

The Association Between ESG Performance and Financial Performance: E, S or G? The Billion-Dollar Question for Investors

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Abstract. The study is designed to dig the association between ESG and economic efficiency. Total samples used are 520 listed enterprises in Chinese stock market for one year (2020). Multiple regression is adopted to analyze this research. The independent variable is ESG scores, and the dependent variable is return on assets (ROA). Control variables include size, leverage, and cashflow. The effect of overall and individual ESG on ROA is examined. Comparing the impact of ESG in different industries and analyzing the reasons for it. This paper finds no important association between ESG and ROA. For individual factors in the industry level, social has no significant impact. However, governance and environmental performance have a significant impact in some specific industries, such as information transmission software and the retail industry, respectively. This study indicates that ESG did not become a key factor determining corporate performance in China in 2020. Furthermore, it provides suggestions for the sustainable growth of companies and the investment of investors.

Keywords: ESG, financial performance, return on assets, industry, regression model

1. Introduction

In the current global business landscape, ESG criteria have changed from ethical considerations to a crucial factor shaping corporate competitiveness. In China, the issuance of the "Notice on Forwarding <Study of the Compilation of ESG Special Reports of Central Enterprises' Controlled Listed Enterprises>" marked a significant move to standardize ESG information disclosure and enhance reporting quality for state-owned enterprises listed subsidiaries. This initiative aims to position these firms as domestic leaders in ESG practices. Notably, the Notice introduced China's first comprehensive set of ESG disclosure indicators, representing a major step forward in the localization of the ESG framework within the country. The development of this China-specific ESG indicator system has also motivated our research into ESG metrics based on this policy.

Additionally, there are a lot of research about how the economic efficiency is influenced by ESG. Drawing upon vote-count research and meta-analyses, Friede established a statistically important positive association between ESG value and CFP, and this correlation does not change dramatically as time goes [1]. Yoon B found that ESG score, ROA, and Tobin's Q showed a negative association in the panel regression model [2]. Similarly, Gartia found that ESG's impact on ROA varies from strongly positive in high-competition environments to negative in monopolistic settings due to "compliance cost traps" [3]. Andersen W. used the DID (Difference-in-Differences) research method to discover that during the outbreak of COVID-19, enterprises with high ESG (Environmental, Social, and Governance) levels exhibited more stable financial performance, and the changes in ROA (Return on Assets) tended to be more stable [4]. The study emphasizes the influence of ESG on mitigating risks during crises. As the results of the research show considerable differences, we believe this is a topic that can be further researched in depth.

Return on Assets (ROA) serves as an extensively utilized standard for assessing an enterprise's profitability and operational performance. Magni posits that ROA serves as an indicator of value creation or destruction [5]. This assessment, however, is contingent upon a comparative analysis with a project's WACC. Complementing this theoretical perspective, Majka delineates the calculation of ROA as the quotient of net income divided by total assets [6]. The fundamental formula effectively measures the profit generated per unit of asset. It can reflect company's profitability. The net income in the formula means the profit that have been accounted, and the profit refers to the amount after deducting interest and taxes. The total asset covers all valuable things that the company owns, such as buildings, machines, cash and so on. Therefore, whether from the perspective of investors or analysts, getting the value of ROA can know the efficiency of profit made from company's asset, and show the enterprise's economic efficiency clearly.

Our current study is designed to contribute significantly to this ongoing dialogue by specifically focusing on the role of heterogeneity across different companies. We have conducted a cross-sectional study to investigate how the ESG indices of various companies, within the same year and same country, impact their ROA. While existing literature often suggests a positive association between ESG and ROA—indicating that higher ESG scores typically result in higher ROA—our paper highlights the heterogeneity among companies within a single year. Additionally, we analyze the results from two different dimensions. The study is initially used to explore the role of ESG efficiency—measured both in its aggregate form and through its disaggregated environmental, social, and regulation pillars—on ROA. The second is to analyze the influence of ESG marks in various sectors on ROA within a year. Our study seeks to provide a more subtle and granular insight into how ESG efficiency translates into financial outcomes, considering the diverse characteristics of enterprises. To gain a comprehensive insight into ESG's overall influence on companies, our study also examined two dimensions: First, we assessed the aggregate role of ESG in companies' return on equity (ROE). Second, we decomposed ESG into its environmental, social, and governance components to separately examine their impacts on two key profitability standards—return on assets (ROA) and return on equity (ROE)—to determine whether the impact patterns were consistent.

This approach will help to unravel the complex interplay of these variables, offering more targeted insights to businesses and policymakers.

2. Literature and hypothesis

2.1. Literature review

It consists of two sections: the influence of ESG on ROA and the influence of environment(E), social(S) and governance performance(G) on ROA.

2.1.1. The impact of ESG on ROA

2.1.1.1. Positive

As Aydoğmuş, M., Gülay, G., & Ergun, K. indicate, “ESG_CS shows a positive and highly important association with the firm value.” [7] Two models are used to investigate Tobin’s Q and ROA. The connection between an enterprise’s profitability and its efficiency on the three factors of ESG criteria is fundamentally grounded in stakeholder principle. This principle posits that enterprises that consider the interests of all their stakeholders are inherently more sustainable and, as a result, tend to be more financially successful.

Xie et al. researched the role of the improvement of ESG in economic efficiency [8]. They use estimation of corporate efficiency and a regression model to prove that a favorable association exists between ESG and fiscal results. Authors analyze the relationship between them in three different disclosure levels: low, middle, and high ESG information disclosure levels. Most of the time, firms have middle information disclosure; in this case, ESG results in the improvement of corporate efficiency. Especially, governance transparency exhibits the most robust positive correlation.

Dalal and Thaker examine of association between ESG and economic efficiency base on Indian companies [9]. Dalal and Thaker find that investors demonstrate a significant preference for firms with robust carbon footprint management, greater societal acceptance, and transparent governance policies. This preference suggests that investor capital is increasingly directed toward companies perceived to have higher long-term sustainability.

In 2024 study, the role of ESG value in corporate efficiency is examined by Xu, S.W. employing a dual-methodological method and adopting both relationship and regression analysis [10]. The empirical outcomes from the correlation analysis reveal a statistically important positive association between ESG and ROA. This finding is further substantiated by the regression model, which confirms an important positive relationship. This relationship is contributed by three reasons. Firstly, increasing ESG can improve product quality and reputation, and increase consumer loyalty by protecting the environment and reducing pollution. Secondly, Enterprises that focus on their efficiency in areas leading to a rise in economic efficiency. Thirdly, regarding governance, if enterprises can actively improve their internal governance structure, reduce costs and enhance efficiency. These will result in higher financial performance and higher ROA.

Adopting panel-data models, Yu and Xiao examine the influence of ESG on economic efficiency [11]. Their research confirms a beneficial role of ESG in ROA, a key finding explained by stakeholder theory. Delving deeper into the three ESG pillars, the authors pinpoint that an enterprise’s environmental and social efficiency are the specific aspects positively correlated with increased value.

2.1.1.2. Negative

Pellegrini verify the role of ESG efficiency in ROA through employing a fixed effect regression model [12]. “Specifically, in the presence of a 10% rise in the ESG Overall Score the Return on

Assets of enterprises in our dataset reduces by 0.45%." An important negative association between ESG and ROA was verified.

In research on UK companies, Brammer et al. identified an inverse association between CSP scores and subsequent stock returns [13]. Adopting the Fama-MacBeth method with cross-sectional regressions, they discovered that higher social performance ratings were correlated with lower economic returns. The authors interpret these outcomes as evidence that social spending can destroy shareholder value.

2.1.1.3. No relationship

Giovanni Landi and Mauro Sciarelli employed a fixed-effects panel model to examine whether ESG values influence abnormal returns in corporations [14]. Despite analyzing 54 publicly traded Italian enterprises from 2007 to 2015, the research observed no statistically significant association between ESG efficiency and economic results. The authors attribute this finding to the market's failure to fully incorporate corporate social responsibility information into stock valuations. Consequently, the research concludes that superior ESG credentials do not necessarily translate into superior financial returns within the studied context.

Atan et al applied panel regression methods and found that ESG elements were not greatly related to company profitability or market value [15]. They attribute this lack of short-term linkage to the time horizon, noting that the positive role of sustainability in economic efficiency tends to emerge over the long term, a view conforming to earlier outcomes by Nollet et al [16].

2.1.2. The role of environment, social and governance in ROA

Dongyang Zhang found that China's environmental laws have negatively influenced ROA in the short term [17]. Enterprises began to invest in ESG, but this environment negatively influenced ROA.

As Xiaoling Yu and Kaitian Xiao discovered, the role of environmental performance in companies needs to be divided into non-key polluting enterprises and key polluting enterprises. Environmental performance is positively related to ROA for non-key polluting enterprises, but it is not positively correlated with ROA for key polluting enterprises [11]. They also found that apart from the key polluting enterprises, social performance is positively correlated with ROA. The initial conclusion that stronger corporate governance correlates with higher ROA was not supported in subsequent robustness and heterogeneity tests. To assess this relationship, a dedicated ESG framework was developed to measure overall and category-specific sustainability performance. Panel regression models were further applied to analyze whether ESG scores influence financial outcomes.

Liu et al examined how ESG influence ROA among Chinese enterprises. Regression analysis from their research revealed a distinct negative effect of Environmental indicators on ROA, whereas Governance elements was positively related to economic efficiency [18].

Conversely, Social factors did not demonstrate a statistically important association with ROA, which the authors associate with limited institutional focus and developmental immaturity. They further suggest that these patterns reflect the nascent state of ESG adoption in China, characterized by emerging awareness and underdeveloped regulatory frameworks.

Elianto et al. examined 140 companies in Indonesia, Germany, and other countries to reveals a mixed and sometimes contradictory association between ESG pillars and ROA [19]. The outcomes show a differentiated influence of ESG ingredients on economic efficiency: environmental and

social efficiency demonstrate a significant positive role in Return on Assets (ROA), whereas governance performance exhibits an important negative association with ROA.

2.2. Hypothesis

On basis of the literatures above, this research puts forward the hypotheses below:

Research Hypothesis 1a: A positive and important association between ESG and ROA is discovered.

Research Hypothesis 1b: No important association between ESG and ROA is discovered.

Research Hypothesis 2a: Environment(E) shows a negative and important influence on ROA.

Research Hypothesis 2b: Environment(E) shows no important influence on ROA.

Research Hypothesis 3a: Social(S) shows a positive and important influence on ROA.

Research Hypothesis 3b: Social(S) shows no important influence on ROA.

Research Hypothesis 4a: Governance(G) shows a positive and important influence on ROA.

Research Hypothesis 4b: Governance(G) shows no important influence on ROA.

3. Methodology

3.1. Sample and data source

According to Kalia, D., & Aggarwal, D., in developed and developing market, ESG will play different roles in the economic efficiency [20]. Therefore, we limited the scope of the survey to China to eliminate the influence brought about by this variable. Also, as Fig 1 shown, ESG changes significantly within 2010-2020 and in 2020, it reaches the lowest point. This trend could be attributed to companies considering ESG development. As a result, our focus is on assessing the role of ESG Scores in economic efficiency in 2020.

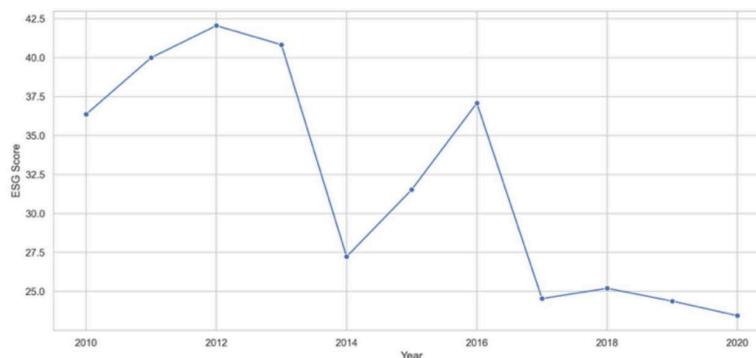


Figure 1. ESG score trends over years

Firstly, followed by Wen Subin, Chen Yuqing et al., we find the sample consisted of 4763 China's A-share ESG score in 2020, including scores in 3 different ESG components (Environmental, Social and Governance) [21,22]. The ESG score is issued by MSCI.

Furthermore, these samples are divided into different countries on basis of the <Guidance for Industry Classification of Listed Enterprises>.

After excluding the incomplete data and some industries that do not have sufficient samples, we finally collected 520 valid samples. It consists of eight industries. Table 1 shows the number of enterprises in various industries.

Table 1. Statistics of industry sample quantity

Number	Industry	Number
(1)	Mining	21
(2)	Manufacturing	349
(3)	Electricity, heat, gas and water production and supply	21
(4)	Building	18
(5)	Wholesale and retail	21
(6)	Transportation, warehousing and postal services	27
(7)	Information Transmission software and information technology services	40
(8)	Real estate	23

3.2. Variable

Previous research indicates various control variables utilized in studying the role of ESG in financial efficiency. For example, Dalal and Junius considered the leverage and size as the control variable [9,23]. Ihsani considered the size as the control variable [24]. Arhinful and Radmehr propose that leverage does not have a considerable effect on ROA, while its influence on ROE is adverse and substantial [25].

Moreover, Ogbeide and Akanji, Laghari, Soet all suggest that cash flow will influence the financial performance significantly and positively [26-28].

Therefore, size, leverage and cashflow will be considered as the control variables.

Based on Velte, the ESG score is adopted as the independent variable to assess corporate ESG efficiency, where a lower score suggests poorer ESG efficiency [29].

In line with Ihsani et al., ROA is adopted as the primary indicator of economic efficiency for China's A-share listed enterprises [24]. Additionally, ROE is utilized as a robustness check to verify the consistency of the findings.

Table 2 shows the explanation of variable.

Table 2. Variable explanation

	Variable	Meaning
Independent Variable	ESG Score	Measure of Corporate ESG performance
Dependent Variable	Return On Asset (ROA)	Ratio of net profits relative to total assets
	Size	Log of total assets
Control Variable	Leverage	Leveraging ratio
	Cashflow	Ratio of cash to net asset

3.3. Model

On basis of the hypotheses proposed herein, the following multiple regression model is shown as equation (1):

$$ROA_{2020} = \alpha + \beta_1 EsG_{2020} + \beta_2 size_{2020} + \beta_3 Leverage_{2020} + \beta_4 cashflow_{2020} + e \quad (1)$$

A baseline regression model with ROA as the dependent variable is adopted. The specification includes the ESG score as the independent variable (coefficient β_1) and controls for Size, Leverage, and Cashflow (coefficients β_2 , β_3 , and β_4 , respectively), along with a constant term (α).

When considering ESG component separately, the following multiple regression model is established as equation (2):

$$ROA_{2020} = \alpha + \beta_1 E + \beta_2 S_{2020} + \beta_3 G_{2020} + \beta_4 size_{2020} + \beta_5 Leverage_{2020} + \beta_6 cashflow_{2020} + e \quad (2)$$

In this case, $\beta_1, 2, 3$ is the regression parameter of the independent variable Environmental, Social, Governance Pillar Score respectively; $\beta_4, 5, 6$ represents the regression parameter of the control variable firm size, leverage and cashflow respectively.

In different industries, the importance of E, S, G is different. To compare the significance of Environment, Social and Governance, the following multiple regressions are established as equation (3), equation (4) and equation (5):

$$ROA_{2020} = \alpha + \beta_1 E_{2020} + \beta_2 size_{2020} + \beta_3 Leverage_{2020} + \beta_4 cashflow_{2020} + e \quad (3)$$

$$ROA_{2020} = \alpha + \beta_1 S_{2020} + \beta_2 size_{2020} + \beta_3 Leverage_{2020} + \beta_4 cashflow_{2020} + e \quad (4)$$

$$ROA_{2020} = \alpha + \beta_1 G_{2020} + \beta_2 size_{2020} + \beta_3 Leverage_{2020} + \beta_4 cashflow_{2020} + e \quad (5)$$

In this specification, β_1 represents the regression coefficient for the Environmental, Social, and Governance Pillar Scores. The coefficients β_2 , β_3 , and β_4 capture the effects of the control variables—firm size, leverage, and cash flow, respectively.

Furthermore, we run the regression of the model through Microsoft excel based on the linear regression.

4. Results

Table 3. Whole and separate ESG impact on ROA

Coefficient	Whole ESG	Separate ESG
Intercept	16.873*** (5.442)	16.221*** (5.696)
ESG	-0.007 (0.017)	/
Social	/	-0.018 (0.019)
Governance	/	0.015 (0.012)
Environment	/	0.003 (0.016)
Size	-0.379 (0.246)	-0.373 (0.254)
Leverage	-8.246*** (1.630)	-8.378*** (1.633)
Cashflow	60.171*** (3.962)	60.196*** (4.966)

Table 3 shows that all the whole ESG, Environmental, Social and Governance performance does not significantly influence ROA based on the current data foundation. It suggests the hypothesis 1b, 2b, 3b and 4b in our study. As Aydoğmuş et al. suggest, stakeholder principle emphasizes that enterprises should think about the interests of all individuals and organizations influenced by their activities, instead of merely paying attention to the interests of shareholders [7].

However, our outcomes do not support stakeholder theory. This result conforms to the study made by Setiawati and Hidayat [30]. They mentioned this relationship contradicts stakeholder theory, which refers to the idea that a company should satisfy multiple stakeholders to enhance the enterprise's performance.

Besides, the outcome of our study conforms to Giovanni Landi and Mauro Sciarelli (2019) and Atan et al [14,15]. Since investors do not incorporate ESG into stock valuations, therefore, high-ESG companies cannot get higher market returns, indicating higher ESG efficiency does not significantly influence ROA.

Table 4. Whole and separate ESG impact on ROE

Coefficient	Whole ESG	Separate ESG
Intercept	0.081 (0.092)	0.0978 (0.0967)
ESG	-0.0003 (0.0003)	/
Social	/	-0.0004 (0.0003)
Governance	/	2.28E-06 (0.0002)
Environment	/	0.0001 (0.0002)
Size	-0.001 (0.004)	-0.0020 (0.0043)
Leverage	-0.006 (0.028)	-0.0062 (0.0277)
Cashflow	0.920*** (0.067)	0.9194*** (0.0673)

We conduct a double check of ESG impact on ROE. As Table 4 shown, the outcomes show the similar trend to the influence of ESG on ROA, which both whole ESG and separate ESG component have no significance impact. Therefore, the analysis leads to the conclusion that no statistically significant association between ESG efficiency and enterprise economic efficiency is discovered.

Table 5. ESG impact on ROA in different industries

Industry	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	12.291 (11.43)	19.325** (7.829)	20.373 (19.011)	5.850 (5.356)	0.813 (28.154)	-3.290 (17.020)	10.599 (41.234)	-0.538 (10.006)
ESG	-0.012 (0.044)	-0.010 (0.022)	0.062 (0.045)	-0.008 (0.025)	-0.025 (0.062)	-0.012 (0.041)	0.082 (0.121)	0.004 (0.029)
Size	-0.582 (0.529)	-0.379 (0.355)	-0.374 (0.802)	0.047 (0.309)	0.527 (1.260)	0.219 (0.720)	-0.487 (1.786)	0.785 (0.493)
Leverage	2.789 (4.453)	-12.393*** (2.064)	-15.315*** (5.173)	-4.452 (5.405)	-16.057* (7.916)	-6.233 (4.108)	-1.820 (8.063)	-26.634*** (4.703)
Cashflow	87.905*** (4.338)	59.275*** (4.473)	-35.991 (23.103)	7.416 (12.650)	49.811** (19.868)	82.518*** (12.752)	63.076** (24.266)	-4.903 (10.688)

As Table 5 shown, ESG has no important influence on ROA in different industries. It suggests our result furthermore.

Table 6. Environmental performance impact on ROA in different industries

Industry	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	15.959 (11.950)	15.678** (8.101)	13.021 (17.380)	6.241 (5.050)	39.360 (29.524)	-0.330 (17.389)	15.759 (48.188)	7.517 (11.662)
Environment	-0.009 (0.0295)	-0.022 (0.0155)	0.076** (0.033)	-0.006 (0.016)	0.093* (0.048)	0.017 (0.031)	0.036 (0.114)	0.025 (0.022)
Size	-0.773 (0.548)	-0.212 (0.363)	-0.036 (0.744)	0.017 (0.269)	-1.323 (1.325)	0.089 (0.733)	-0.637 (2.077)	0.388 (0.563)
Leverage	2.966 (4.492)	-12.418*** (2.057)	-17.022*** (2.742)	-4.102 (5.084)	-9.117 (7.666)	-7.501 (3.825)	-1.065 (8.008)	-18.416*** (4.861)
Cashflow	89.033*** (18.431)	59.264*** (4.461)	25.856 (21.586)	7.998 (11.828)	49.986** (117.874)	80.416*** (13.061)	67.161** (24.275)	-4.441 (9.865)

As Table 6 shown, environmental efficiency shows significant and impact on ROA in industry (3) and (5), which is the Electricity, heat, gas and water production and supply industry and Wholesale and retail industry.

Gündüz and Çağdaş suggest that the influence of climate variation performance on ROA is greatly positively correlated in the electricity industry [31]. Climate Change Risk encourages electric firms to invest and lower the cost. Moreover, it can provide firms opportunities to meet more opportunities through managing the climate change policy rightly.

Therefore, it can enhance the economic efficiency of the enterprises.

Olarewaju et al. made research focusing on retail enterprises in the UK operating in the food, grocery, and supermarket sectors, examining how climate initiatives influence Return on Assets (ROA) [32]. Their research revealed that adopting measures such as utilizing renewable energy, minimizing waste, implementing energy-saving technologies, using sustainable packaging, and improving logistics efficiency positively affect ROA. These approaches help lower operational expenses while simultaneously enhancing brand image and consumer perception, backing better economic efficiency.

Anderson et al. suggest that the retailer's positive environmental activities consistently positively influence economic performance [33]. It results from an enhancement in reputation, brand image, and customer loyalty.

In conclusion, there are two main reasons for the result. As the environmental score grows higher, it might lower the cost. Moreover, it might enhance brand reputation and shape consumer loyalty.

Therefore, it might increase the profit of the business, so ROA might increase as Environmental Pillar Score increases.

Table 7. Social performance impact on ROA in different industries

Industry	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	8.695 (11.431)	20.833** (7.659)	30.727* (17.154)	5.511 (5.598)	4.417 (27.148)	-3.027 (17.047)	2.455 (41.113)	-1.432 (9.478)
Social	-0.032 (0.039)	0.002 (0.0118)	0.044 (0.049)	-0.011 (0.030)	-0.007 (0.054)	-0.005 (0.035)	-0.101 (0.101)	-0.002 (0.023)
Size	-0.391 (0.531)	-0.46 (0.343)	-0.775 (0.742)	0.07 (0.331)	0.354 (1.201)	0.204 (0.720)	-0.005 (1.776)	0.836* (0.465)
Leverage	1.954 (4.499)	-12.345*** (2.065)	-13.677** (5.057)	-4.79 (5.650)	-15.519* (7.893)	-6.513 (4.040)	0.9 (8.105)	-20.939*** (4.704)
Cashflow	85.71*** (18.217)	59.193*** (4.48)	35.076 (23.846)	6.457 (13.486)	48.405** (19.668)	82.52*** (12.906)	82.662*** (24.626)	-5.817 (11.656)

As Table 7 shown, social performance shows no significant impact on ROA in all industries.

Table 8. Governance performance impact on ROA in different industries

Industry	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	15.144 (9.691)	20.868*** (7.343)	34.426* (19.657)	6.789 (5.365)	1.868 (24.815)	-0.448 (16.701)	-0.550 (38.358)	-1.095 (8.880)
ESG	-0.028 (0.037)	0.005 (0.014)	-0.003 (0.029)	0.003 (0.018)	0.047 (0.034)	0.028 (0.028)	0.173*** (0.071)	-0.007 (0.018)
Size	-0.702 (0.413)	-0.467 (0.328)	-0.910 (0.820)	-0.038 (0.331)	0.519 (1.083)	0.134 (0.700)	-0.197 (1.642)	0.829 (0.418)
Leverage	4.444 (4.900)	-12.35*** (2.062)	-12.239*** (5.226)	-3.432 (5.451)	15.484* (7.296)	-5.375 (3.802)	-3.123 (7.457)	-20.741*** (4.475)
Cashflow	91.573*** (18.505)	59.195*** (4.473)	35.579 (25.377)	9.819 (11.894)	56.279*** (19.387)	79.320*** (12.761)	61.007*** (20.486)	-5.655 (10.131)

As Table 8 shown, governance performance shows significant and positive impact in industry (7), which is the Information Transmission software and information technology services industry.

According to research on internal mechanisms, Ma et al. discovered that elements including equity restraint, board size, and executive equity incentives make positive contributions to technical innovation within firms [34]. A higher level of technological innovation, in turn, enhances corporate performance—indicating that innovation acts as a key mediator between corporate governance structures and overall business results.

On basis of these outcomes, it is suggested that firms enhance the transparency and equality of their governance structures, uphold the rights of shareholders and employees, and reinforce internal and external supervision. These actions will reduce conflicts of interest and, in turn, create an environment that promotes technological advancement.

Moreover, Corporate governance involves board meetings [35]. Frequent board meetings can enhance the performance of the company.

Therefore, governance efficiency will positively influence ROA.

5. Conclusion

Over the past decade, the ESG scores of Chinese companies have experienced considerable fluctuations. The average ESG score hit a decade low in 2020, which prompted our investigation into both the trajectory of these scores and their potential role in enterprise economic efficiency. The research examines the influence of ESG performance—both in aggregate and disaggregated by pillar—on the ROA of Chinese listed enterprises, with further analysis across different industries. A robustness check was also performed using ROE as an alternative performance measure.

Mixed perspectives on the ESG–economic efficiency association is presented. A lot of research suggests a positive association, often explained through stakeholder theory. However, some researchers report an inverse relationship, attributing it to resource drain and increased costs, while others find no significant link, citing issues such as time lag and inadequate ESG oversight. At the disaggregated level, the evidence is similarly varied regarding the personal roles of environmental, social, and governance factors in ROA.

In this study, we constructed several regression models using Microsoft Excel. According to the outcomes, overall, ESG marks—whether analyzed collectively or by individual dimension—do not greatly influence economic efficiency. However, industry-specific analyses reveal notable exceptions: environmental efficiency shows a great positive role in the electricity, heat, gas, and water manufacturing and supply industry, and in wholesale and retail trade. This can be attributed to lower operational costs and enhanced brand reputation accompanying improved environmental performance. Additionally, governance performance is found to significantly and positively influence financial outcomes in the data transmission, software, and information technology services sector, likely due to heightened technological capabilities and more frequent board meetings.

Notably, our findings do not support stakeholder theory in the Chinese context. A plausible explanation is that ESG-related activities remain largely unrecognized by the public and are not yet factored into market decisions.

This research explores the association between ESG efficiency and enterprise economic efficiency in China's stock market during 2020. The outcomes display not statistically important connection between general ESG efficiency and economic metrics. Nevertheless, the role of ESG changes markedly across industries, offering practical insights for investors seeking to include ESG factors in their measures.

We recommend that investors conduct industry-specific assessments to evaluate how each ESG dimension may distinctly influence financial returns. Furthermore, this study may encourage government bodies to promote ESG awareness and disclosure. Ultimately, these efforts could help create a market environment where strong sustainability performance is financially rewarded, thereby accelerating the transition toward a sustainable economy.

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