INVESTING IN TRUST

EXAMINING THE IMPACT OF CSR ON STOCK RETURNS DURING MARKET CRISIS

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Investing in trust: Examining the impact of CSR on stock returns during market crisis

Abstract:

This paper examines the impact of social capital, as measured by corporate social responsibility (CSR), on stock returns during economic downturns, specifically the Covid-19 crash and the 2022 market downturn. It highlights the nuanced role of CSR during different types of economic stress and adds a contemporary dimension to existing literature by offering a new perspective on investor behavior in the context of recent global challenges. I find that higher CSR intensity had a positive and significant impact on stock returns during the 2022 market downturn, albeit influenced by the firm's broader financial health. However, this relationship was not evident during the Covid-19 crash, suggesting that the nature of the economic downturn could be pivotal in CSR's protective value.

Keywords:

CSR, Stock returns, Market crisis, Investor behavior, Financial resilience

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1. Introduction

The role of trust in economics is a well-explored topic and has been the topic of prominent research papers for many years. Putnam (1993) explores the positive impact that trust, as measured by social capital, has on the effectiveness and stability of democratic governance. He finds that the level of social capital in a society is a good indicator of economic growth which highlights the macroeconomic importance of trust. Guiso, Sapienza and Zingales (2004) elaborate on the importance of trust by investigating how social capital-building activities foster capital market participation. Over the years, the literature on the broader economic impact of social capital has expanded but it lacks in-depth analysis of its impact on firm-level performance and development. One of the primary challenges associated with analyzing firms at the individual level is determining the appropriate proxy for measuring social capital and trust. Both Putnam (1993) and Guiso et al. (2004) are able to use regional differences to gauge differences in trust. However, a study focusing on the firm level necessitates a more nuanced understanding of trust differences. Relying solely on regional trust variations proves inadequate, as it is the distinctions between individual firms that are of interest. This presents a challenge, as much of what constitutes trust is embedded within cultural and social norms (Scrivens and Smith (2013)). Building on this foundation, this paper examines how social capital impacts stock returns during economic downturns, specifically among US-headquartered firms, focusing on the Covid-19 crash and the 2022 market downturn.

One of the few works that provides an in-depth analysis of the relationship between social capital and firm performance is authored by Lins, Servaes, and Tamayo (2017). They argue that social capital or trust on a firm level can be measured by Corporate Social Responsibility (CSR) and that stakeholders recognize CSR as a proxy for social capital. Lins et al. (2017) address the challenge of the lack of exogenous change in social capital. Varying levels of social capital over time would provide the required exogenous change to measure the relationship between social capital and firm performance. However, firm-level social capital is relatively static over time. Lins et al. (2017) propose that times of economic crisis provide the necessary setting. As overall trust in corporations and markets declines during an economic crisis, firms perceived as trustworthy by stakeholders will be valued higher than their low-trust counterparts. Firms that engaged in social capital-building practices in the past are reciprocated by employees, shareholders and the community when overall trust is low. Lins et al. (2017) find that CSR had a positive and significant impact on firm performance during both the financial crisis of 2008/2009 and the Enron/Worldcom crisis of the early 2000s.

While the study by Lins et al. (2017) offers a novel approach to measure the impact of social capital on firm performance, their study only concerns the financial crisis of 2008/2009 and the Enron/Worldcom crisis of the early 2000s. This prompts a study that investigates more contemporary market downturns. Kee-Hong, El Ghoul, Gong and Guedhami (2021) examine the relationship between social capital and firm performance during the Covid-19 crash. In contrast to Lins et al. (2017), Kee-Hong et al. (2021) do not find that social capital has a significant positive impact on firm performance.

Although the Covid-19 crash in 2020 provides a more recent context than the financial

crises of 2008/2009, I aim to further enhance the exploration of social capital's impact on firm performance by analyzing the market downturn in 2022. In 2022, the S&P 500 index retraced 25%, reflecting the economy's anticipation of aggressive interest rate hikes amid global economic pressures from inflation and geopolitical tensions, particularly the conflict in Ukraine (Caldara, Conlisk, Iacoviello and Penn (2022)). To my knowledge, the impact of social capital on firm performance during the market downturn in 2022 is unexplored territory. Since this is also the most recent major market correction, my study offers the most recent examination of the relationship between social capital and firm performance during an economic crisis.

Furthermore, previous studies have only analyzed economic downturns in isolation (Kee-Hong et al. (2021)) or compared similar economic downturns to each other (Lins et al. (2017) with the financial crisis of 2008/2009 and the Enron/Worldcom crisis of the early 2000s). Thus, there is a noticeable lack of work on how CSR impacts firm performance differently depending on the characteristics of the economic downturn. For instance, the financial crisis in 2008/2009 persisted for eight months, in contrast to the Covid-19 crash, which lasted only one month. The opposing findings by Kee-Hong et al. (2021) and Lins et al. (2017) point to major differences in how stakeholders value social capital depending on the characteristics of the economic downturn. Therefore, apart from offering an analysis on the most recent market downturn in 2022, my study compares the impact of social capital on firm performance from two vastly different economic downturns, the Covid-19 crash and the market downturn in 2022.

At the core of this study, I conduct an empirical analysis to examine the relationship between social capital, quantified through CSR, and stock returns. I build on the regression model presented by Lins et al. (2017). I use CSR data from 2341 firms for the market downturn in 2022 and 1973 firms for the Covid-19 crash to build an aggregate measure of a firm's CSR rating for each crisis period. Subsequently, I analyze stock returns during these two economic downturns and conduct regression analysis to examine the relationship between CSR and stock returns. Furthermore, I control for firm characteristics and factors that are related to the financial health of the firm to add further robustness to my findings. Through the application of my regression model to data from both the 2022 market downturn and the 2020 Covid-19 crash, I derive estimates of the impact of CSR on firm performance across both periods. These results serve as the foundation for my discussion on how stakeholders perceive the value of social capital, varying with the characteristics of economic downturns.

My findings offer support to existing literature. I find that social capital had a positive significant impact on firm performance during the market downturn in 2022 but not in the post-crisis period. Although the results do not exhibit significance across all robustness tests, they nevertheless suggest that social capital had a positive impact on firm performance during the market downturn, similar to that observed by Lins et al. (2017). According to my analysis, a one standard deviation increase in CSR intensity resulted in a 1.41 percentage points increase in stock return during the 2022 market downturn. Lins et al. (2017) observe similar, positive significant, results for the financial crisis of 2008/2009. This indicates that stakeholders put a value premium on firms with high social capital during both the financial crisis of 2008/2009 and the market downturn in 2022. I contend that this is logical, as

the market downturn in 2022 shares similar features with the financial crisis in 2008/2009. However, I do not find a positive significant relationship between social capital and firm performance during the Covid-19 crash or the post-crisis period. This aligns with the findings by Kee-Hong et al. (2021). I argue that the varying importance of CSR in determining firm performance arises from the differing characteristics of the Covid-19 crash and the market downturn in 2022.

2. Background

There's been a growing body of literature that examines the impact of social capital on firm performance during times of economic stress. Lins et al. (2017) were the first ones to comprehensively analyze this relationship, laying a foundation for subsequent research in the field. They introduced the novel method of using CSR as a proxy for social capital when examining the relationship between social capital and firm performance during economic downturns. In their paper, they argue that CSR activities should act as a good measure of social capital as "definitions of CSR, which generally involve aspects of civic engagement, shared beliefs, and disposition towards cooperation between the firm and its stakeholders, tend to map directly into the theoretical foundations of social capital.". Lins et al. (2017) argue that the empirical study on the relationship between CSR and firm performance should be performed during periods of low market trust, such as economic downturns, due to issues of endogeneity. This argument is based on their observation that CSR's impact on firm performance is particularly pronounced during economic downturns when trust is otherwise low. The authors suggest that endogeneity issues, where it is challenging to separate the effects of CSR from other variables that might also be influencing firm performance, are more manageable during crises. This is because the crisis acts as a form of natural experiment in which there is an exogenous shock to overall trust while CSR ratings are kept constant. Lins et al. (2017) find a positive significant relationship between CSR and firm performance during both the financial crisis of 2008/2009 and the Enron/Worldcom Fraud Scandal in the early 2000s. A one-standard deviation increase in CSR led to a 1.83 percentage point increase in stock returns during the financial crisis of 2008/2009.

The findings by Lins et al. (2017) prompted Kee-Hong et al. (2021) to perform a similar empirical study on a more recent economic downturn, the Covid-19 crash. However, contrary to previous studies, Kee-Hong et al. (2021) do not find that CSR had a significant impact on firm performance during the Covid-19 crash. Their findings hold after performing various robustness tests such as including industry dummies and controlling for variables related to the financial health of firms. Additionally, to provide them with a baseline relationship between CSR and firm performance, they test whether CSR impacts firm performance both before and after the crisis. With this, they can compare the impact of CSR during normal times with the impact of CSR during economic downturns. Once again, Kee-Hong et al. (2021) find that CSR had no significant impact on firm performance. They conclude that their findings indicate a contrarian view on the impact of CSR on stock returns during times of economic crisis and suggest that the significance of CSR during a crisis warrants

reevaluation.

This provides me with the opportunity to broaden the existing knowledge about the impact of CSR on firm performance during times of economic crisis in two ways. Firstly, I apply the methodological framework outlined by Lins et al. (2017) and Kee-Hong et al. (2021) to a new period, the market downturn in 2022. By extending the analysis to a more recent economic downturn, I can gauge whether the observed relationship between CSR and firm performance persists across varying economic contexts. Secondly, my analysis of both the market downturn in 2022 and the Covid-19 crash enables me to compare the impact of CSR on firm performance during two distinct periods characterized by differing underlying causes of economic downturns. While the Covid-19 crash was primarily driven by a global health crisis and subsequent lockdown measures, the market downturn in 2022 was influenced by factors such as inflationary pressures and geopolitical tensions. This comparative analysis sheds light on the adaptability of CSR strategies across different crisis scenarios.

3. Data and methodology

Data

All the data that I use in this study is collected from the Eikon Refinitiv Database. The Eikon Refinitiv Database holds all data that relates to the CSR ratings of publicly traded firms with headquarters in the U.S. There are a multitude of different CSR ratings available but I select the ones that represent measures in community, diversity, employee relations, environment and human rights which is consistent with the CSR categories used by both Lins et al. (2017) and Kee-Hong et al. (2021)). However, as both of these studies collect data from the MSCI ESG Stats database, as opposed to the Eikon Refinitiv Database, there may be variations in the exact definitions of individual CSR measures. In the Eikon Refinitiv Database, these CSR measures are named Community Score (measures the company's commitment towards being a good citizen, protecting public health, and respecting business ethics), Policy Diversity and Opportunity Score (score based on the degree that the company implements policy to drive diversity and equal opportunity), Workforce Score (measures the company's effectiveness towards job satisfaction and healthy and safe workplace), Environmental Pillar Score (measures the company's impact on living and non-living natural systems) and Human Rights Score (measures the company's effectiveness towards respecting the fundamental human rights convention). There are also differences in the scaling of CSR measures across the MSCI ESG Stats Database and the Eikon Refinitiv Database. Instead of obtaining a CSR score that ranges from -5 to 5 (Lins et al. (2017); Kee-Hong et al. (2021)), I use a final CSR score that ranges from 0 to 100. This final CSR score is calculated as the arithmetic mean of the five individual CSR scores from each category which all range from 0 to 100 individually. A value of zero in the final CSR score should be interpreted as if the company hasn't taken any measures of social responsibility. On the opposite, if a firm has a perfect social responsibility score in each of the five categories, it obtains a final CSR score of 100. I call the final measure of CSR score *Total CSR* and collect data on *Total CSR* at the conclusion of

the fiscal year preceding each of the economic downturns. This means that *Total CSR* for the market downturn in 2022 is based on the CSR measures of firms at the conclusion of the fiscal year 2021 and *Total CSR* for the Covid-19 crash is based on the CSR measures of firms at the conclusion of the fiscal year 2019. I choose these dates as CSR scores are updated at the conclusion of each fiscal year and I want the most recent CSR scores preceding the economic downturns. Data of all five CSR categories is accessible for the majority of U.S. headquartered firms. As missing data in CSR measures among firms is infrequent, I exclude those lacking such data from the analysis without significantly impacting the analytical outcomes.

I also collect data on stock returns from the Eikon Refinitiv Database. The stock return measure that I use, called *Crisis-Period Return*, is a measure of raw buy-and-hold return over a given period of the firm's stock. I define the market downturn in 2022 as the period from the 4th of January 2022 to the 12th of October 2022 as these dates mark the highest daily closing price of the S&P 500 index before the downturn and the lowest daily closing price of the S&P 500 index during the downturn. I define the post-crisis period as the subsequent 291-day period (October 13-July 31, 2021) during which the S&P 500 index increased by 30%. For the Covid-19 crash, I'm interested in the 33-day period from the 19th of February 2020 to the 23rd of March 2020. This defines the period from the peak of the highest daily closing price of the S&P 500 index before the crash and the lowest daily closing price of the S&P 500 index during the crash. I define the post-crisis period as the subsequent 76-day period (March 23–June 8, 2020) during which the S&P 500 index increased by 45%.

As I encounter outliers in *Crisis-Period Return* on both ends, I winsorize these returns at the 1st and 99th percentiles. Furthermore, I implement a market cap threshold at $250 million to exclude micro-cap stocks. This market cap threshold is implemented because micro-cap stocks typically exhibit low liquidity and wide bid-ask spreads, making them more susceptible to price pressure effects due to trading activities. These vulnerabilities are likely to be exacerbated during times of financial crisis. Furthermore, micro-cap stocks are overrepresented in terms of missing CSR data. Thus, by implementing a market cap threshold I can reduce the number of companies that need to be omitted due to missing CSR data. After the data processing, I obtain a final sample of 2341 firms for the market downturn in 2022 and 1973 firms for the Covid-19 crash.

Model

I use an OLS regression model to regress *Crisis-Period Return* on *Total CSR*. This aligns with the model selection by both Lins et al. (2017) and Kee-Hong et al. (2021). Using a regression model, I am able to test the hypothesis of whether CSR had a significant impact on firm performance during the market downturn in 2022 and the Covid-19 crash in 2020. The regression model also enables me to test whether the hypothesis holds for various robustness tests. Based on a visual inspection of the preliminary data, I infer that any potential relationship between CSR and stock returns would likely exhibit linearity. Fig 1 in the appendix shows a scatter plot of the data with a fitted regression line (*Crisis-Period Return* is

regressed on *Total CSR* for the 2022 market downturn).

Basic regression model

The basic regression model that I use regresses *Crisis-Period Return* on *Total CSR*. I include sector dummies to control for CSR differences across sectors. Sectors differ in their CSR engagement and how they respond to economic downturns. I use the NAICS sector division which consists of 20 sectors such as Manufacturing; Retail Trade; Finance and Insurance; and Information. However, four sectors with less than 10 instances in the data are removed to ensure reliable statistical inferences. These are the four sectors: Agriculture, Forestry, Fishing and Hunting; Arts, Entertainment, and Recreation; Management of Companies and Enterprises; and Public Administration. The basic regression model is presented below (1) (Note that one dummy variable is captured by the intercept.)

$$\begin{aligned} \textit{Crisis-Period Return} = {} & \beta_0 + \beta_1 \times \textit{Total CSR} \\ & + \beta_2 \times \textit{Sector Dummy}_1 + \beta_3 \times \textit{Sector Dummy}_2 \\ & + \ldots + \beta_{16} \times \textit{Sector Dummy}_{15} + \varepsilon \end{aligned} \tag{1}$$

Full regression model

However, in addition to the firm's sector belonging, there are likely other factors that are correlated with *Total CSR* that could explain the variations in return during the market downturn. Lins et al. (2017) argue that such factors should include a firm's financial health and other firm characteristics that have proven to have an impact on stock returns historically. Therefore, following previous studies (Lins et al. (2017); Kee-Hong et al. (2021)), I control for the following factors: First, *Cash Holdings* is a firm's cash divided by its assets. I use *Cash Holdings* as it shows me how liquid the company is and how fast it can meet short-term obligations without difficulty. High levels of *Cash Holdings* also allow the firm to seize opportunities or invest in growth areas without relying heavily on external financing. Secondly, I define *Short-Term Debt* as the ratio of the firm's current liabilities to its assets. I use *Short-Term Debt* as it indicates the company's ability to meet short-term obligations. Higher ratios suggest potential liquidity challenges. Additionally, high ratios indicate higher financial risk, as short-term debt often carries higher interest rates. Thirdly, I use *Long-Term Debt* (long-term debt divided by assets). Long-term debt indicates a firm's leverage and solvency. A higher ratio suggests greater reliance on debt to finance operations, potentially increasing financial risk. Finally, I calculate *Profitability* by dividing operating income by assets. Profitability gives me an idea of how effectively the company generates profits relative to its asset base. I decide to divide all four metrics by the firm's assets as this normalizes the financial metrics which makes them comparable across differently-sized firms. To further control for the size of firms, I include the logarithm of the firm's market capitalization (*Size*).

I also control for *Book-to-Market* in my regression. Fama and French (1992) demonstrated that the Book-to-Market ratio significantly influences the anticipated returns of companies in a systematic way. Finally, I control for a factor that I call *Momentum*. I define momentum as the raw buy-and-hold return of the firm's stock over the last 12 months leading up to the start of the downturns (4th of January 2022 for the 2022 market downturn and 19th of February 2020 for the Covid-19 crash). A firm entering a market downturn with positive momentum may sustain this momentum during the downturn, thereby mitigating the observable effect of the CSR measure on stock returns, as momentum itself explains some of the variations in *Crisis-Period Return* throughout the downturn.

I obtain measures of *Cash Holdings*, *Short-Term Debt*, *Long-Term Debt*, *Profitability*, *Size* and *Book-to-Market* at the conclusion of the fiscal year preceding the market downturns. The full regression model is presented below (2).

$$\begin{aligned} \textit{Crisis-Period Return} = {} & \beta_0 + \beta_1 \times \textit{Total CSR} \\ & + \beta_2 \times \textit{Cash Holdings} + \beta_3 \times \textit{Short-Term Debt} \\ & + \beta_4 \times \textit{Long-Term Debt} + \beta_5 \times \textit{Profitability} \\ & + \beta_6 \times \textit{Size} + \beta_7 \times \textit{Book-to-Market} \\ & + \beta_8 \times \textit{Momentum} \\ & + \sum_{i=1}^{15} \beta_{8+i} \times \textit{Division Dummy}_i + \varepsilon \end{aligned} \tag{2}$$

4. Results and analysis

Market downturn in 2022

Descriptive statistics

Table 1 presents descriptive statistics for all variables included in the regression. The first row shows the statistics for the main regressor (*Total CSR*). *Total CSR* has a mean of 43.705 and a median of 41.704. This indicates a moderate level of engagement in corporate social responsibility activities among the sampled firms. A standard deviation of 19.829 for *Total CSR* tells us that CSR adoption significantly varies across firms. The second row shows descriptive statistics for the dependent variable (*Crisis-Period Return*). We see that the mean return during the market downturn is negative (-26.3%). The median is -26.6%, the 25th percentile value is -43.4%. The negative descriptive statistics for *Crisis-Period Return* reflects the pessimistic investor sentiment and the challenging market conditions during the 2022 downturn. The spread of returns, indicated by the 25th percentile at -44%, reveals the high variability in firm performance during the downturn. Table 1 also shows descriptive statistics for control variables. I present the correlation matrix for all variables in Table 2.

Table 1: Descriptive Statistics for Variables During the 2022 Market Downturn

	Mean	St. Dev.	25th perc.	Median	75th perc.
Total CSR	43.705	19.829	28.649	41.704	58.963
Crisis-Period Return	-0.263	0.266	-0.434	-0.267	-0.109
Long-Term Debt	0.229	0.231	0.017	0.19	0.363
Short-Term Debt	0.025	0.077	0.0	0.002	0.019
Cash Holdings	0.203	0.257	0.02	0.1	0.261
Profitability	-0.028	0.399	-0.037	0.013	0.057
Book-to-Market	0.429	1.008	0.133	0.301	0.583
Momentum	0.304	0.615	0.003	0.236	0.488

This table presents descriptive statistics for variables analyzed during the 2022 market downturn. The variables include Total CSR, Crisis-Period Return, Long-Term Debt, Short-Term Debt, Cash Holdings, Profitability, Book-to-Market, and Momentum. The table reports the mean, standard deviation (SD), 25th percentile, median, and 75th percentile for each variable.

Table 2: Correlation Matrix for Variables During the 2022 Market Downturn

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Total CSR	1.0							
(2) Crisis-Period Return	0.107	1.0						
(3) Long-Term Debt	0.200	0.011	1.0					
(4) Short-Term Debt	0.011	-0.022	-0.004	1.0				
(5) Cash Holdings	-0.234	-0.260	-0.249	-0.055	1.0			
(6) Profitability	0.118	0.043	-0.027	-0.040	-0.199	1.0		
(7) Book-to-Market	-0.035	0.038	0.002	0.080	-0.136	0.030	1.0	
(8) Momentum	-0.005	0.124	0.078	0.093	-0.221	0.033	-0.073	1.0

This table presents the correlation matrix for variables analyzed during the 2022 market downturn. The variables include Total CSR, Crisis-Period Return, Long-Term Debt, Short-Term Debt, Cash Holdings, Profitability, Book-to-Market, and Momentum. Each cell shows the correlation coefficient between the variables.

Regression results

I start by using the basic regression model (1) to regress the firms' stock return (*Crisis-Period Return*) on their CSR scores (*Total CSR*). I only control for sector differences by including sector dummies in the basic regression. Column (1) in Table 3 shows the regression results. *Total CSR* has a positive significant effect on *Crisis-Period Return* at the 1% level. A one-point increase in *Total CSR* gives a percentage points increase of 0.147 in *Crisis-Period Return*. Moreover, a one standard deviation increase in *Total CSR* (19.829) results in a 2.91

percentage points increase in *Crisis-Period Return*. This result aligns with the results obtained by Lins et al. (2017) who saw a significant positive impact of a firm's CSR rating on stock returns during economic downturns when using a regression model without control variables for firm characteristics.

Table 3: Stock Returns and CSR for the 2022 Market Downturn

	(1) Crisis period Basic Regression	(2) Crisis period Full Regression	(3) Post-crisis period Basic Regression	(4) Post-crisis period Full Regression
Total CSR	0.00147***	0.00071**	0.00107***	-0.00028
	(0.00027)	(0.0036)	(0.00041)	(0.00054)
Size		0.0044		0.01756***
		(0.00416)		(0.00639)
Long-Term Debt		-0.04614*		0.05981
		(0.02483)		(0.03841)
Short-Term Debt		-0.16078**		0.10506
		(0.067)		(0.10329)
Cash Holdings		-0.20479***		-0.07084*
		(0.02682)		(0.04125)
Profitability		0.00317		0.03974*
		(0.01322)		(0.02056)
Book-to-Market		0.0008		0.00025
		(0.00526)		(0.00809)
Momentum		0.01992**		-0.01649
		(0.0087)		(0.01327)
Constant	-0.33929***	-0.36086***	0.24492***	-0.0928
	(0.0397)	(0.09006)	(0.0604)	(0.13851)
Sector dummies	Yes	Yes	Yes	Yes
Adj. R^2	0.134	0.16	0.081	0.086
Nr. Data Points	2341	2341	2337	2337

This table presents regression results examining the impact of Total CSR on firms' stock returns during the 2022 market downturn and during the post-crisis period. Regression estimates of Total CSR and control variables are presented. Sector dummies are included in the regression. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

Next, column (2) in Table 3 shows the regression results from the full regression model (2) that includes control variables for firm characteristics. Notably, *Total CSR* is only significant at the 10% level when I control for the additional variables, in contrast to the 1%

significance level that I obtain from the basic regression model. Here, a one-point increase in *Total CSR* only results in a percentage point increase of 0.071 in *Crisis-Period Return*. This is approximately half the effect observed in the basic regression model (0.139 percentage points). This change highlights that CSR's protective effect during the market downturn is present, but somewhat overshadowed by immediate financial conditions controlled for with the control variables. This could indicate that investors prioritize more concrete, short-term financial metrics over longer-term, qualitative factors like CSR during periods of market uncertainty. This contrasts with the findings by Lins et al. (2017), who still observe a positive significant CSR coefficient at the 1% level for the financial crisis of 2008/2009, even when including controls for firm characteristics.

Turning to the control variables in column (2), I note that debt levels are important as a one-standard-deviation increase in *Long-Term Debt* (0.231) and *Short-Term Debt* (0.077) results in a change in *Crisis-Period Return* of -1.07 and -1.24 percentage points. Both of the significant negative coefficients for debt are indicative of the market's concern about a firm's liquidity and financial health during the market downturn in 2022. Surprisingly, the analysis shows that greater cash holdings are associated with a negative impact on stock returns, contrary to the conventional expectation that more cash reserves provide a buffer in turbulent times. A one-standard-deviation increase in *Cash Holdings* (0.257) results in a -5.26 percentage points change in *Crisis-Period Return*.

Columns (3) and (4) in Table 3 show the results from the re-estimated model in which I use stock returns for the post-crisis period (October 13, 2022–July 31, 2023). The positive impact of CSR on stock returns decreases for the post-crisis period. While I still obtain a significant positive result at the 1% level for the basic regression model (1), the full regression model (2) shows no significant relationship between CSR and stock returns. This suggests that while CSR offered protective value during the crisis, its significance diminished during the post-downturn recovery period.

To understand whether the effect of CSR on stock returns is more pronounced at either extreme of the CSR spectra, I re-estimate my regression models (both (1) and (2)) to include dummies for CSR quartiles instead of a linear measure of CSR. Table 4 shows the regression results. Note that I include estimates for quartiles 2-4 as quartile 1 is captured by the intercept. The coefficient for CSR4 indicates that the difference between the first and fourth CSR quartile is 3.05 percentage points for the full regression model (column (2)). The difference between the third and fourth quartiles is 1.21 percentage points and 1.40 percentage points between the second and third quartiles. I find similar results for the basic regression model (column (1)) in which the difference between the four quartiles is even more pronounced. The results align with the results in Table 3 as firms with CSR measures in higher quartiles performed better during the market downturn compared to their low-quartile counterparts.

Overall, when I compare my result to the findings by Lins et al. (2017) for the financial crisis of 2008/2009 and the Enron/Worldcom crisis, I note that their coefficient estimate of *Total CSR* as positive and significant is more robust compared to what I find for the market downturn in 2022. Their estimate of *Total CSR* is significant and positive at the 1% level even when they include all control variables. Since the aggregate CSR measure used by Lins et al. (2017) differs from mine, as they collect data from the MSCI ESG Stats database

instead of the Refinitiv Eikon database, and they aggregate the CSR score differently from my method, directly comparing the magnitude of the CSR estimates would not yield meaningful insights. However, the consistently high significance of their positive CSR estimate, even after adjusting for firm characteristics, suggests that CSR had a greater impact on firm performance during the 2008/2009 financial crisis than during the 2022 market downturn.

Table 4: Stock Returns and CSR Quartiles During the 2022 Market Downturn

	(1) Basic Regression	(2) Full Regression
CSR2	0.01327 (0.01455)	0.00440 (0.01454)
CSR3	0.04285*** (0.01472)	0.01836 (0.01577)
CSR4	0.07226*** (0.0149)	0.03049 (0.0187)
Size		0.00541 (0.00403)
Long-Term Debt		-0.04644* (0.02485)
Short-Term Debt		-0.15916** (0.06705)
Cash Holdings		-0.20705*** (0.02674)
Profitability		0.00319 (0.01324)
Book-to-Market		0.00086 (0.00527)
Momentum		0.01932** (0.00870)
Constant	-0.30718*** (0.03900)	-0.36456*** (0.09194)
Sector dummies	Yes	Yes
Adj. R^2	0.132	0.159
Nr. Data Points	2341	2341

This table presents regression results examining the impact of CSR quartiles on firms' stock returns during the 2022 market downturn. Dummy variables for CSR quartiles replace the linear CSR measure that I use in Table 3. Regression estimates of CSR quartiles and control variables are presented. Sector dummies are included in the regression. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

Sector Analysis

Different sectors were affected differently during the market downturn in 2022. Therefore, I examine descriptive statistics for each of the 16 individual NAICS sectors. Table 9 in the appendix presents the results for each sector. *Crisis-Period Return* varies significantly across the sectors as the mean *Crisis-Period Return* for Educational Services is -10.4% while it is -40.0% for Information. Educational Services suffered relatively little, indicating the stable demand for education even during economic downturns. The poor performance of the Information sector could be due to its heavy exposure to growth stocks. During economic downturns, investors tend to rotate their investments away from growth stocks and into value stocks. As for the other sectors, their *Crisis-Period Return* lie in the range -13.7% to -34.0%.

Analyzing *Total CSR*, I find that Support and Waste Services had the highest rating going into the market downturn in 2022 (54.0) while Finance and Insurance had the lowest rating (36.2).

Furthermore, I analyze the impact of CSR on stock returns for each individual sector with the full regression model (2). However, as the sector dummies are used to divide the data into subsets based on sector belonging, I here omit the sector dummies in the regression model. Table 10 in the appendix presents the results. Notably, CSR only has a significant impact on stock returns in three sectors (Professional, Scientific, and Technical Services; Utilities; Health Care and Social Assistance). For Utilities, the relationship is negative. Overall, the sector-specific regression results indicate that the impact of CSR on stock returns during the market downturn in 2022 was only significant for a few industries. Since the impact of CSR on stock returns is only weakly significant in the full regression model that includes all sectors (see column (2) Table 3), the weak sector-specific results are not unexpected.

Covid-19 crash

Descriptive Statistics

Table 5 presents descriptive statistics for all variables included in the regression. For *Total CSR*, the mean score is 40.406, which is slightly lower than the 2022 downturn's mean of 43.705. The difference tells us that average *Total CSR* was higher at the conclusion of fiscal year 2021 compared to average *Total CSR* at the conclusion of fiscal year 2019. The increase in average *Total CSR* from 2019 to 2021 could be a direct consequence of the pandemic and the heightened interest in CSR among stakeholders it prompted (Kee-Hong et al. (2021)). The standard deviation for *Total CSR* is 19.999, which is close to that of the 2022 market downturn (19.829). *Crisis-Period Return* has a mean of -41.9%, significantly more negative than the -26.3% that I observe during the 2022 downturn. This reflects the more severe impact of the Covid-19 crash on firm performance. The median return of -41.3% and the 25th percentile return of -51.8% further illustrate the Covid-19 crash's effect on firm performance, as compared to the median return of -26.7% and 25th percentile return of -43.4% during the market downturn in 2022. Table 5 also shows descriptive statistics for control variables. I present the correlation matrix for all variables in Table 6.

Table 5: Descriptive Statistics for Variables During the Covid-19 crash

	Mean	St. Dev.	25th perc.	Median	75th perc.
Total CSR	40.406	19.999	26.197	36.791	53.884
Crisis-Period Return	-0.419	0.152	-0.518	-0.413	-0.317
Long-Term Debt	0.237	0.232	0.021	0.204	0.373
Short-Term Debt	0.029	0.082	0.000	0.003	0.023
Cash Holdings	0.157	0.229	0.010	0.053	0.197
Profitability	0.008	0.263	0.008	0.032	0.075
Book-to-Market	0.458	0.618	0.164	0.361	0.631
Momentum	0.148	0.560	-0.086	0.079	0.292

This table presents the descriptive statistics for variables analyzed during the Covid-19 crash. The variables include Total CSR, Crisis-Period Return, Long-Term Debt, Short-Term Debt, Cash Holdings, Profitability, Book-to-Market, and Momentum. The table reports the mean, standard deviation (SD), 25th percentile, median, and 75th percentile for each variable.

Table 6: Correlation Matrix for Variables During the Covid-19 crash

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Total CSR	1.0							
(2) Crisis-Period Return	0.007	1.0						
(3) Long-Term Debt	0.184	-0.192	1.0					
(4) Short-Term Debt	0.022	-0.073	-0.026	1.0				
(5) Cash Holdings	-0.188	0.215	-0.224	-0.077	1.0			
(6) Profitability	0.136	-0.014	0.056	-0.005	-0.341	1.0		
(7) Book-to-Market	-0.025	-0.141	-0.098	0.155	-0.218	0.028	1.0	
(8) Momentum	-0.049	0.059	0.012	0.025	0.175	-0.156	-0.210	1.0

This table presents the correlation matrix for variables analyzed during the Covid-19 crash. The variables include Total CSR, Crisis-Period Return, Long-Term Debt, Short-Term Debt, Cash Holdings, Profitability, Book-to-Market, and Momentum. Each cell shows the correlation coefficient between the variables.

Regression results

I present the results from the basic regression model (1) in column (1) in Table 7. A one-point increase in *Total CSR* is associated with a non-significant increase in *Crisis-Period Return* of 0.003 percentage points and a one standard deviation increase in *Total CSR* (19.999) results in a 0.060 percentage points increase in *Crisis-Period Return*, suggesting that investors did not value CSR ratings during the Covid-19 crash.

Table 7: Stock Returns and CSR for the Covid-19 Crash

	(1) Crisis period Basic Regression	(2) Crisis period Full Regression	(3) Post-crisis period Basic Regression	(4) Post-crisis period Full Regression
Total CSR	0.00003	-0.00030	-0.00058	0.00020
	(0.00017)	(0.00022)	(0.00046)	(0.00061)
Size		0.01356***		-0.02158***
		(0.00276)		(0.00764)
Long-Term Debt		-0.10220***		0.22346***
		(0.01580)		(0.04020)
Short-Term Debt		-0.12218***		0.26176**
		(0.03988)		(0.10801)
Cash Holdings		0.09829***		-0.01953
		(0.01808)		(0.04971)
Profitability		0.02173		-0.03049
		(0.01325)		(0.03658)
Book-to-Market		-0.01538***		0.06226***
		(0.00571)		(0.01651)
Momentum		-0.00072		0.00716
		(0.00601)		(0.01661)
const	-0.55712***	-0.79030***	1.05473***	1.34309***
	(0.02347)	(0.05926)	(0.06285)	(0.16406)
Sector dummies	Yes	Yes	Yes	Yes
Adj. R^2	0.081	0.141	0.091	0.119
Nr. Data Points	1973	1973	1969	1969

This table presents regression results examining the impact of Total CSR on firms' stock return during the Covid-19 crash and the post-crisis period. Regression estimates of Total CSR and control variables are presented. Sector dummies are included in the regression. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

I observe similar, non-significant, results (presented in column (2) in Table 7) when I use my full regression model (2). A one-point increase in *Total CSR* is associated with a decrease in *Crisis-Period Return* of 0.03 percentage points and a one standard deviation increase in *Total CSR* (19.999) results in a 0.60 percentage points decrease in *Crisis-Period Return*. The coefficient for *Total CSR* is negative, however, the non-significant result does not allow me to reject the null hypothesis that CSR rating has no effect on stock return. This result reinforces my findings from the basic regression model (column (1) Table 7) that investors did not value firms' CSR ratings during the Covid-19 crash.

Analyzing the control variables, a one-standard-deviation increase in *Long-Term Debt*

(0.232) and *Short-Term Debt* (0.082) results in a change in *Crisis-Period Return* of -2.37 and -1.00 percentage points. Based on these numbers, I infer that debt affected firm's stock returns negatively during the Covid-19 crash, just as it did for the market downturn in 2022. However, as opposed to the market downturn in 2022, *Cash Holdings* had a positive impact on *Crisis-Period Return* during the Covid-19 crash. A one-standard-deviation increase in *Cash Holdings* (0.229) leads to a 2.25 percentage points increase in *Crisis-Period Return*. These results underscore the heightened value of liquidity (positive impact of cash) and increased risk perception (negative impact of debt) during the pandemic.
Columns (3) and (4) in Table 7 show the results from the re-estimated model in which I use Crisis-Period Return for the post-crisis period (March 24, 2020–June 8, 2020). Both the results from the basic regression model and the full regression model indicate that CSR had a non-significant impact on firm performance during the post-crisis period.

Lastly, I replace the linear CSR measure with CSR quartiles and re-run both regression models ((1) and (2)). Table 8 presents the results. The results from the full regression model (column (2)) show that, contrary to the hypothesis that a high CSR rating increases firm performance, stock returns decrease for higher CSR quartiles. However, the results from the basic regression model (column (1)) indicate the opposite relationship between stock returns and CSR quartiles. Similarly to the results presented in Table 7, the regression results with CSR quartiles indicate a mixed but non-significant relationship between the CSR rating of a firm and its performance during the Covid-19 crash.

In total, my regression results align with the results obtained by Kee-Hong et al. (2021) for the Covid-19 crash. Similarly to me, they find that CSR had no significant impact on firm performance during the Covid-19 crash. While the quartiles-based approach is an extension of the study by Kee-Hong et al. (2021), it aligns with the conclusion that CSR ratings did not have an impact on firm performances during the Covid-19 crash. The results for the Covid-19 crash contrast with my results from the market downturn in 2022 and the findings by Lins et al. (2017) who find that CSR had a positive and significant effect on stock returns during both the financial crisis of 2008/2009 and the Enron/Worldcom crisis of the early 2000s.

Table 8: Stock Returns and CSR Quartiles During the Covid-19 Crash

	(1) Basic Regression	(2) Full Regression
CSR 2nd Quartile	-0.00883 (0.00930)	-0.01054 (0.00908)
CSR 3rd Quartile	-0.00759 (0.00938)	-0.01099 (0.00972)
CSR 4th Quartile	-0.00411 (0.00948)	-0.02140* (0.01165)
Size		0.01389*** (0.00268)
Long-Term Debt		-0.10193*** (0.01582)
Short-Term Debt		-0.12147*** (0.0399)
Cash Holdings		0.09773*** (0.01806)
Profitability		0.02166 (0.01326)
Book-to-Market		-0.01536*** (0.00572)
Momentum		-0.00077 (0.00600)
const	-0.55028*** (0.02311)	-0.79848*** (0.06011)
Sector dummies	Yes	Yes
Adj. R^2	0.081	0.141
Nr. Data Points	1973	1973

This table presents regression results examining the impact of CSR quartiles on firms' stock return during the Covid-19 crash. Dummy variables for CSR quartiles replace the linear CSR measure that I use in Table 7. Regression estimates of CSR quartiles and control variables are presented. Sector dummies are included in the regression. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

Sector Analysis

I present a sector-specific analysis of descriptive statistics in Table 11. Notably, Accommodation and Food Services was affected the most with a *Crisis-Period Return* of -55.6%, explained by closures mandated by government restrictions and reduced travels during the Covid-19 crash. Similarly to the market downturn in 2022, Educational Services faired the best (-32.4%) during the Covid-19 crash.

Table 12 presents sector-specific regression results. I note that the only sectors in which CSR had a significant impact on stock returns are Retail Trade and Other Services. However, the estimated CSR coefficients for these two sectors are only significant at the 10% level. Overall, the non-significant sector-specific results align with the lack of statistical significance I find in the full regression model when all sectors are included.

Robustness Tests

In this section, I focus on various implementations of robustness checks for the main findings. Firstly, it is of interest to test whether the results that I obtain differ depending on the CSR measure that I use. Therefore, I test whether specific components of the CSR measure had a significant impact on stock returns during the market downturn in 2022 and the Covid-19 crash. The five metrics that I choose to include in my aggregate CSR measure cover a broad spectrum of CSR activities and provide me with an overall assessment of the firm's CSR commitment. However, some of the activities could be especially important in building trust among stakeholders and yielding positive stock returns. Therefore, I decompose *Total CSR* into two subcategories, *Internal Stakeholders CSR* and *External Stakeholders CSR*. *Internal Stakeholders CSR* consists of measurements of Policy Diversity and Opportunity Score and Workforce Score and concern CSR metrics aimed at internal stakeholders. *External Stakeholders CSR* is an aggregate measure of Community Score, Environmental Pillar Score and Human Rights Score and address external stakeholders. With the new CSR scores, I use the full regression model (2) to test the relationship between CSR and stock returns. Table 13 in the appendix presents the results for the two economic downturns. For the market downturn in 2022, I note that the coefficients for both *Internal Stakeholders CSR* and *External Stakeholders CSR* are positive and significant at the 10% level, similarly to the main findings in Table 3. A one-point increase *Internal Stakeholders CSR* leads to a 0.06 percentage point increase in *Crisis-Period Return* and a one-point increase in *External Stakeholders CSR* leads to a 0.05 percentage point increase in *Crisis-Period Return*, indicating that they were of similar significance. As for the Covid-19 crash, neither *Internal Stakeholders CSR* nor *External Stakeholders CSR* had a significant impact on stock returns. This, once again, aligns with the main findings presented in Table 7. Thus, I conclude that a focus on either internal or external stakeholders was of equal significance, or non-significance, to investors during the market downturn in 2022 and the Covid-19 crash.

Next, I want to test whether my main findings are robust to the inclusion of smaller firms (I here include firms with market capitalization below $250 million). I run my full regression model (2) on this new dataset for both the market downturn in 2022 and the Covid-19 crash.

Table 14 in the appendix presents the regression results. As I include low-market cap firms, the impact of CSR on stock return is still positive and significant for the market downturn in 2022. A one-point increase in *Total CSR* leads to a 0.059 percentage point increase in *Crisis-Period Return*. Regarding the Covid-19 crash, including low-market cap firms still results in a non-significant estimate of *Total CSR*. In summary, the main results are robust to the inclusion of low-market cap firms.

Lastly, I test the robustness of my main findings by varying the point in time at which I obtain CSR measures of the firms. I argue that I want to use CSR measures that had been updated as recently as possible prior to the onset of the economic downturns. This means that I obtain CSR measures at the conclusion of the fiscal year 2021 for the market downturn in 2022 and at the conclusion of the fiscal year 2019 for the Covid-19 crash. However, as outlined by Lins et al. (2017), firms may anticipate economic downturns and thus adjust their CSR engagement as a response. The results that I report could be biased if there is a correlation between those firms that managed to readjust their CSR prior to the crisis and those firms that handled the crisis well. It is unlikely that firms anticipated the Covid-19 crash at the conclusion of the fiscal year 2018, one year before the onset of the crash, due to its unexpected nature. I nonetheless present the results from my full regression model (2) with CSR measures collected at the conclusion of the fiscal year 2018 in Table 15 in the appendix. The estimated coefficient of *Total CSR* is still non-significant for the Covid-19 crash. It is more likely that managers anticipated the market downturn in 2022 one year in advance due to the risk of inflationary pressures from the extensive stimulus packages implemented in the wake of the Covid-19 crash. The estimated coefficient of *Total CSR* (seen in Table 15 in the appendix) is positive but non-significant for the market downturn in 2022 when I measure CSR at the conclusion of the fiscal year 2020 instead of 2021. The non-significant results contrast with my findings in the main regression (see Table 3), suggesting that the relationship between CSR and stock returns for the market downturn in 2022 is sensitive to the year in which the CSR measure is obtained. One aspect needs to be considered; Kee-Hong et al. (2021) note that the Covid-19 crash led to heightened interest in CSR among stakeholders. I substantiate this by calculating the correlation coefficients of *TotalCSR* across consecutive years - 2020-2021: 0.920, 2021-2022: 0.927 and 2022-2023: 0.944. The correlation coefficients indicate that managers changed their CSR commitments more between the years 2020-2021 and 2021-2022 compared to 2022-2023. Thus, it is plausible that the apparent lack of correlation between CSR measures from the conclusion of fiscal year 2020 and stock returns during the 2022 market downturn isn't solely attributable to managers anticipating the downturn, but rather that it reflects changing CSR behavior as an effect of the Covid-19 crash.

Comparison of economic downturns

I find that CSR had a significant impact on stock returns during the 2022 market downturn, albeit weak and not consistent across all robustness checks, which contrasts with the non-significant result that I observe for the Covid-19 crash.

One factor that I need to consider is if the market downturn in 2022 led to a true ex-

ogenous shock to the level of trust in the economy. The Covid-19 crash presents me with a clear exogenous event as the pandemic led to an unexpected increase in demand for CSR (Kee-Hong et al. (2021)). The characterization of the 2022 downturn as exogenous shock to trust levels is not as clear. By using an economic downturn as a natural experiment, I am able to bypass endogeneity concerns that complicate discerning the actual impact of CSR activities on firm value. Economic downturns disrupt the existing equilibrium level of trust without altering CSR levels in the short term, allowing me to assess how investors adjust their valuations based on firms' CSR stances. This framework mirrors the approach that Lins et al. (2017) implement when they analyze the 2008/2009 financial crisis. For me to be able to draw similar conclusions about exogeneity for the market downturn in 2022, I need to substantiate the claim that the market downturn in 2022 truly disrupted the equilibrium level of trust. The 2023 Edelman Trust Barometer indicates that the overall trust in the world economy declined significantly from 2022 to 2023 with 24 out of 28 countries with trust levels at an all-time low. This suggests a widespread disruption of trust due to an exogenous shock. I substantiate my second claim, that CSR levels remained fixed, by noting that the correlation coefficient for *TotalCSR* between 2022 and 2023 is 0.944. Thus, I infer that the differing results between the two economic downturns are not due to the market downturn in 2022 failing to act as an exogenous shock to trust levels in the economy.

Given the alignment of my findings with those of Kee-Hong et al. (2021) regarding the Covid-19 crash and the similarities between my results for the 2022 market downturn and those of Lins et al. (2017) for the 2008/2009 financial crisis, I investigate whether the characteristics of these economic downturns explain the differing results between the market downturn in 2022 and the Covid-19 crash. One potential explanation for the diverging results is the distinct temporal characteristics of the two economic downturns. The Covid-19 crash only lasted for 33 days (March 24, 2020–June 8, 2020) compared to 281 days for the market downturn in 2022 (January 4, 2022–October 12, 2022). Lins et al. (2017) define the financial crisis of 2008/2009 to have lasted for 240 days (August 1, 2008–March 31, 2009). I note the similar duration of the market downturn in 2022 and the financial crisis of 2008/2009, both of which showed a significant impact of CSR on firm performance. This contrasts with the Covid-19 crash in which the S&P 500 dropped more than 20% from its peak in just 22 days, making it the quickest decline into bear market territory ever recorded. H. Kim, T. Kim, Y. Kim, and Park (2019) find that longer investment horizons are positively related to CSR, indicating that CSR is perceived as a long-term investment metric. Thus, considering the prolonged nature of both the market downturn in 2022 and the financial crisis of 2008/2009, investors likely placed a higher value on CSR during these economic downturns compared to the Covid-19 crash, where short-term metrics held greater importance due to its brevity. (see control variables in column (2) in Table 7). Fig 2 in the appendix highlights the difference in the duration of the market downturn in 2022, the financial crisis of 2008/2009 and the Covid-19 crash.

6. Conclusion

My paper examines the relationship between social capital, measured by CSR, and stock returns during two economic downturns, the market downturn in 2022 and the Covid-19 crash in 2020. I find no evidence that CSR influenced firm performance during the Covid-19 crisis, and this finding remains consistent across various robustness tests. However, for the market downturn in 2022, I find weak evidence suggesting that CSR had a positive impact on stock returns. As the results differ across the two economic downturns, I argue that the characteristics of the economic downturn play a major role in determining the impact of CSR on firm performance. The duration of the economic downturn needs to be considered when reflecting on the importance of CSR during times of economic crisis. Overall, my findings underscore the ambiguous impact of CSR on firm performance when overall trust is low. This contrasts with the prevailing view in the literature, which suggests that firms should enhance social capital to safeguard themselves during market downturns. I challenge the unequivocal perception that social capital offers protective power during market downturns, highlighting that a contextualized and situation-specific approach is needed to determine the impact of CSR on firm performance.

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Appendix

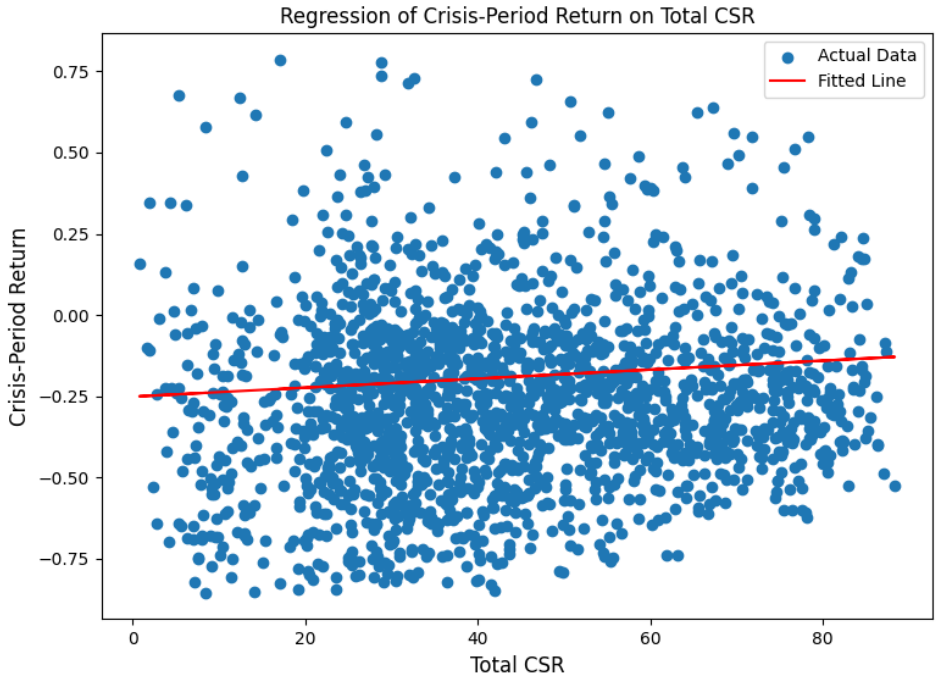


Figure 1: Illustration of Potential Relationship Between Stock Returns and CSR During the 2022 Market Downturn

This figure shows a scatterplot of stock returns and CSR ratings for the market downturn in 2022. The red line is a fitted regression line.

Table 9: Sector-Specific Average CSR Rating, Stock Returns, and Number of Firms 2022

Sector	Total CSR	Crisis-Period Return	Number of Firms
Manufacturing	47.86986	-0.2803	730
Transportation and Warehousing	49.70855	-0.17664	62
Professional, Scientific, and Technical Services	38.40433	-0.34049	261
Utilities	50.14839	-0.13709	66
Mining, Quarrying, and Oil and Gas Extraction	46.01368	-0.31036	77
Wholesale Trade	44.51084	-0.14485	63
Information	41.05512	-0.4003	200
Finance and Insurance	36.20554	-0.20021	425
Retail Trade	44.38856	-0.30591	110
Educational Services	36.33959	-0.10401	13
Real Estate and Rental and Leasing	47.10841	-0.32451	163
Health Care and Social Assistance	41.60257	-0.28601	42
Support and Waste Services	54.03616	-0.20822	32
Other Services (except Public Administration)	38.66914	-0.29301	11
Construction	44.52816	-0.32718	42
Accommodation and Food Services	50.04892	-0.26559	44

This table presents the mean value of *Total CSR* and *Crisis-Period Return* during the 2022 market downturn for the 16 different NAICS sectors.

Table 10: Sector-specific Stock Returns and CSR During the 2022 Market Downturn

Sector	CSR
Manufacturing	0.00045 (0.00070)
Transportation and Warehousing	-0.00139 (0.00231)
Professional, Scientific, and Technical Services	0.00264** (0.00128)
Utilities	-0.00270** (0.00127)
Mining, Quarrying, and Oil and Gas Extraction	-0.00183 (0.00218)
Wholesale Trade	0.00150 (0.00197)
Information	0.00193 (0.00118)
Finance and Insurance	0.00093 (0.00068)
Retail Trade	-0.00213 (0.00164)
Educational Services	-0.00117 (0.00461)
Real Estate and Rental and Leasing	0.00080 (0.00100)
Health Care and Social Assistance	0.00742* (0.00387)
Administrative and Support Services	-0.00377 (0.00332)
Other Services (except Public Administration)	0.00299 (0.01049)
Construction	0.00101 (0.00401)
Accommodation and Food Services	-0.00273 (0.00166)
Sector dummies	No
Control variables	Yes

This table presents regression results examining the impact of Total CSR on firms' stock returns during the 2022 market downturn for the 16 different NAICS sectors. Coefficient estimates on CSR ratings for the 16 sectors are presented. All regressions include control variables as specified by (2) with the exception of sector dummies. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

Table 11: Sector-Specific Average CSR Rating, Stock Returns, and Number of Firms Covid 19

Sector	Average CSR Rating	Average Return	Number of Firms
Retail Trade	42.73071	-0.43633	91
Manufacturing	44.49387	-0.34947	641
Mining, Quarrying, and Oil and Gas Extraction	43.46347	-0.49976	60
Educational Services	36.0883	-0.32355	11
Information	35.78135	-0.35851	147
Finance and Insurance	33.20161	-0.44219	374
Professional, Scientific, and Technical Services	38.12275	-0.37986	168
Transportation and Warehousing	41.04039	-0.44238	57
Administrative and Support Services	45.24615	-0.42911	31
Wholesale Trade	37.44182	-0.39645	53
Real Estate and Rental and Leasing	43.90456	-0.49025	150
Health Care and Social Assistance	33.99321	-0.43822	36
Utilities	47.19776	-0.34985	62
Construction	37.47513	-0.48467	37
Accommodation and Food Services	45.65797	-0.55566	43
Other Services (except Public Administration)	34.3772	-0.47201	12

This table presents the mean value of *Total CSR* and *Crisis-Period Return* during the Covid-19 crash for the 16 different NAICS sectors.

Table 12: Sector-specific Stock Returns and CSR During the Covid-19 Crash

Sector	CSR
Retail Trade	-0.00302* (0.00154)
Manufacturing	0.00003 (0.00038)
Mining, Quarrying, and Oil and Gas Extraction	-0.00309 (0.00203)
Educational Services	0.00367 (0.00537)
Information	0.00009 (0.00079)
Finance and Insurance	-0.00023 (0.0005)
Professional, Scientific, and Technical Services	-0.00044 (0.00058)
Transportation and Warehousing	0.00181 (0.00231)
Administrative and Support Services	0.00127 (0.00148)
Wholesale Trade	-0.00041 (0.00136)
Real Estate and Rental and Leasing	0.00026 (0.00065)
Health Care and Social Assistance	-0.00156 (0.00196)
Utilities	0.00030 (0.00068)
Construction	-0.00007 (0.00180)
Accommodation and Food Services	0.00056 (0.00156)
Other Services (except Public Administration)	-0.00737* (0.00308)
Sector dummies	No
Control variables	Yes

This table presents regression results examining the impact of Total CSR on firms' stock returns during the Covid-19 crash for the 16 different NAICS sectors. Coefficient estimates on CSR ratings for the 16 sectors are presented. All regressions include control variables as specified by (2) with the exception of sector dummies. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

Table 13: Stock Returns and Disaggregated CSR

	Downturn 2022	Covid-19 crash
Int. Stakeholder CSR	0.00062*	-0.00013
	(0.00033)	(0.00018)
Ext. Stakeholder CSR	0.00050*	-0.00029
	(0.00030)	(0.00019)
Control variables	Yes	Yes
Sector dummies	Yes	Yes

This table presents regression results examining the impact of disaggregated CSR on firms' stock returns during the market downturn in 2022 and the Covid-19 crash. Coefficient estimates of Internal stakeholders CSR and External stakeholders CSR are presented. All regressions include control variables as specified by (2). Sector dummies are included in the regressions. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

Table 14: Stock Returns and CSR Without Market Cap Threshold

	Downturn 2022	Covid-19
Total CSR	0.00059*	-0.0001
	(0.00036)	(0.00021)
Control variables	Yes	Yes
Sector dummies	Yes	Yes

This table presents regression results examining the impact of CSR on firms' stock return during the market downturn in 2022 and the Covid-19 crash. Companies with a market capitalization below $250 million are included. Coefficient estimates of CSR are presented. Both regressions include control variables as specified by (2). Sector dummies are included in the regressions. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

Table 15: Stock Returns and CSR the Previous Year

	Downturn 2022	Covid-19
Total CSR	0.00052	-0.00035
	(0.00036)	(0.00022)
Control variables	Yes	Yes
Sector dummies	Yes	Yes

This table presents regression results examining the impact of CSR on firms' stock return during the market downturn in 2022 and the Covid-19 crash. CSR is measured one year prior to the year of the crisis (market downturn in 2022: conclusion of the fiscal year 2020, Covid-19 crash in 2020: conclusion of the fiscal year 2018). Coefficient estimates of CSR are presented. Both regressions include control variables as specified by (2). Sector dummies are included in the regressions. Standard errors are presented in the parentheses. ***, **, and * denote that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels respectively.

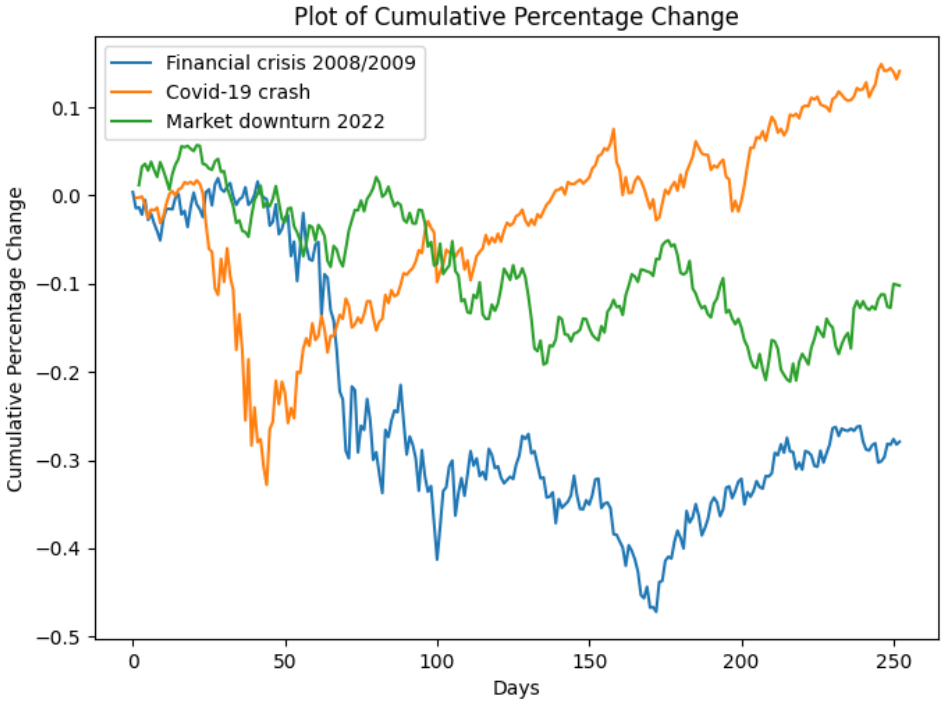


Figure 2: Cumulative Returns During Three Economic Downturns
This figure plots the cumulative return of the S&P 500 index during the financial crisis of 2008/2009, the Covid-19 crash and the market downturn in 2022. The starting date is one month prior to the onset of each economic downturn and the ending date is 250 trading days after the onset of the economic downturn.