THE DETERMINANTS OF ESG RATINGS DISAGREEMENT – EVIDENCE FROM CHINA

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Abstract

This study examines ESG rating disagreement among Chinese A-share listed firms using data from five major ESG rating agencies between 2010 and 2019. We construct three measures of rating divergence and analyze how firm characteristics influence these differences. Our findings reveal that the significance of explanatory variables varies depending on the definition of ESG disagreement and the combination of ratings used. While some variables, such as state ownership and profitability, show inconsistent effects, others, like firm size, leverage, and innovation activity, consistently influence ESG rating divergence. Our study provides valuable insights for regulators, investors, and researchers seeking to improve the reliability and comparability of ESG assessments and contributes to the development of more stable and transparent ESG evaluation framework.

Keywords

ESG, ESG Rating, Corporate Governance, Board Structure, Female Executives

Introduction

In recent years, Environmental, Social, and Governance (ESG) factors have taken on a growing role in corporate management and investment decisions. As in [3], ESG reflects a company's commitment to legal, ethical, social, and environmental responsibilities. It builds on the foundations of a sustainable economy, corporate social responsibility (CSR), and responsible investing, serving as a key measure of global sustainable development efforts. With sustainability becoming an increasing priority, investors, policymakers, and stakeholders are placing greater importance on ESG compliance and integration.

A company's ESG performance is typically assessed through third-party ESG ratings, provided by agencies such as Bloomberg, Refinitiv, Sustainalytics, and Morningstar. These ratings serve as a benchmark for investors seeking socially responsible investment opportunities as well as for stakeholders to evaluate corporate socially responsible engagements. However, ESG ratings exhibit low consistency across different agencies. For instance, Reference [24] find that correlations between ESG ratings are weak, with a coefficient of only 0.58 between the two most widely used ESG ratings. This inconsistency poses challenges for investors, policymakers, and firms attempting to interpret and act upon ESG information.

The discrepancies in ESG ratings can be attributed to several key factors. First, scarcity of data limits the accuracy of ratings, as much relevant information remains unavailable, particularly non-public data such as internal decision-making processes and employee satisfaction surveys. Although there has been significant growth in ESG data availability, for instance, in the 1990s, only 20 publicly listed companies reported ESG-related data, whereas by 2014, this number had increased to nearly 6,000 ([11], [19]), many companies still refrain from disclosing comprehensive ESG information. Second, though the growing emphasis on sustainability, corporate accountability, and responsible investment has driven the need for mandatory ESG reporting, only a few countries and regulatory institutions have introduced mandatory ESG reporting requirements. Voluntary disclosure leads to inconsistencies, as companies selectively report ESG information based on their interests, often disclosing only what benefits them while omitting less favorable details. This aligns with voluntary disclosure theory, which suggests that firms with strong ESG engagement report extensively, whereas those with weaker performance disclose only the minimum (Ballou et al., 2019). Third, the lack of a standardized reporting framework diminishes comparability, as ESG priorities vary across industries, and different organizations employ diverse reporting methods. Without a unified system, firms disclose ESG information selectively, contributing to uncertainty in ratings ([6], [18]). Reference [2] propose establishing a universal ESG reporting standard to mitigate rating disagreements and their negative societal

impacts. Fourth, the subjectivity of certain ESG elements, such as community engagement and social welfare, further complicates evaluations, as these factors lack measurable, universally accepted criteria. Finally, variations in rating methodologies across agencies exacerbate inconsistencies, as some models prioritize governance performance while others emphasize environmental protection. Even with identical data, differences in weighting and assessment frameworks result in divergent ESG scores across rating agencies.

Given the informative role of ESG ratings, disagreements can hinder information diffusion and disrupt the business decision-making process. ESG rating disagreement may have material consequences for investors ([9]). Reference [22] use rating data from six agencies to explore how ESG rating disagreement affects the Chinese capital market. They find that ESG rating disagreement has a significant negative impact on stock returns. Mechanism analysis indicates that ESG rating disagreement can lead to decreased investor sentiment and, subsequently, a decline in stock returns. Similarly, Reference [14] explore the relationship between ESG rating divergence and stock price crash risk in Chinese listed companies. Their study confirms that higher ESG ratings reduce the likelihood of stock price crashes, but discrepancies among rating agencies weaken this protective effect. They emphasize the need for harmonized ESG assessment methodologies and standardized corporate ESG disclosures to enhance financial market stability. In contrast, Brandon et al. (2021) investigate the implications of ESG rating divergence in a sample of S&P 500 firms between 2010 and 2017, using ratings from seven different data providers. Their research reveals a positive correlation between ESG rating divergence and stock returns, suggesting that companies with greater rating discrepancies experience risk premiums. Notably, this relationship is primarily driven by differences in environmental ratings, highlighting the need for greater consistency in ESG evaluation criteria. These findings underscore the importance of improving ESG rating standardization to enhance market efficiency and investor confidence.

In addition, ESG rating disagreement affects corporate decisions and activities. For example, Reference [12] find that ESG rating disagreement discourages corporate innovation, as firms facing conflicting ESG assessments experience heightened financing constraints and reduced human capital investment. Furthermore, Reference [8] demonstrate that ESG rating divergence exacerbates green innovation bubbles, particularly in Chinese A-share listed firms between 2015 and 2021. These findings underscore the importance of understanding the mechanisms driving ESG rating disagreement and its broader economic implications. In contrast, Reference [10], based on a sample of Chinese A-share listed companies from 2010 to 2020, find that ESG divergence motivates firms to engage in green innovation patent applications. This effect is particularly pronounced in large-scale enterprises, firms receiving substantial government subsidies, and companies with significant agency problems. Their research suggests that ESG differentiation leads to more noticeable green innovation behaviors, often characterized by an increase in patent quantity rather than improvements in quality. These findings again underscore the need for greater standardization in ESG rating methodologies to mitigate unintended consequences, such as inefficient capital allocation and innovation distortions.

Despite the growing attention to ESG rating divergence, research in this area remains insufficient, leaving many gaps in understanding its broader implications. One major challenge is the absence of a universally accepted method for measuring ESG rating disagreement. The most common approach involves calculating the standard deviation of ESG scores across multiple agencies, yet this method is not standardized. Differences in the selection of rating agencies, data sources, and measurement techniques significantly influence empirical outcomes, resulting in inconsistencies in findings and interpretations.

Current studies rely on various ESG datasets to construct measures of rating disagreement. For instance, Reference [7] utilize ESG data from the CSMAR and CNRDS databases, while Reference [13] base their analyses on HuaZheng data. In contrast, Kotsantonis et al. (2016) employ ratings from Bloomberg and MSCI. These variations in data sources introduce discrepancies in empirical findings, as different rating providers use issuer-specific methodologies, weightings, and criteria in their assessments. Consequently, the significance of explanatory variables varies depending on the model specifications and rating sources used, making it difficult to draw robust and generalizable conclusions. Given that ESG assessments play a crucial role in capital allocation, regulatory frameworks, and corporate sustainability strategies, developing a comprehensive and standardized framework for analyzing ESG rating disagreement is imperative.

This study aims to propose a general framework and systematically examine ESG rating disagreement among Chinese firms by utilizing data from five major ESG rating providers, HuaZheng, HeXun, RunLing, Bloomberg, and CNRDS which cover the sample period 2010–2019. We construct three distinct measures of ESG rating disagreement using five ESG ratings and assess the factors contributing to rating divergence across different model specifications.

Our contribution to literature is twofold. First, rather than relying on a single method to measure rating disagreement, we propose a general framework to calculate multiple measures of ESG rating discrepancies using a fixed set of ratings, providing a more robust and comprehensive examination of the determinants of these discrepancies. By incorporating this methodological approach, we mitigate potential biases associated with any single measurement, ensuring a more reliable analysis. Second, we confirm existing findings while identifying explanatory variables that exhibit greater consistency across different model specifications, reinforcing their

significance as key drivers of ESG rating disagreements. Our results strengthen the robustness of prior research and offer deeper insights into the persistent factors underlying ESG rating inconsistencies, contributing to a more refined understanding of the structural and methodological drivers behind these divergences. This also provides valuable recommendations for regulators, investors, stakeholders, and policymakers seeking to enhance the reliability and comparability of ESG assessments.

The remaining sections of this paper are organized as follows. Section 2 describes the data, the construction of relevant variables, and provides summary statistics. Results of empirical analyses are presented in Section 3. Section 4 concludesYour paper will be part of the journals therefore we ask that authors follow the guidelines explained in this example, in order to achieve the highest quality possible.

Data and Methodology

We collect ESG ratings for China A-Share listed firms from five major ESG rating providers: HuaZheng, HeXun, RunLing, Bloomberg, and CNRDS. These sources represent a mix of domestic and international rating agencies, each employing unique methodologies, weightings, and evaluation criteria. The diversity in these rating sources enables a comprehensive analysis of ESG rating disagreement, capturing variations in assessments across different market contexts.

HuaZheng ESG Rating is issued by the HuaZheng ESG Rating System, developed by Shanghai Huazheng Index Information Services. It is designed to assess the Environmental, Social, and Governance (ESG) performance of companies listed on China's A-share market and investable Hong Kong-listed companies. As one of the most widely used ESG ratings in Chinese financial research, it is frequently referenced in the literature [13].

HeXun ESG Rating is provided by Hexun Network, covering a broad range of enterprises across various sectors. HeXun employs a comprehensive data dimension and indicator system, incorporating quantitative analysis of corporate performance in environmental, social, and governance aspects. The rating is derived from financial, environmental, and social data, processed through professional statistical models and analytical methods. HeXun ESG ratings are commonly utilized in academic research [13], particularly for their detailed and structured assessment approach.

RunLing ESG Ratings are issued by RunLing Global Responsibility Ratings (RKS). The agency evaluates key issues within the E, S, and G dimensions, assessing companies from management planning to performance outcomes. RunLing also integrates sustainable development goals (SDGs) into its evaluations, offering a forward-looking perspective on corporate sustainability. Its rating methodology primarily relies on publicly disclosed corporate information and voluntary ESG reporting. Recent studies, such as [23], have employed RunLing ESG ratings to analyze corporate sustainability trends.

Bloomberg ESG Ratings are provided by Bloomberg, a globally recognized financial and business intelligence firm. Bloomberg's ESG database covers over 16,000 companies in more than 100 countries, categorizing ESG performance into 2,000 domains. The rating framework structures E, S, and G factors into specific thematic areas, with corporate governance assessments including aspects such as board composition, diversity, and tenure. Bloomberg relies primarily on publicly available corporate disclosures, ensuring high analytical transparency. ESG scores are computed using a weighted aggregation of theme-level scores, resulting in a final ESG score ranging from 0 to 100. The Bloomberg ESG dataset is widely cited in ESG research (e.g., Kotsantonis et al., 2016).

CNRDS ESG Ratings are collected from Chinese Research Data Services Platform. They are developed based on ISO 26000, GRI Standards, SASB Standards, and other international ESG disclosure frameworks. The CNRDS ESG rating system integrates China's ESG information disclosure policies with global standards, providing a China-specific ESG evaluation framework. Covering all A-share listed companies, CNRDS presents annual ESG scores and rankings dating back to 2007. This dataset is widely used to study ESG-related impacts on corporate resilience and operational stability (e.g., Feng et al., 2022). The integration of international and Chinese-specific ESG criteria makes CNRDS a valuable resource for analyzing ESG rating divergence within China's regulatory and corporate environment.

We report the summary statistics of the five ESG ratings in Panel A of Table 1. The HuaZheng ESG rating has an average of 72.6 with a standard deviation of 5.56. The lowest rating in our sample is 41.19, while the highest rating reaches 92.93, indicating a relatively high overall ESG score distribution for firms covered by HuaZheng. The HeXun ESG rating shows a significantly lower mean of 25.11 with a standard deviation of 17.72. Its range is much wider, with a minimum of -18.45 and a maximum of 90.87, suggesting greater variability in ESG assessments.

For the Bloomberg ESG rating, the mean is 26.03, with a standard deviation of 8.02, and values ranging from 7.85 to 65.78. The RunLing ESG rating presents a mean of 39.78, a standard deviation of 12.35, and values spanning from 13.33 to 89.00. Lastly, the CNRDS ESG rating has a mean of 24.47, a standard deviation of 10.05, with scores ranging from 1.05 to 74.66. These descriptive statistics highlight substantial differences across ESG rating providers, reflecting variations in assessment methodologies, weightings, and underlying evaluation criteria.

The five ESG ratings utilized in this study exhibit significant differences in coverage, reflecting variations in data availability, market focus, and rating methodologies. RunLing provides the smallest coverage, with only 5,499 year-observations, suggesting that its dataset is more selective or targeted towards specific firms. In contrast, Bloomberg covers 8,382 year-observations, offering broader coverage, particularly for multinational corporations. Among the Chinese rating agencies, HuaZheng includes 18,378 year-observations, while HeXun (18,492) and CNRDS (18,490) provide the most extensive coverage, nearly encompassing all A-share listed firms in China. The larger dataset sizes of HuaZheng, HeXun, and CNRDS suggest a stronger domestic focus, whereas Bloomberg and RunLing, with fewer observations, may either prioritize quality over quantity or impose stricter selection criteria in their ESG assessments. These differences in data coverage further contribute to ESG rating disagreement, as firms included in one dataset may not be assessed in another, leading to potential biases in empirical findings.

To further investigate ESG rating disagreement, we examine the pairwise correlations between these five ESG ratings, reported in Panel B of Table 1. The results confirm the existence of significant ESG rating divergence, as evidenced by the generally low correlations among different rating providers.

Panel A

Variable	Obs	Mean	Std. Dev.	Min	Max
ESG_HuaZheng	18378	72.6	5.56	41.19	92.93
ESG_HeXun	18492	25.11	17.72	-18.45	90.87
ESG_Bloomberg	8382	26.03	8.02	7.85	65.78
ESG_RunLing	5499	39.78	12.35	13.33	89.00
ESG_CNRDS	18490	24.47	10.05	1.05	74.66

Panel B

Variable	ESG_HuaZheng	ESG_HeXun	ESG_Bloomberg	ESG_RunLing	ESG_CNRDS
ESG_HuaZheng	1.00				
ESG_HeXun	0.09	1.00			
ESG_Bloomberg	0.12	-0.34	1.00		
ESG_RunLing	0.17	-0.11	0.60	1.00	
ESG_CNRDS	0.04	-0.11	0.21	0.18	1.00

Table 1: Summary Statistics of ESG Ratings and Correlations

The highest correlation is between Bloomberg and RunLing (0.60), suggesting some level of alignment between these two agencies, possibly due to similar rating methodologies or overlapping evaluation criteria. However, this correlation remains moderate, indicating differences in ESG score assessments even between the most closely related rating providers. On the other hand, the lowest correlation is between CNRDS and HuaZheng (0.04), implying almost no systematic relationship between their ESG assessments. The correlation between HeXun and Bloomberg is negative (-0.34), further underscoring the lack of consistency in ESG ratings across different agencies.

Overall, the low correlation coefficients across rating providers confirm the existence of significant ESG rating disagreements, which can be attributed to differences in data sources, scoring methodologies, weighting mechanisms, and firm-specific evaluation criteria. These inconsistencies reinforce the importance of developing a standardized ESG rating framework to improve comparability and reliability in ESG assessments.

Following the literature, we use the standard deviation among different ESG ratings as a proxy for ESG rating disagreement. This approach quantifies the extent of divergence in ESG assessments across rating agencies, capturing the inconsistencies that arise due to differences in methodologies, weighting schemes, and evaluation criteria. To ensure a comprehensive measurement that best utilizes the existing ratings, we construct three different standard deviation-based measures of ESG rating disagreement, each incorporating a varying number of ratings based on their coverage.

Disagreement 3: This measure includes the three ESG ratings with the highest coverage: HuaZheng, HeXun, and CNRDS. Since these ratings provide the largest dataset, selecting them ensures maximum sample size while capturing a substantial degree of rating disagreement. The standard deviation of these three ratings is used to represent ESG rating divergence among the most widely available ratings.

Disagreement 4: To provide a more expansive perspective, this measure incorporates four ESG ratings: HuaZheng, HeXun, CNRDS, and Bloomberg. By including Bloomberg, a globally recognized ESG rating provider, this measure balances domestic and international rating methodologies, allowing for a broader evaluation of rating inconsistencies. The standard deviation of these four ratings reflects disagreement across a more diverse set of ESG assessments with a moderate coverage of sample firms.

Disagreement 5: This measure includes all five ESG ratings: HuaZheng, HeXun, CNRDS, Bloomberg, and RunLing, offering the most comprehensive assessment of ESG rating divergence. However, since RunLing has the lowest coverage, this measure also has the smallest sample size, as it only considers firms that have ESG ratings from all five agencies. Despite this limitation, Disagreement 5 provides the most complete representation of ESG rating disagreement, capturing variations across the full spectrum of rating providers.

By constructing these three measures, we propose to examine ESG rating disagreement using a fix set of ratings from multiple perspectives, balancing sample size and comprehensiveness. Comparing results across Disagreement 3, Disagreement 4, and Disagreement 5 allows us to assess and identify how widely accepted explanatory variables affects the magnitude and significance of ESG rating divergence, contributing to a more nuanced understanding of the inconsistencies inherent in ESG evaluations.

We obtained firm fundamental variables from the China Stock Market & Accounting Research (CSMAR) database, a widely used source for financial and accounting data on Chinese A-Share listed companies. Following the sample selection criteria established by Fan et al. (2024), we apply the following filtering steps to ensure data consistency and reliability: 1. Exclusion of Special Treatment (ST and ST) Companies: Firms classified as *ST or ST by Chinese stock exchanges due to financial distress or operational risks are removed, as their financial conditions may introduce bias and instability into the analysis; 2. Exclusion of Financial Industry Firms: Listed companies in the financial sector (e.g., banks, insurance firms, and securities companies) are excluded, as their financial structures and ESG considerations differ significantly from those of non-financial firms; 3. Exclusion of Delisted and Bankrupt Firms: We remove companies that have gone bankrupt or been delisted, ensuring that our dataset only includes active and operational firms.

After applying these selection criteria, we obtain a final dataset consisting of 18,370 firm-year observations spanning a 10-year period. This refined dataset allows us to conduct a systematic and reliable investigation into identifying key financial factors that may impact ESG rating disagreement. We describe our rating disagreement variables in Table 2.

Variable Name	Calculation and Definition of Variables
ESG_HuaZheng	HuaZheng ESG rating
ESG_HeXun	Hexun ESG rating
ESG_Bloomberg	Bloomberg ESG rating
ESG_RunLing	RunLing ESG rating
ESG_CNRDS	CNRDS ESG rating
Disagreement 5	Standard deviation of ESG Ratings from Five Different Rating Agencies
Disagreement 4	Standard deviation of ESG Ratings from Four Different Rating Agencies
Disagreement 3	Standard deviation of ESG Ratings from Three Different Rating Agencies
FEx	Number of female executives
FDir	The number of female directors
BoardSize	Board Size measured as natural logarithm of total number of directors
MngSize	Managerial size measured as the natural logarithm of the total number of executive managers
BoardMeet	Board Meeting measured as natural logarithm of board meetings per year
H10	Herfindahl index for ownership by top-10 shareholders
T10	Percentage of ownership by top-10 shareholders
ROE	Return on equity (= Net Income/Total Equity)
BoardOwnership	Percentage of directors holding shares
Age	Listing age of firm
FirmSize	Firm size measured as the natural logarithm of total assets (TA)
Lev	Leverage ratio (=total debts/ total assets)
Patent	The number of patent

Table 2: Definition of Explanatory Variable

To examine the determinants of ESG rating disagreement, we employ a panel regression model as specified below:

$$ESG\ Disagreement = \beta_0 + \beta_1 StateOwnership_{i,t} + \beta_2 FExec_{i,t} + \beta_3 FDir_{i,t} \\ + \beta_4 ROE_{i,t} + \beta_5 Age_{i,t} + \beta_6 FirmSize_{i,t} + \beta_7 Lev_{i,t} + \beta_8 T10_{i,t} \\ + \beta_9 H10_{i,t} + \beta_{10} BoardSize_{i,t} + \beta_{11} MngSize_{i,t} + \beta_{12} BoardOwnership_{i,t} \\ + \beta_{13} Patent_{i,t} + \beta_{14} BoardMeet_{i,t} + year_t + ind_i + \varepsilon_{i,t}$$

where i represents firms and t represents years. $year_t$ and ind_i denote year fixed effects and industry fixed effects, respectively, while $\varepsilon_{i,t}$ represents the error term. The dependent variable, ESG Disagreement, captures ESG

rating divergence and is measured using three distinct standard deviation-based proxies: Disagreement 3, Disagreement 4, and Disagreement 5.

To examine the determinants of ESG rating disagreement, we incorporate a set of explanatory variables based on prior literature. State Ownership is a binary variable indicating whether a company is state-owned, as government-affiliated firms may have different ESG disclosure practices. Gender diversity in corporate leadership is captured through FExec, representing the number of female executives and FDir, which is the number of female directors. Financial performance and firm characteristics are controlled for using ROE (Return on Equity), Age (firm listing age), FirmSize (natural logarithm of total assets), and Lev (Leverage Ratio), which measures financial leverage. Ownership concentration is assessed through T10, the percentage of ownership by the top 10 shareholders, and H10, the Herfindahl Index for ownership concentration. Governance structures are represented by BoardSize, the natural logarithm of the total number of directors, MngSize, the natural logarithm of the total number of executive managers, and BoardOwnership, the percentage of directors holding shares. Additionally, Patent serves as a measure of a firm's innovation capacity, while BoardMeet (BM), the natural logarithm of the number of board meetings per year, reflects corporate governance oversight. Together, these variables provide a comprehensive framework for analyzing ESG rating disagreement and its potential drivers. We provide the summary statistics of firm fundamental variables in Table 3.

Variable	Obs	Mean	Std.Dev.	Min	Max
Disagreement 5	5110	21.12	2.74	6.96	32.39
Disagreement 4	8358	22.55	2.98	7.63	34.90
Disagreement 3	18370	24.12	3.72	2.07	39.02
StateOwnership	18370	0.50	0.50	0.00	1.00
FExec	18370	0.93	0.99	0.00	8.00
FDir	18370	1.15	1.07	0.00	7.00
ROE	18370	0.08	6.20	-192.98	713.20
FirmSize	18370	22.29	1.40	13.08	28.64
MngSize	18370	1.80	0.38	0.00	3.69
BoardSize	18370	2.16	0.20	0.69	2.89
BoardMeet	18370	9.83	4.28	0.00	58.00
BoardOwnership	18370	0.21	0.22	0.00	1.13
H10	18370	0.16	0.12	0.00	0.81
T10	18370	56.32	15.27	1.31	98.59
Lev	18370	0.48	0.60	-0.19	31.47
Age	18370	17.31	5.77	0.00	43.00
Patent	18370	195.12	1270.54	0.00	51636.00

Table 3: Summary Statistics of Variables

Empirical Results

We report our empirical findings in Table 4. In the column Disagreement 3, we find the following significant relationships between firm characteristics and ESG rating disagreement. State ownership exhibits a significant positive correlation, suggesting that state-owned enterprises (SOEs) are more likely to experience ESG rating inconsistencies. This finding is consistent with the findings by [15]. State-owned enterprises (SOEs) have higher ESG rating disagreement because domestic rating agencies incorporate "implicit" social responsibilities assumed by SOEs into their ESG evaluations, while foreign agencies do not recognize these responsibilities as highly. Additionally, foreign rating agencies place greater emphasis on whether enterprises disclose ESG information according to international standards, leading to lower ratings for SOEs that do not fully align with these requirements.

	Disagreement 3	Disagreement 4	Disagreement 5
StateOwnership	0.676***	0.727***	0.357
	（3.72）	(3.37)	（1.24）
FExec	0.078*	0.055	0.111*
	(1.82)	(1.07)	（1.74）
FD	-0.023	-0.041	-0.097*
	(-0.66)	(-1.01)	（-1.90）
ROE	-0.006	-0.031**	-0.019
	(-1.29)	(-1.97)	（-0.83）
Age	0.068	-0.028	-0.095***
	(0.34)	(-0.01)	（-4.20）
FirmSize	-0.520***	-0.311***	-0.693***
	(-8.75)	(-3.96)	（-5.19）
Lev	0.431***	0.849***	1.997***
	(4.66)	(3.40)	（4.29）
T10	-0.023***	-0.009**	-0.006
	(-6.12)	(-2.02)	（-0.88）
H10	-0.698	-1.543**	-0.640
	(-1.19)	（-2.35）	（-0.73）
BoardSize	-0.470**	-0.623**	-0.445
	(-2.00)	（-2.32）	（-1.34）
MngSize	-0.057	-0.339***	-0.538***
	(-0.51)	（-2.66）	（-3.18）
BoardOwnership	-0.688***	-0.95	-0.033
	(-3.18)	（-1.13）	（-0.1）
Patent	0.0003***	0.00008**	0.0001***
	(6.79)	（2.52）	（3.20）
BoardMeet	-0.018**	-0.009	0.003
	(-2.28)	（-1.08）	(0.27)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	17750	8217	5057

***p<0.01", "**p<0.05", "*p<0.10

Table 4: Regression Results

Profitability measures like return on equity (ROE) show a significant negative correlation with ESG rating disagreement, indicating that more profitable firms tend to have lower ESG rating discrepancies. This is likely because companies with higher profitability have stronger governance and more comprehensive ESG reporting mechanisms, reducing the likelihood of inconsistencies across rating agencies.

We find Firm size as a strongly significant determinant, displaying a consistent negative correlation with ESG rating disagreement. Larger firms tend to have better disclosure practices, more resources dedicated to ESG initiatives, and greater regulatory scrutiny, all of which contribute to reducing inconsistencies in ESG ratings. This finding is consistent with literature ([1], [4], [21]). Similarly, leverage (Lev) exhibits a significant positive correlation, meaning that highly leveraged firms face greater ESG rating divergence. Consistent with literature ([5], [16]), this suggests that rating agencies weigh financial risk differently, with some incorporating it as a critical ESG factor while others focus more on environmental and social components, leading to variations in scores.

Ownership concentration also plays a role in ESG rating disagreement ([17], [20]). T10 (ownership concentration of the top 10 shareholders) is significantly negatively correlated, implying that firms with higher ownership concentration experience lower ESG rating divergence. Large shareholders typically have a greater influence over corporate governance and ESG strategy, ensuring more stable ESG performance and reducing discrepancies in assessments. Furthermore, board size shows a significant negative correlation, suggesting that larger boards contribute to lower ESG rating disagreements. A more extensive board structure and enhanced corporate governance enables more thorough discussions and balanced decision-making in ESG strategy formulation, reducing the likelihood of one-sided approaches that could lead to rating inconsistencies.

We also find that board size, board ownership, and the number of board meetings exhibit a significant negative correlation with ESG rating disagreement, meaning that as these governance factors increase, ESG rating divergence decreases. This suggests that stronger board structures contribute to more consistent ESG evaluations across rating agencies. A larger board allows for more diverse expertise and perspectives in ESG decision-making,

leading to better oversight and more balanced ESG strategies. This reduces the likelihood of biased or one-sided ESG initiatives that could cause discrepancies in ratings. Similarly, higher board ownership means that directors have a greater financial stake in the company's long-term success, aligning their interests with sustainable business practices. This incentivizes more stable and well-structured ESG policies, which in turn lead to greater agreement among ESG rating agencies. Finally, a higher frequency of board meetings ensures that ESG issues are regularly discussed and integrated into corporate strategy, promoting continuous monitoring and refinement of ESG practices. More frequent discussions lead to greater transparency and alignment with ESG goals, thereby minimizing rating inconsistencies across different agencies.

Lastly, we find corporate innovation as proxied by patent count has a significant positive correlation with ESG rating disagreement, indicating that firms with higher patent counts tend to experience greater divergence in ESG ratings across different agencies. This suggests that though innovation is generally viewed as a positive factor in corporate sustainability, its impact on ESG assessments is not uniformly interpreted by rating agencies. One possible explanation is that domestic and foreign ESG rating agencies weigh innovation differently in their assessment frameworks. Domestic rating agencies may view a high number of patents, particularly in strategic industries, as an indicator of a firm's long-term growth potential and commitment to technological advancement, leading to higher ESG scores. In contrast, foreign rating agencies might focus more on the practical implementation and environmental or social impact of these innovations, rather than simply the number of patents filed. This discrepancy in evaluation criteria results in greater ESG rating divergence.

As the measurement framework shifts to Disagreement 4 and Disagreement 5, the explanation powers and significances among different variables start to vary. This is consistent with our expectation that model specifications and the measures of ESG rating disagreements impact the empirical results. For example, State Ownership loses its significance, highlighting that its impact on ESG rating disagreement is not stable across different rating settings. This suggests that the relationship between state ownership and ESG disagreement is context-dependent, and its significance diminishes when additional ESG rating sources are considered. Similarly, ROE, which was significant under Disagreement 3, becomes insignificant, reinforcing the idea that profitability only plays a role in certain ESG rating disagreement contexts.

However, Firm size continues to demonstrate a strong and significant negative correlation with ESG rating disagreement, confirming that larger firms consistently experience lower rating divergence due to their greater transparency, structured ESG reporting, and regulatory oversight, which help align assessments across rating agencies. In contrast, leverage remains significantly positively correlated, indicating that firms with higher financial risk face greater ESG rating divergence, as rating agencies assign varying weights to debt levels when evaluating ESG performance, leading to inconsistencies. Additionally, patent activity exhibits a significant positive correlation with ESG rating disagreement, suggesting that firms with higher innovation intensity experience greater discrepancies in ESG assessments, likely because domestic and foreign rating agencies differ in their evaluation of patents as a sustainability indicator—some viewing it as a signal of long-term value creation, while others emphasize its practical environmental and social impact.

Interestingly, H10 (Herfindahl Index of ownership concentration) becomes significantly negatively correlated under Disagreement 4. This implies that firms with greater ownership disparity among the top ten shareholders tend to experience lower ESG rating discrepancies. When major shareholders hold dominant stakes, they are more likely to impose stricter ESG standards and enforce a unified strategy, reducing inconsistencies in ESG scores.

Corporate governance factors now play a marginal role. Board size remains significantly negatively correlated under Disagreement 4, while the rest are statistically insignificant. Interestingly, management team size (MngSize) now exhibits a significant negative correlation under both Disagreement 4 and 5, suggesting that firms with larger management teams tend to experience more stable ESG ratings across agencies. This could be due to enhanced coordination and resource allocation for ESG initiatives, reducing the variability in ESG performance evaluations.

Our findings illustrate that the significance of explanatory variables varies across different ESG rating disagreement measures, emphasizing the importance of our proposed methodology using a fixed set of ratings to identify consistently significant factors. While firm size, leverage, and patent activity remain significant across all specifications, variables such as state ownership, ROE, and governance factors like board size and ownership concentration lose significance as the measurement framework shifts from Disagreement 3 to Disagreement 5. This suggests that certain variables only hold explanatory power in specific ESG rating settings, while others, particularly those related to financial scale and risk, are more robust determinants of ESG rating divergence. The variation in significance highlights the context-dependent nature of ESG rating disagreements, reinforcing the need for a systematic approach that accounts for differences in rating agency methodologies.

By employing a fixed set of ratings and identifying variables that consistently influence ESG disagreement, this study enhances the reliability of empirical findings and provides a stronger foundation for policy recommendations aimed at improving ESG rating standardization and comparability. In Table 5, we summarize the significance of explanatory variables by highlighting significant results in bold under the three ESG rating

disagreement measures, clearly demonstrating which factors consistently drive ESG rating divergence and which ones are sensitive to the choice of rating framework.

	Disagreement 3	Disagreement 4	Disagreement 5
StateOwnership	**pos**	**pos**	pos
FExec	**pos**	pos	**pos**
FDir	neg	neg	**neg**
ROE	neg	**neg**	neg
Age	pos	pos	**neg**
FirmSize	**neg**	**neg**	**neg**
Lev	**pos**	**pos**	**pos**
T10	**neg**	**neg**	neg
H10	neg	**neg**	neg
BoardSize	**neg**	**neg**	neg
MngSize	neg	**neg**	**neg**
BoardOwnership	**neg**	neg	neg
Patent	**pos**	**pos**	**pos**
BoardMeet	**neg**	neg	pos

Table 5: Variable Explanatory Power under Different Disagreement Measures

Conlusions

Our study examines ESG rating disagreement among Chinese A-share listed firms using a comprehensive dataset from five major ESG rating providers. By constructing three measures of ESG rating disagreement based on a fixed set of five different ESG ratings, we systematically analyze the determinants of rating divergence and assess the stability of explanatory variables across different model specifications. Our findings reveal that explanatory variables commonly identified in previous research as significant drivers of ESG rating disagreement are not necessarily robust across all contexts. Instead, their significance often depends on the specific definition of disagreement and the combination of ratings used. In contrast, certain variables, such as firm size, leverage, and innovation activity, exhibit more consistent explanatory power, regardless of the measurement approach.

These results provide important implications for both regulators and market participants. First, we demonstrate that the choice of method for defining ESG rating disagreement can materially influence the empirical results. Different rating combinations yield varying outcomes, underscoring the necessity of maximizing the use of all available ESG ratings to identify the most reliable and stable determinants of disagreement. Relying on a narrow set of ratings may lead to incomplete or biased conclusions.

Second, our findings highlight the inherent instability and limitations of individual ESG ratings. If regulatory bodies aim to enhance the stability and comparability of ESG assessments, increased oversight and standardization of ESG rating methodologies are essential. Uniform disclosure standards, transparent rating criteria, and standardized evaluation frameworks would help reduce discrepancies and promote more consistent ESG evaluations.

Finally, policymakers and researchers should be aware that ESG rating disagreement is both common and complex. There is no single way to measure rating divergence, and different definitions capture different aspects of the inconsistency problem. Future research and regulatory efforts should continue to explore comprehensive frameworks that account for these variations, ensuring more robust analyses and informed policy interventions aimed at fostering a stable and transparent ESG ecosystem.

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