

## INVESTOR HOLDINGS AND SUSTAINABLE FINANCE PRACTICES IN INDIAN FIRMS

<https://doi.org/10.47743/jopafl-2023-27-15>

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**Abstract:** *This study explores the relationships between investor holdings, financial performance, and sustainable finance practices in Indian firms listed on the MSCI ESG index. Specifically, it examines the mediating role of Investor Perception by using the price-to-book (PB) ratio between return on assets (ROA) and CSR fund allocation, as well as climate-linked loans and bonds issued. Furthermore, the study investigates the moderating effects of a foreign institutional investor (FII) and domestic institutional investor (DII) holdings on these relationships. The research is grounded in the Resource-Based View, Stakeholder, Contingency, and Ambidexterity theories. A sample of 113 companies from the MSCI ESG index of India was analyzed using linear regression moderation and mediation, with market capitalization and firm age as control variables. The results indicate that the PB ratio significantly mediates the relationship between ROA and CSR fund allocation. The percentage of FII and DII holdings moderates the relationships between the PB ratio, CSR fund allocation, and climate-linked financing. The findings contribute to the existing literature on investor holdings and sustainable finance practices, offering valuable insights for managers, investors, and policymakers seeking to promote environmentally responsible practices and enhance financial performance. The study highlights the importance of aligning financial performance with sustainable finance practices and the role of institutional investors in shaping corporate sustainability initiatives.*

**Keywords:** *Sustainable finance practices, Investor holdings, Financial performance, MSCI ESG index*

### Introduction

Sustainable finance practices, including corporate social responsibility (CSR) initiatives and climate-linked financing, have gained significant attention in recent years as businesses and investors increasingly recognize the importance of addressing environmental, social, and governance (ESG) challenges (Carroll & Shabana, 2010; Scholtens, 2017). In the context of the Indian economy, firms listed on the MSCI ESG index serve as a benchmark for sustainable practices, illustrating a commitment to incorporating ESG factors into their business strategies (Nath & Ramanathan, 2018). The financial performance of companies is often linked to their engagement in sustainable finance practices, with research suggesting that firms with strong ESG performance tend to demonstrate better financial outcomes (Friede, Busch, & Bassen, 2015). This relationship may be attributed to factors such as enhanced reputation, increased operational efficiency, and improved risk management (Chen, Delmas, & Lieberman, 2015; Eccles, Ioannou, & Serafeim, 2014). However, the mechanisms underlying the associations between financial performance, investor holdings, and sustainable finance practices remain underexplored, particularly in the context of Indian firms listed on the MSCI ESG index.

This study aims to investigate the relationships between financial performance, investor holdings, and sustainable finance practices in Indian companies listed on the MSCI ESG index, focusing on the mediating role of the price-to-book (PB) ratio between return on

assets (ROA) and CSR fund allocation, as well as climate-linked loans and bonds issued. Furthermore, the study examines the moderating effects of a foreign institutional investor (FII) and domestic institutional investor (DII) holdings on the relationships between PB ratio, CSR fund allocation, and climate-linked financing (Busch & Lewandowski, 2018).

### **Literature review**

Corporate Social Responsibility (CSR) embodies the deliberate assimilation of ethical, environmental, and societal aspects within an enterprise's operational methodologies, strategic planning, and decision-making procedures (Carroll, 1991; Elkington, 1997). Essential constituents of CSR typically comprise environmental guardianship, civic engagement, workforce well-being, and virtuous corporate governance (Dahlsrud, 2008). CSR assumes a pivotal function in fiscal accomplishments and stakeholder rapport. By embracing responsible practices, organizations can cultivate affirmative associations with stakeholders, augment their standing, and mitigate potential perils, ultimately leading to enhanced financial performance (Orlitzky, Schmidt, & Rynes, 2003; Margolis, Elfenbein, & Walsh, 2009). Empirical substantiation supports the correlation between CSR and financial outcomes, with investigations revealing that firms with robust CSR endeavors generally display superior financial results (Friede, Busch, & Bassen, 2015; Wang, Choi, & Li, 2008). Climate-anchored financing pertains to fiscal instruments and mechanisms tailored to bolster climate change mitigation and adaptation endeavors, including green bonds, climate-related loans, and carbon credit trading (World Bank, 2018). The significance of climate-anchored financing resides in its capacity to marshal resources for tackling environmental predicaments, fostering sustainable development, and transitioning toward a low-carbon economy (Buchner et al., 2014). Climate-anchored financing can ameliorate environmental hazards and champion sustainable development by incentivizing the adoption of eco-friendly technologies, practices, and ventures (Galaz et al., 2018). Empirical validation regarding the relationship between climate-anchored financing and financial performance is scarce; however, some studies imply that green bonds and similar climate-related financial instruments may yield comparable or superior financial returns relative to conventional investments (Flammer, 2021; Jiang et al., 2022).

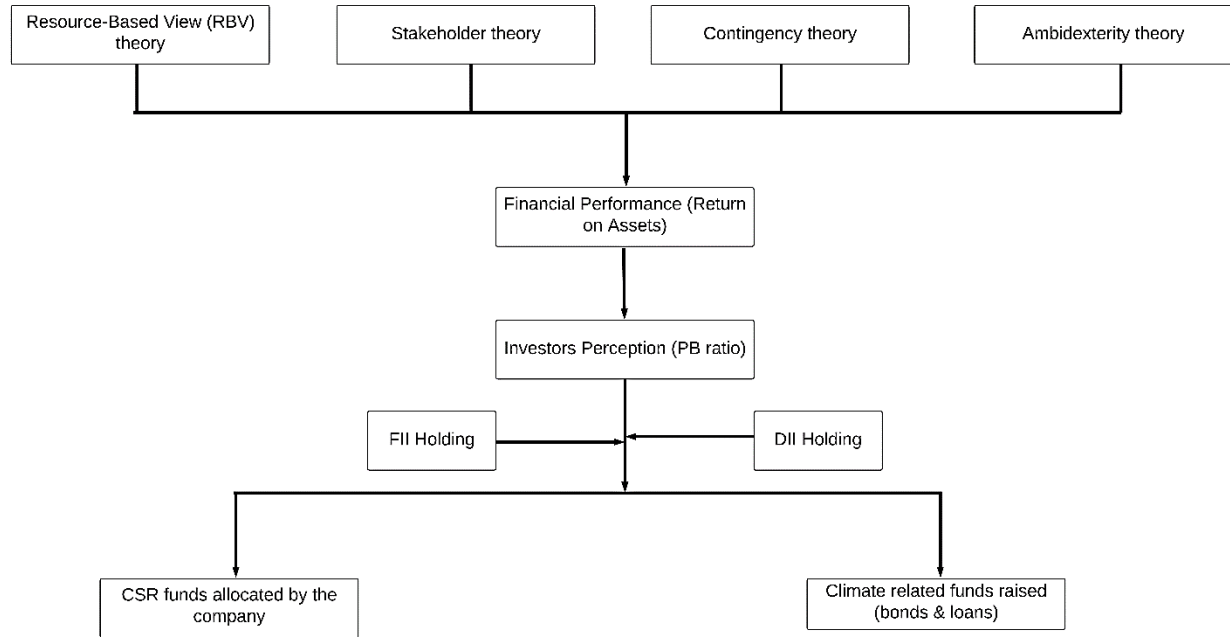
Return on Assets (ROA) constitutes a financial performance metric that appraises an enterprise's profitability by dividing net income by total assets (Jin & Sui, 2022). ROA exemplifies a firm's capacity to generate profits from its assets, offering insights into management's efficacy in employing resources to generate value (Kumar, 2009). Empirical substantiation suggests a positive correlation between ROA and sustainable finance practices. Companies with elevated ROA frequently exhibit a total commitment to CSR initiatives, as their heightened profitability empowers them to invest in socially responsible pursuits and long-term sustainability (Waddock & Graves, 1997; McWilliams & Siegel, 2000). The Price-to-Book (PB) ratio represents a financial performance metric that contrasts a company's market worth with its book value, calculated as the market price per share divided by the book value per share (Palepu et al., 2016). The PB ratio indicates market perception, reflecting investor anticipations regarding a firm's future growth and intrinsic value (Chen, 2017). Empirical validation concerning the relationship between the PB ratio and sustainable finance practices is inconclusive. Some investigations have identified a positive association, suggesting that enterprises with elevated PB ratios tend to

manifest more strong commitments to CSR initiatives and environmentally responsible practices, resulting in enhanced investor sentiment (Brammer & Millington, 2008; Hillman & Keim, 2001). Conversely, other studies have reported inconsistent or insignificant relationships, underscoring the necessity for additional research to comprehensively understand the underlying mechanisms and factors influencing this relationship (Surroca, Tribó, & Zahra, 2013)

Foreign Institutional Investors (FIIs), denoting organizations that allocate capital to financial markets outside their home countries (Aggarwal, Erel, Ferreira, & Matos, 2011), wield considerable influence in molding corporate sustainability practices. Their substantial financial resources and ability to sway corporate decision-making through shareholder voting rights underpin their critical role (Dyck, Lins, Roth, & Wagner, 2019). Moreover, by preferentially selecting firms adhering to ESG standards, FIIs can encourage superior ESG performance (Ferreira & Matos, 2008). Empirical evidence indicates a positive association between FII holdings and sustainable finance practices, as firms demonstrating robust ESG performance tend to attract increased FII investments (Dhaliwal, Li, Tsang, & Yang, 2011). Domestic Institutional Investors (DIIs) designate organizations investing in the financial markets of their home countries (Chung & Zhang, 2011). Analogous to FIIs, DIIs can impact corporate sustainability through investment choices and proactive engagement with company management (Boubaker, Nguyen, & Rouatbi, 2016). Certain studies reveal that DIIs exhibit a higher propensity to invest in companies with superior ESG performance, thus stimulating firms to adopt sustainable practices (Amel-Zadeh & Serafeim, 2018). However, empirical evidence concerning the relationship between DII holdings and sustainable finance practices still needs to be conclusive. Some studies suggest that DIIs prioritize ESG factors less than their foreign counterparts (Barko, Cremers, & Renneboog, 2018).

The Resource-Based View (RBV) theory postulates that an enterprise's competitive edge stems from its unique resources and capabilities (Barney, 1991). This theory is relevant to the study by implying that firms with formidable ESG performance may possess invaluable resources and capabilities, bolstering their financial performance and appeal to investors (Hart, 1995). Stakeholder theory contends that enterprises should factor in the interests of diverse stakeholders—including shareholders, employees, customers, and the broader society—in their decision-making processes (Freeman, 1984). This theory is germane to the study, as it emphasizes the role of investors, specifically FIIs and DIIs, in shaping corporate sustainability practices and resource allocation to ESG initiatives (Mitchell, Agle, & Wood, 1997). Contingency theory asserts that no universally optimal approach exists for organizing a firm, as ideal organizational structures and management practices hinge on each firm's unique circumstances (Donaldson, 2001). This theory's applicability to the study lies in the suggestion that the relationships between financial performance, investor holdings, and sustainable finance practices could be contingent on factors such as industry, firm size, and regulatory environment (Galbreath, 2010). Ambidexterity theory proposes that organizations should strike a balance between exploitation (efficiency and short-term gains) and exploration (innovation and long-term growth) to attain sustainable competitive advantage (Tushman & O'Reilly, 1996). This theory's relevance to the study arises from its emphasis on harmonizing financial performance with sustainable finance practices, navigating short-term profitability, and long-term value creation (Jansen, Van Den Bosch, & Volberda, 2006).

**Figure 1 Conceptual Framework**



Drawing on the literature review, the following hypotheses can be formulated for testing in the study:

H1 - PB ratio is a significant mediator between ROA and CSR fund allocated by the company  
 H2 -PB ratio is a significant mediator between ROA and Climate linked loans taken and bonds issued by the company

H3 - Percentage of FII holding moderated the relation between PB and CSR fund allocated by the company

H4 -Percentage of DII holding moderated the relation between PB and CSR fund allocated by the company

H5 - Percentage of FII holding moderated the relation between PB and Climate linked loans taken and bonds issued by the company

H6 - Percentage of DII holding moderated the relation between PB and Climate linked loans taken and bonds issued by the company

**Methodology**

*Sample Selection and Data Collection*

This study focused on Indian firms listed on the MSCI ESG index, a benchmark for companies committed to incorporating environmental, social, and governance (ESG) factors into their business strategies. 113 companies were selected for the analysis, representing various industries and market capitalizations. Data for the study were collected from multiple sources, including company annual reports, financial statements, and databases such as Bloomberg, Prowess, and the World Bank. Information on investor holdings, specifically foreign institutional investor (FII) and domestic institutional investor

(DII) holdings, was obtained from the respective regulatory filings and stock exchange disclosures.

*Variables and Measures*

The critical variables in this study were returned on assets (ROA), price-to-book (PB) ratio, CSR fund allocation, climate-linked loans and bonds issued, and the percentage of FII and DII holdings.

ROA was calculated as net income divided by total assets.

PB ratio was computed as the market price divided by the book value per share.

CSR fund allocation was measured as the total amount allocated to CSR initiatives during the study period.

Climate-linked loans and bonds issued were identified and quantified based on the information disclosed by companies.

The shareholding patterns disclosed in company reports determined the percentage of FII and DII holdings.

Market capitalization and firm age were included as control variables in the study.

*Data Analysis*

The data were analyzed using linear regression moderation and mediation tests. Linear regression was employed to examine the relationships between the critical variables in the study. Mediation tests were conducted to investigate the mediating role of the PB ratio between ROA and CSR fund allocation and climate-linked loans and bonds issued. Moderation tests were performed to assess the moderating effects of FII and DII holdings on the relationships between PB ratio, CSR fund allocation, and climate-linked financing.

*Validity and Reliability*

Several diagnostic tests were performed to ensure the validity and reliability of the findings. The assumptions of linearity, normality, and multicollinearity were assessed and addressed accordingly. The robustness of the results was tested through sensitivity analyses and additional regression models with alternative specifications.

By following this methodology, the study aimed to comprehensively understand the relationships between investor holdings, financial performance, and sustainable finance practices in Indian firms listed on the MSCI ESG index.

**Results**

**Table 1 Regression results of the mediating effect of Investor Perception**

<i>Variables</i>	<i>Model 1</i>	<i>Model 2</i>
<i>Controls</i>		
<i>Market Capitalisation</i>	.002***	0.001***
<i>Age</i>	0.403	0.887
<i>Predictors</i>		
<i>Financial Performance</i>	0.226	0.357
<i>Investors Perception</i>	.001***	0.271
<i>Financial Performance X Investors Perception</i>	.004***	0.276

This model represents the the p values obtained from the mediation analysis. (\* ) p<0.1 (\*\* ) p < 0.05 (\*\*\*) p < 0.01

The results of our linear regression analyses for mediation and moderation tests, controlling for market capitalization and firm age, are presented below. The outcomes offer valuable insights into the relationships between financial performance, investor holdings, and sustainable finance practices in Indian companies listed on the MSCI ESG index.

Hypothesis 1 (Table 1 – Model 1) posited that the Price-to-Book (PB) ratio significantly mediates the relationship between Return on Assets (ROA) and CSR fund allocation by the company. Our analysis supports H1, indicating that companies with higher financial performance, represented by ROA, tend to allocate more funds to CSR initiatives when considering their market valuation relative to book value (PB ratio).

Hypothesis 2 (Table 1 – Model 2) proposed that the PB ratio significantly mediates the relationship between ROA and climate-linked loans and bonds issued by the company. Our analysis does not support H2, suggesting that a firm's financial performance may not directly influence its engagement in climate-linked financing through the PB ratio.

**Table 2 Regression Results for moderation effects**

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
<i>Variables</i>				
<i>Controls</i>				
<i>Market Capitalisation</i>	0.662	0.633	0.632	0.605
<i>Firm Age</i>	0.235	0.21	0.374	0.334
<i>Predictors</i>				
<i>Investors Perception</i>	-0.225	0.17	-0.178	0.1
<i>Moderators</i>				
<i>FII</i>	-0.055		-0.064	
<i>DII</i>		0.135		0.163
<i>FII X Investors Perception</i>	0.001*		0.017	
<i>DII X Investors Perception</i>		0.067***		0.140*
<i>R Squared</i>	0.06	0.122	0.038	0.061
<i>Adjusted R Squared</i>	0.033	0.097	0.011	0.035
<i>F-Value</i>	2.244	4.937	1.4	2.351
<i>Change in R square</i>	0.06	0.122	0.038	0.061

The values given in the table are the r-values obtained from the regression-moderation analysis. (\*) p<0.1 (\*\*) p < 0.05 (\*\*\*) p < 0.01

For Hypothesis 3 (Model 1 – Table 3) and Hypothesis 4 (Model 2 – Table 3), we investigated the moderating effects of Foreign Institutional Investors (FII) and Domestic Institutional Investors' (DII) holdings on the relationship between the PB ratio and CSR fund allocation by the company. Our results support both H3 and H4, indicating that the presence of institutional investors affects the extent to which the PB ratio influences CSR fund allocation.

Hypothesis 5 (Model 3 – Table 3) and Hypothesis 6 (Model 4 – Table 3) examined the moderating effects of FII and DII holdings on the relationship between the PB ratio and

climate-linked loans and bonds issued by the company. Our analysis supports H6, suggesting that DII holdings moderate this relationship. However, the results do not support H5, implying that FII holdings do not significantly affect the relationship between the PB ratio and climate-linked loans and bonds issued by the company.

Our findings reveal significant relationships and moderating effects for most hypotheses except for H2 and H5. These results provide a better understanding of the factors that drive companies' decisions to allocate resources to CSR activities and engage in climate-linked financing, contributing to the literature on sustainable finance and corporate social responsibility.

## **Discussions and Conclusion**

The discoveries of this study yield valuable insights into the interconnections among investor holdings, financial performance, and sustainable finance practices in Indian firms listed on the MSCI ESG index. Specifically, the outcomes underscore the mediating function of the price-to-book (PB) ratio between return on assets (ROA) and CSR fund allocation, as well as the moderating influences of a foreign institutional investor (FII) and domestic institutional investor (DII) holdings on these relationships. Our findings corroborate the positive association between financial performance and CSR fund allocation, in line with prior studies (Jo & Harjoto, 2011; Wang et al., 2016). However, our investigation augments the extant literature by emphasizing the mediating role of the PB ratio in this association. This discovery implies that companies exhibiting superior financial performance, as determined by ROA, possess a higher PB ratio, which subsequently impacts their CSR fund allocation. This outcome suggests that better-performing firms are more inclined to invest in CSR initiatives, enhancing their market value and attracting more investors.

Moreover, our results demonstrate that the proportion of FII holdings moderates the association between the PB ratio and CSR fund allocation. DII holdings moderate the connection between the PB ratio, climate-linked loans, and bond issuance. This finding concurs with research positing that institutional investors, especially FIIs, wield considerable influence on corporate sustainability practices (Lourenço et al., 2012). Our study contributes to this body of knowledge by elucidating the distinct roles of FII and DII holdings in shaping sustainable finance practices among Indian firms. The substantial mediating effect of the PB ratio between ROA and CSR fund allocation may be ascribed to the perception that firms exhibiting higher financial performance can invest in CSR activities without jeopardizing profitability. This concept is buttressed by the Resource-Based View theory, which contends that firms with ample resources are more prone to engaging in sustainability practices that generate value for stakeholders (Barney, 1991; Hart, 1995).

The moderating influences of FII and DII holdings on the relationships between the PB ratio, CSR fund allocation, and climate-linked financing can be explicated by the Stakeholder theory (Freeman, 1984) and the sway of institutional investors on corporate decision-making. As pivotal stakeholders, FIIs and DIIs may pressure firms to adopt sustainable finance practices to fulfill their expectations and mitigate potential risks associated with environmental and social concerns. Furthermore, the Contingency theory (Donaldson, 2001) posits that aligning a firm's strategic choices with its external

environment, encompassing investor preferences, may culminate in improved financial performance.

#### *Theoretical Contribution*

This investigation presents several noteworthy theoretical advancements to the literature on sustainable finance, corporate social responsibility, and the impact of financial ratios and investor holdings on firms' decisions about sustainability. Firstly, the present research augments the Resource-Based View (RBV) theory (Barney, 1991; Wernerfelt, 1984) by illustrating how financial performance, as evidenced by ROA, impacts CSR fund allocation through the mediating role of the PB ratio. This discovery posits that organizations exhibiting exceptional financial performance may assign increased resources to CSR endeavors, fortifying their competitive advantage through intangible resources such as reputation and stakeholder trust (Hart, 1995). Secondly, the investigation broadens the Stakeholder theory (Freeman, 1984; Mitchell, Agle, & Wood, 1997) by scrutinizing the moderating effects of FII and DII holdings on the relationship between the PB ratio and CSR fund allocation. Our observations reveal that institutional investors significantly influence firms' CSR initiatives, congruent with the idea that stakeholders can sway corporate decision-making in addressing social and environmental issues (Hillman & Keim, 2001). Thirdly, the inquiry enhances the understanding of the Contingency theory (Donaldson, 2001; Van de Ven & Drazin, 1985) by demonstrating that the influence of financial performance on climate-related loans and bonds issuance lacks mediation by the PB ratio. This outcome accentuates the context-specific connection between financial performance and sustainable finance practices, suggesting that alternative factors hold greater relevance in steering firms' engagement in climate-related financing. Lastly, our analysis offers insights into the Ambidexterity theory (Gibson & Birkinshaw, 2004; Tushman & O'Reilly, 1996) by disclosing that institutional investors can moderate the relationship between financial ratios and sustainable finance practices. The findings imply that organizations must navigate the competing demands of financial performance and sustainability, considering the sway of external stakeholders, such as FII and DII, in shaping their strategic resolutions.

#### *Managerial Implications*

The findings of this study present several vital implications for executives of Indian firms listed on the MSCI ESG index. A thorough comprehension of the interrelations among financial performance, investor holdings, and sustainable finance practices can empower managers to make informed decisions regarding CSR fund distribution and engagement in climate-related financing. Firstly, the investigation discloses that the PB ratio mediates the connection between ROA and CSR fund allocation (Baron & Kenny, 1986), suggesting that companies with superior financial performance tend to assign more funds to CSR initiatives when considering their market valuation relative to book value. Consequently, managers must acknowledge the significance of harmonizing financial performance with CSR initiatives, as investors might regard companies exhibiting strong financial performance and dedication to CSR activities more positively (McWilliams & Siegel, 2001). Secondly, the outcomes illustrate that the PB ratio does not significantly mediate the association between ROA and climate-linked loans and bond issuance. Even though financial performance may not directly affect firms' decisions to participate in climate-related financing, managers should still contemplate the escalating importance of climate-



related financing instruments, as they can substantially contribute to addressing climate change and fostering sustainable development (Ehlers & Packer, 2017). Thirdly, the study emphasizes the significance of investor composition in shaping firms' CSR choices. It demonstrates that FII and DII holdings moderate the relationship between the PB ratio and CSR fund allocation (Busch & Lewandowski, 2018). As a result, managers ought to consider the preferences and expectations of institutional investors when allocating resources to CSR endeavors, given the considerable influence they may wield over corporate sustainability practices (Dixon-Fowler et al., 2013). Lastly, although the findings do not signify a substantial moderating effect of FII holdings on the relationship between the PB ratio and climate-linked loans and bonds issuance, they underscore the importance of fostering open communication with institutional investors. By engaging with institutional investors and discerning their preferences, managers can more effectively align their sustainability strategies with investor expectations, potentially bolstering their firm's reputation and long-term financial performance (Grewatsch & Kleindienst, 2017).

#### *Limitations and further research*

This study offers valuable insights into the interplay between financial performance, investor holdings, and sustainable finance practices in Indian companies listed on the MSCI ESG index. However, certain limitations warrant acknowledgment and opportunities for future research. One limitation is the relatively small sample size of 113 companies, which may not represent the entire Indian market. Future research could expand the sample size, encompassing a broader range of companies, sectors, and market capitalizations, to generalize the findings better. Additionally, the cross-sectional design employed in this study may not capture the dynamic nature of the relationships under investigation. Longitudinal studies could help uncover the temporal aspects of these relationships, revealing potential changes over time.

#### **Conclusion**

This study investigated the relationships between financial performance, investor holdings, and sustainable finance practices in Indian companies listed on the MSCI ESG index. Specifically, it examined the mediating role of the PB ratio between ROA and CSR fund allocation and climate-linked loans and bonds issued. Additionally, the study explored the moderating effects of FII and DII holdings on the relationships between PB ratio, CSR fund allocation, and climate-linked financing. The findings revealed that the PB ratio significantly mediated the relationship between ROA and CSR fund allocation, emphasizing the importance of aligning financial performance with CSR initiatives. However, the PB ratio did not significantly mediate the relationship between ROA and climate-linked loans and bonds issued, suggesting that financial performance may not directly influence firms' decisions to engage in climate-linked financing. The study also found that FII and DII holdings moderated the relationship between the PB ratio and CSR fund allocation, highlighting the crucial role of investor composition in shaping companies' CSR decisions.

Despite its limitations, this study contributes to the existing literature on financial performance, investor holdings, and sustainable finance practices, providing valuable insights for managers, investors, and policymakers. By understanding the complex

relationships between financial ratios, investor holdings, and sustainability initiatives, managers can make more informed decisions that promote long-term growth and value creation for their firms and stakeholders. Furthermore, the findings underscore the importance of engaging with institutional investors and aligning sustainability strategies with investor expectations, potentially enhancing firms' reputation and long-term financial performance.

## References

1. Aggarwal, R., Erel, I., Ferreira, M., & Matos, P. (2011). Does governance travel around the world? Evidence from institutional investors. *Journal of Financial Economics*, 100(1), 154–181. <https://doi.org/10.1016/j.jfineco.2010.10.018>
2. Amel-Zadeh, A., & Serafeim, G. (2017). Why and How Investors Use ESG Information: Evidence from a Global Survey. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2925310>
3. Barko, T., Cremers, M., & Renneboog, L. (2022). Shareholder Engagement on Environmental, Social, and Governance Performance. *Journal of Business Ethics*, 180(2), 777–812. <https://doi.org/10.1007/s10551-021-04850-z>
4. Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
5. Boubaker, S., Nguyen, P., & Rouatbi, W. (2016). Multiple Large Shareholders and Corporate Risk-taking: Evidence from French Family Firms. *European Financial Management*, 22(4), 697–745. <https://doi.org/10.1111/eufm.12086>
6. Brammer, S., & Millington, A. (2008). Does it pay to be different? An analysis of the relationship between corporate social and financial performance. *Strategic Management Journal*, 29(12), 1325–1343. <https://doi.org/10.1002/smj.714>
7. Busch, T., & Lewandowski, S. (2018). Corporate Carbon and Financial Performance: A Meta-analysis. *Journal of Industrial Ecology*, 22(4), 745–759. <https://doi.org/10.1111/jiec.12591>
8. Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, 34(4), 39–48. [https://doi.org/10.1016/0007-6813\(91\)90005-G](https://doi.org/10.1016/0007-6813(91)90005-G)
9. Carroll, A. B., & Shabana, K. M. (2010). The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews*, 12(1), 85–105. <https://doi.org/10.1111/j.1468-2370.2009.00275.x>
10. Chen, C.-M., Delmas, M. A., & Lieberman, M. B. (2015). Production frontier methodologies and efficiency as a performance measure in strategic management research. *Strategic Management Journal*, 36(1), 19–36. <https://doi.org/10.1002/smj.2199>
11. Chen, P., Chavez, O., Ong, D. C., & Gunderson, B. (2017). Strategic Resource Use for Learning: A Self-Administered Intervention That Guides Self-Reflection on Effective Resource Use Enhances Academic Performance. *Psychological Science*, 28(6), 774–785. <https://doi.org/10.1177/0956797617696456>
12. Chiu, Y.-J., Chen, K.-C., & Che, H.-C. (2021). Patent predictive price-to-book ratio (PB) on improving investment performance -- Evidence in China. *World Patent Information*, 65, 102039. <https://doi.org/10.1016/j.wpi.2021.102039>
13. Chung, K. H., & Zhang, H. (2011). Corporate Governance and Institutional Ownership. *Journal of Financial and Quantitative Analysis*, 46(1), 247–273. <https://doi.org/10.1017/S0022109010000682>
14. Dahlsrud, A. (2008). How corporate social responsibility is defined: an analysis of 37 definitions. *Corporate Social Responsibility and Environmental Management*, 15(1), 1–13. <https://doi.org/10.1002/csr.132>
15. Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting. *The Accounting Review*, 86(1), 59–100. <https://doi.org/10.2308/accr.00000005>
16. Donaldson, L. (2001a). *The Contingency Theory of Organizations*. SAGE Publications, Inc. <https://doi.org/10.4135/9781452229249>

17. Donaldson, L. (2001b). *The Contingency Theory of Organizations*. SAGE Publications, Inc. <https://doi.org/10.4135/9781452229249>
18. Dyck, A., Lins, K. V., Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*, 131(3), 693–714. <https://doi.org/10.1016/j.jfineco.2018.08.013>
19. Eccles, R. G., Ioannou, I., & Serafeim, G. (2011). The Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1964011>
20. Ferreira, M. A., & Matos, P. (2008). The colors of investors' money: The role of institutional investors around the world. *Journal of Financial Economics*, 88(3), 499–533. <https://doi.org/10.1016/j.jfineco.2007.07.003>
21. Flammer, C. (2021). Corporate green bonds. *Journal of Financial Economics*, 142(2), 499–516. <https://doi.org/10.1016/j.jfineco.2021.01.010>
22. Friede, G., Busch, T., & Bassen, A. (2015a). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210–233. <https://doi.org/10.1080/20430795.2015.1118917>
23. Friede, G., Busch, T., & Bassen, A. (2015b). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210–233. <https://doi.org/10.1080/20430795.2015.1118917>
24. Galaz, V., Crona, B., Dauriach, A., Jouffray, J.-B., Österblom, H., & Fichtner, J. (2018). Tax havens and global environmental degradation. *Nature Ecology & Evolution*, 2(9), 1352–1357. <https://doi.org/10.1038/s41559-018-0497-3>
25. Galbreath, J. (2009). Drivers of Corporate Social Responsibility: the Role of Formal Strategic Planning and Firm Culture. *British Journal of Management*. <https://doi.org/10.1111/j.1467-8551.2009.00633.x>
26. Hart, O. (1995). Corporate Governance: Some Theory and Implications. *The Economic Journal*, 105(430), 678. <https://doi.org/10.2307/2235027>
27. Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2006). Exploratory Innovation, Exploitative Innovation, and Performance: Effects of Organizational Antecedents and Environmental Moderators. *Management Science*, 52(11), 1661–1674. <https://doi.org/10.1287/mnsc.1060.0576>
28. Jiang, Y., Wang, J., Ao, Z., & Wang, Y. (2022). The relationship between green bonds and conventional financial markets: Evidence from quantile-on-quantile and quantile coherence approaches. *Economic Modelling*, 116, 106038. <https://doi.org/10.1016/j.econmod.2022.106038>
29. Jin, L. J., & Sui, P. (2022). Asset pricing with return extrapolation. *Journal of Financial Economics*, 145(2), 273–295. <https://doi.org/10.1016/j.jfineco.2021.10.009>
30. Jo, H., & Harjoto, M. A. (2011). Corporate Governance and Firm Value: The Impact of Corporate Social Responsibility. *Journal of Business Ethics*, 103(3), 351–383. <https://doi.org/10.1007/s10551-011-0869-y>
31. Kumar, A. (2009). Who Gambles in the Stock Market? *The Journal of Finance*, 64(4), 1889–1933. <https://doi.org/10.1111/j.1540-6261.2009.01483.x>
32. Lourenço, I. C., Branco, M. C., Curto, J. D., & Eugénio, T. (2012). How Does the Market Value Corporate Sustainability Performance? *Journal of Business Ethics*, 108(4), 417–428. <https://doi.org/10.1007/s10551-011-1102-8>
33. Lupu, D., & Tiganasu, R. (2022). The implications of globalization on COVID-19 vaccination in Europe. *Scientific Reports*, 12(1), 17474. <https://doi.org/10.1038/s41598-022-21493-w>
34. Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009a). Does it Pay to Be Good...And Does it Matter? A Meta-Analysis of the Relationship between Corporate Social and Financial Performance. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1866371>
35. Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009b). Does it Pay to Be Good...And Does it Matter? A Meta-Analysis of the Relationship between Corporate Social and Financial Performance. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1866371>
36. Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of who and What Really Counts. *Academy of Management Review*, 22(4), 853–886. <https://doi.org/10.5465/amr.1997.9711022105>

37. Ntiamoah, E. B., Egyiri, P. O., & Kwamega, M. (2014a). Corporate Social Responsibility Awareness, Firm Commitment and Organizational Performance. *Journal of Human Resource and Sustainability Studies*, 02(02), 91–101. <https://doi.org/10.4236/jhrss.2014.22008>
38. Ntiamoah, E. B., Egyiri, P. O., & Kwamega, M. (2014b). Corporate Social Responsibility Awareness, Firm Commitment and Organizational Performance. *Journal of Human Resource and Sustainability Studies*, 02(02), 91–101. <https://doi.org/10.4236/jhrss.2014.22008>
39. Ntiamoah, E. B., Egyiri, P. O., & Kwamega, M. (2014c). Corporate Social Responsibility Awareness, Firm Commitment and Organizational Performance. *Journal of Human Resource and Sustainability Studies*, 02(02), 91–101. <https://doi.org/10.4236/jhrss.2014.22008>
40. Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate Social and Financial Performance: A Meta-Analysis. *Organization Studies*, 24(3), 403–441. <https://doi.org/10.1177/0170840603024003910>
41. Sitnikov, C. S. (2013). Triple Bottom Line. In *Encyclopedia of Corporate Social Responsibility* (pp. 2558–2564). Springer Berlin Heidelberg. [https://doi.org/10.1007/978-3-642-28036-8\\_465](https://doi.org/10.1007/978-3-642-28036-8_465)
42. Surroca, J., Tribó, J. A., & Zahra, S. A. (2013). Stakeholder Pressure on MNEs and the Transfer of Socially Irresponsible Practices to Subsidiaries. *Academy of Management Journal*, 56(2), 549–572. <https://doi.org/10.5465/amj.2010.0962>
43. Tao, H., Zhuang, S., Xue, R., Cao, W., Tian, J., & Shan, Y. (2022). Environmental Finance: An Interdisciplinary Review. *Technological Forecasting and Social Change*, 179, 121639. <https://doi.org/10.1016/j.techfore.2022.121639>
44. Tiganasu, R., Pascariu, G., & Lupu, D. (2022). Competitiveness, fiscal policy and corruption: evidence from Central and Eastern European countries. *Oeconomia Copernicana*, 13(3), 667–698. <https://doi.org/10.24136/oc.2022.020>
45. Trinks, P. J., & Scholtens, B. (2017). The Opportunity Cost of Negative Screening in Socially Responsible Investing. *Journal of Business Ethics*, 140(2), 193–208. <https://doi.org/10.1007/s10551-015-2684-3>
46. Tushman, M. L., & O'Reilly, C. A. (1996). Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. *California Management Review*, 38(4), 8–29. <https://doi.org/10.2307/41165852>
47. Wang, H., Choi, J., & Li, J. (2008). Too Little or Too Much? Untangling the Relationship Between Corporate Philanthropy and Firm Financial Performance. *Organization Science*, 19(1), 143–159. <https://doi.org/10.1287/orsc.1070.0271>
48. Waddock, S. A., & Graves, S. B. (1997). The Corporate Social Performance-Financial Performance Link. *Strategic Management Journal*, 18(4), 303–319. <https://doi.org/10.2307/3088143>
49. Wang, H., Tong, L., Takeuchi, R., & George, G. (2016). Corporate Social Responsibility: An Overview and New Research Directions. *Academy of Management Journal*, 59(2), 534–544. <https://doi.org/10.5465/amj.2016.5001>
50. Yu, W., Ramanathan, R., & Nath, P. (2017). Environmental pressures and performance: An analysis of the roles of environmental innovation strategy and marketing capability. *Technological Forecasting and Social Change*, 117, 160–169. <https://doi.org/10.1016/j.techfore.2016.12.005>



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