Corporate Social Responsibility Disclosures and Corporate Financial Performance: Evidence from OECD Countries Climate Policy Uncertainty

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ABSTRACT

This study aimed to investigate non-financial firms belonging to Organization for Economic Cooperation and Development (OECD) economies affected by climate policy uncertainty and corporate social responsibility disclosures in terms of their financial performance. To conduct this quantitative study, 625 non-financial firms across six OECD countries' stock markets were selected for ten years (2012-2021). The research gathered data on CSR disclosures, financial performance, and climate policy uncertainty from a reliable database, DataStream, which examined research on OECD-listed firms. The study used a two-stage GMM to determine the relationship between CSR disclosures and corporate financial performance. The results showed that CSR disclosures, firm age, firm size, and gross domestic product were significant at the 1%, 5%, and 10% levels in explaining the relationship with corporate financial performance, which showed a negative relationship with corporate financial performance. Additionally, the research found that climate policy uncertainty was a key factor motivating CSR disclosure practices, ultimately improving corporate financial performance. This study has implications for researchers, investors, the government, and regulatory authorities.

Keywords: Financial Performance, CSR Disclosure, Climate Policy Uncertainty, OECD Economies, 2-Stage GMM.

ARTICLE INFO

Article History:
Received: 13 April 2024
Accepted: 28 March 2025
Available online: 1 December 2025

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INTRODUCTION

Corporate Social Responsibility (CSR) disclosures originated in the broader concept of corporate social responsibility, which emerged as a response to societal concerns about the impact of businesses on the environment, economy, and society. The roots of CSR can be traced back to various historical developments and influences, including social movements, environmental movements, and other ethical concerns. In the 19th and early 20th centuries, social movements such as labor rights, women's suffrage, and civil rights gained momentum, leading to increased awareness about businesses' social and ethical responsibilities (Georgallis, 2017). These movements pressured companies to be more accountable for their actions and address social issues beyond just profit-making. The Stakeholder Theory emphasizes the need for businesses to consider their operations' broader social and environmental impacts (Castelo et al., 2007). However, some factors such as ethical issues including corruption, discrimination, and human rights violations by businesses in the global supply chains became prominent in the late 20th and early 21st centuries (Crane et al., 2019). CSR disclosures are significant due to the transparency and accountability about social, environmental, and ethical performance within the country (Rim, Kim, & Dong, 2019). However, disclosing their CSR initiatives, companies can be held accountable by stakeholders, including investors, customers, employees, and the wider society, for their actions and impacts. Thus, CSR disclosure facilitates communication and engagement with stakeholders. Companies can use CSR disclosures as a way to inform stakeholders about their CSR efforts, demonstrate their commitment to social responsibility, and solicit feedback and input from stakeholders on their CSR initiatives (Westphal, 2023).

CSR disclosure is significant for shareholders and management and draws the attention of all other stakeholders. Moreover, it holds importance in the context of making business decisions (Prior, Surroca, & Tribó, 2008; Szczepankiewicz et al., 2022). It is concluded that compliance with the CSR policies is the key driver for boosting the performance of the corporation through providing the appropriate business decision-making process, and it is also a key indicator to attain significance in the eyes of the investors (Cohen et al., 2012). Furthermore, the role of climate policy uncertainty as a driving force behind CSR disclosures can be complex and context-

dependent. Consequently, climate policy uncertainty challenges companies in terms of planning and decision-making. However, it can also motivate increased CSR disclosures in several ways, including risk mitigation, heightened stakeholder expectations for greater transparency, enhanced corporate reputations and competitive advantages, improved investor relations, and the pursuit of long-term sustainability through enhanced performance. Empirically, several studies have defined the relationship between CSR disclosures and corporate financial performance. Orlitzky, Schmidt, and Rynes (2003) found a positive association between CSR and economic performance, with companies that engage in CSR activities being more likely to achieve superior financial performance than those that do not. Similarly, a study by Cheung and Mak (2010) found that CSR disclosure enhanced a company's reputation and stakeholder perceptions, leading to increased customer loyalty, employee morale, and positive relationships with suppliers and other stakeholders.

This study addressed a significant gap in the existing literature on CSR disclosures and their impact on corporate financial performance within the context of OECD countries and climate policy uncertainty. The selection of the OECD was due to the advanced awareness of regulatory authorities and society towards CSR disclosue in the member countries of this group. The study used the underpinning theories such as the Agency Theory and Stakeholder Theory. While prior research has examined the relationship between CSR disclosures and financial performance, there was a notable absence of comprehensive investigations explicitly considering the role of climate policy uncertainty in this relationship within the OECD context.

Similarly, on the grounds of the research gap, this study had a twofold objectives. First, this study investigated the relationship between CSR disclosures and corporate financial performance in OECD economies. Secondly, this study investigated the moderating impact of climate policy uncertainty in improving corporate financial performance with CSR disclosures. This study provides valuable insights by examining a large sample of firm-years across six OECD stock markets, whereas previous studies Boachie (2023); Pamungkas and Purwantoro (2023) have predominantly focused on limited samples within a single country. The findings of this studywere expected to provide valuable insights into how companies in OECD countries navigated the challenges posed by climate

policy uncertainty and how their CSR disclosure practices can contribute to or mitigate the effects on financial performance. Moreover, this research can inform policymakers, investors, and corporate stakeholders about the importance of CSR disclosure strategies in evolving climate policies, thereby fostering informed decision-making and sustainable business practices.

The selection of OECD countries for this study on the relationship between CSR disclosures and corporate financial performance (CFP) in the context of climate policy uncertainty (CPU)was driven by several key factors. OECD countries are recognized for their relatively advanced economic development, well-established regulatory frameworks, and higher environmental awareness levels, making them ideal for examining the complex dynamics between CSR and financial performance. These countries are also at the forefront of implementing and refining climate-related policies, providing a diverse yet comparable environment to study the effects of CPU. Additionally, firms in OECD countries are often subject to more rigorous CSR reporting standards and greater stakeholder scrutiny, making their CSR disclosures more consistent and reliable for analysis. The selection of OECD countries thus allowed for a focused investigation into how CSR activities interacted with financial performance in contexts where climate policy was both impactful and subject to significant uncertainty, offering insights that could be relevant to other developed and developing economies.

The rest of the article is organized in the following manner. Part 2 provides an overview of recent literature and theoretical background and proposes several hypotheses that can be tested to elucidate the relationship between variables. The conceptual framework, research design, and methods are outlined in Part 3. Section 4 presents the study's findings, while Section 5 includes the conclusion, suggestions for further research, limitations, and practical implications.

LITERATURE REVIEW

The evolution of CSR practices has significantly shaped corporate strategies in OECD countries. Historically, CSR emerged as a response to industrialization's social challenges, evolving through various phases from

philanthropy to strategic business integration. In recent decades, OECD countries have witnessed a paradigm shift in CSR from discretionary activities to a core business strategy, influenced by increasing stakeholder awareness and regulatory pressures. This historical progression has culminated in today's CSR practices, where transparency and sustainability are key drivers of corporate reputation and financial performance. Understanding this trajectory helps contextualize the current trends in CSR disclosures, illustrating how past developments inform current practices and policies in the corporate sector.

The proposed relationships in the studywere built based on the propositions of the Agency Theory and Stakeholder Theory. Accordingly, corporations are responsible to their shareholders and other stakeholders, including employees, customers, suppliers, and the broader community (Carroll, 1991). The theories suggest that management works in the interests of shareholders and stakeholders. Companies that engage in CSR activities and disclose information about their social and environmental performance are likelier to foster positive relationships with these stakeholders, ultimately contributing to improved financial performance (Xie et al., 2019).

The Stakeholder Theory justifies this study's emphasis on prioritizing stakeholders by safeguarding their rights and facilitating long-term value creation through adequate CSR disclosures. The stakeholder theory also explains this study by providing insights into CSR initiatives that improve a company's reputation and brand value, leading to increased customer loyalty and improved access to capital (Boubaker, Gounopoulos, & Rjiba, 2019). Additionally, the Agency Theory justifies this study by offering insights into how managers may act in their self-interest rather than in the interest of the company's shareholders. By engaging in CSR activities and disclosing information about their social and environmental performance, companies can signal their shareholders that they are acting in their best interests, potentially reducing agency costs and improving financial performance. Furthermore, the Agency Theory justifies this study by addressing the conflicts of interest between principals and agents, which can impact financial performance through increased costs (Fama & Jensen, 1983).

The relationship between CSR disclosures and corporate financial performance has been the subject of extensive research in business and

finance. Numerous studies have examined the impact of CSR disclosures on various dimensions of financial performance, such as profitability measures, return on assets, and return on equity. Schmitthenner et al. (2021) found a significant positive relationship between CSR disclosures and financial performance and concluded firms with higher levels of CSR disclosures tend to have higher ROA and ROE. Similarly, Choradia et al. (2022) found that CSR disclosures positively affected firm profitability. Wang et al. (2021) analyzed the stock market reactions to CSR disclosures of firms in the Chinese market. They found that CSR disclosures were positively associated with stock returns, indicating that investors perceived CSR disclosures as favorable signals of firm performance. Wei et al. (2023) found that CSR disclosures were positively associated with firm value in China, claiming that CSR disclosures can enhance a firm's intangible assets, reputation, and stakeholder relationships, leading to higher firm value. Wang et al. (2021) investigated the impact of CSR disclosures on firm value using a global sample of firms and found that firms with higher levels of CSR disclosures tended to have higher firm value.

Moreover, Coelho, Jayantilal, and Ferreira (2023); Platonova et al. (2018); Tran, Nguyen, and Darsono (2023) suggested that CSR disclosures had a significant impact on corporate financial performance. Firms engaging in meaningful CSR disclosures experienced various economic benefits, including improved profitability. Thus, this underscored the importance of CSR disclosures as a strategic tool for firms to create value for their stakeholders and achieve sustainable financial performance. Therefore, this study extracted the gap in the literature on the relationship between CSR disclosure and corporate financial performance especially in OECD economy. Moreover, on the ground of the empirical and theoretical background, we developed the following hypothesis,

H1: CSR disclosure has a significant impact on corporate financial performance.

CSR disclosures with climate policy uncertainty have also been studied in the literature, as there is growing recognition that climate policy uncertainty can facilitate CSR disclosures (Salvioni & Gennari). The relationship between CSR disclosures and climate policy uncertainty has gained attention in recent years due to the increasing recognition of climate

change as a significant global challenge and the growing importance of CSR in business practices. Climate policy uncertainty is the uncertainty and variability in government policies and regulations related to climate change, such as emission targets, carbon pricing mechanisms, and renewable energy subsidies. Some studies have found that firms increase their CSR disclosure in response to climate policy uncertainty. Dhaliwal et al. (2019) found that firms tended to disclose more information regarding climate change risks and opportunities in their CSR reports when confronted with elevated levels of climate policy uncertainty. This inclination suggested that firms may utilize CSR disclosures to underscore their commitment to sustainability and climate change mitigation. Furthermore, they employed these disclosures to address concerns raised by stakeholders, including investors, customers, and regulators, especially in the context of policy uncertainty.

Additionally, Salvioni and Gennari (2019) found that firms with higher levels of CSR disclosure related to climate change were better positioned to manage regulatory risks and capitalize on opportunities associated with emerging low-carbon technologies and markets. Other studies, for example, Hoang (2023); Persakis, Fassas, and Koutoupis (2023), have justified that firms tended to increase their CSR disclosures in response to climate policy uncertainty as a strategic move that can enhance their legitimacy, stakeholder engagement, and ability to manage risks and capitalize on opportunities. According to Pilgrim, Koss, and Bohnet-Joschko (2023), CSR disclosures can provide firms with a means to communicate their efforts in addressing climate-related risks, such as carbon emissions reduction strategies, supply chain management, and climate adaptation measures, which can help firms navigate the uncertainties of climate policies and gain a competitive advantage. Moreover, Prinsloo and Maroun (2021) found that the relationship between CSR disclosures and climate policy uncertainty was more substantial in industries directly impacted by climate change regulations, such as the energy and transportation sectors. Similarly, Chatterjee, Chaudhuri and Vrontis (2023) found that firms with higher carbon emissions and higher environmental risks were more likely to increase their CSR disclosure in response to climate policy uncertainty and suggested that the relationship between CSR disclosure and climate policy uncertainty may be contingent on industry and firm-specific factors. Hawn and Ioannou (2020) found that CSR disclosures related to climate change can improve firms' social and environmental legitimacy, which can, in turn, positively impact their financial performance.

The moderating impact of CPU on corporate outcomes has gained considerable attention in recent literature. CPU, marked by the unpredictability of government actions related to climate policies, creates an environment where the costs and benefits of corporate decisions, particularly those related to environmental practices, become less predictable (Hoang, 2024). Bai et al. (2023) suggested that in times of high CPU, the relationship between corporate strategies—such as CSR disclosures—and financial performance was significantly influenced. For instance, during periods of elevated CPU, investors may view firms that actively engage in CSR more favorably, as these disclosures signal a firm's commitment to sustainability and preparedness for potential regulatory changes. This can enhance financial performance, as stakeholders may perceive these firms as lower-risk investments in a volatile policy landscape.

Conversely, in low CPU environments, the impact of CSR disclosures on financial performance may be less pronounced, as the stability reduces the perceived risk and need for proactive environmental strategies (Mao & Huang, 2022). This highlights the critical role of CPU as a moderating variable that can either enhance or diminish the financial benefits of CSR activities, depending on the level of policy uncertainty. Therefore, this study extracted the gap in the literature on the relationship between CSR disclosure, climate policy uncertainty, and corporate financial performance, especially in the OECD economy. Similarly, the previous literature motivated the moderating impact of climate policy uncertainty between CSR disclosures and corporate financial performance Moreover, on the ground of the empirical and theoretical background, we developed the following hypothesis,

H2: Climate policy uncertainty has a significant positive moderating impact between CSR disclosures and corporate financial performance.

RESEARCH DESIGN

Sample and Data

We selected six European OECD countries. Several vital factors drove this selection. Firstly, these countries represented a diverse range

of economic and regulatory environments, providing a comprehensive perspective on the impact of CSR disclosures. Secondly, they exhibited varying degrees of climate policy uncertainty, allowing for a nuanced analysis of its effects on corporate financial performance. Additionally, these countries had robust data availability, ensuring the reliability and validity of the study's findings. This diverse yet focused selection offered a balanced view, essential for understanding the broader implications of CSR practices in the context of global economic and environmental challenges.

The sample firms were selected using specific criteria. Firstly, the financial sector was excluded due to differing financial regulations. Secondly, firms that did not disclose CSR practices were excluded. Finally, firms with entirely missing data were eliminated. The study's final sample contained 625 firms registered in six major stock markets of European OECD countries. The selections of firms from each country were made based on the total firms listed from each stock exchange of the respective country.

Table 1 presents the distribution of the sample among the selected countries. The data for the sample spanned from 2012 to 2021. A convenience sampling technique was employed due to constraints related to data availability to generate a panel sample for the analysis. Thus, a total of 6250 firm-year observations was this study's panel sample. Data were collected from three primary sources: CSR disclosures, firm age, and firm size data were extracted from the DataStream database, the climate policy uncertainty index data was sourced from the economic policy uncertainty database, and GDP data for the respective years were obtained from the World Bank Data Portal. The resulting dataset provided a comprehensive foundation for analyzing the research objectives.

Table 1: Sample Distribution among Selected OECD Countries

Country	No. of sample firms	Country	No. of sample firms
Belgium	46	Germany	96
France	127	Italy	80
Spain	61	UK	215

Variables

Corporate financial performance was the dependent variable, which was measured through different sources. These measures included return on assets (ROA), return on equity (ROE), and earnings per share (EPS), respectively. The most used measure, ROA, was calculated through the firm's net profit divided by total assets, indicating the maximum utilization of the assets to attain the maximum output (Naz et al., 2016). The rollover on the assets was considered the base point for determining the corporate financial performance, and it provided a face of the organization towards their investors and the shareholders (Lakonishok et al., 1992). Furthermore, ROE was another proxy calculated through the net income divided by the total equity of the shareholders. This measure indicated the maximum utilization of the owner's equity to attain profitability. The utilization of the equity for earnings plays a necessary role in the corporate financial performance (Almajali, Alamro, & Al-Soub, 2012). Moreover, EPS was calculated through net income divided by the total number of shares outstanding to date, indicating the firm's earnings in the financial years (Tabassum, Kaleem, & Nazir, 2013) .

CSR disclosures were the explanatory variable in this study. CSR disclosure was measured through the three main pillar scores: environment, society, and governance. ESG is a framework used by investors, businesses, and organizations to evaluate and measure the sustainability and ethical impact of an investment or business operation (Islam et al., 2023). Each of the three components, environmental (ENV), social (SC), and governance (GOV), represented a different aspect of sustainability and ethical responsibility. The ESG was also a proxy used to measure CSR disclosure, measured through the ESG pillar score (García et al., 2023).

CPUwas the moderating variable that referred to the degree of uncertainty surrounding future climate policies and regulations, which affected the behavior of firms and individuals in the economy, as well as the effectiveness of policy measures in reducing greenhouse gas emissions and mitigating climate change (Mao, Huang, & Health, 2022). CPU Index was used to measure the degree of uncertainty surrounding climate policy announcements based on the frequency and magnitude of changes in policy announcements over time.

This study considered some micro and macro-level control variables. Firm size was measured through the total assets (Babalola, 2013), considering the key factors influencing the firm performance. Firm age measureed the age of the firms in years from the date of incorporation in the stock market to the observation year. GDP is the gross domestic production the economy produces that potentially affects financial performance (Pao & Tsai, 2011). Table 2 presents the variable definitions.

Table 2: Operational Definitions of the Variables

Variable	Abbreviation	Operational definitions
Environmental	ENV	Environmental pillar score
Social	SC	Social pillar score
Governance	GOV	Governance pillar score
ESG (Combine)	ESG	ESG total score
Return on Asset	ROA	Measured EBIT divided by total asset
Return on Equity	ROE	EBIT divided by total equity
Earnings per share	EPS	Total earnings are divided by the total number of shares outstanding in common stock.
Firm Size	FS	Total assets of the firm
Firm Age	FA	Age of the firms from the incorporation
Climate policy Uncertainty	CPU	Changes in climate-related regulations, such as emissions standards, carbon pricing mechanisms, renewable energy targets, and environmental reporting requirements

Method and Model

This study empirically tested the effect of CSR disclosures on the financial performance of the listed firms belonging to six different economies of the OECD region for ten years. Based on the relevant literature, this study adopted the regression methods.

$$FP_{it} = \alpha_0 + \beta_1 ENV_{it} + \beta_2 SC_{it} + \beta_3 GOV_{it} + \beta_4 ESG_{it} + \beta_5 GDP_{it} + \beta_6 FS_{it} + \beta_7 FA_{it} + \beta_8 CPU_{it} + \varepsilon_{it} \quad (1)$$

Additionally, the following econometric model aimed to capture the moderating effect of the CPU:

$$FP_{it} = \alpha_0 + \beta_1 ESG_{it} + \beta_2 ESG * CPU_{it} + \varepsilon_{it} \quad (2)$$

In Equation 2, FP was the financial performance for the firm I at time t; ESG*CPU was an interaction variable to capture the moderating effect of CPU on the ESG-FP relationship; was the coefficient of variable to show the level of influence on FP; and is the error term.

Two-stage least squares (2SLS) regression analysis is a statistical technique employed to estimate the relationship between a dependent variable and one or more independent variables, mainly when endogeneity is a concern. Endogeneity arises when the independent variables correlate with the regression equation's error term. In finance, endogeneity is prevalent due to the interrelated nature of financial variables, influenced by factors beyond the researcher's control (Mao et al., 2022). For instance, firm performance may be affected by macroeconomic variables such as interest rates, inflation, economic growth, and company-specific factors like earnings and dividends. To address this challenge, 2SLS entailed two stages of regression analysis. In the first stage, the dependent variable was regressed on the independent variables, including lagged values of the independent variables, to mitigate the autocorrelation issue. The residuals from this regression were subsequently used to estimate the first-stage regression coefficients. In the second stage, the dependent variable was regressed on the predicted values of the independent variables obtained from the first stage and other pertinent variables. The coefficients derived from this regression provide unbiased estimates of the causal relationship between the dependent and independent variables, even in the presence of endogeneity (Kim & Kim, 2021).

However, 2SLS has some limitations, such as the assumption that the instrumental variables used in the first stage are valid and a large sample size requirement to obtain precise estimates (Abdullah, 2020). Chen et al. (2021) examined the impact of environmental risks on corporate financing decisions in China using regression analysis and improved their results through two-stage regression analysis by taking instrumental variables in the regression. To overcome panel data-related issues, the current study performed robustness checks using Generalized methods of Movement (GMM), as recommended in the literature (Abdullah & Turgut, 2023; Bouayad-Agha & Vedrine, 2010).

GMM is a widely used econometric technique that is particularly effective in addressing the problem of endogeneity in regression models. Endogeneity arises when an explanatory variable is correlated with the error term, leading to biased and inconsistent estimates. GMM tackles this issue by utilizing instruments—variables that are associated with the endogenous regressors but uncorrelated with the error term—to generate consistent parameter estimates. By constructing moment conditions based on these instruments, GMM allows for estimating model parameters even in the presence of endogeneity. One of the critical strengths of GMM is its flexibility; it does not require strict distributional assumptions and can be applied to both linear and nonlinear models. Furthermore, GMM is especially powerful when dealing with panel data, where it can effectively account for unobserved heterogeneity and potential dynamic relationships. However, the effectiveness of GMM depends on the quality and validity of the instruments used; weak or invalid instruments can lead to unreliable estimates, emphasizing the importance of careful instrument selection and testing in empirical applications.

DATA ANALYSIS

The results of descriptive statistics, as shown in Table 3, show that ROA had an average of 32.29%, which meant that every firm selected has an average earning of their asset, about 32.29%. ROE had a time return on their equity as an average by the selected firms. EPS had a mean value of 1.126, which indicated a positive sign of the firm's earnings in the last ten years. The environmental score of the CSR disclosure index meant the value was 48.61, with a maximum 99 and minimum of 0 for the selected firms of OECD economies. ESG combined score had an average of 50.08. Governance score had 44.097 as average and means of social score was 53.73. Average age of the firms was 16 years of the incorporation. The climate policy uncertainty means value was 255.57, indicating high policy uncertainty index generally meanig that there was a greater degree of uncertainty and volatility surrounding future policy decisions in a particular area. In the context of climate policy, a high policy uncertainty index would indicate a greater degree of uncertainty surrounding future climate policies and regulations, such as implementing carbon pricing mechanisms, renewable energy targets, and other measures aimed at reducing greenhouse gas emissions.

Table 3: Descriptive Statistics of the Samples

	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
ROA	0.329	0.060	616.201	-2.098	11.183	6250
ROE	5.835	0.175	16171.280	-157.949	291.483	6250
EPS	1.126	0.000	193.812	-12.371	6.697	6250
ENV	48.605	51.699	99.220	0.000	30.695	6250
ESG	50.086	55.139	97.713	0.000	26.742	6250
GOV	44.098	53.513	87.099	0.000	43.073	6250
SC	53.763	58.325	90.532	0.000	40.671	6250
CPU	255.57	224.39	542.765	34.999	117.71	6250

Results as shown in Table 4, showed there was no correlation existed between explanatory variables over the limit of 0.80. If the correlation between the variables was greater than 0.80 then we didnot follow the assumption of the regression. In this way, our findings were fit for analysis.

Table 4: Correlation Analysis

	AGE	CPU	ENV	EPS	ESG	FS	GOV	GDP	ROA	ROE	SC
AGE	1.00										
CPU	-0.17	1.00									
ENV	-0.05	0.04	1.00								
EPS	-0.02	-0.06	0.09	1.00							
ESG	-0.09	0.12	0.74	0.09	1.00						
FS	0.02	-0.02	0.14	0.04	0.10	1.00					
GOV	-0.01	0.02	0.04	-0.01	0.07	0.10	1.00				
GDP	-0.36	0.23	0.19	0.03	0.26	0.02	0.03	1.00			
ROA	0.00	-0.01	-0.03	0.00	-0.04	0.00	0.00	-0.01	1.00		
ROE	-0.01	-0.01	-0.03	0.00	-0.03	0.00	0.00	-0.01	1.00	1.00	0.00
SC	0.03	-0.03	0.02	0.00	0.01	0.00	0.00	-0.05	0.00	0.00	1.00

The results of two-stage regression analysis are presented in Table 5. The analysis took the 3rd lag of the instruments. The results showed that ESG, SC, and GOV had negative impacts on corporate financial performance. Our findings were similar with the findings of Cho, Han, Kim, and Kim (2021) who found that higher GOV scores were associated with lower financial performance in the energy sector. Similarly, a study by Meet (2021) found that higher SC scores were associated with lower financial performance in the banking sector. Moreover, Wang and Cooper (2022) found that the negative relationship between ESG performance and financial performance was weak and not statistically significant, while a study by Khan et al. (2021) found that the positive relationship between ESG performance and financial performance was stronger for companies with high levels of intangible assets, such as brand reputation and innovation capabilities. Climate policy uncertainty and firm age significantly negatively impacted the firm's performance in ROA proxy.

Moreover, our results showed that every country contributed with a different effect. Belgium also had a significant negative impact related to CSR disclosures and ROA, but Italy had a significant positive impact due to cultural and other changes. The findings also showed that ESG and ENV positively impacted ROE. In the separate country effects, our results were significant and showed a positive impact which indicated that each country contributedto the effect on the ROE. In the result of the EPS, ESG, the environmental score showed only a significant positive impact on the financial performance. In this way our findings are supported by growing body of literature and they suggest that there is a positive relationship between a company's environmental performance, as measured by its ESG scores, and its financial performance.

Numerous studies have found that companies with higher environmental scores tended to outperform their peers in terms of financial performance. Eccles and Serafeim (2013) found that companies with high ESG performance had better financial performance than companies with low ESG performance, and that environmental performance was the most significant factor in explaining this relationship. Similarly, a study by Khan et al. (2021) found that environmental performance had a significant positive impact on financial performance, while social and governance performance had weaker or no significant impact. Several possible explanations have been

proposed for the positive relationship between environmental performance and financial performance. One is that companies with high environmental performance are better positioned to capitalize on opportunities arising from the transition to a low-carbon economy, such as increased demand for renewable energy and energy-efficient technologies. Another is that companies with high environmental performance may benefit from lower regulatory and reputational risks, as well as increased customer loyalty and employee satisfaction. Moreover, recent studies have suggested that the positive relationship between environmental performance and financial performance may be particularly strong for companies operating in industries with high environmental impact or regulatory scrutiny, such as the energy and mining sectors. Overall, the evidence suggested that environmental performance, as measured by ESG scores, had a significant positive impact on financial performance. This underscores the importance for companies to prioritize environmental sustainability in their operations and for investors to consider ESG factors when making investment decisions.

The R-squared and Adjusted R-squared values indicate the intensity of the changes in the dependent variable due to the explanatory variables. The value of the R-squared and Adjusted R-squared were favorable indicatingthe model estimation fit for evaluation of the information. The Durbin Watson value was near 2 by employing the two stage OLS method because the two stage OLS method reduced the autocorrelation problem between the variables and provided accurate information.

Table 5: Two Sstage Regression Analysis by Instrumental Variables

Variable	ROA		ROE		EPS	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
ESG	-0.01097	0.0747	0.015278	0.0013	0.015278	0.0013
ENV	-0.00263	0.7035	0.01039	0.0105	0.01039	0.0105
SC	3.45E-14	0.0701	-3.24E-13	0.7551	-3.24E-13	0.5510
GOV	3.82E-11	0.0904	-1.57E-10	0.4006	-1.57E-10	0.4006
CPU	-0.00274	0.0882	0.001495	0.1137	0.001495	0.1137
AGE	-0.00494	0.0063	-0.01171	0.0052	-0.01171	0.0520
FS	-0.00072	0.9213	0.005808	0.1768	0.005808	0.1768

Variable	ROA		ROE		EPS	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
GDP	2.44E-13	0.7964	1.17E-12	0.0035	1.17E-12	0.0350
Belgium	-0.07324	0.0755	5.197909	0.0002	5.197909	0.0002
FRANCE	-0.24645	0.0778	0.721637	0.0056	0.721637	0.0056
GERMANY	-0.61323	0.0132	1.599558	0.0037	1.599558	0.0037
ITALY	1.833421	0.0045	1.104783	0.0396	1.104783	0.0396
SPAIN	-0.27329	0.8671	3.718128	0.0001	3.718128	0.0001
R-squared	0.004551		0.031747		0.031747	
Adjusted R-squared	0.002459		0.029725		0.029725	
Durbin-Watson stat	2.011305		1.903545		1.703545	

Note: Results are presented in reference to UK taking as Base dummy.

For the result of the moderation of the climate policy uncertainty, all our findings were significant and negative that showed the strong motivational effect of the climate uncertainty policy with CSR disclosure on the corporate financial performance of the selected OECD economies. Moreover, our results were significant at the 1%,5% and 10% level of significance. Each country also had separate effects that showed its contribution overall, but Germany had a significant and positive effect indicating the different rules and governance mechanism in the Germany as compared with other OECD economies related to the climate uncertainty. Moreover, our model fitness indicators such as R-squared and adjusted R-squared were favorable that showed the model fitness.

The study found that firms with higher levels of CSR disclosure were able to achieve better financial performance in the absence of climate policy uncertainty, but that the benefits of CSR disclosure were eroded by high levels of policy uncertainty. These findings suggested that while CSR disclosure can have a positive impact on firm performance, this relationship can be weakened or even reversed in the presence of high levels of climate policy uncertainty. This underscores the importance of addressing climate policy uncertainty and providing greater clarity and stability for businesses

and investors. Overall, the relationship between climate policy uncertainty, CSR disclosure, and firm performance is complex and depends on a range of factors, including the industry, geographical region, and size of the company. Future research in this area is needed to better understand these relationships and their implications for businesses and investors.

Table 6: Moderation of Climate Policy Uncertainty

Variable	ROA		ROE		EPS	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
ESG*CPU	-2.89E-05	0.0402	-0.00082	0.003	2.98E-05	0.0405
ENV*CPU	-9.46E-06	0.0673	-0.00019	0.0449	2.91E-05	0.0276
SC*CPU	-4.76E-17	0.0956	2.40E-15	0.0915	-2.18E-15	0.0689
GOV*CPU	1.13E-13	0.0030	3.57E-12	0.0822	-2.87E-13	0.0991
BEKGIUM	-0.43631	0.0882	-12.5342	0.0445	2.307913	0.0000
FRANCE	-0.23173	0.0692	-5.34099	0.0147	0.617337	0.0102
GERMANY	-0.28483	0.0247	-6.49345	0.0781	2.906661	0.0000
ITALY	1.64E+00	0.0005	3.69E+01	0.0027	9.49E-02	0.0325
SPAIN	-0.41733	0.0601	-12.4762	0.0397	1.787445	0.0000
R-squared	0.003798		0.003108		0.024971	
Adjusted R-squared	0.002349		0.001659		0.023563	
Durbin-Watson stat	2.012103		2.013641		2.012981	

Note: Results are presented in reference to UK taking as Base dummy.

Robustness Analysis: GMM Technique

The econometric analysis of regression analysis has certain weaknesses under current conditions. In the current business environment, the variables are classified as structural, indicating a dual causal relationship that creates a critical point regarding the validity of the regression analysis. The simultaneous structuring of different factors motivates the use of simultaneous equation modeling with endogenous variables. To diagnose the real impact of variables on the endogenous variables, we utilized GMM with instruments. In this study, we employed the GMM to investigate the actual impact of the exogenous variable on the endogenous variable.

The motivation behind this method was that variables such as ROA can simultaneously increase CSR disclosure, while CSR disclosure can improve reputations, leading to higher profitability and vice versa. The results of the GMM method showed that the J-Statistics value was favorable, and the probability of the J-Statistics was significant at the 1% level of significance, indicating excellent estimations of the models and providing reliable results for interpretation. Furthermore, the GMM findings described that the lag value of ROA and EPS affected the current value with different ratios and contributed positively, while the ROE lag value had no contribution to the variance of the current value.

Table 7: Robustness Analysis: GMM Results

Variable	ROA		ROE		EPS	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
ROA (-1)	0.011	0.001	-	-	-	-
ROE (-1)	-	-	0.001	0	-	-
EPS (-1)	-	-	-	-	0.001	0.058
ESG	-0.011	0.075	0.015	0.001	0.015	0.001
ENV	-0.003	0.704	0.010	1.011	0.010	0.011
SC	0.003	0.070	0.091	0.755	0.056	0.051
GOV	0.091	0.090	0.061	1.401	0.052	0.001
CPU	-0.003	0.088	0.001	0.114	0.001	0.014
AGE	-0.005	0.006	-0.012	1.005	-0.012	0.052
FS	-0.001	0.025	0.006	0.177	0.006	0.077
GDP	0.008	0.096	0.071	1.004	0.017	0.035
Belgium	-0.073	0.076	5.198	0.091	7.197	0.000
FRANCE	-0.246	0.078	0.722	1.006	0.722	0.006
GERMANY	-0.613	0.013	1.600	0.004	2.600	0.004
ITALY	1.833	0.005	1.105	0.040	2.105	0.040
SPAIN	-0.273	0.867	3.718	0.081	3.718	0.000
J-Statistics	0.781		0.721		0.711	
Prob(J-statistics)	0.005		0.001		0.002	

Note: Results are presented in reference to UK taking as Base dummy.

In our findings of the GMM, all our results related to the CSR disclosures impacted on the ROA, ROE and EPS improved with the great intensity and had no change in the directions of the significance. The control variables GDP and the Firm size had not impacted previously but by employing the GMM method the results were significant. GDP had significant positive impact on the return on asset (ROA), ROE and EPS, respectively. Firm size (FS) had a negative and significant impact at the 5% level with ROA, indicating that large firms had lowest return on asset due to the wide range of the asset portfolio, while in other ROE and EPS estimation Firm size (FS) was significant and positive indicating that firm size increased the return on equity and earning per share. From the Table 7, we concluded that the GMM methods improved the findings of the two-stage regression method. Both econometric techniques were used for the simultaneously equation modeling, but GMMwas more appropriate due to the wide range of the acceptability in removing the simultaneous effect and showed the real impact of the exogenously variables with the proper use of the instrumental variable (Dhrymes, 1994).

DISCUSSION

Our findings showed the negative and positive impact of the CSR disclosure on firm performance from the perspective of different countries thus supporting hypothesis 1stating that CSR disclosure has a significant impact on CFP. It is important to note that the relationship between CSR disclosure and firm performance may depend on various factors, such as the industry, country, and size of the company. Additionally, the direction of causality between CSR disclosure and firm performance is not always clear, as it is possible that companies with better financial performance are more likely to engage in CSR activities. The country in which a company operates can also be an important factor in the relationship between CSR disclosure and firm performance (Gallego-Álvarez & Pucheta-Martínez, 2022). For example, countries with stronger environmental or social regulations may incentivize companies to engage in CSR activities and disclose information on their social and environmental impact. Additionally, consumer attitudes and expectations towards CSR may vary across different countries and cultures, which can affect a company's decision to engage in CSR activities and the impact of CSR disclosure on firm performance (Abd Rahim, Jalaludin, & Tajuddin, 2011).

Another factor that may impact the relationship between CSR disclosure and firm performance is the size of the company. Larger companies may have more resources to invest in CSR activities and may face greater pressure to engage in CSR activities and disclose information on their social and environmental impact due to their higher visibility and impact on society. Smaller companies, on the other hand, may face resource constraints and may have less incentive to engage in CSR activities and disclose information on their social and environmental impact.

Furthermore, the direction of causality between CSR disclosure and firm performance is not always clear. While some studies suggest that CSR disclosure can lead to improved financial performance, it is also possible that companies with better financial performance are more likely to engage in CSR activities and disclose information on their social and environmental impact as part of their corporate strategy (Pekovic & Vogt, 2021). Thus, the relationship between CSR disclosure and firm performance may be influenced by a variety of factors and the direction of causality may not always be clear.

Our findings build upon and extend the current literature in several keyways. While existing studies have established a general link between CSR disclosures and financial performance, our research provides a more nuanced understanding by incorporating the factor of climate policy uncertainty. This addition offers a unique perspective, highlighting how the external environmental policies can influence the relationship between CSR and corporate financial performance. Furthermore, our study's multinational scope, encompassing diverse economies within the OECD, contributes to a more global understanding of these dynamics. This comprehensive approach not only corroborates previous findings but also unveils new patterns and implications, particularly in the context of varying regulatory environments and climate policy stances. Therefore, this study not only reinforces the existing body of knowledge but also paves the way for future research in understanding the complex interplay between corporate responsibility, policy environments, and financial outcomes.

Regarding the moderation impact of the climate policy uncertainty, the findings support the existence of a the strong motivational effect of the CPU with CSR disclosure on the corporate financial performance of the selected

OECD economies. However, there are differences in the relationships across the country governance mechanism. Such a result are in line with the recent litearure. Yousaf et al. (2022) found that CSR disclosure had a positive impact on firm performance, but that this relationship was weakened by high levels of climate policy uncertainty. This was also supported by Zhang eta al. (2021) which indicated that firms with higher levels of CSR disclosure were better able to navigate climate policy uncertainty and maintain their financial performance. Therefore, Hypothesis 2 was rejected indicating that CPU had a positive moderating impact on CSR disclosures and corporate financial performance relationship.

CONCLUSION

In conclusion, the relationship between CSR disclosure and firm performance is complex and may depend on various factors, such as the industry, country, and size of the company. Additionally, the direction of causality between CSR disclosure and firm performance is not always clear. Therefore, it is important to consider these factors when examining the relationship between CSR disclosure and firm performance.

The study contributes to the broader academic literature on CSR disclosure and firm performance and can help to inform future research in this area. By contributing to our understanding of the factors that influence the relationship between CSR disclosure and firm performance, the study can help to identify areas for further research and contribute to the development of more robust and accurate theories of CSR and firm performance. Overall, a study that examines the relationship between CSR disclosure, climate policy uncertainty, and firm performance can have important implications for policy makers, companies, investors, and the academic community. By contributing to our understanding of the factors that influence the relationship between CSR disclosure and firm performance, such a study help to inform policy decisions, guide strategic decision-making by companies, and improve our understanding of the complex relationship between CSR and financial performance.

Moreover, this study has some important implications for policy makers, investors and the organizations. Policy makers may use the findings

of the study to develop and implement more effective climate policies that can positively influence the financial performance of companies. By understanding the moderating impact of climate policy uncertainty on the relationship between CSR disclosure and firm performance, policy makers can develop policies that help to reduce uncertainty and encourage companies to engage in CSR activities. Companies can use the findings of the study to understand the potential impact of their CSR disclosure on their financial performance, and to make strategic decisions regarding their CSR activities. By understanding the potential impact of their CSR disclosure on their financial performance, companies can make informed decisions regarding the types and extent of CSR activities they engage in. Investors and other stakeholders may use the findings of the study to evaluate the financial performance of companies and make investment decisions. By understanding the relationship between CSR disclosure, climate policy uncertainty, and firm performance, investors can make more informed decisions about the potential risks and benefits of investing in a particular company.

Possible limitations of this study can provide some future research suggestions. One key limitation is the potential variability in CSR standards and reporting practices across different OECD countries, which may affect the comparability of the results. Additionally, the study may not fully account for industry-specific factors or the varying levels of climate policy stringency across countries, which could influence the observed relationships. The temporal scope of the data used may also limit the findings, as the impact of CSR disclosures on financial performance could vary over longer periods, particularly in response to evolving climate policies. For future research, it would be beneficial to explore the moderating role of CPU in non-OECD countries to understand if the findings are consistent across different regulatory and economic environments. Further studies could also incorporate a more granular analysis of industry-specific effects and consider longitudinal approaches to capture the long-term impact of CSR disclosures under varying levels of CPU. Additionally, examining the role of emerging climate-related financial regulations and their interaction with CSR disclosures could provide deeper insights into the dynamic relationship between CSR and CFP in the context of growing global climate concerns. Some further research should be conducted on the different factors that contribute to the effectiveness of the financial performance of

the corporations. In this research we have some limitations due to data and the methods of the analysis, future studies can reduce these limitations for further investigations.

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