

Multiple Divergences: Board Heterogeneity and ESG Rating Discrepancies

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Abstract. Under the strategic objectives of “carbon peak and carbon neutrality”, ESG (Environmental, Social, and Governance) ratings, as a core metric for evaluating corporate performance in these areas, have increasingly attracted attention due to their discrepancies. This paper investigates the role of board heterogeneity in ESG rating discrepancies from a corporate governance perspective. Using a sample of A-share listed companies in China from 2018 to 2022, the study finds that board heterogeneity significantly exacerbates ESG rating discrepancies by reducing information disclosure and dispersing environmental attention. This conclusion remains robust even after addressing endogeneity concerns and conducting further robustness tests. From various dimensions of board heterogeneity, differences in gender, education, professional background, and international experience intensify ESG rating discrepancies, whereas heterogeneity in age and financial background reduces these discrepancies. The findings not only contribute to the theoretical understanding of the factors influencing ESG rating discrepancies but also offer policy implications for regulatory bodies seeking to promote ESG governance from a corporate governance standpoint.

Keywords: Board Heterogeneity; ESG Rating Discrepancies; Quality of Information Disclosure; Corporate Governance.

1. Introduction

The report from the 20th National Congress of the Communist Party of China incorporates “carbon peak and carbon neutrality” into the overall framework of ecological civilization construction. As a core entity in economic and social development, enterprises play a critical role in the implementation of sustainable development strategies. In recent years, with the rapid rise of ESG rating agencies, the ratings they publish have become a “signal light” for capital allocation. However, due to the lack of a “common theory” and “comparability”, there are significant discrepancies in ESG performance evaluations of the same company across different rating agencies (Chatterji et al., 2016). This divergence not only weakens the usefulness of ESG ratings (Berg et al., 2022) but also reduces the efficiency of market information transmission (Serafeim et al., 2022), which affects corporate financing costs and investor decision-making (Christensen et al., 2022; Li et al., 2024). Therefore, addressing the negative impact of discrepancies in ESG ratings on the healthy development of enterprises and capital markets is crucial for promoting green and low-carbon growth. These discrepancies primarily arise from the “cognitive differences” between various institutions regarding the non-financial performance of companies. Existing literature has predominantly focused on external factors, such as differences in rating methodologies and the subjective biases of rating agencies (Han et al., 2024; Billio et al., 2021; Guo et al., 2024; Berg et al., 2022), while overlooking the profound influence that internal corporate governance mechanisms exert on ESG performance and rating perceptions. As a central component of corporate governance, board heterogeneity affects decision-making processes, information processing capabilities, and the efficiency of balancing interests (Ma & Feng, 2014; Li, 2012), thereby positively impacting corporate strategic choices and overall performance (Simons et al., 1999; Ye, 2017; Pelled et al., 1999). However, excessive heterogeneity may result in conflicts of opinion and delays in decision-making (Westphal & Milton, 2000; Li & Wu, 2014), making it challenging for companies to develop cohesive strategies in their ESG practices. Therefore, board heterogeneity may influence rating discrepancies through two main pathways: For one thing, the decision-making inefficiencies induced by heterogeneity could lead to

ambiguity or inconsistency in ESG information disclosure, thus hindering rating agencies from forming a unified assessment. For another, the diverse backgrounds of board members may shape the communication strategies between the company and rating agencies, thereby reducing the likelihood of misjudgments regarding the company's ESG performance and, as a result, diminishing the rating discrepancies.

Based on this, this paper uses a sample of Chinese A-share listed companies from 2018 to 2022 to explore the role of board heterogeneity in ESG rating discrepancies. The study finds that the higher the board heterogeneity, the greater the ESG rating discrepancy of the firm. This conclusion remains valid even after addressing endogeneity issues and conducting robustness tests. Further analysis suggests that the possible mechanisms include the dispersion of environmental attention allocation and the reduction of information disclosure. From various dimensions of board composition, heterogeneity in gender, education, professional background, and overseas experience exacerbates ESG rating discrepancies, while heterogeneity in age and financial background mitigates these discrepancies.

The potential marginal contributions of this paper are: (1) This paper reveals the micro-foundations of ESG rating discrepancies from the perspective of board heterogeneity. Drawing on information asymmetry theory, the attention dilution effect, and signaling theory, it clarifies the dual impact pathways and provides governance optimization strategies for firms to reduce discrepancies. (2) Existing studies primarily focus on the impact of board heterogeneity on corporate financial performance and strategic decision-making (Simons et al., 1999; Ye, 2017; Pelled et al., 1999; Westphal & Milton, 2000; Li & Wu, 2014). This paper expands the scope to include non-financial performance. (3) Existing studies tend to concentrate on the impact of individual factors, such as gender, educational background, and professional experience, on ESG rating discrepancies (Wang et al., 1998; Tang & Li, 2019; Guo & Lu, 2017; Li & Xie, 2016). This paper adopts a comprehensive approach to measure board heterogeneity across these dimensions.

2. Theoretical Analysis and Research Hypotheses

Based on resource dependence theory (Pfeffer & Salancik, 1978), board heterogeneity facilitates the acquisition of complementary resources in the ESG field through diversified social networks. For instance, directors with backgrounds in international investment banking introduce MSCI rating standards, while those with expertise in environmental engineering optimize corporate carbon accounting standards. This enhances the alignment between ESG practices and mainstream rating systems, thereby reducing discrepancies caused by biases in indicator matching (Wang et al., 2023). Heterogeneity in professional backgrounds promotes the standardization and completeness of ESG information disclosure—directors with legal expertise ensure compliance disclosures, financial specialists enhance data visualization, and supply chain management experts provide insights into ESG performance across the value chain. The synergy of these diverse areas of expertise helps mitigate rating differences caused by data gaps (Zou et al., 2018). Directors with international experience bring institutional cognitive advantages that help bridge the gap between domestic and global ESG standards (Wang et al., 2023). For example, they can cross-verify TCFD climate disclosure requirements with the ESG guidelines from the China Securities Regulatory Commission, allowing the company's disclosure framework to align with the preferences of both international and local rating agencies, thus narrowing the evaluation discrepancies between different institutions. Moreover, age and gender heterogeneity enhances the board's overall risk awareness regarding ESG issues, reduces volatility in practices, and further diminishes ESG rating discrepancies. Based on these observations, the following hypothesis is proposed:

H1a: Board heterogeneity reduces divergence in corporate ESG ratings.

On the other hand, decision-making attention within the board is a scarce resource (Ocasio, 1997; Yin, 2023), and differences in value orientations and professional backgrounds among board members can result in competitive allocation of attention resources, which influences the board's

prioritization of ESG issues. This decentralization of attention sends negative signals to rating agencies, reducing their recognition of the company's ESG information disclosure, thereby amplifying the divergence in ESG ratings (Wang et al., 2023). Variations in educational backgrounds lead to differences in cognitive abilities and approaches to problem-solving among board members (Liao & Zhang, 2024), leading to differentiated judgments on ESG issues. Greater age heterogeneity increases the coordination costs of board decision-making (Guo & Lu, 2017), weakening the consistency of ESG strategies and undermining corporate efforts to disclose environmental information and fulfill social responsibilities. While the diverse perspectives arising from professional heterogeneity may foster innovation, they may also lead to conflicting objectives, such as balancing short-term profitability with long-term sustainability, resulting in fluctuations in ESG resource allocation and practices. This, in turn, may be interpreted by various agencies as strategic ambiguity or poor execution, thereby widening the divergence. Furthermore, cognitive differences among board members may lead to varied decisions regarding ESG disclosures. In an attempt to mitigate conflicts within board decisions, companies may selectively disclose favorable information and obscure less favorable data. This incomplete and non-standardized disclosure diminishes the quality of corporate information, increasing rating agencies' reliance on private information. As a result, this exacerbates subjective judgment discrepancies among rating agencies in data analysis, indicator selection, and weight allocation, further expanding rating divergence (Berg et al., 2022; Wang et al., 2025). Based on these considerations, the following hypothesis is proposed:

H1b: Board heterogeneity exacerbates divergence in corporate ESG ratings.

3. Research Design

3.1 Sample Selection and Data Sources

This study uses A-share listed companies in China from 2018 to 2022 as the research sample, with the following processing steps: (1) Financial sector companies are excluded based on the "Listed Company Industry Classification Guidelines" (2012 revision). (2) Companies that were classified as ST or *ST during the sample period are removed. (3) Companies with significant missing data for key variables are excluded. After these screening procedures, the final sample includes 16,716 observations. The ESG rating data is sourced from the Wind Database, while the company data is obtained from the CSMAR (Guotai An) Database. To mitigate the impact of extreme values, all continuous variables are winsorized at the 1% level.

3.2 Variable Definition

3.2.1 Dependent Variable: ESG Rating Discrepancy

Following the methods outlined by Avramov et al. (2022) and Zhou et al. (2023), this study measures ESG rating discrepancies using the standard deviation of ratings from six rating agencies. The specific procedure is as follows: (1) initial data processing: The ESG ratings for listed companies from six agencies—Huazheng, Wind, SynTao Green Finance, Alliance Bernstein, FTSE Russell, and Runling Global—are standardized into a unified scoring format to ensure comparability across the agencies. (2) ranking processing: The ESG scores assigned by each rating agency are ranked annually, with higher scores corresponding to higher ranks; companies with identical scores receive the same rank. (3) normalization of ranking range: The ranking differences are then standardized. (4) calculation of rating discrepancy: The standard deviation of the standardized rankings across the six agencies is taken as the ESG rating discrepancy (*Dis_Rank*) for the firm in the given year.

3.2.2 Explanatory Variable: Board Heterogeneity

This study follows the approach of Tuggle et al. (2010) and employs the Herfindahl-Hirschman Index (also known as the Blau Index) to measure the heterogeneity of various diversity components. This index is widely recognized and applied in the fields of social and organizational behavior (Zhou, 2012; Ye, 2017; Li, 2012). The specific formula is as follows:

$$H = 1 - \sum_{i=1}^n p_i^2 \quad (1)$$

Where p_i denotes the proportion of the i -th category of members on the board, and n represents the total number of categories.

Board Gender Heterogeneity (*Gen_HH*): In accordance with the method of Cheng et al. (2016), the board's gender composition is categorized into two groups: male and female. The Herfindahl-Hirschman Index, as outlined earlier, is then applied for calculation.

Board Age Heterogeneity (*Age_HH*): Following the approach of Wang Xiaohang (2023), board members' ages are divided into six groups: those under 30 years old are classified as "1", 30-39 years as "2", and so on, with those aged 70 and above categorized as "6". The proportion of board members in each age group is calculated, and the Herfindahl-Hirschman Index, as described earlier, is employed for calculation.

Board Educational Background Heterogeneity (*Edu_HH*): In line with the method of Wang (2023), the educational qualifications of board members are categorized into six levels: technical secondary school, college, bachelor's degree, master's degree, doctoral degree, and others. The proportion of board members in each educational category is calculated, and the Herfindahl-Hirschman Index, as previously described, is applied for calculation.

Board Professional Background Heterogeneity (*Pro_HH*): In accordance with the approach of Guo et al. (2017), work experience is divided into seven categories: administrative management, engineering, finance and accounting, marketing and public relations, research and development, manufacturing, and law. The proportion of board members in each work experience category is calculated, and the Herfindahl-Hirschman Index, as described earlier, is used for calculation.

Board Overseas Background Heterogeneity (*Ove_HH*): Following the method of Zhang et al. (2020), board members with overseas experience are classified into four categories: those with overseas work experience, overseas study experience, both, and those with no overseas experience. The proportion of board members in each category is calculated, and the Herfindahl-Hirschman Index, as outlined earlier, is employed for calculation.

Board Financial Background Heterogeneity (*Fin_HH*): Following the definition of Yan (2021), board members who have held positions in policy banks, commercial banks, investment banks, financial regulatory agencies, fund management firms, insurance companies, exchanges, securities firms, securities registration and settlement companies, futures firms, trust firms, investment management companies, and other financial institutions are considered to possess a financial background. The proportion of board members with and without a financial background is calculated, and the Herfindahl-Hirschman Index, as outlined earlier, is applied for calculation.

Drawing on the work of Wang (2023) regarding comprehensive indicators of board diversity, equal weight is assigned to each factor in constructing a Board Heterogeneity Index (*Div*):

$$Div = 1/6 \times (Gen_HH + Age_HH + Edu_HH + Pro_HH + Ove_HH + Fin_HH) \quad (2)$$

3.2.3 Control Variables

Building upon the studies by Christensen et al. (2022) and Wang et al. (2023), this study controls for the following variables: (1) To comprehensively capture the fundamental operational conditions of the enterprise, this study controls for the debt-to-asset ratio (*Lev*), firm size (*Siz*), profitability (*Roa*), ownership structure (*Soe*), firm age (*Age*), cash holdings (*Cashhold*), and firm growth (*Gin*). (2) To reflect the corporate governance characteristics of the enterprise, this study controls for the shareholding ratio of the top three shareholders (*Top3*), the proportion of independent directors (*Ibr*), board size (*Ibs*), whether the CEO also serves as the board chair (*Dua*), supervisory board size (*Sup*), and the proportion of institutional investor ownership (*Ins*). (3) Given that enterprises may engage in "greenwashing" for short-term gains, the growth rate of total profit serves as an indicator that can partially reflect the enterprise's greenwashing motivations. Therefore, this study also controls for the growth rate of total profit (*Gpr*). To account for differences across years and industries, this study

controls for year and industry dummy variables. The specific variable definitions are provided in Table 1.

3.3 Model Specification

To assess the impact of board heterogeneity on ESG rating discrepancies, this study constructs Model (3) for testing. The specification of Model (1) is as follows:

$$Dis_{Rank_{it}} = \alpha_0 + \alpha_1 Div_{it} + \alpha_i Controls_{it} + \Sigma Year + \Sigma Industry + \varepsilon_{it} \tag{3}$$

In Model (3), *Dis_Rank* represents ESG rating discrepancy, *Div* denotes board heterogeneity, with subscripts *i* and *t* referring to the firm and time period, respectively. *Controls* represents a set of control variables. Given the substantial variation in ESG rating discrepancies across industries, the model also controls for industry fixed effects (*Industry*) and year fixed effects (*Year*) to account for time trends and industry heterogeneity. $\varepsilon_{i,t}$ represents a random error term. In addition, to address potential serial correlation issues, the standard errors of all regression coefficients are clustered at the firm level. The coefficient α_1 reflects the effect of board heterogeneity on ESG rating discrepancies. If the coefficient α_1 is significantly positive, H1a is rejected in favor of H1b, suggesting that board heterogeneity exacerbates ESG rating discrepancies for the firm.

3.4 Descriptive Statistics

The descriptive statistics for the main variables in this study are presented in Table 2. The mean of ESG rating discrepancy (*Dis_Rank*) is 0.461, with a standard deviation of 0.219, a minimum value of 0.045, and a maximum value of 0.932, indicating substantial variation in ESG rating discrepancies across firms. This highlights the prominent existence of ESG rating discrepancies. The mean of board heterogeneity (*Div*) is 0.279, with a standard deviation of 0.072, and the distribution ranges from 0.073 to 0.510. This reflects some fluctuation in the diversity of board member backgrounds across firms, although the overall level remains moderate. The results for the control variables are largely consistent with those found in previous studies (Wang et al., 2023; Zhao et al., 2024). Correlation analysis shows a significant positive relationship between the core explanatory variable and the dependent variable, providing preliminary support for the research hypothesis. Additionally, the correlation coefficients between the variables are all below 0.5, indicating a low risk of multicollinearity.

Table 1: Variable Definitions

Variable Type	Variable Name	Variable Name	Variable Definition
Dependent Variable	ESG Rating Discrepancy	<i>Dis_Rank</i>	Standard Deviation of the Rankings from Six Rating Agencies
Independent Variables	Board Heterogeneity	<i>Div</i>	The Sum of Heterogeneity in Age, Gender, Educational Background, Professional Background, Overseas Background, and Financial Background
	Board Age Heterogeneity	<i>Div_Age</i>	Herfindahl Index ($1-\Sigma p_i^2$)
	Board Gender Heterogeneity	<i>Div_Gen</i>	Herfindahl Index ($1-\Sigma p_i^2$)
	Board Educational Background Heterogeneity	<i>Div_Edu</i>	Herfindahl Index ($1-\Sigma p_i^2$)
	Board Professional Background Heterogeneity	<i>Div_Pro</i>	Herfindahl Index ($1-\Sigma p_i^2$)

	Board Overseas Background Heterogeneity	<i>Div_Ove</i>	Herfindahl Index ($1-\Sigma p_i^2$)
	Board Financial Background Heterogeneity	<i>Div_Fin</i>	Herfindahl Index ($1-\Sigma p_i^2$)
Control Variables	Debt-to-Asset Ratio	<i>Lev</i>	Debt-to-Asset Ratio
	Firm Size	<i>Siz</i>	Natural Logarithm of Total Assets at Year-End
	Profitability	<i>Roa</i>	Ratio of Net Profit to Total Assets at Year-End
	Firm Age	<i>Age</i>	Firm's Actual Years Since Establishment
	Ownership Structure	<i>Soe</i>	Dummy Variable: State-Owned Enterprises are assigned a value of 1, otherwise 0
	Firm Growth	<i>Gin</i>	Ratio of Operating Income Growth to Previous Year's Operating Income
	Cash Holding Level	<i>Cashhold</i>	Ratio of Cash and Cash Equivalents to Total Assets
	Shareholding of Top Three Shareholders	<i>Top3</i>	Ratio of Shares Held by the Top Three Shareholders to Total Shares
	Proportion of Independent Directors	<i>Ibr</i>	Ratio of Independent Directors to Total Board Members
	Board Size	<i>Ibs</i>	Total Number of Directors on the Board
	CEO Duality	<i>Dua</i>	Dummy Variable: CEO Duality (CEO and Chairman being the same person) is assigned a value of 1, otherwise 0
	Supervisory Board Size	<i>Sup</i>	Total Number of Supervisors on the Supervisory Board
	Institutional Investor Proportion	<i>Ins</i>	Ratio of Institutional Investor Holdings to Circulating Shares
	Total Profit Growth Rate	<i>Gpr</i>	Ratio of Total Profit Growth to Previous Year's Total Profit
	Year	<i>Year</i>	Annual Dummy Variable
Industry	<i>Industry</i>	Industry Dummy Variable	

Table 2 Descriptive Statistics

Variable	Sample Size	Mean	Standard Deviation	Median	Minimum	Maximum
<i>Dis_Rank</i>	16716	0.461	0.219	0.450	0.045	0.932
<i>Div</i>	16716	0.279	0.072	0.283	0.073	0.510
<i>Siz</i>	16716	22.330	1.295	22.120	20.080	26.380
<i>Age</i>	16716	20.500	5.652	20.000	8.000	35.000
<i>Lev</i>	16716	0.413	0.196	0.405	0.062	0.887
<i>Roa</i>	16716	0.040	0.072	0.040	-0.265	0.239
<i>Gin</i>	16716	0.141	0.338	0.098	-0.572	1.821
<i>Cashhold</i>	16716	0.180	0.120	0.150	0.017	0.594
<i>Ins</i>	16716	0.421	0.251	0.428	0.002	0.912
<i>Ibs</i>	16716	8.318	1.579	9.000	5.000	14.000
<i>Ibr</i>	16716	0.378	0.053	0.364	0.333	0.571
<i>Sup</i>	16716	3.394	0.885	3.000	3.000	7.000

<i>Gpr</i>	16716	-0.272	2.479	0.000	-16.140	6.718
<i>Top3</i>	16716	0.495	0.150	0.487	0.192	0.861
<i>Dua</i>	16716	0.323	0.468	0.000	0.000	1.000
<i>Soe</i>	16716	0.303	0.459	0.000	0.000	1.000

4. Empirical Results

4.1 Benchmark Regression Results

The benchmark regression results are presented in Table 3. In Column (1), when only year and industry effects are controlled for, board heterogeneity is found to amplify ESG rating discrepancies. Column (2) displays the regression results after including control variables. The effect remains positive and significant, indicating that board heterogeneity across various dimensions significantly exacerbates discrepancies in the ESG performance assessments made by rating agencies. This finding rejects Hypothesis H1a and supports Hypothesis H1b. In terms of control variables, the coefficient for firm size is significantly positive at the 1% level, suggesting that larger firms tend to have more complex ESG practices, leading to greater discrepancies in the evaluation of their multidimensional ESG performance by rating agencies. The coefficient for the debt-to-equity ratio is significantly negative at the 1% level, indicating that highly leveraged firms, due to limited ESG investments, perform poorly in ESG evaluations, resulting in a convergence of rating agencies' assessments based on lower expected performance. The coefficient for the proportion of institutional investors is significantly negative at the 5% level, suggesting that institutional investors' monitoring role may constrain the volatility and divergence of board decisions on ESG issues, thereby reducing rating discrepancies.

Table 3 Board Heterogeneity and ESG Rating Discrepancies

Variable	(1) <i>Dis_Rank</i>	(2) <i>Dis_Rank</i>
<i>Div</i>	0.1832*** (4.76)	0.2003*** (5.33)
<i>Siz</i>		0.0381*** (12.62)
<i>Age</i>		-0.0026*** (-5.03)
<i>Lev</i>		-0.1772*** (-10.08)
<i>Roa</i>		0.3542*** (8.79)
<i>Cashhold</i>		0.0730*** (3.24)
<i>Gin</i>		-0.0008 (-0.15)
<i>Ins</i>		-0.0004** (-2.57)

		0.0070***
<i>Ibs</i>		(2.98)
		0.0033***
<i>Ibr</i>		(5.46)
		0.0029
<i>Sup</i>		(0.78)
		-0.0020***
<i>Gpr</i>		(-2.64)
		0.1558***
<i>Top3</i>		(7.28)
		0.0106
<i>Soe</i>		(1.36)
		-0.0041
<i>Dua</i>		(-0.74)
Constant Term	0.4097***	-0.6036***
	(36.94)	(-8.41)
<i>Year</i>	Control Variables	Control Variables
<i>Industry</i>	Control Variables	Control Variables
Sample Size	16,716	16,716
<i>Adj. R²</i>	0.057	0.153

Note: The values in parentheses represent t-values, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively.

4.2 Robustness Test

4.2.1 Substitute Dependent Variable: ESG Rating Range

Drawing on the methodology of He et al. (2023), this study utilizes ESG data from four rating agencies—Huazheng, Wind, SynTao Green Finance, and AllianceBernstein. The ratings from these agencies are standardized to ensure equivalent weighting, and the range (*Dis_Range*) of these standardized ESG ratings is calculated as an alternative measure of ESG rating discrepancy. A regression analysis is then conducted, controlling for industry and year fixed effects, with firm-level clustering applied. The results, presented in column (1) of Table 4, show that the regression coefficient for the alternative variable is significantly positive at the 5% level, indicating that higher board heterogeneity exacerbates ESG rating discrepancies. This finding is consistent with the conclusions of the baseline regression.

4.2.2 Substitute Explanatory Variables: Lagged One-Period and Lagged Two-Period Board Heterogeneity

Given the potential delayed effects of board members with diverse backgrounds, this study substitutes the explanatory variables with one-period lagged and two-period lagged board heterogeneity in the regression analysis. The regression results, presented in columns (2) and (3) of Table 4, show that the coefficients for one-period lagged board heterogeneity (*Divt-1*) and two-period lagged board heterogeneity (*Divt-2*) are both significantly positive at the 1% level, confirming the robustness of the conclusion.

4.2.3 Controlling for Other Influencing Factors

To reduce the potential bias caused by omitted variables, this study further controls for factors that may influence ESG rating discrepancies, such as social trust and audit quality. Social trust, through reputation mechanisms and moral constraints, incentivizes firms to enhance the quality of their information disclosure (Xu & Li, 2024; Liu et al., 2016; Wang et al., 2023). Audit quality, particularly audits conducted by the Big Four accounting firms, reduces the risk of information distortion and effectively mitigates “greenwashing” behaviors (Yang et al., 2024), thereby decreasing rating discrepancies. To measure social trust, this study adopts the Chinese Urban Commercial Credit Environment Index, following the approach of Xu & Li (2024). Audit quality is represented by a dummy variable, where the value is 1 if the firm's financial statements are audited by one of the Big Four accounting firms in a given year, and 0 otherwise. The regression results, controlling for regional factors and audit quality, are shown in column (4) of Table 4. The coefficient for board heterogeneity remains significantly positive at the 1% level, consistent with the findings of the baseline regression.

Table 4 Robustness Test Results

Variable	Replacing the Dependent Variable	Replacing the Independent Variable		Excluding Other Factors
	(1) <i>Dis_Range</i>	(2) <i>Dis_Rank</i>	(3) <i>Dis_Rank</i>	(4) <i>Dis_Rank</i>
<i>Div</i>	0.3500** (2.07)			0.1542*** (3.84)
<i>Divt-1</i>		0.2146*** (5.23)		
<i>Divt-2</i>			0.2482*** (5.51)	
<i>Tru</i>				0.0016*** (3.31)
<i>Big</i>				0.0803*** (6.05)
Control Variables	Control Variables	Control Variables	Control Variables	Control Variables
Constant	-1.5775*** (-5.62)	-0.6664*** (-8.59)	-0.8429*** (-10.02)	-0.5936*** (-7.27)
<i>Year</i>	Control Variables	Control Variables	Control Variables	Control Variables
<i>Industry</i>	Control Variables	Control Variables	Control Variables	Control Variables
Sample Size	16,716	12,020	8,251	14,743
<i>Adj. R²</i>	0.091	0.160	0.170	0.166

Note: The values in parentheses represent t-values, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively.

5. Further Analysis

5.1 Mechanism Test

Theoretical analysis in the previous sections indicates that board heterogeneity intensifies discrepancies in corporate ESG ratings by dispersing environmental attention allocation and reducing the level of information disclosure. Based on the study by Jiang (2022), this paper focuses on the causal relationship between the explanatory variables and the mechanism variables.

First, cognitive differences among board members can lead to a fragmented allocation of attention to various ESG dimensions. For example, executives with a technical background may focus more on environmental governance, while those with a humanistic background may place greater emphasis

on social responsibility. This results in “diverse but fragmented” ESG practices within the company, leading to imbalanced performance in areas such as environmental investment, employee welfare, and governance mechanisms, ultimately intensifying ESG rating discrepancies. To test this mechanism, this study follows the approach of Yuan et al. (2023) and employs text analysis to select keywords based on three dimensions: green competitive advantage awareness, social responsibility consciousness, and external pressure perception. The frequency of these keywords in annual reports from 2018 to 2022 is used to measure the board’s environmental attention allocation (*EA*). The regression results are shown in column (1) of Table 5. The findings indicate that the regression coefficient for board heterogeneity on environmental attention allocation is significantly negative at the 5% level, suggesting that board heterogeneity disperses environmental attention allocation, which exacerbates ESG rating discrepancies.

Second, according to the upper echelons theory, board heterogeneity may lead to cognitive divergence in the necessity and focus of ESG information disclosure, reducing the consistency of disclosure decisions. This results in fragmented disclosures and the obscuring of key information. When ESG disclosures are insufficient, rating agencies can only rely on limited public data or subjective inferences for evaluation. Given the inherent differences in the weight assigned to indicators and the interpretation of information across agencies, this information asymmetry further amplifies rating bias, ultimately increasing ESG rating discrepancies. To test this mechanism, this study follows the methodology of Zhu et al. (2024) and manually collects the information disclosure indices for companies listed on the Shenzhen Stock Exchange from 2018 to 2022. These indices are divided into four categories (1-4 points), with higher scores indicating a higher level of information disclosure. The regression results are presented in column (2) of Table 5. The findings show that the regression coefficient for board heterogeneity on information disclosure quality is significantly negative at the 1% level, indicating that board heterogeneity reduces the level of information disclosure, which in turn exacerbates ESG rating discrepancies.

Table 5 Mechanism Test

Variable	(1) <i>EA</i>	(2) <i>IDQ</i>
<i>Div</i>	-0.3898** (-2.52)	-0.4569*** (-4.88)
Control Variables	Control Variables	Control Variables
Constant Term	-1.3182*** (-4.74)	4.7453*** (27.54)
<i>Year</i>	Control Variables	Control Variables
<i>Industry</i>	Control Variables	Control Variables
Sample Size	16,716	16,716
<i>Adj. R²</i>	0.230	0.211

Note: The values in parentheses represent t-values, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively.

6. Conclusion

This study empirically investigates the impact of board heterogeneity on corporate ESG rating discrepancies and the underlying mechanisms. The findings indicate that: (1) Board heterogeneity significantly exacerbates ESG rating discrepancies; and (2) Mechanism tests reveal that board heterogeneity intensifies ESG rating discrepancies by reducing the quality of corporate information disclosure and dispersing environmental attention allocation.

Based on these conclusions, the study proposes the following policy recommendations for companies, rating agencies, and policymakers to mitigate the negative impact of ESG rating discrepancies on the capital market: First, when constructing a diversified board, companies should balance the characteristics of heterogeneity to avoid decision-making conflicts and resource wastage.

Furthermore, companies should focus on enhancing the standardization of information disclosure and support the government and regulatory bodies in gradually standardizing ESG disclosure systems. This will improve the efficiency of information transmission in the capital market and reduce interpretational differences among rating agencies regarding the same information dimension. At the same time, companies should strengthen the strategic importance of environmental issues, enhance environmental management training, and introduce external experts to counteract the amplifying effects of attention dilution on rating discrepancies. Second, rating agencies should reference international mainstream frameworks while considering the practical realities of China's economic and social development, and construct an ESG rating system that incorporates both local relevance and international comparability. Additionally, they should establish regular coordination mechanisms through industry associations and foster consensus-building through continuous communication between agencies, ensuring that ESG rating discrepancies remain within a reasonable range. Third, policymakers play a crucial role in enhancing the quality of the information environment and reducing information asymmetry between companies and rating agencies. They should promote the development of information intermediaries, improve the transparency and accessibility of information, and strengthen the attention and oversight of analysts. This will encourage them to conduct in-depth analyses of corporate ESG performance and provide more objective evaluations. Furthermore, improving the information disclosure system and requiring companies to disclose more high-quality ESG information is a critical means to reduce information asymmetry.

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