

Corporate Social Responsibility (CSR) and Firm Features in the immediate aftermath of the COVID-19 Pandemic

C.N.V. Krishnan * and Xiyao Tan ¹

Abstract:

We examine the relationships between key firm features and their Corporate Social Responsibility (CSR) scores in the context of the COVID-19 pandemic and its aftermath. The pandemic created a unique environment that might have altered investor expectations, CSR priorities, and corporate strategies. We examine scores for (a) energy and water; (b) ethics, customer service, and labor; and (c) governance, as well as the (d) aggregate CSR score, and find that large market-cap and profitable firms are significantly associated with higher CSR energy and water management scores, CSR governance scores, and with higher CSR overall scores. This implies that these firms make these CSR investments, perhaps because of public scrutiny. However, these investments do not appear to lead to significant changes in key financial features such as market cap or Market Value of Equity (MVE), profitability as measured by Return on Assets (ROA), or growth (or the lack thereof) as measured by Book-to-Market ratio (BTM), at least in the short run suggesting that CSR benefits may be more strategic.

Keywords:

Corporate Social Responsibility (CSR); CSR energy and water score; CSR ethics; customer service; and labor score; CSR governance score; firm features; Market Value of Equity (MVE); Return on Assets (ROA); Book-to-Market ratio (BTM); CSR investments; COVID shock.

1. Introduction

Using comprehensive data over the years 2021 through 2023, we examine the relationships between key firm features and Corporate Social Responsibility (CSR) investments they make, measured by various CSR scores. We examine the separate CSR scores for (a) energy and water, (b) ethics, customer service, and labor, and (c) governance, as well as the aggregate CSR score - CSR Overall defined as the sum of the three CSR energy and water, CSR ethics, customer, and labor, and CSR governance. Our objective is to understand which firms make the CSR investments, and what are the outcomes for the firms.

Several papers have examined different aspects of CSR investments made by firms. Makridou, Doumpas, and Lemonakis (2021) found that energy management practices are increasingly valued by stakeholders, with positive impacts on firms' long-term valuation, despite initial costs. The study emphasizes the value of sustainable practices in building resilience in volatile markets. Eccles et al. (2014) found that firms with high energy-management scores tend to have lower operational costs and improved long-term financial performance, linking energy efficiency to competitive advantage and sustainability in resource-intensive industries. Delmas and Pekovic (2013) studied the relationship between environmental practices, including energy management, and productivity. Their results indicate that firms prioritizing energy management experience greater operational efficiency and enhanced reputations, which can translate into higher profitability.

¹ Case Western Reserve University

* Correspondence: cnk2@case.edu

¹ xxt187@case.edu

Edmans (2011) found that companies with high employee satisfaction outperformed others in stock returns, underscoring the value of fair labor practices in enhancing shareholder wealth. The study emphasizes labor practices as a strategic asset for corporate success. Lins, Servaes, and Tamayo (2017) observe that ethical governance and compliance practices bolster firm performance, especially during economic downturns. Ethical behavior is associated with greater investor trust and can be a safeguard during periods of financial instability.

Cavusoglu et al. (2004) investigated the impact of data breaches on firm market value, revealing a significant negative impact when customer data becomes compromised. This underscores the financial risks tied to inadequate data security practices. Acquisti, Brandimarte, and Loewenstein (2015) analyzed consumer reactions to privacy concerns, showing that firms with higher data privacy standards retain customer trust and loyalty. This highlights data security as essential for maintaining a competitive edge in customer satisfaction. Gordon, Loeb, and Zhou (2011) examined the impact of cybersecurity investments on firm value, finding that firms with high data security standards face lower costs from breaches and maintain customer trust, enhancing firm reputation and loyalty.

Acquisti, Taylor, and Wagman (2016) explored how strong data privacy practices influence consumer behavior, showing that companies with high data security scores retain better customer loyalty and suffer fewer financial impacts from breaches. Romanosky, Hoffman, and Acquisti (2014) analyzed cyber event disclosures, concluding that firms with proactive data security measures are less susceptible to legal penalties and market backlash, linking strong data security practices to firm value protection. Edmans (2011) finds that companies prioritizing employee satisfaction see improved stock performance, suggesting that fair labor practices positively correlate with long-term financial success.

Bae, Kang, and Wang (2011) analyzed the effects of labor practices on firm performance, showing that strong employment practices correlate with higher employee satisfaction and lower turnover, which positively impact productivity and profitability. Edmans (2011) demonstrated that companies with positive labor practices tend to outperform peers in long-term stock returns, supporting the idea that labor scores are valuable indicators of firm resilience and growth potential.

Carter et al. (2010) demonstrate that diverse boards improve decision-making, which can lead to better ESG outcomes and enhance overall governance quality. The presence of a diverse board composition is associated with stronger firm performance. Hartzell and Starks (2003) suggest that linking executive compensation to ESG metrics can incentivize sustainable practices. Bebchuk's (2004) seminal work investigates how executive compensation is often not tied to firm performance, focusing on the misalignment between executive pay and shareholder value. The authors argue that excessive executive compensation may be driven by weak governance structures and the influence of executives on the compensation-setting process. Frydman (2010) study uses historical data to examine trends in executive compensation over a period of 70 years. It finds that while the pay-performance relationship has strengthened over time, compensation growth has outpaced firm performance, highlighting that increasing compensation is not always aligned with firm outcomes.

Bergstresser (2006) explores the relationship between executive compensation and earnings management. It finds that executives with compensation structures heavily reliant on stock options are more likely to engage in earnings manipulation to meet performance targets, highlighting potential negative effects of poorly designed compensation packages. Bebchuk et al. (2009) show that stronger shareholder rights are correlated with better corporate governance, which supports higher firm value. Bebchuk, Cohen, and Ferrell (2009) analyzed the influence of shareholder rights on firm value, showing that stronger shareholder protections, reflected in high shareholder rights scores, often correlate with better financial performance and reduced agency conflicts. Gompers, Ishii, and Metrick (2003) examined the "Governance Index" and found that companies with more

robust shareholder rights tend to have higher market valuations and profitability, linking strong governance practices with firm stability. 95
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Aggarwal, Erel, Stulz, and Williamson (2009) found that firms in countries with strong shareholder rights structures often benefit from lower capital costs, as shareholders' influence over key decisions aligns corporate strategies with long-term growth goals. Simunic and Stein (1996) find that strong auditing reduces the likelihood of financial misreporting, thereby building investor confidence and promoting sustainable firm performance. Carcello et al. (2011) examined the relationship between audit quality and corporate governance, finding that firms with strong governance and high audit scores are less likely to face financial misreporting issues, thus bolstering investor confidence and firm valuation. DeFond and Zhang (2014) reviewed the significance of audit quality, noting that high audit scores reduce agency costs and improve transparency, particularly in large, public firms where governance plays a crucial role. Cheng, Dhaliwal, and Zhang (2013) explored audit scores in the context of firm risk, concluding that stronger audit practices, measured by audit scores, mitigate risk and align financial reporting with regulatory standards. 97
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Overall, Friede, Busch, and Bassen (2015) aggregate findings from over 2,000 studies and conclude that CSR investments positively impact firm valuation, especially in large-cap firms, due to their greater visibility and regulatory pressure. Khan, Serafeim, and Yoon (2016) report that CSR activities related to material issues, specific to industry sectors, have a positive impact on profitability, particularly in firms where CSR activities are aligned with core business operations. Dhaliwal et al. (2011) found that firms with high CSR disclosure practices tend to have a lower book to market ratio, suggesting that investors may assign a premium to companies with strong CSR initiatives due to perceived future growth and lower risk profiles. Lins, Servaes, and Tamayo (2017) explored the financial value of CSR during crisis periods and observed that firms with high CSR scores had higher valuation multiples (and lower book to market ratios) during financial downturns, indicating CSR's role in enhancing firm resilience. Ameer and Othman (2012) found that CSR investments are linked to higher profitability, especially in sectors sensitive to public perception. Firms with larger market caps were more likely to invest in CSR, suggesting an alignment between CSR activities and firm resources. Choi, Kwak, and Choe (2010) analyzed the book-to-market ratio and CSR scores, finding that firms with lower book-to-market ratios are more engaged in CSR, suggesting that high market valuation firms often prioritize sustainability. In a recent paper, Bhagawan and Mukhopadhyay (2023) examine the impact of mandatory CSR spending on firm value (Tobin's Q) in the Indian context, and find that mandatory CSR spending has a positive and statistically significant impact on firm value, especially for firms with higher information asymmetry problem and lower institutional holdings. 111
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Thus, several papers in the extant literature have examined firm investments in energy and water; in ethics, customer service, and labor; and in governance, and have generally found positive effects of these investments on firm market share or profitability or other features. In this paper, we examine the most recent data (2021-2023) to provide an updated perspective on CSR investments' relationship with firm characteristics in the context of the COVID-19 pandemic and its aftermath. The pandemic created a unique environment that might have altered investor expectations, CSR priorities, and corporate strategies. 133
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The COVID-19 pandemic can significantly influence corporate social responsibility (CSR) and its relationship with financial performance. Xia et al. (2021) explore how firms with strong CSR practices can be more resilient to stock market shocks during the COVID-19 crisis. Companies with better CSR performance tended to have more stable stock returns, supporting the notion that CSR can be tied to investor trust, especially in times of economic uncertainty. Kotsantonis et al. (2020) examine whether CSR activities act as a 141
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protective shield during the COVID-19 pandemic, finding that high CSR scores were associated with a lesser decline in firm value during the market downturn. This suggests that firms with higher CSR scores might maintain investor confidence even during economic crises, supporting the idea that CSR activities contribute to continued higher market capitalization. Wang et al. (2020) examine the relationship between CSR and financial performance during the COVID-19 crisis, noting that while CSR investments may not immediately impact financial metrics, they can contribute to firms' long-term resilience and helped maintain investor confidence. Thus, pandemic disrupted financial markets, influencing how investors assess companies' financial health and long-term prospects. It heightened societal and investor focus on corporate social responsibility (CSR), as issues such as employee well-being, environmental sustainability, and governance became more critical in shaping corporate strategies. Firms with higher CSR scores could attract more investor interest due to their perceived resilience and responsible business practices during the crisis. This heightened scrutiny and investor preference may contribute to a positive relationship between CSR and market capitalization, as well as profitability. The pandemic's impact on consumer behavior and market expectations can also reinforce the value of such sustainable practices in attracting long-term investors.

Therefore, examining how the relationship between CSR investments and key firm features holds up in the post-pandemic context offers new insights into the effects of CSR investments after a significant global disruption, help validate previous findings using recent data, and show whether these relationships can be generalized across different market conditions.

We examine the relationships between key firm features and CSR scores for energy and water; ethics, customer service, and labor; and governance (proxying for investments in these areas), as well as the aggregate CSR score, and find that that large market-cap and profitable firms are significantly associated with higher CSR energy and water management scores, CSR governance scores, and with higher CSR overall scores. However, we find these investments do not appear to lead to significant changes in key financial features such as market cap or Market Value of Equity (MVE), profitability as measured by Return on Assets (ROA), or (the inverse of) growth options as measured by Book-to-Market ratio (BTM), at least in the short run (over our time period 2021-2023) suggesting that CSR benefits may be long-term and strategic.

2. Data, Variables, and Methodology

We obtain comprehensive data for the different (annual) CSR scores from Bloomberg and MSCI (Morgan Stanley Capital International) database for as many firms as we can, for the years 2021 through 2023. MSCI is a leading provider of global equity indices, widely used in the investment and financial sectors to measure and manage risk, as well as to assess the sustainability and governance practices of companies across different industries. The CSR scores are based on companies' reporting and disclosures, with MSCI incorporating sector-specific risks and opportunities into its scoring model. We matched these data to firm data from S&P's Compustat database for 2021 through 2023 also, to examine trends in firm characteristics and relate them to changing CSR scores over the same period, resulting in a final dataset of 255 companies based in the United States, with all the information we need (detailed below) for the years 2021, 2022 and 2023. This timeline allows us to analyze the relationship between CSR investments and key firm features immediately following the COVID-19 pandemic. The same companies are present in our final database every year; so it is a balanced sample. This list of companies is dominated by Software and Tech Services, or the HiTech industry (as classified in Kenneth French data library site, also called "Fama-French industry classification"), because these companies are often at the forefront of CSR and ESG activities due to their visibility, global impact, and regulatory environment, in the recent years.

Prior literature has found that the market capitalization, the book at market ratio, and the profitability as measured by the return on assets are important firm characteristics that can reflect managerial strategies' outcomes. Therefore, we used four firm characteristics:
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 (a) industry, the 4-digit SIC code;
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 (b) market value of equity (MVE), the market capitalization, a measure of presence in
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 the market that could influence its revenue streams, financing options, and brand recogni-
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 tion;
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 (c) the book-to-market ratio (BTM), a proxy for the (inverse of) growth prospects or
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 real option value of the firm (Tobin's Q); and
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 (d) return on assets (ROA), an accounting-based measure of operating performance
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 that focuses on profitability per dollar of assets, which is widely used in long-run perfor-
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 mance studies.
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MVE (market value of equity) is calculated by multiplying CSHO (shares outstanding)
 211 from annual Compustat, the net number of all common shares outstanding at year-
 212 end excluding treasury shares and scrip, with PRC (price) from CRSP, which is the closing
 213 price of the same day as the report date of CSHO. Book value of equity (BVE), which
 214 equals shareholders' equity + deferred taxes and investment tax credit - preferred/prefer-
 215 ence stock (capital) from annual Compustat. The book to market ratio (BTM), which is the
 216 BVE divided by the MVE as computed above. ROA (return on assets), every year, is cal-
 217 culated by dividing NI (net income) by AT (total assets), from annual Compustat. Industry
 218 is a 4-digit SIC code from Compustat.
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Our CSR data from MSCI database, where the definitions are all coded by MSCI, con-
 220 tains all relevant firm scores on the following metrics. MSCI evaluates CSR components
 221 based on sector-specific and region-specific standards, and it adjusts the weight and scale
 222 accordingly. For instance, environmental scores (energy, water) may be quantitatively
 223 measured, while governance factors (board composition, executive compensation) are of-
 224 ten rated on qualitative criteria like board diversity or structure.
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CSR Energy and Water Score

We define this as the sum of:

EMI (Energy Management Issue Score): Reflects a company's effectiveness in manag-
 228 ing energy use, focusing on energy conservation, renewable energy adoption, and carbon
 229 emissions reduction.
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H2O (Water Management Issue Score): Assesses a company's policies and actions re-
 231 lated to water management, including water conservation efforts, efficiency improve-
 232 ments, and handling of water-related risks.
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CSR Ethics, Customer, and Labor Score

We define this as the sum of:

ETH (Ethics and Compliance Score): Evaluates a company's ethical standards, anti-cor-
 236 ruption measures, and data privacy protocols, showing how robustly it upholds compli-
 237 ance, privacy, and integrity in its operations.
 238

CUST (Data Security and Customer Score): Measures a company's data security prac-
 239 tices, with a focus on protecting customer information, cybersecurity protocols, and re-
 240 sponse strategies for data breaches.
 241

LABOR (Labor and Employment Practices Score): Assesses a company's labor poli-
 242 cies, including diversity and inclusion, employee well-being, fair employment practices,
 243 and adherence to labor standards.
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<u>CSR Governance</u>	245																									
We define this as the sum of:	246																									
BOARD (Board Composition Score): Evaluates the diversity, independence, and expertise of board members, reflecting governance quality and potential effectiveness of corporate oversight.	247																									
EXEC (Executive Compensation Score): Measures the alignment of executive compensation with company performance, considering incentives, equity in pay, and support for long-term value creation.	250																									
SHARE (Shareholder Rights Score): Examines the governance framework protecting shareholder rights, such as voting mechanisms, board accountability, and shareholder engagement policies.	253																									
AUDIT (Audit Score): Assesses the strength of a company's audit practices and internal controls, indicating the quality of oversight and transparency in financial reporting.	256																									
<i>Descriptive Statistics</i>	258																									
We start by examining the descriptive statistics of the various CSR scores that we collected, and the various firm features associated with these scores year by year for 2021, 2022 and 2023. Table 1 reports the descriptive statistics (the mean, median, and standard deviation (SD)) of the overall CSR score and its components.	259																									
Table 1. Descriptive Statistics of CSR scores	263																									
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The table shows that the CSR energy and water scores are stable year after year, with low variability, while the CSR governance score increases and remains relatively stable. There are more fluctuations in the CSR ethics, customer and labor score. The overall mean and median CSR scores shows a steady increase over the years.

Table 2 reports the descriptive statistics (the mean, median, and standard deviation (SD)) of the characteristics for the firms for which we have the CSR scores.

Table 2. Descriptive Statistics of Firm Features

This table shows the descriptive statistics (the mean, median, and standard deviation (SD)) of the market value of equity (MVE), the book-to-market ratio (BTM), and the return on assets (ROA). The three panels show these statistics year by year: Panel A for 2023, Panel B for 2022 and Panel C for 2021.

Panel A: Descriptive statistics of 2023 firm characteristics.

	N	Mean	SD	Median
MVE	255	28.6 billion	16.5 billion	3.8 billion
BTM	255	0.271	0.39	0.19
ROA	255	-0.029	0.15	0.005

Panel B: Descriptive statistics of 2022 firm characteristics.

	N	Mean	SD	Median
MVE	255	23.3 billion	12.6 billion	3.4 billion
BTM	255	0.273	0.71	0.22
ROA	255	-0.048	0.18	-0.011

Panel C: Descriptive statistics of 2021 firm characteristics.

	N	Mean	SD	Median
MVE	255	29.1 billion	13.6 billion	4.6 billion
BTM	255	0.175	0.65	0.13
ROA	255	-0.031	0.21	-0.003

The mean market cap or MVE is higher than the median, indicating a few large market cap firms in our sample. The book-to-market ratio is also increasing over time, indicating more “value orientation” over time in our sample for which we have the CSR scores. The average ROA remains slightly negative over time, although the median has moved towards being positive in 2023.

We now state our main hypotheses linking CSR scores with key firm features that we test in this paper.

Hypothesis

Investments in CSR can be costly and may be made by large market cap firms likely because they face increased investor and institutional scrutiny as well as media attention. Further, based on the theory of “doing-well-by-doing-good”, a positive view perceives CSR as a business strategy to improve firm performance and hence, shareholders’ wealth (see Galema et al., 2008; Gillan et al., 2010; and Bhagwan and Mukhopadhyay, 2024). However, the COVID-19 pandemic disrupted financial markets, and heightened societal and investor focus on corporate social responsibility (CSR), as issues such as employee well-

being, environmental sustainability, and governance arguably became more critical in shaping corporate strategies. Therefore, examining how the relationship between CSR investments and key firm features holds up in the post-pandemic context can offer new insights, help validate previous findings using recent data, and show whether previously uncovered relationships can be generalized across different market conditions.

This leads to our two hypotheses:

Hypothesis 1. *Higher CSR scores are significantly associated with higher market capitalization and/or more profitable firms, for reasons that include higher investor interest and scrutiny.*

Hypothesis 2. *Even in the aftermath of a global disruption, changes in CSR scores are associated with changes in market capitalization, the book-to-market ratio and return on assets.*

3. Results

We first examine the univariate results for the associations between CSR scores and key firm features.

CSR Scores and Firm Features

To analyze the relation between firm features and the various CSR scores, we start with univariate results, segregating the MVE, BTM and ROA for the firms in our sample as above median or below or equal to the median for each of the 3 years in our sample: 2021, 2022, and 2023. Table 3 shows the result.

Table 3. Univariate Results of CSR Scores and Firm Features.

This table shows means and the significance of the difference in means of (a) CSR overall score, (b) CSR energy and water score, (c) CSR ethics, customer, and labor score, and (d) CSR governance, between firms that are segregated by MVE, ROA and BTM by firms that are above the median in each of these features and those that are below and equal to median, from the 2023 MSCI ESG scores database (Panel A), 2022 MSCI ESG scores database (Panel B), and 2021 MSCI ESG scores database (Panel C). ***, **, * denote significantly different from the other cohort at the 1%, 5%, and 10% significance levels.

Panel A: 2023 CSR measures by firm features in 2023.

	MVE		ROA		BTM	
	Above Median on	Below or Equal to Median	Above Median on	Below or Equal to Median	Above Median on	Below or Equal to Median
CSR overall	42.42	35.24 ***	40.83	36.78***	38.23	39.39
CSR energy and water	6.11	2.56 ***	5.08	3.57***	4.07	4.59
CSR ethics, customer, and labor	8.14	5.75 ***	7.22	6.66	6.76	7.13
CSR governance	28.15	26.93 ***	28.53	26.54 ***	27.40	27.67

Panel B: 2022 CSR measures by firm features in 2022.

	MVE		ROA		BTM	
	Above Median on	Below or Equal to Median	Above Median on	Below or Equal to Median	Above Median on	Below or Equal to Median
CSR overall	39.44	32.51 ***	39.36	32.54 ***	36.27	35.66
CSR energy and water	6.99	1.66 ***	5.90	2.73 ***	3.65	4.97 *

CSR ethics, customer, and labor	4.60	4.12	4.65	4.07	4.72	4.00
CSR governance	28.33	26.25 ***	28.82	25.75 ***	27.28	27.29

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Panel C: 2021 CSR measures by firm features in 2021.

	MVE		ROA		BTM	
	Above Median on	Below or Equal to Median	Above Median on	Below or Equal to Median	Above Median on	Below or Equal to Median
CSR overall	35.80	33.72 *	35.53	33.98	35.06	34.46
CSR energy and water	5.73	2.94 ***	5.09	3.55 ***	4.18	4.48
CSR ethics, customer, and labor	9.14	9.00	9.24	8.90	9.66	8.48
CSR governance	21.08	21.63	21.19	21.52	21.22	21.49

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The three panels show that CSR Overall score and the CSR energy and water scores are significantly higher for the larger market cap firms than those for the smaller market cap firms across all years, while the CSR ethics, customer, and labor and CSR governance scores are significantly higher for the larger market cap firms than those for the smaller market cap firms, in the later years. The CSR Overall, the CSR energy and water scores and CSR governance scores are significantly higher for the more profitable firms than those for the less profitable firms in 2022 and 2023. There are no significant differences in any CSR score (except for CSR energy and water, which is lower for the higher BTM firms) when firms are segregated by BTM. Thus, overall, larger and more profitable firms are associated with higher CSR investments and scores.

We examine these associations next in a multivariate regression setting that controlled for industry fixed effects that includes indicator variables for the consumer, tech, manufacturing, health and other industries (the 5 “Fama-French Industry classifications”, as well as year dummy variables for 2023, 2022 and 2021, using the following specification:

$$Y_i = \beta_I + \beta_Y + \beta_1 MVE_i + \beta_2 BTM_i + \beta_3 ROA_i + \varepsilon_i$$

Table 4. Multivariate Results of CSR Scores and Firm Features.

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Regression coefficients and robust t-statistics when firm features are regressed on (a) CSR Overall score, (b) CSR energy and water score, (c) CSR ethics, customer, and labor score, (d) CSR governance score from the 2023 MSCI database. Indicator variables for the 5 Fama-French Industry classifications, and for year, are included. ***, **, * denote coefficients that are significantly different from 0 at the 1%, 5%, and 10% significance levels.

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	CSR overall	CSR energy and wa- ter	CSR ethics, cus- tomer, and labor	CSR governance
	N = 765	N = 765	N = 765	N = 765
MVE _t	0.0005 ** (2.16)	0.0004 *** (3.02)	0.0001 (0.07)	0.0002 (1.21)
ROA _t	10.50 *** (5.19)	5.97 *** (5.79)	0.57 (0.55)	3.96 *** (4.06)
BTM _t	-1.63 *** (-2.76)	-0.779 ** (-2.59)	-0.435 (-1.43)	-0.420 (-1.47)
Industry Effects (Fama-French 5)	Yes	Yes	Yes	Yes

Year fixed effects	Yes	Yes	Yes	Yes
The table shows that the firm's market value of equity or market cap, and profitability, measured by ROA, are significantly and positively associated with CSR overall score and CSR energy and water scores. Profitability is also significantly and positively associated with CSR governance score. In line with the associations with market cap, BTM (in which the market cap comes in the denominator) is significantly and negatively associated with CSR overall and CSR energy and water scores.	362	363	364	365
Tables 3 and 4 show larger and more profitable firms are associated with higher CSR investments and scores. Thus, we find support for Hypothesis 1.	366	367	368	369
We tackle our Hypothesis 2 next.	370	371		
<i>Change in CSR Scores and Change in Firm Features</i>	372			
There are two ways to examine the regression results. The first question is as follows: are changes in CSR scores significantly associated with changes in firm characteristics? This is in line with the CSR overall and component scores being the dependent variables. Table 5 shows this result using the following regression specification:	373	374	375	376
$\Delta Y_i = \beta_1 + \beta_2 \Delta MVE_i + \beta_3 \Delta BTM_i + \beta_4 \Delta ROA_i + \varepsilon_i$,	377			
where ΔY_i is the change in the CSR overall score, or the change in one of the component CSR scores from 2021 to 2023, ΔMVE_i , ΔBTM_i , and ΔROA_i are changes in the firm characteristics from 2021 to 2023, and β_i is the vector of industry fixed effects to control for un-specified industry-related common effects. Table 5 reports the results.	378	379	380	381
Table 5. Whether changes in Firm Features Affect Changes in CSR scores.	382			
Regression coefficients and robust t-statistics when changes in firm features (from 2021 to 2023) are regressed on changes in (a) CSR Overall score, (b) CSR energy and water score, (c) CSR ethics, customer, and labor score, (d) CSR governance score from 2021 to 2023. ***, **, * denote coefficients that are significantly different from 0 at the 1%, 5%, and 10% significance levels.	383	384	385	386
	ΔCSR overall	ΔCSR energy and water	ΔCSR ethics, customer, and labor	ΔCSR governance
	N = 255	N = 255	N = 255	N = 255
$\Delta MVE_{t-2,t}$	0.0004*	0.0001*	0.0001	0.0001
	(1.82)	(1.75)	(0.97)	(1.07)
$\Delta ROA_{t-2,t}$	-0.485	-0.806	-0.344	-0.665
	(-0.09)	(-0.37)	(-0.11)	(-0.23)
$\Delta BTM_{t-2,t}$	-2.185	-0.057	-1.393	-0.734
	(-1.40)	(-0.09)	(-1.55)	(-0.89)
Industry Effects (Fama-French 5)	Yes	Yes	Yes	Yes

Table 5 shows that changes in CSR scores are generally not significantly associated with changes in firm characteristics, except for change in CSR overall and CSR energy and water scores being significantly (at the 10% level) and positively associated with change in market cap. This implies that as the market cap of a firm becomes higher, its investments, on average, in CSR (especially in environment) become higher. Post-pandemic, CSR investments may be seen as a driver of stability, which could help explain the association of increased such investments in well-followed large cap firms even in this period.

Table 6 answers the reverse question: are changes in firm characteristics significantly associated with changes in different CSR scores, after controlling for industry fixed effects?

Table 6. Whether changes in CSR Scores Affect Changes in Firm Features.

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Regression coefficients and robust t-statistics when changes in (a) CSR Overall score, (b) CSR energy and water score, (c) CSR ethics, customer, and labor score, (d) CSR governance score from 2021 to 2023 are regressed on changes in firm features over the same period. ***, **, * denote coefficients that are significantly different from 0 at the 1%, 5%, and 10% significance levels.

	$\Delta MVE_{t-2,t}$	$\Delta ROA_{t-2,t}$	$\Delta BTM_{t-2,t}$
	N = 255	N = 255	N = 255
ΔCSR overall	146.67 (0.46)	-0.0009 (-0.64)	-.0077 (-1.56)
ΔCSR energy and wa- ter	544.49 (0.93)	0.0003 (0.14)	.0080 (0.87)
ΔCSR governance	169.48 (0.33)	0.0010 (0.45)	.0051 (0.63)
Industry Effects (Fama-French 5)	Yes	Yes	Yes

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Table 6 shows that changes in any of the firm characteristics have no significant associations with any changes in CSR scores – overall or each of the components. That is, when the CSR score changes for a firm, on average, there is no significant contemporaneous impact on firm market cap, or profitability, or BTM, after controlling for industry-fixed effects. Therefore, we find no support for our Hypothesis 2, at least contemporaneously and in the immediate aftermath of the Covid-19 disruption and renewed scrutiny.

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4. Conclusions and Discussion

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Our findings imply that large market-cap and profitable firms may allocate significant resources toward CSR initiatives, particularly in CSR energy and water management, and CSR governance that lead to higher CSR overall scores. However, despite these efforts, these investments do not appear to lead to significant contemporaneous changes in key financial features such as Market Value of Equity (MVE), Return on Assets (ROA), or Book-to-Market ratio (BTM). Below, we provide some examples, discussing firm-specific investments in various CSR categories:

Adobe Inc. (ADBE)

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Adobe demonstrates strong overall CSR commitment, particularly with high scores in Ethics and Compliance (7.95), Audit Score (7.94) and Shareholder's rights score (8.29). Adobe's *Sustainability at Scale* program focuses on enhancing transparency in governance and sustainability reporting. These investments improve Adobe's overall CSR profile but do not translate into significant improvements in the firm's key features, as the firm remains a leader in creative software. In fact, the MVE dropped from 2021 through 2023, with little changes in BTM and ROA (that remained strong). Bai, and Kim (2024) discuss how CSR practices improve corporate social performance, aligning with stakeholder interests. Their work highlights the nuanced role of CSR in fostering goodwill but notes it is often limited effect on immediate financial outcomes.

Visa Inc. (V)

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Visa leads in CSR energy management with a score of 7.42, complemented by a strong water management score of 7.08. The governance score is also very high at 9.47 for audit score, for example. The company focuses on achieving renewable energy targets and enhancing energy efficiency across its global facilities. While these initiatives address environmental concerns, they have no discernible impact on financial metrics. Indeed, the

MVE declined slightly from 2021 through 2023, while profitability improved slightly. Hart and Ahuja (1996) argue that while environmental initiatives may improve operational efficiency, their financial impact is often more visible in competitive or resource-intensive industries, whereas firms in dominant market positions may not experience substantial changes in financial metrics.

Fiserv Inc. (FI)

Fiserv scores high in Executive Compensation (9.03) and Audit Themes (9.71), reflecting its efforts to align leadership incentives with long-term shareholder value and robust internal controls. These governance practices reinforce investor confidence and corporate accountability but do not alter significantly its MVE (increased marginally), ROA (increased marginally), or BTM (decreased marginally), as governance improvements may have indirect and long-term financial effects. Brown, Beekes, & Verhoeven (2011) study the link between corporate governance and firm performance, highlighting that governance improvements strengthen investor confidence and reduce risks but exhibit financial benefits only in the long term.

ServiceNow Inc. (NOW)

ServiceNow achieves notable scores in Board Composition (7.40) and Labor Practices (6.98). The firm emphasizes workplace diversity and ethical labor standards, complemented by a focus on board independence. These governance-related investments position ServiceNow as a responsible industry player but do not lead to measurable changes in its financial indicators (all three of MVE, BTM, and ROA increased marginally from 2021 through 2023), as its software offerings remain the primary driver of performance. Bear, Rahman, & Post (2010) examine the influence of governance practices, particularly board diversity and independence, on CSR and firm perception. They find that such investments build stakeholder trust without altering immediate financial performance metrics.

These examples illustrate that CSR investments by large, profitable firms primarily serve as tools for compliance and reputation enhancement rather than drivers of immediate financial performance. The financial markets likely perceive CSR efforts as complementary to core operations, reinforcing the notion that CSR benefits may be long-term and strategic rather than short-term and transactional.

In this study, we are limited by the time series of MSCI (Morgan Stanley Capital International) data available to us (2021 through 2023), but this allows us to examine the relationships between CSR investments and key firm features in the aftermath of the COVID economic recession. Future studies can examine a longer time series of data to examine effects of different economic crises. Further, other datasets, when available or constructed may also be examined to corroborate results. For example, Chava, Du, and Malakar (2021) argue that discrepancies in ESG ratings can contribute to the weak or inconsistent relationships observed in financial studies; Serafeim and Yoon (2023) suggest that any inconsistencies of ESG assessments could explain why CSR investments do not always lead to significant shifts in financial performance, as investors may have difficulty interpreting the signals from varying ratings; and Wang, Jiao, Ge, and Sun (2024) examines the relationship between corporate ESG rating divergence and stock returns, showing that the variation in ESG ratings across different agencies can lead to different stock return outcomes.

Our findings suggest that while CSR investments may not immediately lead to changes in key financial features, post-pandemic, CSR investments may be seen as a driver of stability, which could help explain the association of these investments in well-followed large cap firms even in this period. While the pandemic had an immediate disruptive effect on markets, CSR practices have the potential to provide long-term strategic benefits, aligning with growing investor demand for companies that are socially responsible and sustainable.

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