International Journal of Applied Economics, Finance and Accounting
ISSN 2577-767X
Vol. 18, No. 1, pp. 142-157
2024
DOI: 10.33094/ijaefa.v18i1.1336

The impact of environmental, social, and governance on corporate financial performance: Empirical evidence based on Chinese a-share listed companies

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Keywords:
Corporate financial performance
Environmental
ESG
Governance
Social.

JEL Classification:
A13; M00; M49.

Received: *15 August 2023*
Revised: *26 September 2023*
Accepted: *18 December 2023*
Published: *12 January 2024*
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Abstract

This study aims to delve into the influence of ESG performance on the financial outcomes of companies listed on China's A-share market, emphasizing the interplay of ESG's three critical dimensions: environmental, social, and governance performance. Utilizing ESG data from A-share listed companies in China spanning from 2013 to 2022, regression analysis was executed in STATA 17.0. Factors like company size, leverage, growth, age, board size, and ownership concentration were integrated as control variables. The results underscored a positive association between both holistic ESG performance and its individual dimensions (environmental, social, and governance performance) and financial outcomes. Notably, non-state-owned enterprises exhibited a more pronounced positive relationship between ESG performance and financial results than their state-owned counterparts. Drawing from these insights, it's advocated that companies amplify their efforts towards ESG performance enhancement. It further accentuates the need for regulatory bodies to formulate pertinent policies and amplify oversight. Additionally, investors are advised to incorporate ESG performance metrics into their investment decisions, promising not only improved financial standing for corporations but also fostering sustainability and comprehensive growth in the social, environmental, and economic domains.

Funding: This study received no specific financial support.
Institutional Review Board Statement: Not applicable.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Data Availability Statement: The corresponding author may provide study data upon reasonable request.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Conceptualization, validation, investigation, resources, data curation, writing—original draft preparation, writing—review and editing, G.Y.; methodology, A.A.M.S.; software, X.H.; formal analysis and visualization, Z.K. All authors have read and agreed to the published version of the manuscript.

1. Introduction

Amid the burgeoning global discourse surrounding sustainable development, considerations pertaining to Environmental, Social, and Governance (ESG) are garnering heightened scrutiny across diverse societal echelons. Several contemporary conglomerates are architecting dedicated ESG roles, aiming to refine their intrinsic value through an enlightened nexus of environmental, social, and governance dimensions. Arvidsson and Dumay (2022) posit that ESG serves as an indispensable fulcrum, enabling entities to navigate the path to sustainable evolution while augmenting operational excellence. Within the precincts of China's A-share market, ESG determinants have crystallized as a pivotal concern for both discerning investors and sagacious corporate stewards. Zumente and Bistrova (2021) contend that a robust ESG framework not only augments a firm's fiscal robustness but also accentuates its competitive market stance, culminating in enduring institutional value.

Because many countries know that ESG factors can have positive effects, they have carefully crafted a wide range of ESG-related laws and rules to help businesses on their sustainable efforts and in meeting their social obligations. For illustration, the magnum opus of the United Nations—The Sustainable Development Agenda—has unfurled a suite of 17 Sustainable Development Goals (SDGs), meticulously crafted with the overarching objective of galvanizing sustainable metamorphosis on the global stage (Allen, Metternicht, & Wiedmann, 2018). The China Securities Regulatory Commission made a big change in 2016 when it issued the "Administrative Measures on Environmental Information Disclosure of Publicly Traded Entities." This meant that last companies had to reveal information about the environment, which made things clearer for everyone (Zheng, Khurram, & Chen, 2022). At the same time, the Chinese government is strongly supporting companies that take part in societal responsibility models that include reducing poverty and helping the public as ways to promote equality and progress in society (Zheng et al., 2022).

The contemporary academic milieu is rife with discourse concerning the putative influence of ESG considerations on a corporation's fiscal outcomes. A faction of the scholarly community posits that stellar ESG execution exhibits a favorable entwinement with fiscal prowess. Delving deeper, they elucidate that impeccable environmental stewardship engenders economic dividends, underpinned by the curtailment of resource consumption, mitigation of ecological degradation, augmentation of operational efficacy, and diminution of commercial perils (Khanifah, 2020). Assiduously championing societal mandates not only crafts an illustrious corporate façade but also amplifies its renown, engendering consumer benevolence and fortifying investor confidence, collectively ushering in augmented sales trajectories and bolstered profitability (Pérez-Cornejo, de Quevedo-Puente, & Delgado-García, 2020). Moreover, adept corporate custodianship can catalyze organizational agility, pare down agency expenditures, and fine-tune the governance architecture, thus enhancing corporate vitality (Saona, Muro, & Alvarado, 2020).

Yet, contrapuntally, another scholastic contingent forwards a more skeptical perspective, propounding that ESG prowess might, paradoxically, be inversely tied to fiscal results. The main point is that ESG projects need a long-term commitment and a lot of resources, which could hurt a company's short-term financial health (Cappucci, 2018).

This study focuses on Chinese A-share listed companies from 2013-2022 and uses the ESG evaluation results from the Sino-Securities Index (henceforth called "SNSI") as its empirical dataset. Employing rigorous analytical methodologies, we endeavor to elucidate the intricate conduits via which ESG interplays with corporate fiscal acumen. The ambitions of this scholarly pursuit are threefold:

(1) To carefully examine the impact that ESG has on the financial health of corporations.

(2) To engage in a granular dissection of the tripartite dimensions of ESG vis-à-vis their ramifications on corporate fiscal fortitude. This kind of analysis aims to not only give us a better understanding of the complex ways that ESG affects financial outcomes, but also to help us learn more about the different ESG paradigms.

(3) Informed by our revelations on ESG's symbiosis with fiscal vitality, we proffer sagacious counsel to corporate luminaries and the investor fraternity, empowering them with insights to judiciously navigate and harness ESG's transformative potential in amplifying and architecting corporate value.

2. Literature Review and Hypothesis

ESG stands as an integrative metric, encapsulating three pivotal facets: environmental stewardship, societal responsibility, and astute governance. Scholarly consensus converges around the notion that the calibre of ESG execution is intrinsically tied to a corporation's trajectory towards sustainable development and its fiscal robustness. The crux of this inquiry centres around dissecting both the holistic influence of ESG and the nuanced implications of its trident dimensions on corporate fiscal health.

Research has shown that better ESG performance can help companies become more valuable and competitive, attract more investors and consumers, and improve financial performance (Chen & Xie, 2022). Specifically, environmental performance mainly includes environmental management, resource use efficiency, and carbon emissions. Excellent environmental performance can help reduce environmental risks and costs, increase productivity and innovation, and thus improve corporate financial performance (Zhang, Wei, Zhu, & George-Ufot, 2020). The relationship between companies and their employees, communities, and societies is at the heart of corporate social responsibility performance. Good performance in corporate social responsibility can improve corporate image and recognition, attract more customers and employees, increase brand value and market share, and positively impact corporate financial performance (Lahouel, Zaied, Song, & Yang, 2021). Corporate governance performance focuses on corporate board structure, regulatory mechanisms, and disclosure. Good corporate governance can improve corporate transparency and the quality of decision-making, reduce agency problems and moral hazards, increase investor confidence, and positively affect corporate financial performance (Al Farooque, Buachoom, & Sun, 2020).

In summary, both the overall level of ESG performance and specific ESG performance are driving factors for corporate financial performance. The impact of ESG as a whole and its three dimensions on corporate financial performance is shown in Figure 1. Therefore, the hypotheses proposed in this paper are H1-H4.

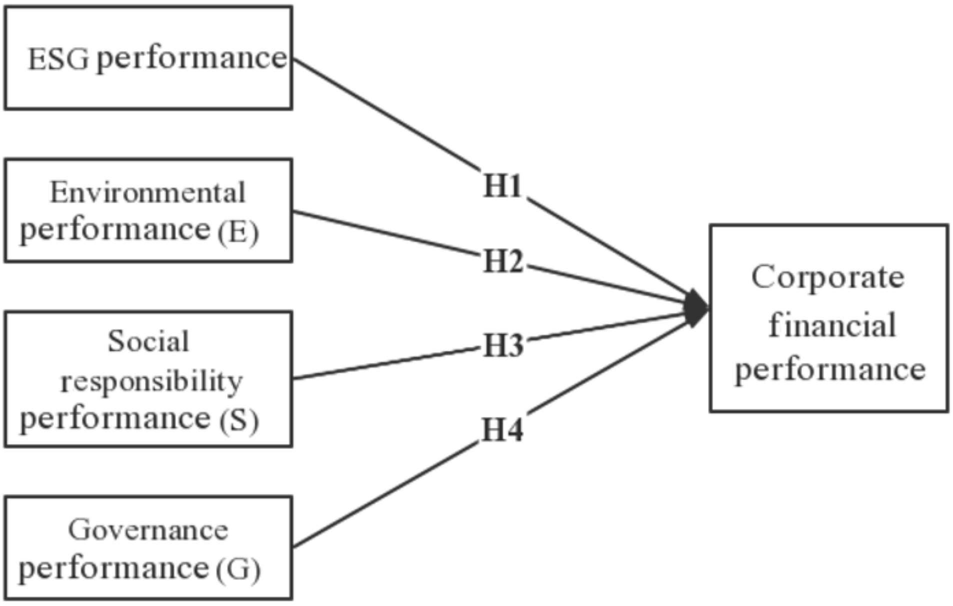

Figure 1. Conceptual framework.

2.1. ESG Performance and Corporate Financial Performance

ESG performance acts as a barometer, gauging a corporation's overarching acumen across the environmental, societal, and governance spectrums. In contrast, corporate financial performance offers a lucid snapshot of an organization's economic vigor and its profitability metrics. The nascent endeavours to understand the intricate dance between ESG performance and corporate fiscal outcomes bore the imprints of neoclassical economic paradigms, propounding an inverse correlation between the two. This is because when companies enhance their ESG performance, they have to increase their capital investment, which leads to higher operating costs (Nirino, Santoro, Miglietta, & Quaglia, 2021). While improved ESG performance may increase product prices, it is challenging to offset losses brought on by higher costs because of market supply and demand constraints (Giannopoulos, Kihle Fagernes, Elmarzouky, & Afzal Hossain, 2022). Nevertheless, some studies have shown that there is no significant correlation between ESG performance and financial performance, meaning that the level of ESG performance does not have a significant impact on a company's profitability (Nekhili, Boukadhaba, & Nagati, 2021).

However, most studies have shown that ESG performance has a positive impact on improving a company's financial level. First, good ESG performance helps to enhance corporate reputation and credibility. By taking environmental protection measures, actively fulfilling social responsibilities, and establishing a scientific governance structure, companies create a positive image in society and increase public trust and recognition (Koh, Burnasheva, & Suh, 2022). This trust and recognition can attract more consumers, investors, and partners, bringing more business and cooperation opportunities to the company, which in turn drives the corporate financial performance.

Second, ESG performance helps to reduce business risks and costs. By focusing on environmental and social responsibility, companies can reduce the risks they face, such as environmental pollution and social conflicts, and avoid possible fines, lawsuits, and reputation damage (Li, Zhou, & Xiong, 2020). In addition, good corporate governance structures help in regulating business activities, reducing incidences of internal fraud and corruption, and reducing corporate operating risk (Li et al., 2020). These risk reductions help companies save costs and improve financial performance.

Finally, investors, financial institutions, and governments are increasingly valuing ESG performance. Investors are more inclined to invest in companies with high ESG levels. The main reason is that they judge that these companies have greater growth potential and sustainability (Giese, Lee, Melas, Nagy, & Nishikawa, 2019). Financial institutions have also begun to incorporate ESG considerations into lending and financing decisions, encouraging ESG-performing companies by offering more favourable financing terms (Giese et al., 2019). In addition, the government has implemented various policies and incentives to support and reward businesses for excellence in sustainability (Giese et al., 2019). This attention from investors, financial institutions, and governments has resulted in more opportunities and resources for companies to drive improved financial performance. This is shown in Figure 2.

Figure 2. Ways of ESG performance affecting corporate financial performance.

For this reason, the following hypotheses are proposed in this paper:

H_1: ESG performance positively affects financial performance.

2.2. Environmental Performance and Corporate Financial Performance

Currently, there is no definitive evidence to prove that there is a necessary link between environmental performance and financial performance. However, most theories and research literature have shown that environmental performance is positively correlated with corporate financial performance.

As environmental awareness grows, good environmental performance significantly impacts corporate financial performance. Good environmental performance can reduce the environmental risks faced by companies. It can enhance the company's reputation and brand influence, thereby improving the company's financial performance (Khanifah, 2020). Environmental performance directly affects stakeholder satisfaction and trust, influencing investor, customer, government, and public attitudes and support (Elmagrhi, Ntim, Elamer, & Zhang, 2019). Investors are more likely to invest in companies that perform well on the environment, customers are more likely to choose products that perform well on the environment, and governments are more likely to support companies that perform well on the environment and provide relevant policy support and economic incentives (Elmagrhi et al., 2019).In addition, environmental performance is a part of corporate governance, which has the effect of reducing agency costs and improving governance efficiency (Lu & Wang, 2021). Good environmental performance can reduce the cost increase brought about by information asymmetry, improve market transparency, and help the company make more scientific and reasonable decisions (Lu & Wang, 2021). At the same time, corporate environmental performance can be used as a signalling mechanism to communicate corporate responsibility and sustainability strategies. This can enhance market confidence and the company's brand value, thereby contributing to financial performance (Shahab et al., 2020).

Based on the above analysis, the following hypotheses are proposed:

H_2: Environmental performance (E) positively affects financial performance.

2.3. Social Responsibility and Corporate Financial Performance

Stakeholder theory suggests that business activities have strong links with their stakeholders and that good relations with stakeholders can help businesses create value. Related research has shown that there is a positive correlation between corporate social responsibility and financial performance. By fulfilling their corporate social responsibility and taking into account social welfare, environmental protection, and sustainable development, companies can achieve economic and social win-win situations. This can improve the company's reputation, enhance stakeholders' trust in the company, strengthen customer loyalty and shareholder trust, and contribute to the improvement of the company's financial performance (Pérez - Cornejo et al., 2020).

When a company fulfils its social responsibilities, the positive effects generated can manifest in various ways. First, fulfilling social responsibility increases stakeholder satisfaction and promotes good stakeholder relations, thus increasing the value creation capacity of the company (Dalla-Pria & Rodríguez-de-Dios, 2022). Second, fulfilling social responsibility helps to mitigate the principal-agent problem of shareholders vis-a-vis corporate managers and strengthens shareholders' trust and loyalty to the company, which in turn improves financial performance (Benitez, Ruiz, Castillo, & Llorens, 2020). In addition, socially responsible behaviour shapes a good corporate image and reputation, reduces business risks, and increases supplier and consumer loyalty (García-Sánchez, Hussain, Martínez-Ferrero, & Ruiz-Barbadillo, 2019). By communicating information about the company's values, culture, and management capabilities to the outside world, companies can raise the awareness and trust of shareholders, investors, customers, and employees, and increase their loyalty. This, in turn, has a positive impact on financial performance (García-Sánchez et al., 2019).

This paper proposes a hypothesis based on the above analysis:

H_3: Social responsibility (S) positively affects financial performance.

2.4. Corporate Governance and Corporate Financial Performance

Good corporate governance has a significant impact on how a company operates and grows. Through the establishment of a transparent, accountable, and compliant corporate governance structure, companies are able to reduce the risk of manipulation and errors, thereby improving financial performance (Saona et al., 2020). A good corporate governance structure promotes trust and cooperation between companies and stakeholders, helping to solve the principal-agent problem and aligning the interests of management with those of shareholders, thus improving financial performance (Wu, Li, Du, & Li, 2022). Corporate governance mechanisms, such as boards of directors and general meetings of shareholders, monitor and review management decisions, regulate financial reporting and disclosures, reduce the risk of information leakage, and increase market transparency and fairness, which in turn improves corporate financial performance (Landau, Rochell, Klein, & Zwergel, 2020; Zhang, Chong, & Jia, 2020).

Studies have shown that there is a positive relationship between corporate governance and financial performance (García-Sánchez et al., 2019). Huang (2021), in his study of listed companies in China, found that the corporate governance composite index is positively correlated with financial performance. As an important corporate agency mechanism, the independent director system can effectively protect the overall interests of the company, prevent moral hazard, and reduce information asymmetry. Furthermore, it helps the company make scientifically sound decisions that can positively affect financial performance (Al Farooque et al., 2020), as a high percentage of independent directors have oversight and voting power in important decisions.

This paper proposes a hypothesis based on the above analysis:

H_4: Corporate governance (G) positively affects financial performance.

3. Research Design

3.1. Sample Selection and Data Sources

This paper aims to investigate the impact of ESG performance on corporate financial performance, considering the mediating role of financing constraints, by selecting Chinese A-share-listed companies with SNSI ESG ratings from 2013 to 2022. Listed company ESG ratings data from SNSI ESG Ratings in the Wind database; corporate-level financial data from the CSMAR (China Stock Market and Accounting Research Database) database.

The paper treats the obtained data as follows: To eliminate sample bias, the study excludes companies that have less than 3 years of continuous ESG disclosure information; it also excludes companies with incomplete financial or ESG data or anomalous data; financial and insurance listed companies are excluded; and ST and *ST listed companies receive special treatment. After the above screening, a total of 4928 companies with 35171 samples were obtained. Excel was then used for the initial screening and formatting of the sample data, and the data were statistically analyzed using STATA 17.0.

3.2. Variables Selection

3.2.1. Dependent Variable - Corporate Financial Performance

Corporate financial performance represents the operation of a company's assets and liabilities, profitability, and revenue growth over a period of time, which can be understood as the payment of a cost and thus the creation of more value (Almira & Wiagustini, 2020). Financial performance can be broadly divided into two main categories of measures: accounting measures and market measures. For the market-based measures, market transaction data is selected. This indicator is mainly used to judge the long-term value of a company in the market (Taouab & Issor, 2019). Accounting indicators use the historical cost method to calculate corporate financial performance over time from operational data that the company has disclosed (Taouab & Issor, 2019). Due to China's unstable capital market environment, it can be challenging to accurately reflect corporate financial performance using market measures instead of accounting measures (Zheng et al., 2022). As a result, return on equity (ROE) is the accounting measure that this paper uses to reflect the financial performance of the company (Almira & Wiagustini, 2020; Taouab & Issor, 2019). The higher the value of ROE, the more efficient the use of the company's nets assets is and the better the financial performance.

3.2.2. Independent Variable - ESG Performance

Sino-Securities Index Information Service (Shanghai) Co. Ltd. adopts an internationally recognized methodology, incorporating practical experience while taking into account China's unique national context and securities market characteristics. Their approach entails providing ratings on environmental, social responsibility, and corporate governance aspects, collectively known as the SNSI ESG Rating, for China's A-share and Hong Kong stock issuers. Compared to other ESG rating systems, the SNSI ESG Rating System boasts distinct advantages.

Firstly, it boasts a broader coverage, encompassing a wider range of entities, and exhibits a higher frequency of updates, ensuring more timely and current data. Secondly, the SNSI ESG Rating System draws inspiration from well-established overseas ESG rating frameworks, thereby incorporating indicators that align more closely with the prevailing dynamics of the domestic market. Significantly, the SNSI ESG Rating system offers comprehensive coverage of the majority of A-share listed companies, rendering it particularly suitable for this study's purposes. Its vast and precise database serves as a dependable source, providing a reliable measure of corporate ESG performance for our research endeavors. Consequently, the selection of the SNSI ESG ratings as the primary metric for evaluating ESG performance in this study stems from their robustness and capacity to furnish an accurate portrayal of ESG dimensions for the examined companies.

The SNSI ESG Ratings are measured using a standardized score from 0 to 100; with nine grades ranging from AAA to C. Higher scores indicate that the subject performs better on that indicator. This study is based on the nine levels of data from the CSI ESG ratings and the corresponding ESG performance scores. AAA is defined as the highest rating and is for companies that perform very well on ESG issues, scoring 9, while C is for companies that perform poorly on ESG issues, scoring 1. Table 1 shows the specific ratings:

Table 1. SNSI ESG ratings, scores and assignments.

ESG ratings	Scores	Assignments
A AA	Score ≥ 95	9
A A	90 ≤ Score < 95	8
A	85 ≤ Score < 90	7
B BB	80 ≤ Score < 85	6
B B	75 ≤ Score < 80	5
B	70 ≤ Score < 75	4
C CC	65 ≤ Score < 70	3
C C	60 ≤ Score < 65	2
C	Score < 60	1

3.2.3. Control Variables

Drawing from pertinent prior research works (Koh et al., 2022; Li et al., 2020; Zhang et al., 2020), this study incorporates a set of control variables to ensure a comprehensive examination. Specifically, the control variables introduced in this research encompass corporate size (Size), financial leverage (Lev), corporate growth (Growth),corporate age (Age), board size (Board), and shareholding concentration (Top1). These control variables have been chosen based on their relevance and significance in the literature. A detailed exposition of the variables' definitions and descriptions is presented in Table 2 for reference and clarity in the ensuing investigation.

Table 2. Control variable definition and description.

Type	Name	Symbol	Description
Dependent variable	Corporate financial performance	*ROE*	Net profit / Closing shareholders' equity
Independent variable	ESG performance	*ESG*	Sino-securities index ESG ratings
	Environmental performance	*E*	Sino-Securities index ESG ratings - environmental ratings
	Social performance	*S*	Sino-securities index ESG ratings - social ratings
	Governance performance	*G*	Sino-securities index ESG ratings - governance ratings
Control variables	Corporate size	*Size*	Logarithm of total assets
	Financial leverage	*Lev.*	Total liabilities / Total assets
	Corporate growth	*Growth*	(Operating revenue for the year - Operating revenue for the previous year) / Operating revenue for the previous year
	Corporate age	*Age*	Current year - established year
	Board size	*Board*	Natural logarithm of the number of directors
	Equity concentration	*Top1*	Number of shares held by the largest shareholder / Total number of shares

3.3. Structural Equation Modelling

To empirically ascertain the nexus between ESG and corporate financial performance, we formulated Equation 1 as the analytical scaffold for hypothesis testing. Within this econometric architecture, corporate financial performance is enshrined as the dependent variable, juxtaposed against ESG performance, which is delineated as the independent variable. The main goals of the study are twofold: first, to find out if there is statistically significant link between the two concepts; and second, to find out how big and which way ESG performance affects corporate financial metrics if there is a link.

$$ROE_{it} = \alpha_0 + \alpha_1 \times ESG_{it} + \alpha_2 \times Control_{it} + lnd + year + \varepsilon_{it} \quad (1)$$

To empirically evaluate the potential value effect of ESG performance on corporate financial health, a regression model is structured. Within the ambit of this model, the term "control" embodies an aggregate of control variables, encapsulating salient determinants that are germane to influencing corporate financial performance. The notations "i" and "t" respectively signify the company under consideration and the temporal dimension. Central to the empirical deliberation is the observed coefficient " α ," which demarcates the magnitude of the relationship. A positive inflection of this coefficient would indicate a beneficial bearing of ESG performance on a corporation's financial vitality. In particular, it would be thought that better ESG performance would lead to better financial results for companies, supporting hypothesis H1.

Pursuing a similar investigative trajectory, this research endeavor fashions Equations 2,3, and 4, each meticulously tailored to assess the veracity of hypotheses H2, H3, and H4, in that order. By marshaling these equations for empirical scrutiny, the intent is to distill the nuanced interplay between the individual dimensions of ESG and corporate fiscal performance.

$$ROE_{it} = \nu_0 + \nu_1 \times E_{it} + \nu_2 \times Control_{it} + lnd + year + \varepsilon_{it} \quad (2)$$

If the coefficient of ν_1 is significantly positive, it means that environmental performance (E) can improve corporate financial performance. That is, the better the environmental performance (E), the higher the level of financial performance of the firm, and then H2 is supported.

$$ROE_{it} = \delta_0 + \delta_1 \times S_{it} + \delta_2 \times Control_{it} + lnd + year + \varepsilon_{it} \quad (3)$$

If the coefficient of δ_1 is significantly positive, it means that social responsibility performance (S) can improve corporate financial performance. That is, the better the social responsibility performance (S), the higher the level of financial performance of the firm, and then H3 is supported.

$$ROE_{it} = \eta_0 + \eta_1 \times G_{it} + \eta_2 \times Control_{it} + lnd + year + \varepsilon_{it} \quad (4)$$

If the coefficient of η_1 is significantly positive, it means that corporate governance performance (G) can improve corporate financial performance. That is, the better the corporate governance performance (G), the higher the level of financial performance of the firm, and then H3 is supported.

4. Empirical Analysis Results

4.1. Descriptive Statistics

Table 3 shows the descriptive statistical results of key variables, providing crucial insights into their measures and distributions. The total sample size consists of 35,171 observations, offering a substantial data-set for analysis. These descriptive statistics offer a comprehensive understanding of the characteristics and dispersion of the variables under investigation. This broad overview makes it easier to do a full and in-depth study of how environmental, social responsibility, and corporate governance factors affect the financial performance of businesses. This makes it easier to look into their possible effects in a research setting.

The ROE (Return on Equity) variable calculates the company's profit per share of equity. A mean value of 0.055 indicates that the average profit earned per unit of equity is 5.5%. The median of 0.071 indicates that the company's median return on equity is 7.1%. The standard deviation of 0.173 indicates a high degree of dispersion in the data, i.e., the return on equity varies considerably across the sample.

ESG: This variable reflects the company's overall situation in terms of environment, social responsibility, and corporate governance. A mean of 4.088 indicates that companies in the sample have, on average, a high composite rating. A median of 4 indicates that companies at the median have a composite rating of 4. A standard deviation of 1.12 indicates that there is some variability in the composite ratings of companies in the sample, i.e., this suggests that companies differ to some extent in terms of environmental, social, and governance performance.

E (Environmental Rating): This variable measures the environmental rating of companies. A mean of 1.872 indicates that companies in the sample have an average environmental rating of 1.872. A median of 1 indicates that companies at the midpoint have an environmental rating of 1. A standard deviation of 1.149 indicates that there is a high degree of variability in environmental ratings among companies in the sample.

S (Social Rating): This variable measures the social rating of companies. A mean of 4.666 indicates that the average social rating of the companies in the sample is 4.666. A median of 4 indicates that the companies at the median have a social rating of 4. A standard deviation of 2.209 indicates that there is a high degree of variability in the social ratings of the companies in the sample.

G (Corporate Governance Rating): This variable measures the corporate governance rating of companies. A mean of 5.369 indicates that companies in the sample have an average corporate governance rating of 5.369. A median of 6 indicates that companies at the median have a corporate governance rating of 6. A standard deviation of 1.438 indicates that there is some variability in corporate governance ratings among companies in the sample.

Table 3. Descriptive statistical results.

Variables	N	Mean	Median	Std. dev.	Minimum	Maximum
ROE	35171	0.055	0.071	0.173	-1.198	0.487
ESG	35171	4.088	4.000	1.12	1.000	8.000
E	35171	1.872	1.000	1.149	1.000	9.000
S	35171	4.666	4.000	2.209	1.000	9.000
G	35171	5.369	6.000	1.438	1.000	9.000
Size	35171	22.12	21.934	1.331	19.374	27.145
Lev.	35171	0.428	0.417	0.215	0.051	0.988
Growth	35171	0.419	0.137	1.202	-0.791	9.37
Age	35171	17.441	17.000	5.781	5.000	32.000
Board	35171	8.559	9.000	1.686	5.000	15.000
Top1	35171	0.344	0.322	0.149	0.084	0.745

4.2. Correlation Analysis

Multicollinearity represents a statistical aberration in linear regression modelling, where predictor variables exhibit an elevated degree of mutual correlation, muddying the interpretative waters. A widely accepted rule of thumb dictates that a correlation coefficient surpassing 0.8 between predictors raises red flags concerning multicollinearity. Drawing insights from Table 4, it becomes evident that the correlation coefficients nestled between the control and explanatory variables in this research hover below the threshold of 0.5. This incontrovertibly underscores the absence of multicollinearity complications within the constructed model.

When we look at the real-world results, we can see that ESG and financial performance are strongly connected. This is shown by a statistically significant correlation at the 1% level, with the coefficient of 0.182. This empirical testament underscores a cogent narrative: as corporations elevate their ESG prowess, a concomitant amplification in financial performance manifests. This revelation robustly buttresses Hypothesis 1. Such empirical findings highlight how important it is for businesses to take actions in areas like protecting the environment, caring for society, and being smart about how they run their businesses. It becomes abundantly clear that a commitment to sustainable and ethically sound business modalities isn't merely a lofty ideal; it is a cornerstone for ensuring financial prosperity.

Table 4. Correlation analysis.

Variables	ROE	ESG	E	S	G	Size	Lev.	Growth	Age	Board	Top1
ROE	1										
ESG	0.182***	1									
E	0.029***	0.489***	1								
S	0.091***	0.605***	0.267***	1							
G	0.188***	0.626***	0.081***	0.026***	1						
Size	0.081***	0.215***	0.197***	0.182***	0.026***	1					
Lev.	-0.173***	-0.118***	0.044***	0.026***	-0.278***	0.443***	1				
Growth	0.025***	-0.015***	0.039***	0.000	-0.036***	-0.001	0.077***	1			
Age	-0.052***	-0.040***	0.048***	0.078***	-0.174***	0.197***	0.174***	0.047***	1		
Board	0.031***	0.039***	0.030***	0.012**	0.027***	0.270***	0.145***	-0.020***	0.008	1	
Top1	0.120***	0.119***	0.012**	-0.00500	0.179***	0.206***	0.033***	0.004	-0.113***	0.033***	1

Note: **, *** denote significant at the 10 % and 5 % levels, respectively.

In light of the examination of the relationships between corporate environmental responsibility (E), social responsibility (S), corporate governance (G), and Return on Equity (ROE), notable findings emerge. All three dimensions, E, S, and G, exhibit significant and positive correlations with ROE. Specifically, the correlation coefficient between E and ROE is 0.029, between S and ROE is 0.091, and between G and ROE is 0.188, all at the 1% level of significance. The positive correlations with ROE in these empirical findings show that enhancing corporate environmental responsibility, social responsibility, and corporate governance is associated with improved corporate financial performance. Consequently, these findings lend strong support to Hypotheses 2, 3, and 4, which posited positive associations between the respective dimensions of E, S, and G, and financial performance. The observed relationships underscore the potential benefits of incorporating sustainable and responsible practices across environmental, social, and governance domains to bolster corporate financial success.

In summary, the analysis of correlation coefficients in Table 4 yields the following preliminary conclusions: ESG performance is significantly and positively correlated with corporate financial performance (ROE), supporting Hypothesis 1. Additionally, environmental responsibility, social responsibility, and corporate governance are all significantly and positively correlated with corporate financial performance, confirming Hypotheses 2, 3, and 4. Control variables, such as leverage level, corporate size, growth, board size, and equity concentration, also show significant correlations with corporate financial performance, signifying their impact on financial outcomes. However, it is essential to note that these findings are based on preliminary inferences from the Pearson correlation coefficient, and further validation through regression analyses or other statistical methods is necessary for a comprehensive understanding of the relationships between the variables.

4.3. Regression Results Analysis

4.3.1. ESG Performance and Corporate Financial Performance

To explore the relationship between ESG and financial performance, a stepwise regression analysis was conducted. The regression results, offering valuable insights into the strength and significance of this relationship, are duly documented in Table 5. With the stepwise regression method, the most important ESG factors that have a big effect on a company's financial results can be found. This makes the analysis more complete and accurate.

The regression analysis in column (1) reveals a significant and positive impact of ESG performance on corporate financial performance (coefficient = 0.028, $p < 0.01$), confirming Hypothesis 1. When controlling for relevant variables in column (2), the positive relationship remains significant (coefficient = 0.018, $p < 0.01$). Further adjustments for industry and year in column (3) reinforce the finding, with a significant coefficient of 0.017 ($p < 0.01$). The research results prove the positive role of ESG performance in promoting corporate financial performance, emphasizing the key role of sustainable practices in the environmental, social, and governance dimensions in improving corporate financial performance.

Table 5. Regression results between ESG performance and corporate financial performance.

Variables	**(1)**	**(2)**	**(3)**
ESG	0.028*** (34.80)	0.018*** (21.24)	0.017*** (20.50)
Size		0.018*** (22.09)	0.021*** (24.54)
Lev		-0.182*** (-38.16)	-0.204*** (-40.48)
Growth		0.007*** (8.98)	0.007*** (9.45)
Age		-0.001*** (-5.47)	0 (0.90)
Board		0.002*** (3.71)	0.00100 (0.96)
Top1		0.094*** (15.27)	0.087*** (13.94)
Cons.	-0.060*** (-17.56)	-0.380*** (-24.13)	-0.457*** (-24.74)
Ind	NO	NO	YES
Year	NO	NO	YES
N	35171	35171	35171
Adj-R^2	0.333	0.484	0.398

Note: The values in square brackets under the regression coefficients are t-values, and *, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, respectively.

Furthermore, the impact of control variables on corporate financial performance is examined. Results indicate that corporate size (size) exerts a positive and significant effect on financial performance, suggesting that larger companies demonstrate superior financial performance. Conversely, financial leverage (Lev) demonstrates a negative and significant impact on financial performance, implying that firms with higher debt levels exhibit poorer financial outcomes. Corporate growth and financial performance are significantly positively correlated, indicating that companies with higher growth potential can achieve better financial performance. On the other hand, corporate age (age) displays a negative and significant effect on financial performance, suggesting that younger companies tend to underperform financially. Additionally, board size (Board) and shareholding concentration (Top1) exhibit positive effects on corporate financial performance, signifying that larger board sizes and higher ownership concentrations positively influence financial outcomes.

These findings provide valuable insights into the multifaceted influences shaping corporate financial performance. Larger companies with sound financial structures, robust growth, and experienced boards tend to exhibit superior financial performance. Conversely, higher debt levels and younger corporate entities may encounter challenges in achieving desirable financial outcomes. These nuanced relationships emphasize the significance of considering these control variables when interpreting the impact of ESG dimensions on corporate financial performance.

4.3.2. ESG and Corporate Financial Performance

The investigation also looked very closely at how the three ESG factors-environmental stewardship (E), societal commitment (S), and governance praxis (G)- affect the financial health of companies in different ways. The fruits of this analysis find residence in Table 6, shedding perspicacious light on the idiosyncratic value contributions manifested by each ESG pillar.

Such empirical findings solidify the idea that strict adherence to ESG requirements not only improves a company's reputation, boosts its credibility, and wins over investors, but it also makes better use of resources, lowers costs, and boosts revenue streams. These findings show that ESG is becoming more important as a key factor in determining a company's value, supporting hypothesis H2, H3, and H4. In summary, the analytical bounty of this study underscores the profound dividends that accrue when firms meld sustainability protocols and governance edicts with their fiscal ambitions. This, in turn, punctuates the supreme relevance of ESG in sculpting corporate triumphs and in harmonizing the interests of the multifarious stakeholders in the corporate tapestry.

Table 6. Regression results of E, S and G and corporate financial performance.

Variables	(1)	(2)	(3)
E	0.003*** (3.56)		
S		0.007*** (15.04)	
G			0.012*** (17.97)
Size	0.026*** (30.37)	0.024*** (28.77)	0.023*** (27.58)
Lev	-0.230*** (-46.86)	-0.224*** (-45.59)	-0.197*** (-37.96)
Growth	0.007*** (8.85)	0.007*** (9.17)	0.007*** (9.16)
Age	0.000 (-0.29)	0.000 (0.81)	0.000 (0.06)
Board	0.000 (0.79)	0.000 (0.56)	0.00100 (1.34)
Top1	0.095*** (15.13)	0.096*** (15.39)	0.082*** (13.03)
Cons	-0.483*** (-25.97)	-0.460*** (-24.82)	-0.523*** (-28.26)
Ind	Yes	Yes	Yes
Year	Yes	Yes	Yes
N	35171	35171	35171
Adj-R^2	0.488	0.493	0.396

Note: The values in square brackets under the regression coefficients are t-values, and *, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, respectively.

4.4. Robustness Test

To mitigate the issue of endogeneity between ESG performance and financial performance, lagged period regression tests are employed. By incorporating temporal dynamics and persistent effects over time, these tests offer a more precise evaluation of the causal relationship between ESG performance and financial outcomes. The lagged period regression analysis results are shown in Table 7. These results give us important information about how the link between ESG factors and company's financial performance changes overtime. This approach strengthens the validity and robustness of the findings, enhancing our understanding of the temporal dynamics shaping the impact of ESG on financial outcomes.

The first column of the results shows that ESG performance has a long-lasting and very significant effect on future corporate financial performance (ROE_{it+1}), with a coefficient of 0.022 and a t-value of 23.96. When accounting for additional control variables in column (2), the coefficient of ESG remains significant at 0.017 (t-value of 18.50). Even when all other factors in column 3 are carefully taken into account, ESG performance still has a big positive effect on the future financial performance of a company (ROE_{it+1}), with a coefficient of 0.018 at the 1% level of significance. Strong results like these backup the previous conclusion that ESG performance (H1) has a positive effect on a company's financial performance over time. They also show how important sustainable and responsible business practices are for a company's future financial success.

Apart from ESG performance, other control variables also significantly influence corporate financial performance. Corporate size (size) positively affects financial performance (ROE), indicating larger companies perform better. Conversely, the debt ratio (Lev) negatively impacts financial performance (ROE), with higher debt levels associated with lower performance. Additionally, board size (Board) and top corporate ownership (Top1) positively influence ROE, indicating that larger boards and higher ownership concentration contribute to improved financial performance. These results show that there are many things that affect a company's financial success. They also show how important it is to look at these control variables along with ESG performance when analysing finances.

In summary, actively managing environmental, social, and corporate governance responsibilities in the current period is expected to positively impact financial performance in the subsequent period. Emphasizing sustainable practices, social reputation, and strong governance creates a conducive business environment, fostering long-term financial success. Integrating ESG considerations into company strategies can drive competitive advantage, stakeholder support, and shared goals of sustainable development and value creation.

Table 7. Lag period regression results.

Variables	(1) ROE_{it+1}	(2) ROE_{it+1}	(3) ROE_{it+1}
ESG	0.022*** (23.96)	0.017*** (18.50)	0.018*** (18.47)
Size		0.004*** (4.15)	0.006*** (6.41)
Lev.		-0.063*** (-11.76)	-0.079*** (-14.02)
Growth		0.00100 (1.17)	0.002** (2.07)
Age		-0.001*** (-3.60)	0 (0.85)
Board		0.003*** (4.26)	0.001** (2.12)
Top1		0.104*** (15.15)	0.100*** (14.33)
Cons	-0.037*** (-9.70)	-0.126*** (-7.11)	-0.168*** (-8.13)
Ind	Yes	Yes	Yes
Year	Yes	Yes	Yes
N	30800	30800	30800
Adj-R^2	0.518	0.432	0.443

Note: The values in square brackets under the regression coefficients are t-values, and *, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, respectively.

4.5. Nature of Property Right Heterogeneity Analysis

The investigation also casts its analytical net towards a heterogeneity study predicated on ownership rights. The crux of this analysis is the notion of ascertaining the differential impacts of ESG performance on corporate financial health, contingent upon the idiosyncratic ownership architectures–specifically, state-owned enterprises (SOEs) juxtaposed against their non-state-owned counterparts (non-SOEs). The overarching ambition here is to distill the nuanced relationships ESG might share with financial metrics across these disparate organizational structures.

Drawing insights from Table 8, it becomes apparent that the interplay between ESG and financial performance is not homogenous across the SOE and non-SOE divides. For state-owned enterprises (SOEs), as delineated in Column 1, ESG metrics exhibit a statistically significant and salutary correlation with financial outcomes, as evidenced by a coefficient value of 0.012, resonating robustly at a p-value less than 0.001. This intimates that, within the SOE paradigm, proactive strides in ESG realms align with enhanced fiscal vitality. However, a contrasting narrative unfolds for the non-state-owned enterprise (non-SOE) cohort. As evidenced in Column 2, the impact of ESG performance on fiscal health is more pronounced, brandishing a coefficient value of 0.019 ($p < 0.001$). This heightened effect implies that, within the non-SOE canvas, ESG's bearing on financial landmarks is markedly more palpable. Such differential outcomes, one might postulate, can be traced back to the inherent organizational attributes of non-SOEs. Their propensity for a more forthcoming ESG disclosure, coupled with a diminished governmental oversight, casts them in a unique light. This new information shows how important it is for operational autonomy and transparency to be able to change hoe ESG factors and financial metrics work together, especially in non-SOE settings.

The study that splits the group into SOEs and non-SOEs shows a lot of interesting patterns in a lot of different aspects of companies and how they affect their financial performance.

Across both organizational typologies—SOEs and non-SOEs—certain universalities emerge. Financial outcomes have an inverse relationship with both corporate magnitude (Size) and debt profiles (Lev). This empirical revelation suggests that behemoth entities and those steeped in greater indebtedness tend to grapple with financial challenges or at the very least, don't necessarily translate their size or leverage into superior financial returns. Conversely, growth emerges as a robust predictor of fiscal health. A significant positive correlation underscores the premise that entities, regardless of their ownership structures, that are on an upward growth trajectory are predisposed to better financial benchmarks.

However, when diving deeper into the nuances that delineate SOEs from non-SOEs, intriguing disparities surface:

Corporate Longevity (Age): Within the SOE echelon, the age of a corporation resonates with better financial performance, suggesting that seasoned state-owned entities benefit from their long-standing market presence and possibly their entrenched business networks and partnerships. This positive correlation, however, doesn't maintain its significance when examining the non-SOEcohort, hinting at different dynamics at play in the two sectors.

Board Composition (Board): The governance architecture, particularly the scale of the board, emerges as an inconsequential factor for SOEs in terms of its impact on financial outcomes. This could be attributed to the distinct governance and oversight mechanisms that state-owned entities are subjected to. Yet, in the non-SOE tapestry, a larger board appears to contribute positively to fiscal vitality. This might suggest that, for non-SOEs, a more extensive board brings a diversity of expertise, perspectives, and decision-making prowess that bolsters the company's financial standing.

These research studies help us understand how a company's internal qualities and its management affect its financial health in a more complex way. They also bring out the small differences that set SOE's apart from other companies.

Table 8. Empirical analysis results of heterogeneity based on nature of property right.

Variables	(1) SOEs	(2) Non-SOEs
ESG	0.012*** (8.02)	0.019*** (17.75)
Size	0.021*** (15.41)	0.026*** (21.29)
Lev	-0.212*** (-25.84)	-0.168*** (-25.85)
Growth	0.005*** (4.38)	0.008*** (8.09)
Age	0.002*** (4.61)	0.000 (-0.51)
Board	0.000 (0.57)	0.003*** (3.30)
Top1	0.048*** (4.66)	0.122*** (14.99)
Cons	-0.427*** (-15.37)	-0.577*** (-21.58)
Ind	YES	YES
Year	YES	YES
N	12540	20911
Adj-R^2	0.4920	0.404

Note: The values in square brackets under the regression coefficients are t-values, and *, **, and *** indicate significant at the 10%, 5%, and 1% significance levels, respectively.

Additionally, the real-world connection between ESG performance and financial health is positive for both state-sponsored and private corporate types, though it is stronger in the non-state-owned sector. At the same time, other corporate characteristics like the size of the business, how much it borrows, its growth trajectory, and the size of its governance board all play major roles in shaping financial outcomes. These characteristics change subtly but significantly depending on who owns the business. Such revelations bequeath indispensable insights for corporate strategists and policy architects, underscoring the imperativeness of assimilating ESG paradigms into corporate practices. The potency of this integration, particularly for private enterprises, cannot be overstated. Furthermore, the expansive analytical purview of this investigation enriches the academic and industrial discourse on the ESG-financial nexus, proffering granular insights that foster sustainable commerce tenets and bespoke managerial strategies across a spectrum of ownership landscapes. It is a clarion call, heralding the paramountity of ESG not as a peripheral but as a central pillar in the edifice of modern corporate excellence and sustainability.

5. Conclusions and Suggestions

5.1. Conclusions

This study confirms a positive relationship between ESG (environmental, social, and governance) performance and corporate financial performance (H1). Improving a company's ESG performance is beneficial for enhancing its financial standing. These findings suggest that as companies improve their ESG performance, their public reputation and perception are positively influenced, thereby leading to favorable financial performance (Chen & Xie, 2022). This empirical evidence underscores the relevance of ESG considerations in shaping corporate financial success, highlighting the tangible benefits of sustainable practices and responsible governance for companies and their stakeholders.

Environmental performance has a positive relationship with corporate financial performance (H2). The study further supports the view in sustainable development theory that good environmental performance promotes improved corporate financial performance. Improving environmental performance not only brings environmental benefits but also creates economic benefits, achieving a win-win situation between economic and environmental benefits (Nguyen, Elmagrhi, Ntim, & Wu, 2021).

Social responsibility has a positive relationship with corporate financial performance (H3). Although actively fulfilling social responsibility will increase the cost of the company, it can build a good communication bridge with stakeholders and solidify the rights and interests of internal and external stakeholders. Stakeholders provide more capital investment in the company, which drives the company to higher levels of performance. Active fulfillment of social responsibility also helps companies to build a good image, enhance their reputation, and create intangible assets, which in turn increase competitive advantage and market share (Shabbir & Wisdom, 2020).

Corporate governance has a positive relationship with corporate financial performance (H4). Good corporate governance can help managers better understand business operations, make decisions, and control risks, thereby improving financial performance. Good corporate governance promotes transparency and responsible behaviour, reduces costs and risks, and enhances shareholder value and reputation. In addition, good corporate governance strengthens oversight and incentives that motivate managers to perform better and create greater economic value (Al-Ahdal, Alsamhi, Tabash, & Farhan, 2020).

Further research found that non-SOEs have a more significant positive effect on the relationship between ESG performance and financial performance compared to SOEs. This implies that ESG performance makes a more significant contribution to the financial performance of non-SOEs (Khalid, Sun, Huang, & Su, 2021). This difference may be due to the fact that non-SOEs are more concerned about the true economic value of the social activities they engage in for operational and developmental reasons (Khalid et al., 2021). In particular, when exposed to widespread public and government concerns about heavily polluting industries, non-SOEs are more motivated to provide transparent and credible environmental information to improve their financial performance and gain market recognition (Zhou, Liu, & Luo, 2022). In contrast, SOEs may be guided and intervened in by the government in their business decisions, and the direct impact of their ESG performance on financial performance may be relatively weak (Zhou et al., 2022). SOEs may pay more attention to the government's policy requirements and resource allocation in their operations and may pay less attention to ESG factors.

5.2. Suggestions

5.2.1. For Enterprises

Companies should aim to improve their ESG performance, including environmental, social, and governance practices. By adopting sustainable policies and practices, companies can balance environmental protection, social interests, and shareholder rights and improve overall performance. Second, it is critical for the company to have a clear ESG strategy. The strategy should integrate ESG factors into core business decisions and operations and be aligned with the company's long-term strategy. In addition, a transparent and reliable reporting mechanism should be established to communicate corporate ESG performance to stakeholders. This will enhance communication and trust with stakeholders.

5.2.2. For Government

Governments should formulate and improve ESG-related policies and regulations to encourage and guide companies to strengthen environmental protection, social responsibility, and corporate governance practices. Governments can provide incentives and tax breaks to encourage companies to invest in and improve ESG. At the same time, the government should strengthen its monitoring and enforcement of corporate ESG behaviour to ensure that companies comply with relevant regulations and standards. It should establish a robust monitoring and evaluation system to regularly assess corporate ESG performance and publicly disclose relevant information to promote transparency and standardization.

5.2.3. For Investors

Investors should increase their focus on corporate ESG performance and take it into account in their investment decisions. Selecting companies with good ESG performance as investment targets can help improve the long-term return and sustainability of investment portfolios. In addition, investors can encourage companies to provide comprehensive, accurate, and comparable ESG information. By advocating for transparency and standardized ESG reporting, investors can push companies to improve their ESG performance and increase investor confidence.

In summary, by strengthening corporate ESG performance, developing a clear ESG strategy, government support and regulation, and investor attention and encouragement, we can facilitate the improvement of corporate financial performance, promote sustainable development, and contribute to shared social, environmental, and economic progress.

5.3. Limitations and Future Research Suggestions

The limitations and future research of this study mainly manifest in the following aspects:

Sample Size: The scale of the research sample is relatively small, which might limit the generalizability of the results. In the future, the geographic scope can be expanded. In addition to Chinese A-share-listed companies, other markets can be considered. Longitudinal research can be employed to examine long-term impacts.

Variable Consideration: The study may not have considered all the relevant variables. Future research can select more variables related to ESG performance indicators and financial performance to derive a more comprehensive understanding.

This addresses the need for future studies to expand the scope both in terms of geography and the variables considered to offer a more rounded perspective.

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