

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

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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 capitalization 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.

JEL Classification: G32

I. 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 CSR investments, and what are the outcomes for the firms.

Several papers have examined different aspects of CSR investments made by firms. Markidou, Doumpos, 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.

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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 and 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.

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.

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 capitalization (market cap) 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.

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.

The COVID-19 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. Extant literature has generally argued 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 cap. 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 cap, as well as profitability. We review the literature below.

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 protective shield during the COVID-19 pandemic, and find that high CSR scores were associated with a smaller decline in firm value during the market downturn. 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. Bolton and Kacperczyk (2021) demonstrate that during the COVID-19 pandemic, investor concern over carbon risk increased, leading to greater integration of environmental factors into investment decisions. Firms with higher carbon emissions faced higher expected returns, reflecting a risk premium demanded by investors. Environmental responsibility became more central to ESG evaluations and capital allocation, with carbon risk likely a key factor in assessing firm resilience and long-term value. Cheema-Fox et al (2021) analyze how corporate responses to the COVID-19 crisis influenced stock performance. After examining 3,023 global companies, they argue that firms demonstrating positive actions such as supporting employees, maintaining supply chains, and repurposing operations to meet urgent needs, experienced less severe stock declines during the market downturn.

Al Amosh et al (2023) conducted a study analyzing 12,325 firm-year observations from 2016 to 2021 to assess how ESG performance evolved during the COVID-19 pandemic. Their findings indicate that the pandemic positively influenced overall ESG performance, particularly enhancing environmental and social dimensions, while governance performance declined. The study suggests that during crises, firms prioritize ethical behavior and societal expectations, leading to increased ESG compliance. Qing et al (2023) examine 359 mobile business platform firms to assess how ESG activities and AI-driven digital transformation affect corporate sustainability, with green innovation as a moderating factor. Findings show ESG efforts significantly improve sustainability, especially post-pandemic. Gipper et al (2024) provides a large-scale evidence on ESG assurance practices among U.S. firms, focusing on S&P 500 companies from 2010 to 2020. Their study reveals a significant increase in both the number of firms issuing ESG reports and those obtaining third-party assurance—rising from 38% to 76% and from 16% to 46%, respectively, over the decade. This growth is primarily driven by the adoption of ESG reporting frameworks and peer influence, rather than firm-specific characteristics. The authors find that ESG assurance is associated with improved disclosure quality, higher ESG ratings, and increased institutional investor interest, suggesting that assurance enhances the credibility of ESG reporting and may positively influence firm performance.

Lu et al (2024) analyzed the impact of pre-pandemic corporate social responsibility (CSR) on stock resilience during the COVID-19 crisis, utilizing contract theory to understand stakeholder dynamics. Their study reveals that firms with strong CSR practices prior to the pandemic experienced moderate stock gains, whereas those with weaker CSR faced significant losses, particularly around the lockdown. This suggests that robust CSR initiatives can enhance stakeholder trust and operational stability, thereby mitigating financial uncertainties during crises. The findings underscore the strategic value of CSR as a mechanism for risk management and resilience in the face of systemic shocks. Mohy-ud-Din (2024) investigates the impact of ESG reporting on corporate green innovation in U.S. firms, highlighting the moderating role of board diversity. Analyzing data from 334 non-financial companies listed in the S&P 1500 Index between 2010 and 2021, the study finds that higher ESG ratings and robust CSR strategies

are significantly associated with improved environmental performance and innovation outcomes. Notably, board diversity enhances the positive relationship between ESG efforts and green innovation, suggesting that diverse boards contribute to increased green revenues, product innovation, and the adoption of eco-friendly technologies.

Some studies were less sanguine. Bae et al (2021) analyzed 1,750 U.S. firms during the COVID-19 pandemic and found that pre-crisis CSR investments did not significantly influence stock returns during the market crash or the subsequent recovery period. This suggests that CSR activities prior to the pandemic were not effective in shielding shareholder wealth from the adverse effects of the crisis. The authors also observed that firms with explicit commitments to stakeholder interests, such as Business Roundtable signatories, did not outperform others during the crisis. Lööf et al (2022) examined whether ESG investing provided a "free lunch" for investors during the COVID-19 crisis by analyzing 5,073 stocks across ten countries. Their study finds that higher ESG ratings are associated with lower downside tail risk, meaning these stocks were less susceptible to extreme losses during market turmoil. However, this reduced risk comes at the cost of lower upside potential, indicating a trade-off between risk mitigation and return. Cardillo et al (2005) conducted a bibliometric and systematic review to examine the moderating variables influencing the relationship between ESG/CSR activities and financial performance. Their analysis identifies key factors such as firm size, industry sector, geographic region, and governance structures that affect how ESG and CSR initiatives impact financial outcomes. The study emphasizes that these moderating variables can either strengthen or weaken the link between sustainability efforts and financial performance, highlighting the importance of context in evaluating ESG/CSR effectiveness. Narula et al (2025) analyzed 198 studies published between 2010 and 2022. They found that ESG activities generally have a positive impact on firm performance. However, the strength of this relationship varies depending on factors such as ESG rating methodologies (e.g., Bloomberg vs. Thomson Reuters), industry sectors, and geographic regions.

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 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.

II. 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 cap, the book to 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:

- (a) industry, the 4-digit SIC code;
- (b) market value of equity (MVE), the market cap, a measure of presence in the market that could influence its revenue streams, financing options, and brand recognition;
- (c) the book-to-market ratio (BTM), a proxy for the (inverse of) growth prospects or real option value of the firm (Tobin’s Q); and
- (d) return on assets (ROA), an accounting-based measure of operating performance that focuses on profitability per dollar of assets, which is widely used in long-run performance studies.

MVE (market value of equity) is calculated by multiplying CSHO (shares outstanding) from annual Compustat, the net number of all common shares outstanding at year-end excluding treasury shares and scrip, with PRC (price) from CRSP, which is the closing price of the same day as the report date of CSHO. Book value of equity (BVE), which equals shareholders’ equity + deferred taxes and investment tax credit - preferred/preference stock (capital) from annual Compustat. The book to market ratio (BTM), which is the BVE divided by the MVE as computed above. ROA (return on assets), every year, is calculated by dividing NI (net income) by AT (total assets), from annual Compustat. Industry is a 4-digit SIC code from Compustat.

Our CSR data from MSCI database, where the definitions are all coded by MSCI, contains all relevant firm scores on the following metrics. MSCI evaluates CSR components based on sector-specific and region-specific standards, and it adjusts the weight and scale accordingly. For instance, environmental scores (energy, water) may be quantitatively measured, while governance factors (board composition, executive compensation) are often rated on qualitative criteria like board diversity or structure.

CSR Energy and Water Score

We define this as the sum of:

- EMI (Energy Management Issue Score): Reflects a company’s effectiveness in managing energy use, focusing on energy conservation, renewable energy adoption, and carbon emissions reduction.
- H2O (Water Management Issue Score): Assesses a company’s policies and actions related to water management, including water conservation efforts, efficiency improvements, and handling of water-related risks.

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-corruption measures, and data privacy protocols, showing how robustly it upholds compliance, privacy, and integrity in its operations.
- **CUST (Data Security and Customer Score):** Measures a company's data security practices, with a focus on protecting customer information, cybersecurity protocols, and response strategies for data breaches.
- **LABOR (Labor and Employment Practices Score):** Assesses a company's labor policies, including diversity and inclusion, employee well-being, fair employment practices, and adherence to labor standards.

CSR Governance

We define this as the sum of:

- **BOARD (Board Composition Score):** Evaluates the diversity, independence, and expertise of board members, reflecting governance quality and potential effectiveness of corporate oversight.
- **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.
- **SHARE (Shareholder Rights Score):** Examines the governance framework protecting shareholder rights, such as voting mechanisms, board accountability, and shareholder engagement policies.
- **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.

Descriptive Statistics

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.

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.

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.

Table 1: Descriptive Statistics of CSR scores**Panel A: Descriptive statistics of 2023 MSCI CSR scores.**

	N	Mean	SD	Median
CSR energy and water	255	4.33	4.72	3.00
CSR ethics, customer, and labor	255	6.94	4.89	5.09
CSR governance	255	27.57	3.50	27.26
CSR Overall	255	38.81	10.53	36.90

Panel B: Descriptive statistics of 2022 MSCI CSR scores.

	N	Mean	SD	Median
CSR energy and water	255	4.31	4.72	3.00
CSR ethics, customer, and labor	255	4.36	3.85	3.35
CSR governance	255	27.28	3.87	27.16
CSR Overall	255	35.96	8.02	35.57

Panel C: Descriptive statistics of 2021 MSCI CSR scores.

	N	Mean	SD	Median
CSR energy and water	255	4.33	4.72	3.00
CSR ethics, customer, and labor	255	9.07	4.99	8.70
CSR governance	255	21.35	5.55	22.24
CSR Overall	255	34.75	8.91	34.87

This table shows the descriptive statistics (the mean, median, and standard deviation (SD)) of the overall CSR score, as well as the three components of the CSR score – CSR energy and water, CSR ethics, customer, and labor, and CSR governance. The three panels show these statistics year by year: Panel A for 2023, Panel B for 2022 and Panel C for 2021.

Table 2: Descriptive Statistics of Firm Features**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

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.

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

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

III. Results

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

Firm Features and CSR Scores

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. 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.

Table 3: Univariate Results of CSR Scores and Firm Features**Panel A: 2023 CSR measures by firm features in 2023**

	MVE			ROA			BTM		
	Above Median	Below or Equal to Median	Difference between group Means	Above Median	Below or Equal to Median	Difference between group Means	Above Median	Below or Equal to Median	Difference between group Means
CSR overall	42.42	35.24	7.18***	40.83	36.78	4.05***	38.23	39.39	-1.16
CSR energy and water	6.11	2.56	3.55***	5.08	3.57	1.51***	4.07	4.59	-0.52
CSR ethics, customer, and labor	8.14	5.75	2.39***	7.22	6.66	0.56	6.76	7.13	-0.37
CSR governance	28.15	26.93	1.22***	28.53	26.54	1.99***	27.40	27.67	-0.27

Panel B: 2022 CSR measures by firm features in 2022

	MVE			ROA			BTM		
	Above Median	Below or Equal to Median	Difference between group Means	Above Median	Below or Equal to Median	Difference between group Means	Above Median	Below or Equal to Median	Difference between group Means
CSR overall	39.44	32.51	6.93***	39.36	32.54	6.82***	36.27	35.66	0.61
CSR energy and water	6.99	1.66	5.33***	5.90	2.73	3.17***	3.65	4.97	-1.32*
CSR ethics, customer, and labor	4.60	4.12	0.48	4.65	4.07	0.58	4.72	4.00	0.72
CSR governance	28.33	26.25	2.08***	28.82	25.75	3.07***	27.28	27.29	-0.01

Panel C: 2021 CSR measures by firm features in 2021

	MVE			ROA			BTM		
	Above Median	Below or Equal to Median	Difference between group Means	Above Median	Below or Equal to Median	Difference between group Means	Above Median	Below or Equal to Median	Difference between group Means
CSR overall	35.80	33.72	2.08*	35.53	33.98	1.55	35.06	34.46	0.6
CSR energy and water	5.73	2.94	2.79***	5.09	3.55	1.54***	4.18	4.48	-0.3
CSR ethics, customer, and labor	9.14	9.00	0.14	9.24	8.90	0.34	9.66	8.48	1.18
CSR governance	21.08	21.63	-0.55	21.19	21.52	-0.33	21.22	21.49	-0.27

This table shows means, the difference of 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 grouped 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.

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, to control for unspecified year and industry-related fixed effects, using the following specification:

$$Y_i = \beta_1 MVE_i + \beta_2 BTM_i + \beta_3 ROA_i + \text{Year Fixed Effects} + \text{Industry Fixed Effects} + \varepsilon,$$

where Y_i is the CSR overall score, or one of the component CSR scores.

Table 4: Multivariate Results of CSR Scores and Firm Features

	CSR overall	CSR energy and water	CSR ethics, customer, 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

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.

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.

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.

We tackle Hypothesis 2 next.

Change in CSR Scores and Change in Firm Features

Are changes in CSR scores are significantly associated with changes in market cap, the book-to-market ratio and return on assets. after controlling for industry fixed effects? Table 5 shows this result using the following regression specification:

$$\Delta Z_i = \beta_1 \Delta \text{CSR overall} + \beta_2 \Delta \text{CSR energy and water} + \beta_3 \Delta \text{CSR governance} + \text{Industry Fixed Effects} + \varepsilon,$$

where ΔZ_i is ΔMVE_i the change in market cap from the change from 2021 to 2023 or ΔBTM_i the change in the book-to-market ratio from 2021 to 2023 or ΔROA_i the change in the return on assets from 2021 to 2023. We drop ΔCSR ethics, customer, and labor score, from the explanatory variables, in this specification, since the CSR overall score is the sum of the component scores.

Table 5. Whether changes in CSR Scores Affect Changes in Firm Features.

	$\Delta MVE_{t-2,t}$	$\Delta ROA_{t-2,t}$	$\Delta BTM_{t-2,t}$
	N = 255	N = 255	N = 255
ΔCSR overall	146.67 (0.46)	-.0009 (-0.64)	-.0077 (-1.56)
ΔCSR energy and water	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

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.

Table 5 shows that when the CSR score changes (or when the component CSR score changes) for a firm, there is no significant contemporaneous impact on firm market cap, or profitability, or BTM, on average, 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.

IV. Conclusions and Discussion

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). Bai, and Kim (2024), for example, 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. 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. 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. 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 can build stakeholder trust without altering immediate financial performance metrics. We also conclude that CSR investments by large, profitable firms may primarily serve as tools for compliance and reputation enhancement rather than drivers of immediate financial performance, in the immediate aftermath of a pandemic. The financial markets likely perceive CSR efforts as

complementary to core operations, leading to 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) examine 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.

In summary 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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