An Empirical Study on the Influence of ESG Ratings on Earnings Management among Listed Companies in China

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ABSTRACT

This study examines the influence of ESG (Environmental, Social, and Governance) ratings on the financial performance of listed companies in China from 2011 to 2021. With a sample of 21,289 A-share listed companies, the study employs a fixed-effects panel analysis, focusing on Return on Assets (ROA) and Return on Equity (ROE) as key financial indicators. The research incorporates comprehensive ESG ratings from the China Securities Index Company and Wind database, alongside control variables like company size, age, and industry. The findings reveal that ESG ratings significantly and positively affect financial performance, with companies exhibiting higher ESG scores demonstrating better asset management and profitability. The robustness of these results is confirmed through various tests, including substituting dependent and explanatory variables, and addressing multicollinearity concerns. The study emphasizes the increasing significance of ESG factors in the financial well-being of businesses. It demonstrates the connectedness between social responsibility and economic success. This study supports the use of stakeholder theories in examining the influence of ESG ratings on earnings management among listed companies. However, its scope is limited to China, making the findings potentially unsuitable for other developing nations.

Keywords: ESG Ratings, Financial Performance, Listed Companies, Return on Assets, Return on Equity, China

INTRODUCTION

The integration of ESG principles, driven by initiatives such as "carbon peak" and "carbon neutrality," has become essential for corporations, financial institutions, and investors. The evaluation of sustainable development in environmental, social, and governance areas through ESG is crucial in China's business environment(Ge et al., 2022; Li et al., 2023; Ruan & Liu, 2021). This is particularly relevant with the 20th National Congress of the Communist Party of China emphasizing ecological prioritization and promoting green growth with low carbon emissions. This transition emphasizes the assessment of a firm's investment value by taking into account not just financial metrics but also its ESG performance.

Investors are increasingly considering the long-term sustainability of businesses and their influence on society and the environment, leading to a growing emphasis on evaluating investment prospects through the ESG framework.

ESG ratings assess a company's performance in categories like carbon emissions (Baratta et al., 2023; Percy, 2021; Raghunandan & Rajgopal, 2022; Rokhmawati et al., 2015) human rights (Chandrakant & Rajesh, 2023; Rau & Yu, 2024; Singhania & Saini, 2023) diversity and inclusion (Foster et al., 2023; Savio et al., 2023; Shakil, 2021) executive remuneration (Cohen et al., 2023; Jang et al., 2022), and board oversight (Arayssi et al., 2020;

Burke, 2022; Shahbaz et al., 2020), These elements can greatly influence a firm's reputation, activities, and financial results. Consequently, they are being more widely incorporated into investment decision-making procedures.

Studies by Erol et al. (2023) Kim & Yoon (2023) Mercereau et al. (2022) and Wang et al. (2023) have demonstrated that organizations exhibiting robust ESG performance typically surpass their counterparts in the long run, suggesting that investors focusing on ESG factors may achieve better investment yields..

however, studies by Cinceoglu & Strauß; Rau & Yu (2024), Tan et al. (2024) and Zhang et al. (2024) indicates that some firms have faced allegations of employing ESG ratings to engage in greenwashing or manipulate their financial results in order to mislead investors. There is conflicting evidence indicating that further exploration is needed to understand the connection between ESG and earnings manipulation. Abdelmoneim & El-Deeb (2024) and Göttsche et al. (2024) unveil that non-financial disclosures can also provide valuable insights, allowing investors to assess the financial performance of companies.

It is logical to infer that the disclosure of nonfinancial ESG information can also impact a company's financial performance by minimizing information asymmetry Hu et al. (2024) and Yu et al. (2024) also indicate that Companies that prioritize ESG ratings are inclined to reveal a greater amount of corporate information in their reports, aiding external investors in gaining a more comprehensive understanding of the company. This suggests that ESG disclosures serve as a form of oversight on restrictions related to managing earnings.

There is still much to be discovered about the influence of ESG ratings on earnings management within publicly traded companies. There are still uncertainties about how effective ESG ratings are and the different impacts of various ESG factors on both ESG ratings and investment results. It is crucial to conduct further research in order to provide investors with a more thorough understanding of the importance of ESG ratings in making investment decisions and how they can be effectively incorporated into investment strategies. Despite growing interest in ESG factors for investment decision-making, there is still uncertainty about their influence on stock prices and investment performance.

This research seeks to address the gap in existing literature by exploring how ESG ratings impact earnings management within Chinese listed companies. It also aims to analyze the implications of this influence on financial performance, aiming to uncover its potential role in alleviating financing constraints and enhancing corporate efficiency over a period from 2011 to 2021. The goal is to shed light on the contribution of ESG factors to operational and financial success, thereby adding valuable insights to discussions around sustainable business practices.

The key innovations and impact of this research are as follows:

1. Explore the connection between ESG ratings and the financial performance of companies.
2. Investigate how ESG ratings affect firm performance using stakeholder theory as a framework.
3. It also aims to highlight the relevance of ESG performance in modern business environments, emphasizing its ability to reduce risks and improve overall company performance.

The results of this research will offer valuable understandings for investors, professionals, and decision-makers regarding the significance of integrating ESG ratings in planning company performance. The economic impacts of this study also advocate for the advancement of ESG initiatives. This enables firms to uphold their sustainability, establish a solid reputation, earn stakeholders' trust, and contribute to national sustainable development efforts. The rest of this article is structured as follows:

Section 2 Empirical literature review and theoretical analysis

Section 3 Research methodology

Section 4 Main results and findings

Section 5 Theoretical and practical implication of the study

Section 6 Conclusion limitation and further research

EMPIRICAL LITERATURE REVIEW AND THEORETICAL ANALYSIS

Companies that prioritize ESG ratings are more likely to disclose a greater amount of corporate information in their reports, providing external investors with a more comprehensive understanding of the company's sustainability practices and performance. This increased transparency can enhance trust and attract socially responsible investors, potentially leading to improved financial performance (Alsayegh et al., 2020). Moreover, businesses with elevated ESG scores are frequently perceived as more robust and adept at handling environmental and social challenges, which can contribute positively to their sustained financial success. Chininga et al. (2023), Dincă et al. (2022), Naeem et al. (2022) and Son & Kim (2022) conducted a comprehensive analysis using a global sample of companies. The results implied a favorable correlation between elevated ESG ratings and financial metrics, such as return on assets and return on equity. The authors reached the conclusion that firms demonstrating robust ESG performance commonly display superior financial performance. For example, a meta-analysis conducted by Friede et al. (2015) examined 2,200 empirical studies and concluded that around 90% of them showed a positive relationship between ESG factors and financial performance.

Alduais (2023) explored the relationship between ESG ratings and cost of capital. Their study encompassed a large sample of companies across industries. They found that firms with higher ESG ratings tend to have lower costs of capital, indicating that investors perceive them as less risky. This suggests a potential link between strong ESG performance and improved financial conditions. Sandberg et al. (2023) and Yin et al. (2023) examined the financial performance of companies that improved their ESG ratings over time. Their study revealed a positive association between ESG rating improvements and subsequent improvements in financial performance, including increases in revenue, operating income, and market valuation. This suggests that companies can benefit financially from enhancing their ESG practices. For example Liu et al. (2023) investigated the relationship between ESG ratings and stock returns. A firm fixed effect panel model was applied to a dataset of over 230 listed companies in Japan, spanning from January 2016 to December 2021. The findings indicated that firms with higher ESG scores tended to observe heightened stock returns, indicating an investor preference for strong ESG performance. This implies that companies demonstrating robust ESG practices could potentially attract more favorable investment. Yadav et al., (2023) uses a quantitative systematic review was carried out through bibliometric analysis, indicating a consistent increase in ESG research over recent years. The majority of studies were conducted in developed countries such as the USA, UK, and Australia. Research themes were further delineated using bibliographic coupling techniques.

Meng et al. (2023) conducted a meta-analysis of multiple studies on the ESG-financial performance relationship. Their findings suggested a positive association between ESG performance and financial performance across different industries and regions. This indicates a potential universal link between strong ESG practices and improved financial outcomes. Saini et al., (2023) indicate that sustainable indices demonstrate stronger long-term performance compared to traditional indices after the event. This research has significant implications for investors, portfolio managers, and policymakers, recommending that investors and portfolio managers diversify their investments in sustainable indices to reduce risk over the long term. In addition, it suggests that policymakers should explore stricter sustainable reporting standards. Velte (2017) conducted a study on a selection of companies listed in the German Prime Standard (DAX30, Tec DAX, MDAX) for the period 2010-2014, comprising a total of 412 data points. The research involved an examination of correlations and regressions to explore potential relationships between ESGP derived from Thomson Reuters' Asset4 database and accounting as well as market-driven indicators of FINP (such as Return on Assets [ROA] and Tobin’s Q). The findings revealed that ESGP positively influences ROA but has no impact on Tobin’s Q. Additionally, when analyzing the three components of ESGP, governance performance emerged as having the most significant influence on FINP compared to environmental and social performance.

Chen et al. (2023) and Fu & Li (2023) argue that companies with strong ESG practices are seen as better equipped to manage environmental and social risks. Such firms may experience lower operational costs, reduced regulatory risks, and improved brand reputation, which can positively impact financial performance. For example, Fu & Li (2023) sample of listed companies on the A-share market in China from 2015 to 2021 was employed. The study revealed that the beneficial impact of recent ESG practices on financial performance will diminish over time. Notably, the examination of variances revealed that ESG's beneficial impact on financial performance is statistically notable for privately-held firms but lacks significance for state-owned businesses. Research by Asimakopoulos et al. (2023) and Priem & Gabellone (2024) indicates that firms with strong ESG ratings could potentially benefit from reduced capital costs. This is because investors and lenders view these firms as less risky and more environmentally responsible, which may result in lower borrowing expenses and increased stock values.

ESG considerations have the potential to spur creativity and bolster a company's enduring ability to compete. Companies that prioritize ESG initiatives may allocate resources to sustainable technologies, enhance their use of resources, and cultivate an environment conducive to innovation. These efforts can result in favorable effects on financial performance (Kandpal et al., 2024; Yan et al., 2022). The connection between ESG ratings and financial performance may differ from one industry to another. Certain industries, like renewable energy or clean technology, could exhibit a more pronounced positive correlation due to their alignment with ESG objectives (Broadstock et al., 2020; Wang et al., 2024). On the other hand, sectors with elevated environmental or social risks, such as extractive industries, might encounter greater obstacles in attaining high ESG ratings (Hirons, 2020; Lèbre et al., 2020; Tost et al., 2018). Stakeholder theory plays a crucial role in understanding the influence of ESG ratings on firm performance. Research suggests that higher ESG scores positively impact operating performance, returns, and firm-specific risk (Wai-Khuen et al., 2023). Additionally, the relationship between external stakeholders and ESG disclosure is complex, with stakeholders exerting pressure on corporate ESG commitments (Alessa et al., 2024). Studies have shown a significantly positive correlation between ESG composite performance and firm value, supporting stakeholder theory (Yu & Xiao, 2022). Furthermore, the positive impact of environmental and social performance on firm value has been highlighted, especially for state-owned companies (Zeng & Jiang, 2023). Overall, incorporating stakeholder theory into ESG practices can lead to improved corporate performance, emphasizing the importance of ethical, fair, and sustainable practices in today's competitive business landscape (Gomes et al., 2023).

Stakeholder theory suggests that organizations are accountable not only to their shareholders, but also to a range of stakeholders such as employees, customers, suppliers, communities, and the natural environment. In the context of ESG ratings and earnings management, stakeholders' interests and concerns can influence a company's financial reporting practices. Companies with a strong stakeholder orientation and higher ESG ratings are more likely to prioritize transparency and accountability in their financial reporting (Oncioiu et al., 2020; Smith et al., 2022). This commitment to stakeholder interests may reduce the incentive for earnings management practices aimed at manipulating financial results (Jian et al., 2024; Kim et al., 2012; Zhao et al., 2018). Stakeholder theory underscores the significance of generating enduring value and implementing sustainable business strategies (Martínez-Peláez et al., 2023; Yamane & Kaneko, 2022). Organizations that have higher ESG ratings are inclined to embrace a long-term outlook and give precedence to stakeholder engagements over immediate financial profits. Prioritizing long-term sustainability may diminish the inclination towards manipulating earnings, which typically seeks to artificially enhance short-term financial performance (Martínez-Peláez et al., 2023; Moore & Walker-Arnott, 2014).

Stakeholders, including customers, employees, and communities, are increasingly concerned about a company's environmental and social performance. Negative publicity or reputational damage resulting from earnings management practices can harm a company's relationships with stakeholders(Ahmad et al., 2023). To protect their reputation and maintain stakeholder trust, companies with higher ESG ratings may be more cautious about engaging in earnings management (Barghathi et al., 2020). Active involvement with stakeholders, such as staff, clients, and local areas, typically results in elevated ESG ratings for companies just like Raphael (2022) ascertained with healthcare funding and sustainability. Strong stakeholder relationships can lead to improved customer loyalty, enhanced reputation, and increased market share, ultimately contributing to better financial performance (Lin, 2024; Sarpong et al., 2023). Saini et al., (2023) suggests that stakeholder, legitimacy, and signaling theories form the basis for the relationship between ESG factors and financial performance.

As a result, this paper proposes the following hypothesis.

Hypothesis H_1: Firms ESG rating has a positive impact on its financial performance.

RESEARCH METHODOLOGY

Data collection

This research examines the impact of ESG ratings on the financial performance of A-share listed companies in China between 2011 and 2021. To conduct this investigation, data from the Wind database was utilized. Certain categories such as ST and *ST listed companies, those in the financial sector, newly listed companies, and those with incomplete data were excluded. In order to prevent outliers from affecting the empirical analysis results, all continuous variables were adjusted at the 1% and 99% quantiles through winsorization. Subsequently, approximately 21,289 observations from around 3,134 listed companies were included for analysis. The ESG data used came from Huazheng's ESG rating system obtained via the Wind Information Financial Terminal Database while other financial information was sourced from National Bureau of Statistics and CSMAR database.

Variables and measures

Financial performance

Return on assets is considered a representative measure of accounting-based performance, providing a more precise reflection of resource allocation efficiency compared to other financial information(Zabri et al., 2016). Therefore, consistent with(Kim & Lee, 2020) Hence, our primary focus on analyzing return on assets as the dependent variable aims to indicate corporate profitability and financial health. Furthermore, return on equity can be used as an alternative method for cross-validation in our analysis. In order to explore any potential delay effects, we studied financial data for t, t+1, and t+2 years.

ESG

The ESG rating, which serves as the independent variable, is obtained from the China Securities Index Company and consists of nine levels ranging from AAA to C. The research also investigates financing constraints and corporate efficiency as intermediary factors, with financing constraints being assessed using the SA Index formula, considering company size and age. Corporate efficiency is measured through Total Factor Productivity (TFP), calculated via the OP method.

Control variables

Control variables include financial metrics and governance indicators like total market value, company age, revenue, cash flow, R&D expenditure, profit growth rate, debt-to-asset ratio, asset turnover rate, board size, and major shareholder shareholding ratio. These factors help in assessing the influence of ESG ratings on financial performance with greater accuracy. Definition of variables are shown in Table 1 below.

Table 1 Variables and definitions

Variable type	Variable name	Symbol	Description
Independent variable	Return on Asset	ROA	Total profit/total assets
Dependent variable	Return on Equity	ROE	Thomson reuters ESG
Control variables	ESG rating	ESG	Measure used to evaluate the performance and behavior of the company
	total market value	TFP	Total market capitalization of a company
	company age	AGE	This indicate the existence of the company since,

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			it's establishment
	revenue	SALES	Describe the total amount of money generated by a company from its core business activities
	cash flow	CFO	The net amount of cash and equivalents
	R&D expenditure	R&D	The amount of money invested on research and deployments in the company
	profit growth rate	GROWTH	Revenue growth rate
	debt-to-asset ratio	D/A	The proportion of total asset financed by debt
	asset turnover rate	ATO	Measure on how efficiently a company utilize its asset to generate revenue
	board size	BOARD	Number of members serving on a company's board director
	shareholder shareholding ratio	SSR	This indicate the percentage of share owned by major shareholder
	Province fixed effect	PROV	The control variable used to account for unobserved characteristics that vary across different provinces
	Financial leverage	LEV	Total liabilities/total assets

Research design

Theoretically, the impact of ESG ratings on the financial performance of listed companies could be linear or nonlinear. Following the empirical methods common in corporate finance research, this study assumes a linear relationship between the two, constructing the following baseline regression model.

To assess the impact of ESG ratings on the financial performance of firms, Eq. 1 is formulated to examine hypothesis1:

$$ROA_{i,t} = a_0 + a_1 ESG_{i,t} + \sum \gamma_i Control_k + \delta\, Ind_i + \theta Year_i + \varphi Prov_i + \epsilon_{i,t}$$

Among them, ROA is the annual return on assets of the listed company, ESG is the ESG score after assignment, Control is the control variable, Ind, Year, and Prov represent industry, year, and province fixed effects respectively, and $\in$ is the random disturbance. i and t represent the listed company and year respectively.

MAIN RESULTS AND FINDINGS

Descriptive Statistics and Basic Tests

Descriptive statistics for the variables after applying winsorizing are displayed in Table 2. Out of 21,289 observations, it is observed that the maximum Return on Assets for listed companies stands at 22.23%, while the minimum is -19.08%, with a mean of 4.627%. This indicates notable disparities in financial performance across the companies. The average value of the explanatory variable ESG is recorded at 4.178, with a standard deviation of 1.100, signifying moderate overall variability; however, its range from a high of 8 to a low of 1 underscores divergent efforts among companies towards environmental, social and governance aspects.

To ensure the appropriateness of the explanatory variables selected for this study and to eliminate any potential impact of multicollinearity, an assessment using the Variance Inflation Factor test was carried out. The VIF values for each variable are all well below 5, with a maximum value of only 2.54 and an average VIF of 1.40. This signifies that there is no evidence of multicollinearity among the variables, confirming the suitability of the chosen variables. Furthermore, based on the results of the Hausman test which yielded a P-value less than 0.01, we reject the null hypothesis. As a result, this paper employs a fixed-effects model for panel regression analysis.

Table 2. Descriptive Statistics

Variables	Number of Observations	Mean	Standard Deviation	Minimum	Median	Maximum
ROA	21289	4.627	5.894	-19.08	4.263	22.32
ESG	21289	4.178	1.1	1	4	8
SA	21289	-3.793	0.264	-5.646	-3.796	-2.109
TFP	21289	8.909	0.975	7.136	8.811	11.21
SIZE	21289	22.21	1.271	20.09	22.01	26.38
AGE	21289	9.092	6.806	1	7	26
SALES	21289	19.23	2.570	11.14	19.51	24.35
CFO	21289	21.03	64.96	-43.45	4.621	497.3
R&D	21289	4.707	4.64	0.02	3.6399	26.18
GROWTH	21289	-2.255	294.2	-1840	11.55	1126
LEV	21289	40.01	19.04	5.353	39.41	84
TAT	21289	0.662	0.41	0.116	0.571	2.493
BOARD	21289	8.504	1.644	5	9	15
TOP1	21289	33.85	14.53	8.38	31.82	73.19

Source: A-share listed companies in china, from 2011 to 2021

Baseline Regression Analysis

To test the impact of ESG ratings on financial performance, this study conducted a fixed-effects panel analysis on 21,289 sample data from 2011 to 2021. The baseline regression results are shown in Table 3. As indicated in columns (1) and (2) of Table 2, the coefficients of ESG performance on Return on Assets (ROA) are 1.082 and 1.150, respectively, both significant at the 1% level, irrespective of controlling for industry, province, and time fixed effects. Furthermore, as shown in column (3), when control variables and fixed effects are included, the impact coefficient of ESG rating performance on the financial performance of listed companies is 0.671, also demonstrating a positive effect. These regression results robustly support Hypothesis H. From an economic perspective, a high ESG rating indicates that a company possesses strong capabilities in environmental, social, and governance aspects. These capabilities are reflections of the company's operational and management skills, which in turn positively influence the financial performance of the listed companies. This also suggests that a company's social benefits and economic effects can develop in harmony and mutually reinforce each other.

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Table 3. Baseline regression results

	(1)	(2)	(3)
	ROA	ROA	ROA
ESG	1.082*** (0.036)	1.150*** (0.036)	0.671*** (0.030)
SIZE			0.947*** (0.040)
AGE			-0.102*** (0.005)
CFO			0.001 (0.001)
R&D			-0.012 (0.009)
SALES			0.078*** (0.013)
GROWTH			0.008*** (0.000)
LEV			-0.129*** (0.002)
TAT			2.927*** (0.087)
BOARD			0.016 (0.020)
TOP1			0.024*** (0.002)
CONSTANT	0.109 (0.155)	-0.179 (0.154)	-17.461*** (0.785)
Industry fixed effects	N	Y	Y
Province fixed effects	N	Y	Y
time fixed effects	N	Y	Y
Observations	21289	21289	21289
R-squared	0.041	0.098	0.428

[***, **, and * represent 1%, 5%, and 10% significance level respectively]

Robustness Test

Replacement of the Dependent Variable to ensure the robustness of the regression results, this study replaced the dependent variable with Return on Equity (ROE). As an important financial metric for shareholders to assess listed companies, ROE also reflects corporate financial performance. The regression results are shown in columns (1) to (3) of Table 4. It is evident that, even when substituting the dependent variable with ROE, controlling and not controlling for fixed effects, and adding control variables, all regression coefficients remain positive and significant at the 1% level. This indicates that ESG performance positively influences financial performance, further corroborating the reliability of Hypothesis H. Replacement of the Explanatory Variable given that several institutions provide ESG ratings for listed companies in the market, to further validate the impact of ESG performance on the financials of listed companies, this study substitutes the China Securities Index Company's ESG rating data with that from the Wind database. The study utilized ESG metrics from Wind for the years 2018–2021, encompassing 10,618 sample data. Employing the same regression method, the results are shown in columns (4) to (6) of Table 4 Similar to Table 3, Wind's ESG metrics have a significant positive effect on Return on Assets (ROA) at the 1% level, further supporting Hypothesis H.

Table 4. Robustness Analysis

	（1）	（2）	（3）	（4）	（5）	（6）
	ROA	ROA	ROA	ROA	ROA	ROA
ESG	1.922*** (0.064)	1.973*** (0.064)	1.166* (0.055)			
WINDESG				1.281*** (0.091)	1.233*** (0.092)	0.511*** (0.072)
Controls	N	N	Y	N	N	Y
Constant	0.719*** (0.277)	-0.825*** (0.278)	-35.485*** (1.444)	0.563 (0.001)	-3.275*** （0.562）	-25.185*** 1.235）
Industry fixed	N	Y	Y	N	Y	Y
Province fixed	N	Y	Y	N	Y	Y
Fixed time	N	Y	Y	N	Y	Y
Observations	21289	21289	21289	21289	21289	21289
R-squared	0.041	0.074	0.391	0.018	0.067	0.486
[***, **, and * represent 1%, 5%, and 10% significance level respectively]						

Theoretical and practical implication of the study

Theoretical implication

This study makes a significant contribution to the current academic literature, specifically by investigating how ESG performance affects companies, especially in times of crisis. Employing robust ESG practices can help organizations attract and retain high-caliber employees, boost employee morale through fostering a sense of purpose, and ultimately enhance overall efficiency. The results of the research indicate that implementing strong corporate governance, social responsibility, and environmental programs can improve asset returns. Companies that adopt ESG standards gain several benefits compared to their rivals, such as improved reputation with stakeholders and employees, greater investment returns, a competitive advantage in the market, increased attractiveness to investors and lenders, better financial performance, and stronger customer loyalty.

The data indicates that China makes different contributions to ESG initiatives, with the level of contribution varying based on their ability to maintain high ESG standards in various industry sectors. A successful ESG strategy allows businesses to enter new markets, expand within current ones, and lower costs. Furthermore, robust external value propositions resulting from ESG practices afford companies greater strategic flexibility while decreasing regulatory pressures. Firms that demonstrate strong ESG performance show increased ability to manage risks, greater potential for growth, and improved financial well-being. Larger companies often have more capacity to meet ESG standards, enabling them to effectively convey positive messages to the public and gain broader social approval for their offerings. Developed nations typically display a stronger need for ESG transparency and place a higher priority on ESG performance in comparison to developing countries.

Practical Implications

Regardless of the results, this research highlights the practical benefits of promoting ESG rating programs. These programs empower companies to improve their sustainability efforts, bolster their reputation, earn stakeholder confidence, and advance national sustainable development objectives. The research indicates that organizations should view ESG ratings as an initial step in identifying and measuring pertinent data, disclosing information openly, and comparing their achievements with industry standards. By prioritizing inclusivity, communication, and collaboration within teams, businesses can proactively address any deficiencies they may have.

Additionally, there seems to be a favorable cycle of influence between ESG ratings and earnings management. Engaging in ESG efforts enhances a company's profits, but the results also impact the firm's dedication to these endeavors. Elevated ESG ratings are linked with a robust ESG strategy from both an inclination and momentum standpoint. Improved performance in ESG is also connected with a reduction in potential losses.

The research suggests that incorporating ESG ratings in businesses has a positive effect on their performance. A favorable ESG rating allows companies to grow in both current and new markets, as well as lower expenses. By offering an appealing external value proposition and reducing regulatory pressure, it gives companies more strategic autonomy. Businesses with outstanding ESG ratings demonstrate higher employee productivity, resulting in better financial outcomes, decreased organizational risk, and reduced information disparities. These attributes help address potential worries of external investors about a company's future growth prospects by alleviating financial constraints that the business may encounter.

In summary, the practical implications highlight the benefits of ESG rating initiatives in terms of sustainability, reputation, stakeholder trust, and overall firm performance. By leveraging ESG ratings, companies can drive positive outcomes such as market expansion, cost reduction, strategic flexibility, and improved financial performance.

CONCLUSION LIMITATION AND FURTHER RESEARCH

Conclusions

With the growing emphasis on sustainable development and ethical investment at a global level, the emergence of ESG rating principles is certain. This research centered on an analysis of 3,134 publicly traded firms in China spanning from 2011 to 2021, using Refinitiv's ESG ratings and financial information to develop a panel regression model. The investigation assessed how ESG scores influenced financial performance measures, particularly ROA and ROE.

The study's findings suggest a strong connection between higher ESG scores and better financial performance, demonstrated by an increase in ROA and ROE. These results affirm the notion that proficient handling of environmental, social, and governance aspects not only signifies corporate accountability but also fosters economic prosperity. The research adds to our comprehension of the financial impact of ESG practices and advocates for the inclusion of ESG metrics in corporate evaluations and investment decision-making procedures.

This research contributes to the expanding collection of literature concerning the achievement of businesses in environmentally sustainable sectors by employing ESG rating. Stakeholder theory, which has a lengthy history within both academic literature and business practices, has been influential in shaping these discussions. Over time, there has been a realization that for-profit enterprises should not only prioritize maximizing shareholder profits but also take into account the concerns of other stakeholders. This shift occurred alongside an increasing demand from the business community for social responsibility, prompting many managers and executives to participate in voluntary initiatives aimed at benefiting their employees and local communities. Stakeholder theory, with a well-established presence in academic and business circles, has had a substantial impact on these conversations. There is growing acknowledgment that profit-driven companies should not only prioritize increasing shareholder profits but also take into account the concerns of other stakeholders. This shift aligns with heightened demands for corporate social responsibility within the business sphere, prompting numerous leaders and executives to participate in voluntary programs aimed at supporting their employees and local areas.

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The acceptance of the ESG framework has become increasingly popular among a range of organizations, including government bodies, quasi-governmental institutions, UN-associated groups, non-profit advocacy organizations, financial rating agencies and important policy bodies. These entities have created extensive criteria and evaluation methods to appraise companies' ESG performance and encourage ethical business conduct.

Limitation and further research

Despite the valuable perspectives offered by this research, there are specific constraints that could be explored in future studies to achieve more reliable outcomes. Initially, this study concentrated on ESG rating scores and financial returns but did not factor in the influence of unstable circumstances on investors' investments, potentially impacting firms' liquidity. Additionally, it should be noted that the scope of this study was limited to China; henceforth, upcoming investigations should consider how uncertain conditions affect investor returns globally. The research also failed to examine how investor advisory services contribute to evaluating carbon and water risk, or analyze the influence of NGO participation in these assessments. Subsequent studies could focus on these areas to enhance comprehension of their impact on ESG ratings.

Additionally, it would be advantageous for upcoming research to make use of the data gathered in this study and integrate other variables that impact ESG ratings. Variables like financial resources (investments, earnings) and the economic situations of specific countries could be taken into account to determine companies' overall growth rates. By confronting these constraints and exploring these possibilities for future investigation, a more thorough comprehension of ESG ratings and their ramifications can be attained.

Authors' contribution

Raphael Ampedu; Idea conceptualization, literature revision, methodology, original draft article writing and formal analysis.

Bright Antwi Agyei and Frank Peter Mang' ati: Methodology and software formal analysis,

Joana Ankobea Boadi and, Cornelius Nii Odoi MENSAH: Review, editing and supervision

Linda Ofeibea Nunoo, Gifty Boakye-Boateng and Richmond Mensah: Proofreading and editing

Consent to participate

Approved

Consent to publish

All authors reviewed and approved the manuscript for publication.

Availability of data and material

Data is available from authors upon reasonable request.

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