0.0700**	-0.0904**	-0.0995***	-0.1231**
	(0.0362)	(0.0396)	(0.0404)	(0.0435)
Observations	2,604	2,604	2,604	2,604
Adjuested R-squared	0.15	0.19	0.15	0.19

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The findings in columns (1) and (2) reveal that, during the Covid-19 crisis, both returns were positively and statistically significantly impacted by the pre-crisis CSR scores, even after including a control variable for Firm Value. Compared to the results obtained without this control variable, the CSR coefficients only slightly declined in magnitude. Besides, these findings are in line with research by Daniel and Titman (1997) who found that Firm Value may have an impact on stock performance.

Results in columns (3) and (4) show that being among the top 100 highest-value firms had a positive and statistically significant impact on both returns during the crisis. In fact, the Raw Returns for these enterprises were 0.0634 percentage points higher, and the Abnormal Returns were 0.0801 percentage points higher compared to other firms. Moreover, one can observe that accounting for these companies shrank the size of the CSR's coefficients while maintaining its positive and statistically significant impact on both returns.

To sum up, the analysis reveals that accounting for the highest-value enterprises weakened the positive impact of pre-crisis CSR scores on stock returns. This might occur given that these companies probably had a dominant position in the market, reducing their reliance on CSR to achieve higher returns, following the rationale used for the financial crisis.

A.4.3 Comparative Analysis of Results between Two Crisis Periods

Upon comparing the results of the two crises, it was discovered that including the two new control variables (Firm Value and Dummy for the Highest-value companies) did not remove the positive and statistically significant impact of pre-crisis CSR scores on both returns in either crisis. However, accounting for the highest-value firms weakened this impact.

Moreover, there are some differences in the outcomes of the two crises. Firstly, even though the addition of new control variables led to a greater reduction in the magnitude of the CSR coefficients during the Covid-19 crisis, they remained higher compared to the financial crisis. This finding supports the results of the first hypothesis and Section A.1.3 of Part 3 provides an explanation for it. Secondly, it was discovered that the impact of Firm Value on stock returns was only statistically significant during the Covid-19 crisis, suggesting that only for this crisis it can be inferred that Firm Value influenced stock performance. Thirdly, the Dummy Variable coefficients for the Covid-19 crisis were higher and more statistically significant, indicating that being among the top 100 highest-valued enterprises was more beneficial in terms of stock performance during this crisis.

A.5 Impact of the pre-crisis CSR on Capital Raising Activities

Panel E displays the results of the Fifth Hypothesis, which examines how pre-crisis CSR scores impacted a firm's capacity to issue debt during the crises, seeks to ascertain whether CSR can foster trust. The pre-crisis CSR scores were employed as the explanatory variable and the Long-Term Debt Issuance (%assets) was used as dependent variable. Besides, the model includes other control variables.

A.5.1 Outcomes of the 2008-2009 Financial Crisis

Panel E.1: CSR scores: Capital Raising Activities – 2008-2009 Financial Crisis

	Debt Issuance (%Assets) (1)	Debt Issuance (%Assets) (2)
CSR	0.0681***	0.0522***
	(0.0235)	(0.0211)
Cash Holdings		0.0291*
		(0.0121)
Size		0.0099
		(0.0087)
Total Debt		-0.0901***
		(0.0284)
Profitability		0.1079***
		(0.0310)
Industry Dummies	YES	YES
Constant	-0.0077**	-0.0058**
	(0.0031)	(0.0024)
Observations	1,098	1,098
Adjuested R-squared	0.13	0.19

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

In Column (1), results reveal that pre-crisis CSR scores had a positive and statistically significant impact on a firm's capacity to raise debt during the crisis. Specifically, a one-unit increase in the pre-crisis CSR score was associated with a 0.0681 percentage points rise on Long-Term Debt Issuance (% of assets). This aligns with previous research conducted by Karl V. Lins, Henri Servaes, and Ane Tamayo (2017), which demonstrated that firms with higher CSR scores engaged in more fundraising initiatives.

Additionally, in Column (2), the pre-crisis CSR score's positive and statistically significant impact on Long-term Debt Issuance was maintained even after including the control variables. However, its impact's strength decreased, as shown by the reduced size of the CSR coefficient.

Furthermore, the results reveal that Total Debt had a statistically significant negative impact on a company's ability to raise debt during the crisis, whereas Cash Holdings and Profitability had a statistically significant positive impact. In addition, Total Debt and Profitability appeared to have had a greater impact than CSR on Long-term Debt Issuance, given the larger magnitude of their coefficients. To be more precise, a one percentage point increase in Total-Debt was linked to a 0.0901 percentage points decline in Long-term Debt Issuance, whereas a one percentage point increase in Profitability was associated with a 0.1079 percentage points rise in Long-term Debt Issuance.

In conclusion, the analysis suggests that during the crisis, CSR was a useful tool for firms to build trust, with firms that scored higher on CSR indicators instilling confidence in financial intermediaries about their ability to fulfill their financial obligations. This finding is in line with previous research conducted by Guiso, Sapienza, and Zingales (2008) which revealed that the adoption of CSR policies increased the perception of a company's trustworthiness, increasing the likelihood that a firm would receive financial support during the crisis (Eccles, Ioannou, and Serafeim (2014)). Additionally, it aligns with Karl V. Lins, Henri Servaes, and Ane Tamayo (2017) argument that stakeholders tend to place more trust in high-CSR companies due to their lower likelihood of breaking agreements.

A.5.2 Outcomes for the Covid-19 crisis.

Panel E.2: CSR scores: Capital Raising Activities – Covid-19 Crisis

	Debt Issuance (%Assets) (1)	Debt Issuance (%Assets) (2)
CSR	0.1428***	0.1321***
	(0.0385)	(0.0362)
Cash Holdings		0.0432
		(0.0205)
Size		0.0041
		(0.0052)
Total Debt		-0.0235***
		(0.0123)
Profitability		0.1193***
		(0.0331)
Industry Dummies	YES	YES
Constant	0.00703	0.0336
	(0.00593)	(0.0325)
Observations	1,302	1,302
Adjuested R-squared	0.17	0.22

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

In column (1), one can observe that the firm's capacity to raise debt during the Covid-19 pandemic was positively and statistically significant impacted by pre-crisis CSR scores. The results indicate that a one-unit increase in the CSR score was linked to a 0.1428 percentage points upsurge in Long-term Debt Issuance (% of assets)

After controlling variables were added in column (2), results reveal that pre-crisis CSR scores still had a statistically significant positive impact on a firm's ability to issue debt, even though the size of the CSR coefficient shrank. Specifically, a one-unit increase in the CSR score was associated to a 0.1321 percentage points increase in Long-term Debt Issuance.

Furthermore, both the control variables Total Debt and Profitability had statistically significant impact on a company's capacity to raise debt. More precisely, a one percentage point rise in Total-Debt was linked to a 0.0235 percentage points decrease in Debt Issuance, whereas a one percentage point increase in Profitability was associated with a 0.1193 percentage points rise.

In summary, the findings demonstrate that CSR fostered trust, enabling high-CSR firms to raise more debt.

A.5.3 Comparative Analysis of Results between Two Crisis Periods

When the results of the two crises were compared, it was discovered that, during both crises, pre-crisis CSR scores positively and statistically significantly impacted a company's capability to issue debt, with the impact being more pronounced during the Covid-19 crisis.

Furthermore, it was observed that the impact of Total Debt on the firm's ability to issue new debt was more negative during the financial crisis than during the Covid-19 crisis. This could be attributed to the fact that the former crisis was triggered by economic factors, prompting financial intermediaries to prioritize financial stability in their funding decisions. On the other hand, since the Covid-19 crisis was initiated by public-health concerns, financial intermediaries did not accord this component as much weight.

To summarize, CSR fostered trust during the crises because, as noted above, it boosted financial intermediaries' belief in the ability of businesses with higher CSR scores to fulfill their financial obligations, leading these organizations to be able to raise more debt. In fact, this trust was probably diffused throughout the market, increasing investor confidence, motivating them to trade stocks more frequently, ultimately improving returns. Thus, trust might be the underlying mechanism behind the positive impact of pre-crisis CSR scores on returns that was observed throughout both crises. This aligns with prior research by Guiso, Sapienza, and Zingales (2008), who argued that the decision to invest in a firm depends on the degree of trust that investors have in that company.

B. Robustness Tests

To confirm the accuracy of the results obtained throughout the paper, additional tests were conducted, and the results are presented in this part.

B.1 Altering the CSR Score Collection Period

The first robustness test involves altering the year for which CSR scores were gathered. The objective is to assess the consistency of the findings with those previously discovered when using CSR data from a different year as an independent variable.

B.1.1 2008-2009 Financial Crisis

For the 2008-2009 financial crisis, the regression models used CSR Scores from the 2006 end-year to account for the possibility that businesses may have altered their CSR policies in preparation for the financial crisis, in 2007. However, according to Karl V. Lins, Henri Servaes, and Ane Tamayo's (2017) it is probable that the CSR score at the 2006 end-year did not accurately reflect the CSR score before the crisis since numerous companies may have adjusted their CSR policies in that year, after foreseeing the crisis.

Therefore, a robustness test was conducted to address this issue. It involves re-estimating the First Hypothesis while using the pre-crisis CSR scores measured at the 2005 end-year as an explanatory variable. Since there were no signs of the impending financial crisis in 2005, that year was selected. Below, the analysis' findings are displayed.

Panel F.1: Robustness Test: Altering the CSR Score Collection Period – 2008-2009 Financial Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0019***	0.0195***	0.0008***	0.0171***
	(0.0036)	(0.0133)	(0.0032)	(0.0122)
Control Variables	NO	NO	YES	YES
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Observations	2,840	2,840	2,840	2,840
Adjuested R-squared	0.06	0.10	0.09	0.12

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The findings indicate the impact of 2005 end-year pre-crisis CSR scores on raw and abnormal returns was comparable to that of 2006 end-year CSR scores. This conclusion can be obtained from the fact that the robustness test's coefficients and the First Hypothesis's coefficients were both statistically significant at 1% level and had roughly the same magnitude.

The constant trend of the CSR scores between 2005 and 2006, which is supported by the significant correlation coefficient of 0.92 found between the CSR scores recorded in both years, may be the reason for the consistency of the results. These results are consistent with earlier research by Karl V. Lins, Henri Servaes, and Ane Tamayo (2017).

B.1.2 Covid-19 Crisis

Since the Covid-19 crisis was unexpected, the 2019 end-year CSR scores were utilized in the regression models. In fact, it was assumed that these values accurately reflected the CSR scores prior to the crisis. However, given that the virus first surfaced in China in that year, it is probable that some firms started altering their CSR policies in response to the pandemic in 2019. As a result, the 2019 end-year CSR scores may not be an accurate indicator of CSR prior to the crisis.

To test it, a robustness test was conducted. It involves re-estimating the First Hypothesis while using the CSR scores measured at the 2018 end-year. The results are shown below.

Panel F.2: Robustness Test: Altering the CSR Score Collection Period – Covid-19 crisis.

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0392***	0.0938***	0.0311***	0.0803***
	(0.0191)	(0.0262)	(0.0168)	(0.0238)
Controls	NO	NO	YES	YES
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Observations	2,596	2,596	2,596	2,596
Adjuested R-squared	0.11	0.16	0.15	0.19

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The findings showed that the CSR scores from the end-year of 2018 and from the end-year of 2019 had a comparable impact on returns. This is evident from the fact that the CSR coefficients were nearly identical in size and exhibited the same level of statistical significance.

In accordance with the rationale used for the financial crisis, the consistency of the findings can be attributable to the fact that CSR scores did not vary substantially between 2018 and 2019. The correlation coefficient, which was found to be 0.88, provides support for this argument.

To conclude, for both crises, the results were unaffected by the period selected to collect the CSR scores, demonstrating the accuracy of the findings.

B.2 Incorporating Micro-cap Firms into the Analysis

In the second robustness test, an investigation was conducted to determine if the results were impacted by the removal of micro-cap firms from the sample (market capitalization under $250 million). In fact, their exclusion relied on the idea that due to their low liquidity, it could be difficult to capture the impact that other factors might have had on returns. This test involved re-estimating the first hypothesis after including the micro-cap companies.

B.2.1 2008-2009 Financial Crisis

Panel G.1: Robustness Test – Include Micro-Cap firms – 2008-2009 Financial Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0027***	0.0213***	0.0013***	0.0191***
	(0.0037)	(0.0136)	(0.0033)	(0.0126)
Control Variables	NO	NO	YES	YES
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Observations	3472	3472	3472	3472
Adjuested R-squared	0.06	0.10	0.09	0.12

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The results show that, when micro-cap companies were incorporated, the CSR coefficients displayed only modest magnitude differences and exhibited the same level of statistical significance as the findings for the First Hypothesis, indicating that the positive and statistically significant impact of the pre-crisis CSR scores on returns persisted. This highlights the accuracy of the outcomes obtained in the paper.

B.2.2 Covid-19 Crisis.

Panel G.2: Robustness Test – Include Micro-Cap firms – Covid-19 Crisis

	Raw Return (1)	Abnormal Return (2)	Raw Return (3)	Abnormal Return (4)
CSR	0.0407***	0.0965***	0.0323***	0.0823***
	(0.0196)	(0.0270)	(0.0175)	(0.0244)
Controls	NO	NO	YES	YES
Industry Dummies	YES	YES	YES	YES
3FF	YES	YES	YES	YES
Observations	2,836	2,836	2,836	2,836
Adjuested R-squared	0.11	0.17	0.15	0.20

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The findings reveal that for the Covid-19 crisis, the inclusion of micro-companies did not substantially alter the CSR coefficients, which continued exhibiting a similar magnitude and the same level of statistical significance. However, they were slightly higher for both Abnormal and Raw returns. This is consistent with the previous research conducted by Kee-Hong Bae, Sadok El Ghoul, Zhaoran Gong, and Omrane Guedham (2021) which found that the impact of pre-crisis CSR scores on returns was slightly sensitive to the exclusion of micro-cap companies.

The result of this test also highlights the accuracy of the outcomes obtained in this paper.

Part 4: Limitations, Further Research, Managerial Implications and Conclusion

A. Limitations

This paper has certain limitations which should be considered when interpreting the results.

Firstly, in accordance with prior research, the CSR score was computed by averaging the social and environmental scores retrieved from the ESG Refinitiv Database. However, this approach may not be the most precise way to compute the CSR score, as it does not provide a detailed breakdown of the various CSR indicators. Thus, alternative methods, such as using the MSCI ESG Stats Database, may offer a more accurate analysis of the impact of the pre-crisis CSR score on the stock performance, as they enable the estimation of CSR scores' exact values.

Secondly, the sample used in this study is restricted to NYSE constituents, which represents only a small subset of enterprises globally. As a result, the outcomes may be subject to sampling bias, thereby limiting the generalizability of the findings. For a more thorough comprehension of the impact of pre-crisis CSR scores on stock returns, a broader selection of companies should have been included in the sample.

Thirdly, this study focuses solely on the impact of the pre-crisis CSR scores on stock returns during crisis, while not examining it for the post-crisis era. As such, it fails to fully capture the long-term effect of CSR. Besides, it does not examine whether the two crises' results comparison remains an important subject of research in the post-crisis period.

Finally, the study focuses on a relatively recent phenomenon, the Covid-19 crisis. Therefore, there is a paucity of research on this subject, and the available studies have yielded contradictory findings. As a result, it is challenging to validate the conclusions of this paper.

Despite such limitations, I am confident about the accuracy of the results obtained and I believe that they are substantial enough to deserve attention.

B. Further Research

The limitations previously highlighted indicate that there is potential for further research on this topic.

Firstly, subsequent research could investigate the same research question utilizing a different sample, such as another index or all firms within a particular country. In fact, this would permit to confirm whether the paper's findings remain consistent across diverse samples.

Secondly, further research could examine whether the conclusions drawn from comparing the outcomes of the two crises are still valid in the post-crisis period. In fact, studying the impact of pre-crisis CSR scores on stock returns in the long run may yield to different outcomes. Thus, analyzing and comparing them to those obtained for the crisis periods might be a potential avenue for future research.

Finally, future studies could explore whether trust can be fostered through channels other than CSR. In doing so, it would be feasible to assess the CSR's relative effectiveness compared to other channels.

The proposed studies outlined in this section supplement the analysis carried out in this paper.

C. Managerial Implications

Overall, the results of this paper indicate that, during the two crises, enterprises with higher CSR scores prior to crises experienced higher stock returns and raised more debt compared to those with lower scores.

These findings have significant implications for managerial decision-making since they increase executives' awareness of the significance of CSR in a firm's ability to survive a crisis. Consequently, managers are likely to decide to adopt additional CSR policies to reinforce the business's resilience against the adverse effects of crises.

Furthermore, the paper’s outcomes suggest that for an enterprise to fully reap the benefits of CSR, its CSR score must surpass a certain threshold. As a result, this would have an influence on the management's decision regarding the appropriate level of investment in CSR.

The decisions made by managers will have an impact on the firm’s shareholders. In fact, the adoption of more CSR initiatives will generate value not only for internal stakeholders but also for external stakeholders, including shareholders. This is evidenced from the increased returns that shareholders will receive. Therefore, they would presumably be better equipped to deal with the crisis.

Furthermore, management initiatives can have an impact on other stakeholders. In fact, the increasing investment in CSR helps companies function better in times of crisis, allowing them to fulfill their obligations towards stakeholders such as customers and financial institutions. This will improve their level of satisfaction and encourage collaboration with the company.

To conclude, the findings of the paper have the potential to impact managerial choices, which, in turn, will have an impact on the firms' stakeholders.

D. Conclusion

The aim of the paper was to examine how pre-crisis CSR scores impacted firms' performance during two distinct crisis periods: The 2008-2009 financial crisis and the Covid-19 crisis. Besides, it seeks to contrast the results obtained for these two crises periods. In this section, the key conclusions are highlighted.

This paper provides evidence that investing in CSR benefited companies during crisis, as evidenced by the positive and statistically significant impact of pre-crisis CSR scores on both Raw and Abnormal returns during the 2008-2009 financial crisis and the Covid-19 crisis. In fact, the results indicate that companies with higher CSR scores outperformed those with lower ones in terms of stock performance by a minimum of 0.0010 percentage points throughout the financial crisis and by a minimum of 0.0318 percentages points during the Covid-19 crisis. Additionally, the effect of CSR scores on Abnormal Returns was found to be greater than that on Raw Returns, for both crises. These results persisted, even after including control variables in the analysis, albeit the magnitude of the CSR's impact on returns shrank. Furthermore, results reveal that, during both crises, the positive impact of pre-crisis CSR scores on returns might be contingent upon the CSR score surpassing a specific threshold, as only the CSR coefficients of the fourth quartile exhibited a statistically significant impact on stock returns.

Furthermore, empirical evidence reveals that, for both crises, accounting for the highest-value firms weakened the impact of pre-crisis CSR scores on both returns. One plausible explanation for this is the fact that these firms were likely to have a strong reputation, and, as a result, might not require as much CSR to attract investors and to achieve higher returns. However, the inclusion of this control variable did not remove the positive and statistically significant impact of pre-crisis CSR scores on stock returns.

In attempting to understand the underlying mechanism that might explain the positive impact of the pre-crisis CSR scores on stock returns for both crises, the study identified Trust as the key mechanism. In fact, the results reveal that CSR had a positive and statistically significant impact on a firm's ability to issue debt in both crises, indicating that firms with higher CSR scores were perceived as more trustworthy. This implies that CSR fostered trust, which probably was diffused throughout the market, increasing investor confidence, motivating them

to trade stocks more frequently, ultimately improving returns. Therefore, it can be inferred that the positive impact of pre-crisis CSR scores on returns hinged on their ability to enhance trust.

After outlining the main findings concerning the impact of the pre-crisis CSR scores on returns during both crises, it is crucial to present an answer to the research question: **Did the impact of the pre-crisis CSR scores on firm performance differ between the 2008-2009 financial crisis and the Covid-19 crisis?**

As previously described, the Hypotheses tested have yielded findings that could be applied to both crisis' periods. Nonetheless, the impact of pre-crisis CSR scores on firm performance differed between the two crises due to the extent of the impact felt. This is reflected in the size of the CSR coefficients, which were considerably greater during the Covid-19 crisis compared to the financial crisis. This dissimilarity can be attributed to two factors. Firstly, the increasing prominence of CSR in recent years, which has led investors to favor businesses with more CSR policies in place; secondly, the Covid-19 crisis, being a public health crisis, has encouraged investors to give higher priority to businesses which have demonstrated a strong commitment to supporting their stakeholders during the crisis. These factors have contributed to high-CSR firms gaining a competitive edge, attracting more investors, resulting in higher returns.

Overall, the results suggest that firms experienced less severe impacts during both crises by implementing more CSR policies. In fact, by fostering trust, CSR can serve as a hedging tactic against times of crisis, enabling companies to attain higher returns. Although the positive impact of pre-crisis CSR scores on returns was more pronounced during the Covid-19 crisis, it remained positive and statistically significant during the financial crisis. Thus, it can be inferred that the beneficial effects of CSR may not be limited to a specific crisis scenario.

These findings will probably have an impact on management decisions, given that managers are likely to prioritize the implementation of additional CSR initiatives to increase the company's resilience to the negative effects of crises. Consequently, this will impact the firms' stakeholders, specifically the shareholders who can benefit from higher stock returns.

Further research can be conducted to investigate whether pre-crisis CSR scores preserved their positive impact on stock returns during the post-crisis period as well as if the comparison of the two crises is still relevant for that period. Besides, determining whether there is another mechanism that might promote trust and contrasting its effectiveness with the CSR will be an interesting topic to study.

Appendix

Table 21- Definition of all Variables

Name	Definition
CSR	Average of Social and Environmental Score retrieved from Refinitiv ESG Database. It was collected at year-end of 2006 for the 2008-2009 Financial Crisis and at the end-year 2019 for the Covid-19 Crisis
CSR Dummies	Dummy variables CSR2, CSR3, and CSR4 that were used to indicate whether the firm's CSR score fall within the second, third, and fourth quartiles, respectively
Governance Score	Governance Score retrieved from Refinitiv ESG Database. It was collected at year-end of 2006 for the 2008-2009 Financial Crisis and at the end-year 2019 for the Covid-19 Crisis.
Size	Natural log of firm's Total Assets, measured in US$, retrieved from DataStream.
Cash Holdings	Cash and Short-term Investments over Total Assets, measured in US$, retrieved from DataStream
Short-term Debt	Short-term Debt over Total Assets, measured in US$, retrieved from DataStream
Long-term Debt	Long-term Debt over Total Assets, measured in US$, retrieved from DataStream
Profitability	Operating Income over Total Assets, measured in US$, retrieved from DataStream
Book-to-Market	Book-Value of Equity over Market Capitalization, measured in US$, retrieved from DataStream
Momentum	Firm's annual Holding Period Return over the period that includes the year prior to the crises.
Industry Dummies	4 Dummy variables representing the 4 different industries provided by DataStream's General Industry Classification.
3FF	3-Fama-French Factors retrieved from Kenneth French Library
Raw-Crisis Period Return	Monthly Holding Period Return retrieved from CSRP. It was collected from August 2008-March 2009 for the 2008-2009 Financial Crisis and from February 2020-March 2020 for the Covid-19 Crisis.
Abnormal-Crisis Period Return	Difference between the Raw-Crisis Period Return and the Expected Return. The Expected Return was computed using the CAPM model with an estimation window of 60-months ending in July 2008 for the 2008-2009 Financial Crisis and in January 2020 for the Covid-19 Crisis.
Firm Value	Natural log of firm's Market Value, measured in US$, retrieved from DataStream.
Dummy for High-Value firms	1 Dummy variable that take the value of 1 for the 100 highest-value firms and zero otherwise.
Long-term Debt Issuance	Long-term Debt Issuance over Total Assets, measured in US$, retrieved from DataStream
Total Debt	Total Debt over Total Assets, measured in US$, retrieved from DataStream

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