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A Study Based on the Impact of ESG Rating Divergence on Corporate Performance

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Abstract

As a core professional indicator that defines the sustainable development potential and long-term value of an enterprise, the ESG rating plays an important role in current investment decision-making and enterprise development assessment. However, the ESG rating results of the same company by different rating agencies often differ significantly. In this study, A-share listed companies in China from 2015–2023 are used as the sample to systematically investigate the impact of the divergence of ESG ratings on the financial performance and market performance of firms, and the action mechanism is analyzed on the basis of financing constraint theory, institutional theory and signaling theory. The study reveals that the divergence of ESG ratings significantly inhibits companies' financial performance and market performance, and this conclusion still holds after a series of stability tests. Mechanistic tests reveal that ESG rating divergence inhibits corporate financial performance and market performance through the triple path of strengthening financing constraints, weakening corporate green technology innovation capability and reducing the quality of information disclosure. Heterogeneity analysis reveals that this negative effect is more prominent among companies in the eastern region, companies in heavily polluting industries, and companies with greater attention from analysts. This study provides not only management inspiration for enterprises to optimize their ESG management system but also a theoretical basis and policy reference for enhancing the sustainable development effectiveness of listed companies and improving ESG ecological governance.

Keywords

ESG rating divergence, financial performance, market performance, financing constraint theory, signaling theory

1. Introduction and Literature Review

With the deepening of the global concept of sustainable development, environmental, social and governance factors have gradually become the core indicators for assessing the sustainable development and long-term value of an enterprise (Li et al., 2021). To follow the wave, the Chinese government has adopted a "top-down" policy to promote the implementation of ESGs (Hu et al., 2025). Specifically, in 2018, the China Securities Regulatory Commission revised the "Governance Guidelines for Listed Companies" to establish the basic framework for ESG information disclosure, and in 2025, it revised the annual report standards to strengthen the standards of environmental information disclosure. However, owing to the differences in the indicator system and weights among rating agencies, the ESG rating results of the same company often significantly differ (Fan et al., 2025). With intensified market uncertainty, the divergence of ESG ratings may

aggravate the information asymmetry between the company and external investors, having complex impacts on corporate performance, and the specific mechanism remains unclear.

The divergence of ESG ratings has become a hot topic of sustainable development research in recent years. Existing research shows that the divergence in ESG ratings is serious. For example, the average correlation of the ratings provided by the six major U.S. rating agencies is only 0.48 (Avramov et al., 2022). The correlation coefficient of ESG ratings of different rating agencies is only 0.38–0.71, further confirming that there are high degrees of divergence in ESG ratings (Ruan & Yang, 2025). According to the 2021 ESG Investment Report released by the Chinese University of Hong Kong and China Wealth Management, the correlation of the eight rating agencies was nearly 0.5, indicating that the differences in ESG ratings were widespread and affected investors' decision-making.

In terms of the causes of rating disagreement, the existing studies can be divided into two categories. First, the differences in rating techniques are reflected mainly in the three aspects of the rating agencies' measurement standards, coverage and weight setting (Berg et al., 2022). Second, differences in information collection exist. The "information overload hypothesis" points out that more ESG information disclosure increases the differences in the assessments of the rating agencies and exacerbates the differences in ESG ratings (Christensen et al., 2022). On the other hand, companies that voluntarily provide ESG reports transmit more information to the outside world, which is conducive to reducing the divergence of ESG ratings (Kimbrough et al., 2024).

In view of the lack of standards and insufficient validity in ESG rating practices, economic consequences have attracted the attention of scholars at home and abroad. From the perspective of market reaction, the greater the divergence of ESG ratings is, the lower the accuracy of the market's forecast of future earnings (Serafeim & Yoon, 2023), sends a negative signal to the outside world, which will eventually trigger higher market risk (Avramov et al., 2022). From the perspective of firms, divergence is associated with lower stock returns and lower forecasts of future returns (Brandona et al., 2021; Serafeim & Yoon, 2023), while increasing return fluctuation (Liu et al., 2023) increases the bond risk premium (Wang et al., 2024), ultimately increasing the overall risk level of the enterprise and affecting earnings management (Mao et al., 2024). From the perspective of stakeholders, rating disagreement reduces credibility and weakens information validity (Sun et al., 2024). This reduces investors' attention and harms the confidence of the outside world in ESG ratings (Zhou et al., 2023).

As an important indicator for measuring an enterprise's operating results and value creation ability, enterprise performance is reflected in the efficiency of internal resource utilization and the degree of recognition of enterprise value by the external market (Chen & Wei, 2025). Existing studies generally divide enterprise performance into two dimensions, financial performance and market performance, and the two dimensions reflect the value creation capability of an enterprise from different perspectives (Zou & Xiao, 2024).

The commonly used indicators of financial performance included earnings per share (EPS), return on equity (ROE), and return on assets (ROA), and the influencing factors were divided into internal and external factors. In terms of internal factors, innovation activity is a key factor through which enterprises enhance their long-term competitiveness and development potential. Both the digital transformation of enterprises and green technology innovation are considered important ways to improve financial performance (Bai et al., 2022; Nie & Zhang, 2025). In addition, there is an inverted U-shaped relationship between the financialization of enterprises and the financial performance of manufacturing enterprises (Su et al., 2025). In terms of external factors, factors such as policy regulation and social responsibility affect the financial performance of enterprises. ESG performance improves corporate financial performance through compensating effects and offsetting effects (Sun & Zhu, 2023). By paying environmental protection taxes to force enterprises to innovate technologically, it indirectly improves financial performance (Liu & Shao, 2021).

Market performance is often measured by the Tobin's Q value. Existing studies on market performance focus on the perspectives of industry competition structure, corporate social responsibility practices, top management team characteristics, and the implementation of digital strategy. The education heterogeneity of the top management team has a significant positive effect on competitive complexity, which in turn has a U-shaped curve effect on market performance (Deng et al., 2021). In addition, the implementation of digital procurement by enterprises can significantly improve market performance (Xu et al., 2025). The effectiveness

of corporate social responsibility investment is limited by its implementation, which ultimately affects market performance (Zhang & Luo, 2021).

Although the literature focuses on the potential impact of ESG ratings and differences in corporate performance, the conclusions differ. In the early stage, foreign scholars reviewed more than 2,000 studies on the ESG performance and financial performance of enterprises and reported that approximately 90% of the empirical studies verified the existence of a nonnegative correlation between the two (Friede et al., 2015). ESG ratings can reduce information asymmetry, increase support from stakeholders, and ultimately improve financial performance and market value (Deng et al., 2013; Flammer, 2015). In recent years, some studies have begun to focus on the impact of ESG rating divergence on corporate performance and have reported that it reduces corporate performance by exacerbating the financing constraints of listed companies and weakening corporate innovation capability and human capital accumulation (Chen & Wei, 2025), but did not distinguish between financial performance and market performance.

In accordance with the literature, studies on the divergence of ESG ratings have focused mostly on the economic effects caused by it, such as increasing the financing costs of companies, exacerbating stock volatility, reducing the attention of investors, and increasing the overall risk level of companies, while the economic effects on ESG ratings have been systematically studied. The literature on the influence of firm performance as a core indicator is relatively scarce. The existing studies generally have two limitations. One is the simplification of the dimension, the focus being on a single dimension of corporate performance and the failure to analyze in-depth the path and effect of the possible differentiated influences of the divergence of ESG ratings on financial performance and market performance. The mechanism of action was not explored in depth, and in-depth theoretical analysis and empirical testing were lacking. Therefore, the purpose of the present study is to incorporate ESG rating divergence and corporate performance into the same framework, to clearly distinguish financial performance from market performance, to explore the differential effects of ESG rating divergence on the two, and to verify the mechanisms of action of the three pathways: corporate financing constraints, green technological innovation, and information disclosure quality. On the basis of the ESG rating data of a number of institutions, this paper uses the 2015–2023 data of A-share listed companies in Shanghai and Shenzhen for empirical analysis.

The marginal contribution of this paper lies in the following three aspects. First, at the theoretical analysis level, the present study introduces ESG rating divergence and corporate performance into the same analytical framework, which contributes to the study of ESG rating divergence and provides new perspectives for understanding the complex impact of ESG rating divergence. Second, this study breaks through the limitations of the existing research in terms of general or single-dimensional investigations of enterprise performance and clearly distinguishes financial performance from market performance to reveal in depth the differentiated impacts of the divergence of ESG ratings on the two. Third, this paper innovatively proposes and validates the mechanism by which ESG rating divergence reduces corporate performance by reducing corporate green innovation and weakening the quality of information disclosure, which provides a basis for companies to optimize ESG management practices and regulatory agencies to standardize rating market standards to promote improvement in capital market efficiency.

The structure of this paper is as follows. The first section is the introduction and literature review, the second section is the theoretical analysis and research hypothesis, the third section is the research design, the fourth section is the empirical result analysis, and the fifth section is the mechanism test and heterogeneity analysis. The sixth section presents the research conclusions and policy recommendations.

2. Theoretical Analysis and Research Hypotheses

The literature review revealed that the influence mechanism of the divergence of ESG ratings on corporate performance still needs to be improved, and its action path remains to be expanded. On the basis of classic theories such as information asymmetry theory and resource-based theory, in this chapter, an analytical framework is constructed, and research hypotheses are proposed to clarify the internal logic of the impact of ESG rating divergence on corporate performance.

2.1 Differences in ESG Ratings and Corporate Performance

The theory of information asymmetry focuses on the information differences among the participants in market transactions, and this difference causes adverse selection and moral hazard. Owing to the information gap in ESG practices between enterprises and stakeholders, the differences in ratings can reflect the uncertainties in the performance of enterprises at the environmental, social and corporate governance levels. From the perspective of investors, the conflicting rating results of different agencies make it difficult for stakeholders to identify the true ESG performance of the enterprise, aggravate doubts about the enterprise's sustainable development ability, and form a potential obstacle to the acquisition of resources and the creation of value. From the enterprise's perspective, when faced with amplified information asymmetry, management may adjust its disclosure strategy to avoid liability risk, affecting the quality of information disclosure. This type of speculative behavior, which covers internal management defects, increases the communication cost of the enterprise by 12% on average, reduces the efficiency of enterprise resource allocation, and ultimately harms enterprise performance (Wan et al., 2024). According to resource-based theory, an enterprise is an aggregation of resources (Barney, 1991). The divergence of ESG ratings has a dual effect on resource allocation. On the one hand, external resources such as financing and loans are tilted toward enterprises with clear ESG performance, weakening the ability of divergent enterprises to acquire resources. On the other hand, internal resources such as investment in technology R&D may be misallocated in response to the rating controversy, affecting the construction of an enterprise's core capabilities and ultimately affecting its performance.

In summary, the divergence of ESG ratings exacerbates information asymmetry, leads to confusion in the cognition of the enterprise by external stakeholders, and makes accurate identification of the real operating status and ESG performance of the enterprise difficult. Therefore, these differences drive stakeholders to adjust their resource allocation strategy. Owing to the vague information, investors reduce their capital injection into the enterprise; creditors may also tighten credit conditions. On the basis of the above analysis, this paper proposes Hypothesis 1.

H1: Divergence in ESG ratings will reduce the financial and market performance of the firm.

2.2 ESG Rating Divergence, Financing Constraints and Corporate Performance

The theory of financing constraints points out that the sustainable operation of enterprises depends on the support of external resources. In the short term, a shortage of funds directly affects daily operations, resulting in a shrinking market share. In the long term, intensified financing constraints hinder the expansion of the enterprise's production scale, inhibit the research and development of innovation projects, and ultimately cause the enterprise to miss development opportunities. When an enterprise's development opportunities decrease, its financial performance and market performance are bound to decline. After the financing constraints of enterprises are eased and the source of funds for financial investment is provided, the degree of financialization of enterprises increases by 0.49 percentage points (Gu et al., 2020). When ESG ratings differ significantly, investors question the authenticity and comparability of companies' ESG performance information, making it difficult to make short-term decisions or demand a higher risk premium and significantly increasing the difficulty of corporate financing (Huang et al., 2020). In addition, the divergence in ratings may be interpreted by the market as an indication that the corporation's ESG performance is not credible, which may negatively affect corporate reputation. In turn, bank credit approval tightens corporate credit policies because of reputation risk, further narrowing financing channels.

The intensification of financing constraints inhibits corporate performance. At the financial level, the rising financing costs and the limited acquisition of funds directly squeezed the profit margins and limited the scale of operations and investment, resulting in sluggish revenue growth, a decline in the return on assets, and weakened financial performance. At the market level, owing to the lower expectations and frustration of investors' confidence in the development prospects of the enterprises, the valuations were revised, resulting in the deterioration of market performance. On the basis of the above analysis, Hypothesis 2 is proposed.

H2: The divergence of ESG ratings reduces the financial and market performance of companies by strengthening financing constraints.

2.3 Divergence of ESG Ratings, Green Technology Innovation and Corporate Performance

Institutional theory holds that organization and management practices are the product of social pressure; that is, organizations' behavior decisions are not only based on rational choices but also profoundly affected by external institutional pressure (DiMaggio & Powell, 2010). By integrating green concepts into product R&D and production, green technology innovation plays a mediating role in the sustainable development of enterprises, with an indirect effect of 1.2% (Shan, 2025). Substantive technological innovation is characterized by high risk, high investment and a long cycle, which makes it difficult to meet the short-term needs of enterprises. When faced with external uncertainties caused by rating disagreements, to quickly quell the controversy, management may turn resources to conservative strategies that achieve short-term results and reduce investment in green technology innovation to address potential risks, resulting in insufficient investment in innovation. The weakening of green technology innovation capability will have a double effect on performance. On the one hand, lagging environmental protection technologies and low-carbon transformation increase companies' compliance costs, reduce production efficiency, and weaken their competitiveness in the environmental protection field, thereby decreasing their financial performance. On the other hand, it will damage the image of the enterprise's sustainable development, reduce the confidence of investors and the market valuation, and lead to a decline in market performance. On this basis, Hypothesis 3 is proposed.

H3: The divergence of ESG ratings reduces the financial and market performance of companies by weakening their green technology innovation capabilities.

2.4 Differences in ESG Ratings, Information Disclosure Quality and Corporate Performance

Signaling theory focuses on the mechanism through which an enterprise releases signals to the outside world. These signals can originate from the enterprise's own sustainable development actions or reflect the expectations and feedback of external stakeholders. The consistency and credibility of the signals directly determine the results of market feedback (Sun, 2024). Enterprises with different ESG ratings can transmit information to the market and investors through multiple channels, affecting enterprise value and performance. When the divergence of ESG ratings is significant, companies are prone to encountering a signaling dilemma and sending negative signals to the outside world. The market doubts caused by this will weaken companies' motivation to disclose and cause them to reduce their investment in substantive information. More critically, owing to the difficulty in identifying the root causes of the differences, management may have chosen the fuzzy disclosure strategy to avoid disputes, resulting in a decrease in the accuracy and comparability of information disclosure. Ultimately, the exacerbation of information asymmetry will increase financing and transaction costs, constrain revenue growth and directly weaken financial performance. Moreover, market doubts about the credibility of corporate information will trigger stock price fluctuations or valuation discounts, which will eventually cause a dual suppression of financial performance and market performance.

On this basis, Hypothesis 4 is proposed.

H4: Divergent ESG ratings reduce companies' financial and market performance by weakening the quality of information disclosure.

3. Study Design

3.1 Data Source and Processing

Since the rating data of SynTao Green Finance were released in 2015, the present paper selects the Shanghai and Shenzhen A-share listed companies in China from 2015–2023 as the research sample. Considering that companies in the abnormal trading state have a special business logic, their ESG performance is prone to interference from nonsustainable factors, and the financial industry is quite different from traditional industries because of their business and ESG disclosure logic; therefore, the screening and processing processes of the research samples are as follows: 1) the exclusion of companies with a history in the position of ST*, ST and other samples with abnormal trading status; 2) the samples of listed companies in the financial industry were deleted; and 3) the samples with a serious absence of key variables were excluded. To control the influence of

extreme values, the 1% and 99% quantiles of the continuous variables were tailed. To unify the data scale, logarithmic processing was performed on variables such as First, Size, Board, and Eco. The missing values were processed by linear interpolation and the mean and median imputation methods. After the above screening and processing, we ultimately obtained 15,841 valid observation samples. The data sources are as follows. The ESG data are taken from the Wind database, China Securities ESG Rating, SynTao Green Finance ESG rating, the Bloomberg database and the CNRDS database to reduce subjectivity through multisource cross-validation; the green patent data are constructed on the basis of the patent information of the State Intellectual Property Office. ESG practices make substantial contributions. The corporate finance and governance data are from the CSMAR database and form the basis of the empirical evidence. The macroeconomic data at the city level are from the "China City Statistical Yearbook" and are used as a supplement to the control variables.

3.2 Model Settings

To test the impact of ESG rating divergence on financial and market performance while controlling for unobservable individual firm heterogeneity and time trends, the following two-way fixed effects model is established in the present study (1) and (2):

$$ROE_{it}=\alpha_0+\alpha_1 ESGdif6_{it}+\sum \alpha_j\, control_{jit}+\mu_i+\delta_t+\varepsilon_{it} \quad (1)$$

$$TobinQ_{it}=\beta_0+\beta_1 ESGdif6_{it}+\sum \beta_j\, control_{jit}+\mu_i+\delta_t+\varepsilon_{it} \quad (2)$$

where the subscript i is the enterprise code, t represents the year, *ROE* represents financial performance, *TobinQ* represents market performance, *ESGdif*6 is the core explanatory variable in this paper,*control* is a series of control variables that affect the firm's performance,μ_i represents controlling for individual fixed effects,δ_t represents controlling for time fixed effects, andε_{it} is a random disturbance term. On the basis of the theoretical analysis in the foregoing text, the coefficient of the core explanatory variables is expected to beα_1 andβ_1 significantly negative; that is, the divergence of ESG ratings has a negative effect on the financial performance and market performance of companies.

3.3 Variable Definition

3.3.1 Explained Variables: Financial Performance (ROE) and Market Performance (TobinQ)

In the literature, ROA, ROE, Tobin's Q, EPS, etc., are the commonly used indicators to measure enterprise performance and can be divided into two types: financial performance and market performance. In this paper, the rate of return on equity (ROE) is used to measure the financial performance of an enterprise, and the TobinQ value (TobinQ) is used to measure market performance (Hong, 2025; Lee & Suh, 2022). ROE reflects the current financial results of an enterprise, and TobinQ reflects the market expectations for its long-term value. The combination of the two can more comprehensively capture the multidimensional effects of the divergence of ESG ratings on corporate performance.

3.3.2 Core Explanatory Variable: ESG Rating Divergence (ESGdif6)

In this paper, the ESG rating results of six institutions, namely, SynTao Green Finance, Bloomberg, Wind, Menglang, Huazheng, and FTSE Russell, were selected to measure the divergence of the core explanatory variable ESG rating (He et al., 2023). First, the ratings of each agency were standardized. The ESG ratings of Huazheng, Wind and Menglang are divided into 9 levels (C, CC, CCC, B, BB, BBB, A, AA, AAA), with corresponding points 1–9. SynTao Green Finance has a total of 10 ESG ratings, with points from 0–9. The ESG ratings of Bloomberg and FTSE Russell are specific values, which are converted and rounded according to ratios of 10% and 200%, respectively, so that the scores of different rating agencies are comparable and accorded equal weight. After processing, the standard deviation of the rating scores of the six agencies is used as the proxy variable of ESG rating divergence (ESGdif6). Moreover, to test the robustness of the results, the rating data of FTSE Russell and Bloomberg were excluded, and the standard deviation (ESGdif4) of the rating scores of the remaining four agencies was calculated.

3.3.3 Mechanism Variables

The first is the financing constraint (SA). To examine whether the divergence of ESG ratings reduces corporate performance by strengthening financing constraints, the SA index in the Guotai'an database is used as a proxy variable for financing constraints. The second is enterprise green technology innovation (Patent). Enterprise green technology innovation is the core reflection of the environmental dimension of enterprise ESG performance, and it is also a key way to enhance core competitiveness. In this paper, the number of green invention patent applications is selected as a proxy variable for enterprises' green technology innovation (Li & Zheng, 2016). The third is information disclosure quality. The information disclosure evaluation results of listed companies in the Guotai'an database are used as a proxy variable, with 1 indicating excellent, 2 indicating good, 3 indicating satisfactory, and 4 indicating unqualified.

3.3.4 Other Control Variables

In this paper, at the enterprise and city levels, we control for a series of factors that may affect enterprise performance (Chen & Wei, 2025). The control variables at the firm level included the cash flow ratio (Cashflow), ownership concentration (First), dual position (Dual), board size (Board), independent director proportion (Indep), firm size (Size), asset-liability ratio (LEV) and enterprise age (Age). The control variables at the city level included the level of financial development (Finance), the level of economic development (Eco), and the industrial structure (Industry). Table 1 lists the variables and their definitions.

Table 1: Variable definition table

Variable type	Variable name	Variable symbol	Variable definition
Explained variable	Financial performance	ROE	Growth rate of return on equity
	Market performance	Tobin Q	Market value of total assets/face value of total assets
Explanatory variables	ESG ratings diverge	ESGdif6	Six rating agencies assign points to the same company and take the standard deviation
Control variables	Cash flow ratio	Cashflow	Net cash flow from operations as proportion of total assets
	Ownership concentration	First	Shareholding ratio of the largest shareholder
	Board size	Board	Number of board members
	Proportion of independent directors	Indep	Proportion of independent directors
	Two jobs in one	Dual	The value is 1 if the chairperson of the board of directors is also the general manager; otherwise, 0
	Enterprise size	Size	The logarithm of the total assets of the enterprise
	Asset-liability ratio	LEV	Ratio of total liabilities to total assets of enterprise at the end of the year
	Enterprise age	Age	Take the logarithm of the firm's age
	Level of financial development	Finance	Ratio of the balance of deposits and loans of financial institutions to the GDP at the end of the year
	Level of economic development	Eco	Logarithm of GDP per capita
	Industrial structure	Industry	Ratio of the output value of the tertiary industry to the output value of the secondary industry

4. Analysis of the Empirical Results

4.1 Descriptive Statistics

Table 2 reports the descriptive statistics of the major variables. The mean value of the core explanatory variable ESGdif6 was 2.284, and the standard deviation reached 0.549, reflecting that there are significant differences in the degree of divergence in the ESG ratings of the sample companies. Among the explained variables, the mean value of ROE was -0.347, and the standard deviation was 1.385, indicating that the

financial performance of the sample companies fluctuated greatly; the mean value of TobinQ was 2.019, and the median was 1.745, indicating that the market value assessment of most companies was at the intermediate level. For the control variable dimension, the mean value of First was 0.331, indicating that the sample companies had the characteristics of concentrated ownership; the mean value of Board was 8.303, and the mean value of Indep was 0.380, which was in line with the typical characteristics of the governance structure of listed companies in China. The descriptive statistics of the other control variables were in line with expectations.

Table 2: Descriptive statistics

Variable name	Sample size	Mean	Standard deviation	Minimum value	Maximum value
ROE	15,841	-0.347	1.385	-3.755	2.947
Tobin Q	15,841	2.019	1.745	0.138	9.779
ESGdif6	15,841	2.284	0.549	0.817	3.488
Cashflow	15,841	0.105	0.447	-1.782	2.685
First	15,841	0.331	0.143	0.0891	0.732
Board	15,841	8.303	1.594	5	14
Indep	15,841	0.380	0.0536	0.333	0.571
Size	15,841	3.110	0.0558	3.009	3.278
LEV	15,841	0.407	0.185	0.0625	0.829
Age	15,841	2.984	0.305	1.575	4.248
Dual	15,841	0.342	0.474	0	1
Finance	15,841	2.988	2.998	0.0917	9.934
Eco	15,841	2.439	0.0345	2.354	2.502
Industry	15,841	1.374	0.0511	1.243	1.439

4.2 Baseline Regression

The baseline regression estimation results are reported in Table 3. Column (1) shows that when ROE is the explained variable, the divergence coefficient of the core explanatory variable ESG rating is -0.283, which is significantly negative at the 10% level; Column (2) shows that when TobinQ is the explained variable, the coefficient is -0.230, which is significantly negative at the 1% level. The above results show that the exacerbation of the divergence of ESG ratings significantly reduces the financial performance and market performance of the enterprise, supporting Hypothesis H1. Among the control variables, the first coefficient was significantly positive, indicating that the concentration of ownership has a positive effect on corporate performance; the LEV coefficient was significantly negative, indicating that high debt will negatively affect corporate performance. The signs and significance of the other control variables were in line with the theoretical expectations.

4.3 Stability Analysis

To verify the reliability of the baseline regression results, we carried out stability testing by substituting the variable measurement and changing the model specification. The details are as follows. First, the explained variables were replaced. To alleviate the unity bias of the variable measurement, we replaced ROE with BP (operating profit growth rate) and TobinQ with PB (price-to-book ratio). Second, the explanatory variables were replaced. The original core explanatory variable ESGdif6 was replaced by ESGdif4 for the regression. Third, the model settings were changed. The eco, finance and industry variables at the city level were excluded, the macroscopic confounding factors of the city were simplified, and only the enterprise-level control variables were retained for reregression. The results of the stability test are reported in Table 4. The estimation coefficient of the core explanatory variable ESGdif6 is significantly negative for both ROE and TobinQ, indicating that the negative impact of ESG rating divergence on the financial performance and market performance of enterprises is robust.

Table 3: Benchmark regression

	(1) ROE	(2) TobinQ
ESGdif6	-0.283*	-0.230***
	(-1.82)	(-9.18)
Cashflow	-0.000	-0.021
	(-0.00)	(-1.40)
First	5.996***	1.087***
	(3.42)	(3.65)
Board	-0.134	-0.001
	(-1.10)	(-0.05)
Age	1.994	-1.041***
	(1.03)	(-2.67)
Finance	0.001	0.000
	(0.78)	(1.31)
Eco	-15.834	2.570
	(-0.81)	(0.76)
Industry	-16.377**	-7.127***
	(-2.34)	(-5.52)
Dual	0.231	-0.071*
	(0.78)	(-1.71)
Indep	1.534	-0.261
	(0.54)	(-0.65)
LEV	-8.823***	-1.361***
	(-7.66)	(-8.69)
Size	35.644***	-18.088***
	(5.86)	(-15.94)
Firm fixed effects	Yes	Yes
Time fixed effect	Yes	Yes
Sample size	15,841	15,841
Adjust R^2	0.025	0.403

Note: ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively; robust standard errors are in parentheses. Unless otherwise stated, the following tables are the same.

Table 4: Stability check

	Replacement of explained variable		Substituting explanatory variables		Change model settings	
	(1) ROE	(2) TobinQ	(1) ROE	(2) TobinQ	(1) ROE	(2) TobinQ
	BP	PB				
ESGdif6	-0.162***	-0.383***			-0.333*	-0.230***
	(-3.11)	(-9.16)			(-1.91)	(-9.17)
ESGdif4			-0.194*	-0.150***		
			(-1.78)	(-8.20)		
Constant term	-3.649	121.912***	-35.167	67.647***	-240.939***	63.284***
	(-0.18)	(9.77)	(-0.82)	(8.41)	(-9.12)	(17.68)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	15,841	15,841	15,841	15,841	15841	15841
Adjust R^2	0.026	0.352	0.028	0.401	0.046	0.402

4.4 Endogeneity Treatments

In the aforementioned research process, there may be endogeneity problems such as reverse causation, measurement error, and omitted variables, which can negatively affect the reliability of the conclusions. For example, the financial performance and market performance of an enterprise reflect part of the enterprise information, thus affecting the ESG ratings of the enterprise by the ESG rating agencies, and there is a reverse causation relationship in which poor corporate performance leads to large differences among the rating agencies. To this end, the mean (ESGdif6_mean) and median (ESGdif6_med) of the ESG rating divergence in

the same year in the same city and in the same industry were selected in the present study as instrumental variables to reexamine the core relationship (Zhao et al., 2024).

The instrumental variables should satisfy both the correlation and exclusivity requirements. In terms of correlation, the differences in ESG ratings in the same city and the same industry can reflect external shocks such as the strength of regional supervision and the differences in ESG practices in different industries and are significantly related to the differences in the ESG ratings of the companies themselves. In terms of exclusivity, the instrumental variables are driven by macroscopic industry and regional factors and are not affected by performance indicators such as corporate profitability and market performance, nor do they directly affect corporate financial performance and market performance, thus satisfying exogenous conditions (Chen et al., 2025). The two-stage regression results are shown in Tables 5 and 6. In the first stage, the estimation coefficient of the instrumental variables on ESG rating divergence was significantly positive at the 1% level, indicating that the instrumental variables are highly correlated with the endogenous variables and satisfy the correlation requirement. With a first-stage F statistic >10, the Kleibergen–Paap rk LM statistic is significant at the 1% level, and the Kleibergen–Paap Wald F statistic is much greater than the critical value of the weak instrumental variable test, indicating that the instrumental variables can better address internal variables. Sexual problems. The second-stage estimation results reveal that the estimation coefficient of ESG rating divergence is still significantly negative, indicating that ESG rating divergence significantly reduces the financial performance and market performance of enterprises.

Table 5: Endogeneity test

	Stage 1	Stage 2	
Explained variable	ESGdif6	ROE	Tobin Q
ESGdif6		-1.049**	-0.178***
		(-2.019)	(-2.805)
ESGdif6_mean	1.018***		
	(30.652)		
Control variables	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Sample size	15,653	15,653	15,653
Adjust R^2	0.396	0.014	0.334
The first-stage F statistic	933.75***		
Kleibergen–Paap rk LM statistic		236.86***	
Kleibergen–Paap rk Wald F statistic		933.75[16.38]	

Table 6: Endogeneity test

	Stage 1	Stage 2	
Explained variable	ESGdif6	ROE	Tobin Q
ESGdif6		-1.041*	-0.187***
		(-1.869)	(-2.751)
ESGdif6_med	0.806***		
	(26.920)		
Control variables	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Sample size	15,653	15,653	15,653
Adjust R^2	0.382	0.014	0.334
The first-stage F statistic	719.72***		
Kleibergen–Paap rk LM statistic		204.86***	
Kleibergen–Paap rk Wald F statistic		719.72[16.38]	

5. Mechanism Testing and Heterogeneity Analysis

5.1 Mechanism Check

To examine the mechanism through which ESG rating divergence affects financial performance and market performance, the model shown in Equation (3) was constructed.

$$Med_{it}=\gamma_0+\gamma_1+ESGdif6_{it}+\sum\gamma_j+control_{jit}+\mu_i+\delta_t+\varepsilon_{it} \quad (3)$$

where *Med* is the mechanism variable in this paper, which includes corporate financing constraints, corporate green technology innovation and information disclosure quality; the setting method of the other variables is the same as in the previous study.

5.1.1 Financing Constraints

The results of the theoretical analysis reveal that the divergence of ESG ratings may cause creditors and equity investors to worry about the enterprise's operating risks, increase the financing cost or limit the availability of financing, aggravate the enterprise's financing constraints, and ultimately inhibit enterprise performance. In this paper, the SA index is used as a proxy variable for financing constraints and is included in the test of Model (3). The results in Column (1) of Table 7 show that the estimation coefficient of financing constraints by the divergence of ESG ratings is significantly positive, indicating that the greater the divergence of ESG ratings is, the more obvious the restriction on the enterprise's external financing ability and the more significant the negative impact on performance, validating Hypothesis 2.

5.1.2 Green Technology Innovation

The negative signals sent by the divergence in the ESG rating may aggravate the external pressure on corporate green technology innovation, causing corporate resources to turn to short-term ESG image maintenance activities, and the resources originally used for green technology innovation will be deployed to alleviate the crisis caused by rating divergence, thus weakening investment in green technology innovation. The results in Column (2) of Table 7 show that the estimation coefficient of ESG rating divergence is significantly negative at the 1% level, indicating that ESG rating divergence weakens enterprises' ability to innovate in green technologies and validating Hypothesis 3.

Table 7: Mechanism analysis

	(1)SA	(2)Patent	(3)Quality
ESGdif6	0.0129***	-0.0640***	-0.0253**
	(0.00130)	(0.0150)	(0.0117)
Constant term	2.290***	-27.684***	19.44***
	(0.553)	(3.855)	(3.089)
Control variables	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Sample size	15,841	15,841	15,841
Adjust R^2	0.822	0.079	0.026

5.1.3 Quality of Information Disclosure

The previous analysis revealed that the divergence of ESG ratings triggers the disorder of corporate information disclosure and weakens the ability of companies to deliver high-quality information. Because it is difficult for management to identify the sources of their differences, they may be inclined to adopt a fuzzy disclosure strategy, reducing the accuracy, completeness and comparability of ESG information disclosure. The results in Column (3) of Table 7 show that the estimation coefficient of information disclosure quality by ESG rating divergence is significantly negative at the 5% level, indicating that ESG rating divergence significantly reduces the quality of corporate information disclosure and validating Hypothesis 4.

5.2 Heterogeneity Analysis

The results of the theoretical analysis and empirical testing reveal that the negative effects of ESG ratings on financial performance and market performance vary according to firm characteristics. This study explored

the mechanism of heterogeneity in terms of the three dimensions of regional differences, industry pollution attributes, and analysts' attention.

5.2.1 Regional Heterogeneity

There are differences in the level of economic development and the maturity of the market environment between the eastern, central and western regions of China, and the impact of the differences in ESG ratings on corporate performance shows regional heterogeneity. The regression results are shown in Columns (1) (2) of Table 8 and Table 9. The data in Table 8 show that the negative impact of the divergence of the ESG ratings of companies in the eastern region on financial performance is significant at the 5% level, whereas the results for the central and western regions fail the significance test. Table 9 shows that the differences in the ESG ratings of companies in the eastern region and the central and western regions have a significant effect on market performance at the 1% level, but the absolute value of the coefficient in the eastern region is greater. This finding indicates that the negative impact of the divergence of ESG ratings on corporate performance in the eastern region is more prominent. The reason is that the economy in the eastern region is relatively developed, the market system is more complete, the competition among enterprises is fierce, and investors pay more attention to the ESG performance of enterprises. The divergence of ESG ratings is quickly reflected in the financing costs and market valuation of enterprises, magnifying the negative impact on financial performance and market performance.

5.2.2 Heterogeneity of Industrial Pollution Attributes

On the basis of the difference in industrial pollution attributes, the samples were divided into heavily polluting industries and nonheavily polluting industries. The regression results are shown in Columns (3) and (4) of Tables 8 and 9, respectively. The results in Table 8 show that the negative impact of the divergence of the ESG ratings of heavily polluting enterprises on their financial performance is significant at the 10% level and that the nonheavily polluting enterprises fail the significance test. Table 9 shows that the differences in the ESG ratings of the two types of companies have a significant effect on market performance at the 1% level, but the absolute value of the coefficient of heavily polluting companies is greater. This finding shows that the divergence of ESG ratings has a more significant negative effect on the performance of heavily polluting firms. The reason is that heavily polluting enterprises face higher environmental compliance costs and social trust thresholds, and the divergence of ESG ratings may further aggravate financing constraints, reducing financial performance and market performance.

Table 8: Analysis of ROE heterogeneity

	(1) Eastern regions	(2) Central and western regions	(3) Heavily polluting enterprises	(4) Non-heavily polluting enterprises	(5) High analyst attention	(6) Low analyst attention
ESGdif6	-0.383**	0.106	-0.505*	-0.193	-0.400**	-0.185
	(-2.20)	(0.31)	(-1.66)	(-1.07)	(-2.14)	(-0.66)
Constant term	-36.255	-107.255	-15.624	-74.346	-164.919	-51.746
	(-0.61)	(-1.08)	(-0.20)	(-1.45)	(-0.97)	(-0.91)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	12,618	3,223	3,206	12,635	5,017	10,824
Adjust R^2	0.027	0.025	0.023	0.027	0.031	0.021

5.2.3 Heterogeneity of Analysts' Attention

Companies with different levels of analyst attention differ in terms of information dissemination efficiency, market surveillance intensity, and degree of investor concern, and the impact of the differences in ESG ratings may also differ. In this paper, the sample is divided into two groups according to the average value: those with a high analyst focus and those with a low analyst focus (Zou & Xiao, 2024). The number of analysts from an

enterprise in the CSMAR database was selected as the proxy variable of analyst attention. The regression results are shown in Columns (5) and (6) of Tables 8 and 9, respectively. The results in Table 8 show that the negative impact of the ESG ratings of companies with high attention on financial performance is significant at the 5% level, whereas the effect of companies with low attention failed to pass the significance test. Table 9 shows that the differences in the ESG ratings of the two groups of companies have a significant effect on market performance at the 1% level, but the absolute value of the coefficient of companies with a high focus is greater. This finding indicates that the negative impact of the divergence of ESG ratings on the performance of high-profile firms is more prominent. The reason is that high-profile companies have higher information dissemination efficiency, investors and the media have a tighter focus on their ESG performance, and negative information is prone to spread rapidly, thus amplifying the impact on corporate performance.

Table 9: Tobin's Q heterogeneity analysis

	(1) Eastern regions	(2) Central and western regions	(3) Heavily polluting enterprises	(4) Non-heavily polluting enterprises	(5) High analyst attention	(6) Low analyst attention
ESGdif6	-0.240***	-0.224***	-0.244***	-0.183***	-0.118***	-0.081***
	(-8.61)	(-4.18)	(-8.16)	(-4.78)	(-2.77)	(-2.84)
Constant term	95.894***	36.981**	67.243***	70.810***	49.765**	81.602***
	(7.54)	(2.48)	(8.02)	(3.00)	(2.33)	(9.65)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	12,618	3,223	3,206	12,635	5,017	10,824
Adjust R^2	0.423	0.353	0.402	0.404	0.369	0.474

6. Research Conclusions and Policy Suggestions

6.1 Study Conclusions

Against the background of the synergistic promotion of dual-carbon goals and high-quality development, ESG practices are becoming increasingly critical to enterprise development, and the action mechanism and economic consequences of ESG rating divergence for corporate performance are worthy of further investigation. On the basis of the empirical analysis of the 2015–2023 data of A-share listed companies in Shanghai and Shenzhen, the data of six mainstream rating agencies were selected to systematically explore the paths through which ESG rating divergence affects the financial performance and market performance of enterprises. The study reveals that the divergence of ESG ratings significantly reduces the financial performance and market performance of companies; i.e., the greater the divergence of ESG ratings is, the poorer the corporate performance. After the stability test and endogeneity treatment are performed, this conclusion is still stable. Mechanism testing indicates that ESG rating discrepancies negatively impact corporate financial and market performance through three channels: exacerbating financing constraints, suppressing green technological innovation capabilities, and weakening the quality of information disclosure. Heterogeneity analysis reveals that ESG rating discrepancies have a more pronounced inhibitory effect on the performance of companies in eastern regions, heavily polluting companies, and companies with high analyst attention. This study holds significant implications for companies in understanding their sustainable development positioning and optimizing resource allocation. It also provides a basis for regulatory authorities to formulate scientifically sound and effective policies, thereby promoting the sustainable and healthy development of capital markets.

6.2 Policy Recommendations

On the basis of the above empirical research conclusions, the following conclusions are reached:

First, at the government level. As the rule-setter of ESG ecology, the government needs to create a favorable environment for the practice of ESGs through the improvement of the policy system and the overall planning of regional resources. In terms of improving the policy system, through legislation or the release of industry guidance documents, the ESG rating agencies will be promoted to unify the assessment criteria, the core indicators and scoring rules will be clarified, differentiated incentive policies will be introduced, and special projects will be established in key areas such as green technology innovation and supply chain ESG synergy. Innovate funds to enhance the long-term competitiveness of enterprises; improve the ESG supervision system, focusing on cracking down on illegal operations such as "green washing" and "green washing", to ensure the fairness, consistency and credibility of the ratings; and maintain market order. In terms of coordinated regional development, for the eastern region, we will deepen the ESG innovation pilot and support the development of "ESG demonstration parks" in first-tier cities such as Shanghai and Shenzhen with reference to the "White Paper on the Sustainable Development (Environment, Society and Governance) of Suzhou Industrial Park" and through the "demonstration effect" to increase the ESG management level of eastern enterprises. For the central and western regions, financial support should be increased to enhance the level of ESG practices through the establishment of regional training bases and the cultivation of local service organizations.

Second, at the enterprise level. As the core entity of ESG practices, the enterprise needs to exert efforts in both directions from the closed internal management loop and the external communication network to actively reduce differences and enhance performance. On the one hand, internal governance must be strengthened by setting up a full-time ESG management department and formulating a list of quantitative ESG goals and responsibilities to reduce the divergence in ratings caused by fragmented internal management. Moreover, a dynamic ESG mechanism should be established to periodically review issues on the basis of the feedback from rating agencies and market demand. On the other hand, external communication must be emphasized. First, information disclosure is in accordance with international standards, and international standards such as the Global Reporting Initiative (GRI) and the Sustainability Reporting Standards (SASB) are followed, and the ESG reports are regularly released with verifiable norms and full-dimensional coverage. Second, a regular communication mechanism with the rating agencies is established to actively disclose key performance indicators to investors so that the market can deeply understand the actual situation and development strategy of the enterprise, ensure the stability of the enterprise's capital chain, and lay the foundation for the improvement of financial performance and market performance.

Third, at the investor level. As suppliers of market funds, investors' rational decision-making and active participation are critical in mitigating the negative impact of ESG rating divergence and optimizing the allocation of resources in the market, and they need to enhance their own understanding. The government should strengthen ESG education for investors; systematically popularize the ESG concept, rating system and logic to investors; and guide investors not to blindly rely on a single ESG rating result. On the basis of the above, investors should form comprehensive, dynamic and accurate judgments on the ESG performance of the enterprise in combination with actual data, such as the actual ESG practices of the enterprise and green technology patents, to avoid errors in investment decisions because of the disagreement in the ratings and to ensure investment income.

In summary, the joint efforts of the government, enterprises and investors are needed to promote the development of ESGs. The government should formulate good policies to coordinate the development of various regions, enterprises should improve internal management and strengthen external communication, and investors should raise their professional standards and make rational decisions. The close cooperation of the three parties can promote the reasonable convergence of ESG rating divergence, help enterprises break through performance constraints, achieve high-quality development, and inject green kinetic energy and long-term vitality into sustainable economic transformation.

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