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# THE MODERATING EFFECT OF BOARD CHARACTERISTICS IN THE RELATIONSHIP BETWEEN ESG AND CORPORATE FINANCIAL PERFORMANCE

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***Abstract:***

*This study provides a contribution by filling the gap in existing research through an analysis of the relationship between ESG performance and corporate financial performance, as well as the moderating role of board characteristics in between. Using panel data from Chinese A-share listed companies from 2018 to 2022 and employing a fixed-effects model, the study draws the following key conclusions. First, it discovered that ESG scores have a positive and significant impact on the financial performance of Chinese A-share listed companies. Second, the role of board independence as a moderating variable in the relationship between ESG and corporate financial performance was not statistically significant. Third, ownership concentration in Chinese companies was found to play a moderating role in the relationship between ESG performance and corporate financial performance. The results suggest that, in the case of Chinese companies, ownership concentration by management appears to promote ESG activities and consequently enhance financial performance more than maintaining an independent board.*

***Key words:*** *ESG, financial performance, board independence, ownership concentration*

## 1. Introduction

The rapid progress of industrialization has brought environmental issues to the forefront, with population growth, climate change, and environmental pollution acting as significant impediments to sustainable societal development. Corporations are increasingly recognizing the importance of implementing strategies related to sustainability to address these challenges. Themes associated with corporate sustainability have emerged as crucial topics in both academia and industry, with a heightened focus on Environmental, Social, and Governance (ESG) factors. Environmental, social, and corporate governance structures related to corporate sustainability are now at the forefront of corporate management concerns. Corporate performance is heavily reliant not only on internal operational achievements but also on social and environmental outcomes. ESG considerations have thus gained substantial attention in both academic and practical contexts.

The influence of ESG performance on financial outcomes and corporate valuation is predominantly contrasted from the perspectives of stakeholder theory and shareholder theory. Stakeholder theory, as proposed by Freeman (1984), posits that ESG contributes to increasing the interests of a company's stakeholders. Stakeholders such as shareholders, employees, bondholders, and suppliers, who can directly affect the company during policy implementation and goal achievement, are classified as having a direct relationship with the company's interests. Meanwhile, entities like governments, the public, and the natural environment, while not directly linked to the company, are considered indirect stakeholders as the company's production and operational activities impact them. The objective of a company extends beyond the interests of shareholders alone, encompassing the well-being of various stakeholders such as employees, bondholders, suppliers, governments, and the public. Recent corporate practices involve active communication of corporate policies to diverse stakeholders through ESG disclosures, aiming to build trust. Companies view ESG disclosure as a regular procedure, voluntarily engaging in transparent communication to enhance corporate value actively.

In contrast, shareholder theory presents a negative perspective on ESG. According to shareholder theory, the primary objective of a company is to maximize shareholder interests, and ESG is theorized to incur costs for the company while causing disadvantages for shareholders. This theory prioritizes shareholder interests over the interests of other corporate stakeholders such as employees, suppliers, customers, and society. Shareholder theory posits that shareholders are the ultimate owners of the company's assets; therefore, the primary task of management and the board is to protect and enhance these assets for the benefit of shareholders. Consequently, management is argued to make decisions that maximize the compound value of dividends and stock price appreciation. However, shareholder theory fails to consider that shareholders and companies may have objectives not solely based on financial performance (O'Connell and Ward, 2020).

As the significance of ESG becomes increasingly prominent, research on the relationship between a company's ESG performance and its financial outcomes is growing richer. However, empirical findings on the relationship between ESG performance and corporate value or financial performance have yet to converge to a consistent conclusion. Whelan et al. (2021), in their analysis of empirical studies examining the relationship between ESG performance and financial performance across over 1,000 companies from 2015 to 2020, reported that positive relationships accounted for 58%, mixed results for 21%, neutral relationships for 13%, and negative relationships for 8%. This study aims to analyze the impact of ESG performance on corporate financial performance and elucidate whether board characteristics play a moderating role in this relationship.

## 2. Literature Review

Research on the influence of ESG performance on corporate financial outcomes has been categorized into positive, negative, and mixed relationships. First, examining the positive relationship between ESG performance and corporate financial performance, Friede et al. (2015) reviewed over 2000 studies spanning from the 1970s, revealing that more than 90% of the studies identified a positive correlation between ESG and financial performance, noting the stability of this relationship over time. Alshehhi et al. (2018) reported that 78% of papers in their study on the relationship between corporate sustainability practices and financial performance found a positive association. Xie et al. (2019), focusing on a global sample of large corporations, discovered a predominantly positive correlation between ESG and financial performance. Bhaskaran et al. (2020) analyzed the impact of ESG on financial performance, concluding that companies with high ESG performance exhibit higher market values. De Lucia et al. (2020) found a positive relationship between ESG performance and financial performance in their analysis of companies across 22 European countries. Huang (2021) highlighted the positive impact of ESG scores on financial performance. Abdi et al. (2022) reported that governance investments increase market value, while social and environmental investments enhance financial performance in their analysis of 38 airlines from 2009 to 2019. Naeem et al. (2022) analyzed the impact of ESG performance on financial performance in emerging market companies from 2010 to 2019, revealing significant positive effects on corporate value and profitability. Finally, analyzing a sample of 14,039 U.S. companies from 2002 to 2018, Benjamin and Biswas (2022) found that the CSR dimensions of environmental, social, and governance criteria have a positive relationship with corporate value.

Among studies exploring the impact of ESG performance on corporate financial outcomes, Nollet et al. (2016) conducted an analysis on the relationship between ESG performance and financial performance of S&P 500 companies. Their findings, based on a linear model, confirmed a negative relationship between the two variables. Landi and Sciarelli (2019) analyzed the relationship between annual ESG evaluations and excess returns in Italian listed companies from 2011 to 2015. Their results indicated that engaging in socially responsible investment (SRI) did not have a statistically significant positive impact from a market premium perspective. Folger-Laronde et al. (2020) explored the relationship between financial returns of ETFs during the financial market collapse associated with COVID-19 and their Eco-fund ratings. Despite the high sustainability performance of ETFs, the study revealed that such investments did not provide protection from financial losses during severe market downturns. In the analysis spanning from 2007 to 2014, Garcia and Orsato (2020) reported a significant negative relationship between ESG scores and financial performance in emerging market companies. Similarly, Duque-Grisales and Aguilera-Caracuel (2021) examined multinational companies in Latin America from 2011 to 2015, uncovering a significant negative relationship between ESG scores and financial performance.

Research exploring the relationship between ESG performance and financial performance has yielded mixed findings, with some studies reporting positive correlations while others reveal negative associations. Han et al. (2016) analyzed companies listed on the Korea Exchange from 2008 to 2014, finding no significant relationship with social scores, a positive relationship with governance scores, and a negative relationship with environmental scores. Atan et al. (2019) examined the impact of ESG scores on profitability, corporate value, and capital costs in Malaysian listed companies but did not find significant results. Lopez-de-Silanes et al. (2020) discovered a robust relationship between the scope of ESG disclosure and the quality of corporate disclosure; however, they reported that ESG scores have minimal or no impact on risk-adjusted financial performance. Saygili et al. (2021) analyzed the impact of ESG performance on financial performance of Turkish listed companies from 2007 to 2017. They found that environmental reporting has a negative relationship with financial performance, stakeholder engagement has a positive relationship with the social dimension, and governance has a positive relationship with financial performance. Behl et al. (2022) examined the relationship between ESG performance and corporate value in the Indian energy sector, revealing mixed results and a positive association between governance and financial performance. Giannopoulos et al. (2022) analyzed the impact of ESG scores on financial outcomes of Norwegian listed companies from 2010 to 2019. They reported a positive relationship between ESG scores and corporate value, and a negative relationship between ESG scores and profitability. Aydogmus et al. (2022) conducted an analysis of the impact of ESG performance on corporate value and profitability. They reported that overall ESG scores, environmental, social, and governance scores have a positive and significant relationship with corporate profitability. However, individual social and governance scores show positive and significant relationships, while environmental scores do not show a significant relationship with corporate value.

## 3. Hypothesis and Methodology

While some studies suggest that ESG performance either has no impact or exerts a negative influence on corporate value, a majority of research supports a positive relationship between the two. Companies maintaining a competitive edge and demonstrating superior financial performance compared to their counterparts following ESG implementation are often observed (Yadav and Pathak, 2017). Corporate social responsibility activities contribute to consumers expressing positive opinions about new products (Drumwright, 1996; Brown and Dacin, 1997; Sen and Bhattacharya, 2001; Lichtenstein et al., 2004; Luo and Bhattacharya, 2006). Based on these insights, this paper posits the following hypothesis:

Hypothesis 1: ESG performance is positively related to corporate financial performance.

While existing research has extensively investigated the relationship between ESG performance and corporate financial performance, there is limited exploration of the role of board characteristics in this relationship. Organizational structures have evolved through continuous improvements, separating ownership from operations and dispersing operational risks borne by shareholders among stakeholders such as managers, bondholders, and employees. Ownership structure reflects the distribution of rights among business owners, with board characteristics playing a crucial role, particularly in ESG activities within overall corporate strategies. Research findings indicate that board characteristics play a moderating role in the relationship between ESG performance and corporate financial performance. Ownership structure influences management strategies and ESG activities, thereby facilitating or inhibiting the impact of ESG performance on corporate financial outcomes (Cillberti et al., 2011; Liu et al., 2019). Companies with higher ownership concentration tend to prefer long-term decision-making, enhancing the efficiency of ESG performance, especially in corporations with independent boards (Kong et al., 2018). Therefore, in corporations with high ownership concentration and independent boards, ESG performance has a significant impact on corporate financial performance. Based on the above analysis, this paper proposes the following hypotheses:

Hypothesis 2a: The independence of a corporate board is positively related to corporate financial peformance.

Hypothesis 2b: Corporate ownership concentration is positively related to corporate financial peformance.

This study analyzed 534 companies listed on the China A-stock market from 2018 to 2022. The research sample targeted companies with complete financial data and ESG scores from 2018 to 2022, excluding those subjected to various sanctions in the Chinese securities market during the analysis period. The data for the analysis were sourced from the Wind database.

To ascertain the impact of ESG performance on corporate financial performance and examine whether board characteristics play a moderating role in the relationship between them, we established the following panel regression model.

$$ROE_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 CS_{it} + \beta_3 FA_{it} + \beta_4 TQ_{it} + \beta_5 GP_{it} + \epsilon_{it} \quad (1)$$

$$ROE_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 BI_{it} + \beta_3 CS_{it} + \beta_4 FA_{it} + \beta_5 TQ_{it} + \beta_6 GP_{it} + \epsilon_{it} \quad (2)$$

$$ROE_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 BI_{it} + \beta_3 BI_{it} * ESG_{it} + \beta_4 CS_{it} + \beta_5 FA_{it} + \beta_6 TQ_{it} + \beta_7 GP_{it} + \epsilon_{it} \quad (3)$$

where, $ROE_{it}$ serves as the dependent variable, representing the return on equity of company i at time t. $ESG_{it}$ functions as an independent variable, indicating the ESG performance of company i at time t. $BI_{it}$ and $EC_{it}$ represent moderating variables, indicating the board independence and ownership concentration of company i at time t, respectively. $CS_{it}$, $FA_{it}$, $TQ_{it}$, and $GP_{it}$ are control variables, representing, respectively, the capital structure, proportion of fixed assets, Tobin's Q, and the number of green patents for company i at time t.

To test Hypothesis H2b, I substitute the variable BI with the variable EC in equations (2) and (3), setting up Models 4 and 5 for examination

## 4. Results and Discussion

The data in this study, being panel data, were analyzed using a fixed-effects model through LM tests and the Hausman test. Table 1 presents the descriptive statistics of the variables. The maximum and minimum values of ROE are 2.3789 and -4.3196, respectively, indicating significant variation in financial performance among the companies. Similarly, for ESG, there is a diverse range of ESG performances among companies.

Examining the Pearson correlation coefficients in Table 2 reveals a positive correlation between ROE and ESG. Positive correlations are also observed between the moderating variables EC and BI with both ROE and ESG. Overall, the correlation coefficients between variables are not excessively high. The average Variance Inflation Factor (VIF) for each variable is well below 10, confirming the absence of multicollinearity among the variables.

**Table 1: Summary Statistics**

| Variables | Mean | Maximum | Minimum | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| ROE | 0.0671 | 2.3789 | -4.3196 | 0.0611 | -8.3944 | 249.2970 |
| ESG | 23.2477 | 90.0100 | 10.0100 | 14.3461 | 1.6654 | 6.8638 |
| EC | 0.3298 | 0.8770 | 0.0212 | 0.1526 | 0.6409 | 2.8937 |
| BI | 0.3759 | 0.8000 | 0.2500 | 0.0608 | 1.2411 | 5.7965 |
| CS | 0.5236 | 1.0057 | 0.1041 | 0.1536 | -0.0298 | 2.6383 |
| FA | 17.9539 | 4063.153 | 1.1896 | 126.2400 | 21.3080 | 556.8492 |
| TQ | 29.5056 | 6464.782 | 0.0000 | 221.8011 | 20.0942 | 511.0684 |
| GP | 127.8148 | 13621.00 | 0.0000 | 724.3986 | 11.0848 | 149.2304 |

**Table 2: Correlation Analysis**

| | ROE | ESG | EC | BI | CS | FA | TQ |
|---|---|---|---|---|---|---|---|
| ESG | 0.1470 | | | | | | |
| EC | 0.0720 | 0.1211 | | | | | |
| BI | 0.0357 | 0.0108 | 0.0391 | | | | |
| CS | 0.0741 | 0.0240 | 0.1208 | 0.0475 | | | |
| FA | 0.0100 | 0.0233 | 0.0676 | 0.0319 | 0.0459 | | |
| TQ | 0.0099 | 0.0203 | 0.0636 | 0.0013 | 0.1180 | 0.7285 | |
| GP | 0.0117 | 0.0328 | 0.0115 | 0.1194 | 0.1085 | 0.0051 | 0.01489 |

Table 3, as observed in the first column, reveals that the regression coefficient between ESG performance and corporate financial performance is 0.0016, indicating a statistically significant positive impact of ESG on corporate financial performance at the 1% level. This implies that higher ESG scores among Chinese companies correspond to better financial performance, thereby confirming Hypothesis 1. The fidings of this study are consistent with previous research conducted by Huang (2021), Abdi et al. (2022), Naeem et al (2022), and Benjamin and Biswas (2022). Model 2 indicates a significant positive impact of board independence on corporate financial performance at the 10% level. Model 3, designed to test the moderating effect of board independence, demonstrates that the regression coefficient for the interaction term BI*ESG is -0.0040 and is not statistically significant. Board independence does not appear to play a moderating role in the relationship between ESG and corporate financial performance, thus rejecting Hypothesis H2a. These findings contrast with the results of Cillberti et al. (2011) and Liu et al. (2019), which suggest that the independence of the board influences both managerial strategies and ESG activities, thereby enhancing corporate financial performance. This align with the findings of Bebchuk et al. (2009) and Huang and Watson (2015), indicating that independent boards may not enhance the relationship between ESG and financial performance.

**Table 3: Moderating Effect of Board Independence**

| Variables | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| ESG | 0.0016*** | 0.0017*** | 0.0031** |
| BI | | 0.0754* | 0.1716* |
| BI*ESG | | | -0.0040 |
| CS | -0.0790 | -0.0771*** | -0.0766*** |
| FA | 0.0004 | 0.0003 | 0.0003 |
| TQ | -0.0003 | -0.0002 | -0.0002 |
| GP | 0.0003 | 0.0002 | 0.0002 |
| $\overline{R^2}$ | 0.2567 | 0.2610 | 0.2620 |

Note: * p<0.1, ** p<0.05, *** p<0.01

**Table 4: Moderating Effect of Ownership Concentration**

| Variables | Model 1 | Model 4 | Model 5 |
|---|---|---|---|
| ESG | 0.0016*** | 0.0015*** | 0.0025*** |
| EC | | 0.0691*** | 0.1444*** |
| EC*ESG | | | 0.0031** |
| CS | -0.0790 | -0.0873*** | -0.0887*** |
| FA | 0.0004 | 0.0004 | 0.0004 |
| TQ | -0.0003 | -0.0003 | -0.0003 |
| GP | 0.0003 | 0.0003 | 0.0003 |
| $\overline{R^2}$ | 0.2567 | 0.2945 | 0.3084 |

Note: * p<0.1, ** p<0.05, *** p<0.01

Table 4 presents the analysis of the moderating role of ownership concentration in the relationship between ESG and corporate financial performance. As shown in Model 4, ownership concentration has a positive and statistically significant impact on corporate financial performance. The regression coefficient for the interaction term EC*ESG is 0.0031 at the 5% level, signifying that ownership concentration acts as a moderating variable in the relationship between ESG and corporate financial performance. Therefore, Hypothesis H2b is supported. The results of this study align with the findings of Kong et al. (2018). In contrast to board independence, ownership concentration appears to enhance the relationship between ESG and corporate financial performance among Chinese firms. The moderation effect of ownership concentration on the relationship between ESG and financial performance supports the expopriation hypothesis, which posits that controlling shareholders influence corporate decision-making to maximize their profits. Ultimately, the study reveals that in Chinese companies, the financial performance associated with ESG activities is more pronounced in firms with concentrated ownership as opposed to those with independent boards.

## 5. Conclusion

This study analyzes panel data from Chinese A-share listed companies spanning from 2018 to 2022 to investigate the relationship between ESG performance and corporate financial performance, as well as the moderating role of board characteristics in this relationship. The key conclusions are as follows. Firstly, ESG performance was found to have a positive and significant impact on the financial performance of Chinese companies. Secondly, board independence was discovered not to play a moderating role in the relationship between ESG and corporate financial performance. Thirdly, ownership concentration in Chinese companies was found to act as a moderating variable in the relationship between ESG and corporate financial performance. The implications of these results suggest that, in the context of Chinese firms, ownership concentration, rather than board independence, plays a role in enhancing the relationship between ESG activities and financial performance.

This study contributes to filling gaps in existing research and provides practical insights by examining the relationship between ESG and corporate financial performance, along with the moderating effects of board characteristics, in Chinese A-share listed companies. However, it is worth noting that the analysis is confined to Chinese A-share listed companies, and future research could expand the scope to include firms from more countries. Additionally, while this study focuses on board characteristics limited to board independence and ownership concentration, future research may benefit from analyzing a broader range of characteristics. Addressing these aspects in future research would contribute to a more comprehensive understanding of the subject matter.

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