

The Reverse Pressure Effect of ESG Rating Divergence on High-Quality Corporate Development

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Abstract

As ESG concepts become increasingly integrated into China's capital market, the divergence in ESG ratings across different rating agencies has become an increasingly prominent phenomenon. This paper examines the Chinese A-share listed companies from 2012 to 2024 empirically to investigate the influence of the differences in ESG ratings on the excellent development of enterprises (assessed by total factor productivity). The research results show that the differences in ESG ratings can remarkably improve the total factor productivity of the enterprise, exerting a "stimulating effect" instead of a suppressing effect. This conclusion is also confirmed by several robustness tests, such as variable replacement, modification of model specification and instrumental variables method. The heterogeneity analysis indicates that the "stimulating effect" is more obvious in the companies with high analyst coverage, low managerial ownership and a well-structured organization. This study implies that the disagreement in ESG ratings may motivate companies to improve the quality of their development. It gives a new insight into the economic impacts of the differences in ESG ratings and proposes some feasible recommendations for regulators and enterprises.

Keywords

ESG rating divergence, high-quality corporate development, total factor productivity, reverse pressure effect

1. Introduction

During the "14th Five-Year Plan" period, China's economy is in a stage of high-quality development, in which improving total factor productivity (TFP) becomes an important driving force for sustainable corporate growth and competitiveness improvement [1]. At the same time, ESG (Environmental, Social, and Governance) principles, serving as a benchmark for evaluating the sustainability capability of companies, receive more and more attention from regulators, investors and the general public. Under the influence of policies such as the "dual carbon" target and the Guidelines for Sustainable Development Reports of Listed Companies, the ESG evaluation results are gradually incorporated into investment decisions, financing assessments and risk management procedures. However, it is a neglected fact that different rating agencies usually give significantly different assessments of the ESG performance of the same enterprise. This leads to the problem of "ESG rating divergence". Will this divergence ultimately affect the performance of enterprises or will it instead urge them to improve their total factor productivity? This issue is closely related to the effectiveness of the ESG system and the way towards high-quality corporate development, and therefore urgently needs empirical confirmation.

In fact, the differences in ESG ratings are not only technical problems. According to the China ESG Development Report (2023), the average correlation coefficient among the ratings given by major domestic ESG rating agencies to the same listed company is less than 0.6, indicating significant divergence. From the perspective of information economics, the divergence increases the uncertainty of external stakeholders' perception of a company's true ESG level, which may result in negative effects such as investor confusion and higher financing costs [2-4]. It also causes stock prices to be synchronized and decreases the pricing efficiency of the financial market [5, 6]. When enterprises encounter conflicting external evaluations, they may have the motivation to carry out "legitimacy repair" to rebuild market trust by improving governance, enhancing efficiency and strengthening information disclosure. In fact, previous research shows that the differences in ESG ratings can compel companies to increase their green innovation levels [7-9]. It also prompts them to improve the quality of their ESG disclosures and attract analyst attention, thereby reducing their debt financing costs [3]. The differences in ESG ratings may not be just "noise", but rather an external pressure that forces companies to make self-improvements. However, existing research has not sufficiently explored this positive effect; especially, there is still a lack of empirical verification at the level of the core production efficiency of the enterprises.

A review of the existing literature reveals that scholarly research on divergences in ESG ratings primarily focuses on two directions: First, the causes of divergence—such as differences among rating agencies regarding the scope of evaluation, measurement methodologies, and the assignment of weights. [10, 11] Insufficient Standardization and Transparency in Corporate ESG Information Disclosure[2, 12]. The negative economic consequences of divergence—such as increased stock price synchronicity and reduced capital market information efficiency. [5, 6] Raises debt financing costs [2, 4] and triggers a reduction in holdings by institutional investors [13], It weakens an enterprise's bargaining power within its supply chain and the stability of its customer base [14, 15], and may even stifle its continuous innovation and green collaborative innovation [16, 17]. The aforementioned studies generally view disagreement as an "external burden." Scant literature explores whether divergence might compel enterprises to take substantive action to enhance the quality of their development. Although some studies have identified the positive incentive effect of ESG rating divergence on green innovation [7-9], no research has directly examined the causal relationship between ESG rating divergence and the total factor productivity of listed companies, which is widely regarded as the core indicator of high-quality corporate development. This theoretical gap provides important research space for the present study.

To solve the above problems, this paper takes Chinese A-share listed companies from 2012 to 2024 as the research objects to empirically investigate the impact of the difference in ESG ratings on the total factor productivity of the firms. It also examines the heterogeneity of this effect under different external supervisory environments, internal governance structures and the corporate life-cycle stages. The results indicate that: (1) The difference in ESG ratings can improve the total factor productivity of the firms. The coefficient of ESG_rank in the basic regression is 0.076 (with a significant level of 1%). This means that an increase of one standard deviation in the difference will lead to an approximately 0.014 standard deviation increase in the TFP of the firm, showing a "forcing effect". (2) The conclusions remain valid after the robustness tests, such as replacing the dependent variable with the TFP calculated by the OP method and replacing the independent variable with the rank difference. (3) The analysis of heterogeneity shows that this "forcing effect" is more obvious in the firms with high analyst coverage, low managerial ownership and mature corporate stage. The results obtained through instrumental variable method have the same direction and support the robustness of the basic conclusions.

The main contributions of this paper are mainly reflected in three aspects. From a theoretical perspective, this study expands the previous understanding that 'the disagreement in ESG ratings is completely negative'. By considering its economic effects from the positive side of 'encouraging enterprises to achieve high-quality development', this research enriches the literature about the informational value of ESG ratings. In terms of mechanism identification, heterogeneity was examined from three aspects: analyst attention, management shareholding ratio and company age. It reveals the conditions under which the differences in ratings exert their effects on external supervision, internal governance and organizational abilities. It provides empirical evidence to understand the context dependence of the reverse-forcing mechanism. From a practical standpoint, this research offers strategic advice to enterprises on how to handle the differences in ESG ratings, especially suggesting that they should actively transform external pressure into improvement of internal efficiency. At

the same time, it provides some policy recommendations for regulatory authorities to regulate the ESG rating market and prevent 'bad ratings pushing out good ones'.

2. Theoretical Mechanisms and Research Hypotheses

2.1 ESG Rating Divergence and High-Quality Corporate Development

Several rating agencies evaluate the environmental, social and governance performance of the same company differently. From the viewpoint of information economics, these differences cause more uncertainty for the external stakeholders about the actual ESG level of the company, which may result in negative effects like investor confusion and higher financial costs. Based on the concept of legitimacy, if a company considers that some important external resources providers (such as investors, creditors and regulators) doubt its legitimacy, it will take 'legitimacy repair' measures to maintain or restore the social legitimacy of the organization [18]. The inconsistency in ESG ratings acts as an 'unfavorable signal', thus increasing the legitimacy pressure faced by the companies, leading them to adopt effective improvement strategies.

Specifically, the difference in ESG ratings can improve the corporate total factor productivity through the following three ways:

Firstly, the impact of strengthened external supervision. The differences in ratings will attract more attention from analysts, the media and regulators. Studies show that the differences in ESG ratings can increase the attention of analysts and the media, forcing enterprises to participate in green innovative activities [7, 8]. In order to eliminate the differences and resolve market doubts, companies have the motivation to provide more detailed information about their ESG practices and internal management procedures. This 'forced disclosure' is usually accompanied by the standardization of the process and the improvement of resource utilization efficiency, contributing to the growth of TFP.

Secondly, the effect of incentives and constraints on managers. When the management's ownership is low and the alignment with shareholders' interests is insufficient, the rating difference can serve as a 'warning signal' prompting board intervention or shareholder activism, thereby correcting the inefficient decisions and guiding the allocation of resources to profitable projects. Previous research has found that the management's shareholding has a negative moderating effect on the relationship between the ESG rating difference and the company's behavior. A lower management ownership strengthens the external governance role of the rating difference [19]. This mechanism is especially important in companies encountering serious management conflicts of interest.

Lastly, the effect of resource redistribution. The rating difference makes it harder or more expensive for companies to obtain funds in the capital market, thus worsening the financing constraints of the company [2, 20, 21]. This compels the companies to reconsider their internal resource allocation and reduce unnecessary and inefficient expenditures. Redirecting investments to fields which can significantly enhance productivity, such as green technological innovation [7-9]. This 'effort to improve efficiency under pressure' directly results in the enhancement of TFP.

H1: ESG rating divergence exerts a reverse pressure effect on total factor productivity.

2.2 The Joint Moderating Effects of Analyst Coverage, Managerial Ownership, and Firm Age

The degree to which the above-mentioned reverse coercive effect depends on the external information environment, internal governance structure and its own organizational capacity of the enterprise's operation. This article comprehensively examines its boundary conditions from three dimensions.

The analyst coverage reflects the intensity of the external review faced by the company. High analyst coverage amplifies the market visibility of ESG rating differences. Accelerated the internal transmission of negative signals within the company. The forced pressure has increased. Some studies believe that analyst coverage is the key communication channel for the positive impact of ESG rating differences [7]. On the

contrary, in the case of low attention. Differences may be overwhelmed by information noise, making it difficult to generate effective incentives.

The shareholding ratio of the management measures the degree of consistency between the interests of shareholders and the interests of the management in the internal governance mechanism. When the shareholding ratio is low, the management lacks the motivation to take the initiative to improve productivity. So external rating differences can be used as an alternative governance mechanism. Let the management take action by drawing the attention of the board of directors and investors. Empirical studies shows that management shareholding negatively adjust the relationship between ESG rating differences and high-quality audit demand [19]. The lower the shareholding ratio, the stronger the external governance effect of the difference. When the shareholding ratio is high, the management already has strong incentives. So the marginal effect of divergence is weakened.

Enterprise age is a characteristic of organizational experience, resource accumulation and process maturity. Mature companies have richer management experience, more stable cash flow and more sound internal control system. They are more capable of converting external pressure into improved system efficiency. Studies have found that the negative impact of ESG rating differences on enterprise innovation is more obvious in enterprises in the growth and maturity stage, and not in enterprises in the recession stage[16]. This shows that mature enterprises are more sensitive to the pressure of differentiation. Younger enterprises are constrained by limited resources and lack of management experience, and it is difficult to effectively take advantage of the pressure brought by differences.

Although these three operate through different channels. External supervision, internal governance and organizational ability. But they all have the same basic logic. Under the condition of stronger external supervision, more obvious internal institutional problems, and more mature organizational capacity. The mandatory impact of ESG rating differences is more significant. So this paper incorporates the three into a comprehensive hypothetical framework:

H2: The positive effect of ESG rating divergence on total factor productivity is stronger among firms with higher analyst coverage, lower managerial ownership, and greater firm age.

3. Research Design

3.1 Sample Selection and Data Sources

This paper selects Chinese A-share listed companies from 2012 to 2024 as the research subjects, and, drawing upon existing studies, applies the following screening criteria to the sample: (1) ST and *ST firms are excluded; (2) firms in the financial industry are excluded; (3) firms that have been delisted or suspended from listing are excluded; (4) observations with abnormal or missing values for relevant variables are excluded. Ultimately, a total of 47,883 valid observations were obtained. The ESG rating data in this article comes from the scores published by six rating agencies (China Securities, Wind, SynTao Green Finance, Bloomberg, FTSE Russell, and CNRS). The remaining raw data is sourced from the CSMAR database. In addition, to reduce the potential impact of extreme values on the research results, this paper applies Winsorization to all continuous variables at the 1% and 99% quantiles.

3.2 Variable Definitions

3.2.1 Dependent Variable: Total Factor Productivity (TFP_LP)

Following prior studies [22, 23], this paper adopts firm-level total factor productivity estimated using the LP method as a quantitative indicator of high-quality corporate development. Total factor productivity reflects firms' resource allocation efficiency and technological progress beyond factor inputs and is widely recognized as a key indicator for measuring the level of high-quality corporate development.

3.2.2 Independent Variable: ESG Rating Divergence (ESG_rank)

Following existing literature [24], ESG rating divergence is measured by directly calculating the standard deviation of the rankings assigned by all rating agencies to the same firm in a given year. A larger value

indicates greater inconsistency among rating agencies in evaluating the firm's ESG performance, implying a higher degree of ESG rating divergence.

3.2.3 Control Variables

Drawing on prior studies [24, 25], this paper includes the following control variables: (1) fixed asset ratio (Fixed), used to control for the impact of asset structure on production efficiency; (2) ownership concentration (First), reflecting the governance effect of major shareholders; (3) firm size (Size), controlling for economies of scale; (4) market value (TobinQ), measuring firms' growth opportunities and market valuation; (5) return on assets (Roa), controlling for differences in profitability; (6) leverage ratio (Lev), reflecting firms' financial leverage and risk level; and (7) operating revenue growth rate (Growth), controlling for the influence of firm growth on total factor productivity. Detailed definitions of all variables are presented in Table 1.

Table 1: Definitions and Descriptions of Variables

Variable Type	Variable Name	Variable Definition
Dependent Variable	High-Quality Corporate Development (TFP LP)	Firm-level total factor productivity estimated using the LP method
Independent Variable	ESG Rating Divergence (ESG_rank)	Standard deviation of the rankings assigned by all rating agencies to the firm in a given year
Control Variables	Fixed Asset Ratio (Fixed)	Net fixed assets / total assets
	Ownership Concentration (First)	Shareholding ratio of the largest shareholder
	Firm Size (Size)	Natural logarithm of total assets
	Market Value (TobinQ)	Market value / total assets
	Return on Assets (Roa)	Net profit / total assets
	Leverage Ratio (Lev)	Total liabilities / total assets
	Revenue Growth Rate (Growth)	(Current quarter operating revenue – previous quarter operating revenue) / previous quarter operating revenue

3.3 Model Specification

Based on the above discussion and hypotheses regarding ESG rating divergence and high-quality corporate development, this paper constructs the following model to examine their relationship:

$$TFP_LP_{i,t} = \alpha + \beta_1 ESG_rank_{i,t} + \gamma Controls_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (1)$$

where $TFP_LP_{i,t}$ denotes the total factor productivity of firm i in year t ; $ESG_rank_{i,t}$ represents the degree of ESG rating divergence for firm i in year t ; $Controls_{i,t}$ denotes the set of control variables; μ_i represents firm fixed effects controlling for time-invariant firm characteristics; λ_t denotes year fixed effects controlling for macroeconomic shocks; and $\varepsilon_{i,t}$ is the random error term. Standard errors are clustered at the industry level.

4. Empirical Results

4.1 Descriptive Statistics

As shown in Table 2, the sample consists of 47,883 observations. The mean value of firms' total factor productivity (TFP_LP) is 8.967, with a standard deviation of 1.092, indicating substantial variation in development quality among sample firms. The mean value of ESG rating divergence (ESG_rank) is 0.438, with a standard deviation of 0.193, ranging from a minimum of 0.07 to a maximum of 0.88, suggesting significant heterogeneity in the degree of ESG rating divergence faced by different firms during the sample period. The distributions of the remaining control variables are all within a reasonable range.

Table 2: Descriptive Statistics

	Observations	Mean	Standard Deviation	Minimum	Median	Maximum
TFP_LP	47883	8.967	1.092	6.747	8.857	11.877
ESG_rank	47883	0.438	0.193	0.070	0.425	0.880

Fixed	47883	0.201	0.154	0.002	0.169	0.673
First	47883	3.409	0.478	2.111	3.439	4.313
Size	47883	22.144	1.351	19.274	21.963	26.273
TobinQ	47883	2.003	1.283	0.830	1.588	8.469
Roa	47883	0.034	0.068	-0.275	0.036	0.204
Lev	47883	0.412	0.207	0.053	0.400	0.911
Growth	47883	0.337	0.893	-0.751	0.118	6.098

4.2 Baseline Regression Results

To examine the impact of ESG rating divergence on high-quality corporate development, this paper constructs the following two-way fixed effects model:

$$TFP_{LP_{i,t}} = \alpha + \beta_1 ESG_rank_{i,t} + \gamma Controls_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (2)$$

where μ_i denotes firm fixed effects and λ_t denotes year fixed effects. The regression results are reported in Table 3.

Table 3: Baseline Regression Results

	(1)	(2)
	TFP_LP	TFP_LP
ESG_rank	0.355***	0.076***
	(0.045)	(0.025)
Fixed		-0.799***
		(0.097)
First		-0.033
		(0.024)
Size		0.573***
		(0.012)
TobinQ		0.024***
		(0.003)
Roa		1.900***
		(0.129)
Lev		0.479***
		(0.066)
Growth		-0.009
		(0.010)
Constant	8.822***	-3.866***
	(0.020)	(0.264)
Company	Yes	Yes
Year	Yes	Yes
N	40,099	39,561
R ²	0.878	0.935

*Notes: The standard error of industry-level gathering is reported in parentheses. *, * and *** represent statistical significance at the levels of 10%, 5% and 1% respectively. The same symbol is also applicable below.

Column (1) of Table 3 includes explanatory variables and company/year fixed effects. The coefficient for ESG_rank is 0.355, which is significant at the 1% level. In Column (2), after including all control variables, the coefficient for ESG_rank is 0.076, remaining positive at the 1% level. This result indicates that for every one-standard-deviation increase (0.193) in ESG rating divergence, the firm's total factor productivity increases by approximately 0.0147 (0.076×0.193) on average. Relative to the TFP_LP mean of 8.967, the economic significance is substantial. The benchmark regression results validate the core hypothesis of this paper: ESG rating divergence exerts a significant positive forcing effect on the high-quality development of enterprises.

4.3 Robustness Tests

4.3.1 Replacing the Dependent Variable

To avoid the influence of different TFP estimation methods on the results, this paper replaces TFP_LP estimated using the LP method in the baseline regression with total factor productivity estimated using the OP method (TFP_OP). As shown in Column (1) of Table 4, the coefficient of ESG rating divergence (ESG_rank) is 0.056 and positive at the 5% level, which is consistent with the baseline findings.

4.3.2 Replacing the Independent Variable

Following the measurement approach of prior literature [26], this paper uses the ESG ratings issued by four rating agencies—Huazheng ESG Rating, Wind, SynTao Green Finance, and Bloomberg. Each institution was assigned a rating, and then the standard deviation of the four institutions' ratings was calculated. Construct the ESG rating divergence indicator (ESGdif4) to replace the original explanatory variable in the regression analysis. As shown in Column (2) of Table 4, the coefficient for ESGdif4 is 0.005, which is positive at the 5% level; the conclusion is robust.

4.3.3 Replacing the Independent Variable

In addition to the four existing rating agencies, FTSE Russell's ESG rating has been added. Calculate the standard deviation of the scores from five institutions, construct the ESG rating divergence indicator (ESGdif5), and re-run the regression. As shown in Column (3) of Table 4, the coefficient of ESGdif5 is 0.006, which is positive at the 5% level, further validating the robustness of the benchmark conclusion.

Table 4: Robustness Tests

	(1)	(2)	(3)
	TFP_OP	TFP_LP	TFP_LP
ESG_rank	0.056** (0.027)		
Fixed	-0.818*** (0.092)	-0.800*** (0.097)	-0.800*** (0.097)
First	-0.036 (0.024)	-0.030 (0.024)	-0.030 (0.024)
Size	0.366*** (0.011)	0.576*** (0.013)	0.576*** (0.012)
TobinQ	0.019*** (0.003)	0.024*** (0.003)	0.024*** (0.003)
Roa	1.885*** (0.131)	1.904*** (0.129)	1.904*** (0.129)
Lev	0.393*** (0.064)	0.472*** (0.067)	0.472*** (0.067)
Growth	-0.003 (0.010)	-0.009 (0.010)	-0.009 (0.010)
ESGdif4		0.005** (0.003)	
ESGdif5			0.006** (0.003)
Constant	-1.533*** (0.227)	-3.916*** (0.267)	-3.910*** (0.266)
Company	Yes	Yes	Yes
Year	Yes	Yes	Yes
N	39,561	39,561	39,561
R ²	0.897	0.934	0.934

4.4 Endogeneity Treatment: Instrumental Variable Approach

Considering that the disagreements in ESG ratings may have an inverse causal relationship with high-quality corporate development or be due to endogeneity issues caused by omitted variables. Drawing upon the approach adopted in reference [27], this paper employs ESG fund holdings data as an instrumental variable (IV) for corporate ESG performance. The IV is the percentage of shares held by ESG funds in a company in

that year. The correlation lies in the fact that ESG funds exhibit a preference for firms with consistent ESG performance; the exogeneity stems from the fact that fund holdings primarily exert influence by affecting the divergence in ESG ratings, rather than by directly determining a firm's Total Factor Productivity (TFP). The regression results are presented in Table 5.

Table 5: Instrumental Variable Results

	(1) ESG_rank	(2) TFP_LP
ESG_rank		0.812
		(0.430)
IV	-0.001***	
	(0.000)	
Fixed	-0.027	-0.780***
	(0.017)	(0.094)
First	0.031***	-0.056*
	(0.007)	(0.028)
Size	0.048***	0.539***
	(0.006)	(0.025)
TobinQ	-0.004**	0.028***
	(0.001)	(0.004)
Profitabil~y	0.044	1.871***
	(0.026)	(0.126)
Lev	-0.079***	0.539***
	(0.014)	(0.080)
Growth	-0.003**	-0.006
	(0.001)	(0.010)
Company	Yes	Yes
Year	Yes	Yes
N	39561	39561
F	30.698	417.495

In the first-stage regression, the coefficient of IV was -0.001, which was significant at the 1% level, and the F-statistic was 30.698, which was greater than 10. Rule out the problem of weak instrumental variables. In the second-stage regression, the coefficient of ESG_rank was 0.812, which was significant at the 10% level ($p=0.059$). The direction and magnitude of the coefficients continue to support the benchmark conclusions. ESG rating divergence has a positive impact on TFP_LP. The instrumental variable results further validate the causal robustness of the "forcing effect."

5. Heterogeneity Analysis

5.1 Grouping Based on Analyst Coverage

Research indicates that analysts, as important information intermediaries in capital markets, can mitigate information asymmetry between companies and external investors through their tracking and coverage activities. Exert external supervisory pressure on corporate business practices[28, 29]. When companies face high analyst scrutiny, the negative signals generated by disagreements in ESG ratings are more easily captured and interpreted by market participants. Impose stronger reputation constraints and performance pressure on the management. Management is more motivated to deal with external problems by improving productivity and optimizing resource allocation. Expand the mandatory effect of ESG rating differences. But in companies with less attention from analysts, the information environment is relatively closed. The difference in ESG ratings is difficult to effectively translate into internal decision-making and is unlikely to be convincing. This paper follows the method of existing literature [30], and divides the sample into high-attention group and low-attention group according to the median of analyst attention. The results of the grouped regression are presented in Table 6.

Table 6: Heterogeneity Test: Analyst Coverage

	(1)	(2)
	Low Analyst Coverage	High Analyst Coverage
	TFP LP	TFP LP
ESG_rank	0.029	0.074***
	(0.033)	(0.025)
Fixed	-0.920***	-0.753***
	(0.124)	(0.109)
First	-0.037	-0.014
	(0.041)	(0.025)
Size	0.528***	0.585***
	(0.022)	(0.013)
TobinQ	0.019**	0.024***
	(0.008)	(0.003)
Roa	1.820***	1.821***
	(0.202)	(0.128)
Lev	0.562***	0.404***
	(0.088)	(0.073)
Growth	-0.004	-0.009
	(0.015)	(0.009)
Constant	-2.842***	-4.156***
	(0.485)	(0.301)
Company	Yes	Yes
Year	Yes	Yes
N	11,543	26,989
R ²	0.943	0.942

The results indicate that, in the high-attention group, the coefficient for ESG_rank is 0.074, which is positive at the 1% level. In the low-attention group, the coefficient is 0.029 and not significant. This result validates the aforementioned theoretical expectation: the external monitoring function of analysts serves as a crucial transmission channel through which ESG rating divergence exerts its coercive influence. When analyst coverage is high, the governance-related information embedded in rating divergence is fully disseminated, thereby prompting firms to improve their performance. But when external informational pressure is insufficient, rating divergence struggles to translate into effective governance constraints. Discrepancies in ESG ratings do not directly impact firms; rather, they amplify the effects of external pressure through information intermediaries.

5.2 Grouping Based on Managerial Ownership

Some people think that management shareholding is an important internal governance mechanism. When management holds a considerable proportion of shares, their personal interests are consistent with those of shareholders, which reduces agency costs[31, 32]. The management itself already has a strong motivation to create value. The marginal utility of the additional pressure exerted by external ESG rating differences is low, and the resulting coercive effect may not be significant. In companies with a low shareholding ratio of management, the conflict of interest between management and shareholders is more obvious. The management lacks sufficient intrinsic motivation to improve the long-term value of the enterprise. Differences in ESG ratings can make up for the lack of internal incentives and trigger a defensive response from management. By enhancing production efficiency, the uncertainty associated with external evaluations is reduced, thereby generating a more pronounced "reverse-forcing" effect.

This paper divides the sample into two groups of low-management shareholding and high-management shareholding according to the median of the management shareholding ratio. The regression results are presented in Table 7.

Table 7: Heterogeneity Test: Managerial Ownership

	(1)	(2)
	Low Managerial Ownership	High Managerial Ownership
	TFP LP	TFP LP

ESG_rank	0.100***	0.038
	(0.035)	(0.027)
Fixed	-0.678***	-1.062***
	(0.086)	(0.134)
First	-0.000	-0.084***
	(0.032)	(0.031)
Size	0.552***	0.567***
	(0.019)	(0.016)
TobinQ	0.019***	0.031***
	(0.005)	(0.003)
Roa	2.032***	1.789***
	(0.132)	(0.215)
Lev	0.434***	0.538***
	(0.080)	(0.076)
Growth	-0.001	-0.024**
	(0.011)	(0.009)
Constant	-3.479***	-3.554***
	(0.412)	(0.343)
Company	Yes	Yes
Year	Yes	Yes
N	20,089	19,170
R ²	0.936	0.940

In the low-shareholding group, the coefficient for ESG_rank is 0.100, significant at the 1% level. In the high-holding group, the coefficient is 0.038 and not significant. There exists a substitutive relationship between ESG rating divergence and internal governance structures. When the internal incentive mechanism is weak, the external rating difference can play a "compensation" role, so that the management can improve the company's performance. When the management has gained sufficient incentives through stock holdings, the marginal impact of external differences is limited. This provides new empirical evidence for understanding the differentiated effect of ESG rating differences in different governance environments.

5.3 Grouping Based on Firm Age

The age of the organization reflects the differences in resource accumulation, management experience and adaptability of the organization [33]. Mature enterprises usually have a perfect governance structure and standardized operation process; They possess an exceptional ability to absorb and process information, can turn external pressure into improved internal efficiency [34]. Partners are more likely to trust established companies. Research suggests that when established companies supply used equipment to younger companies, it leads to regional economic prosperity [35]. Domestic scholars have made similar findings. For example, there is an inverted U-shaped relationship between firm age and government subsidies [36], and national innovation systems tend to favor established firms [37]. Mature companies are subject to stricter market oversight and reputational constraints, and are more concerned about discrepancies in external evaluations. Young companies have limited resources. Their organization is undergoing rapid change, and management is placing greater emphasis on market expansion and survival. The response to relatively "indirect" external signals (such as differences in ESG ratings) is weaker; so the "crowding-out effect" is difficult to materialize.

This paper divides firms into young firm and mature firm groups according to the annual industry median of firm age. The regression results are reported in Table 8.

Table 8: Heterogeneity Test: Firm Age

	(1)	(2)
	Young Firm	Mature Firm
	TFP LP	TFP LP
ESG_rank	0.026	0.102***
	(0.029)	(0.034)
Fixed	-1.090***	-0.669***
	(0.149)	(0.082)
First	-0.064**	-0.014

	(0.032)	(0.024)
Size	0.559***	0.576***
	(0.021)	(0.014)
TobinQ	0.025***	0.022***
	(0.004)	(0.006)
Roa	1.944***	1.861***
	(0.201)	(0.128)
Lev	0.538***	0.436***
	(0.076)	(0.072)
Growth	-0.021**	-0.005
	(0.010)	(0.011)
Constant	-3.449***	-3.981***
	(0.450)	(0.311)
Company	Yes	Yes
Year	Yes	Yes
N	17,152	22,409
R ²	0.938	0.926

The results shows that in mature companies, the ESG_rank coefficient is 0.102 and is statistically significant at the 1% level. For young enterprises, the coefficient is 0.026, which is not statistically significant. This suggests that the positive spillover effects of ESG rating differences do not apply to all companies, it depends on their “absorption capacity.” Mature companies rely on robust governance structures and substantial resources. More effectively transform external pressures into a driving force for high-quality development. Due to their limited capabilities, young companies are unable to derive similar incentives from rating divergences. If a company relies solely on differences in ESG ratings to drive high-quality corporate development. That may need to be supplemented by capacity-building efforts within the company. Otherwise, the expected “compulsory effect” may be absent among young companies that are most in need of improvement.

6. Conclusions and Policy Implications

This article is based on data from Chinese A-share listed companies from 2012 to 2024. This study systematically examined the impact of ESG rating divergence on the high-quality development of enterprises; the main findings are as follows: (1) Discrepancies in ESG ratings are not merely “informational noise,” rather, it serves as a key catalyst for driving improvements in total factor productivity. Even after addressing endogeneity, using proxy variables, and modifying the model specifications. The “compulsion effect” is also strong. And this confirms the core hypothesis of the “compulsion mechanism.” (2) From the perspective of the external oversight environment, the visibility of rating discrepancies is greater among companies that are closely monitored by analysts. Greater external oversight pressure has amplified the enforcement effect. High analyst coverage can amplify the positive incentive effect of divergent views. (3) From the perspective of internal governance structure, agency problems are more pronounced when management holds a low percentage of shares. Different external ratings can serve as a substitute for internal governance mechanisms and create more positive incentives. On the contrary, a high degree of managerial ownership mitigates the marginal effects of disagreements. (4) In terms of the company's maturity, mature companies have better management expertise, cash flow, and internal control systems. They can better channel external pressure into improvements in system efficiency. Young companies are constrained by limited resources and a lack of management experience. Struggling to effectively harness the pressure created by disagreements. This reveals the fundamental logic behind how differences in ESG ratings drive the high-quality development of enterprises through three distinct channels. “strengthened external oversight—management incentives and constraints—resource reallocation.”

So this paper proposes the following policy recommendations: (1) Regulatory authorities should objectively recognize the “double-edged sword” effect of differences in ESG ratings; While making ratings and disclosures more standardized, they do not need to go to great lengths to eliminate all these differences. Appropriate “constructive disagreement” can create a mechanism for external pressure. Encourage companies to actively improve their governance and efficiency. A mechanism for monitoring and issuing early warnings regarding

credit rating discrepancies could be established, with preferential policies offered to companies that show significant but sustained improvement in their credit ratings. (2) Investors should pay attention to the various signals conveyed by ESG ratings and use them as supplementary indicators for assessing corporate governance risks and future sustainability potential. Actively engage with management through channels such as shareholder meetings and investor engagement platforms to drive improvements in the company's ESG performance and operational efficiency. For companies that are controversial but fundamentally sound, they may be viewed as potential "value pockets." (3) Companies should recognize the value of the external pressure inherent in rating divergences. Use rating feedback to identify gaps in environmental, social, and governance (ESG) performance. Transform external pressures into an endogenous driver for improving total factor productivity. Established companies can leverage their organizational capabilities to be the first to improve efficiency. Young companies should establish an ESG management system in phases to lay the groundwork for better development.

This study also has some limitations and suggests directions for future research. (1) Differences in ESG ratings are primarily measured using the standard deviation of the rankings assigned by different rating agencies. It doesn't specify the exact source of the differences. For example, whether the divergence stems primarily from the environmental, social, or governance dimension; The mechanisms by which differences across various dimensions affect total factor productivity may vary. And the researchers can explore this further later. (2) Due to limitations in data availability, the sampling period did not cover a longer time window. It is challenging to characterize the long-term dynamic effects of ESG rating divergence on high-quality corporate development, as well as its potential nonlinear features (such as U-shaped or inverted U-shaped relationships). In the future, the researchers can combine data from longer time periods for tracking and analysis. (3) This article primarily focuses on three heterogeneity dimensions: analyst attention, management shareholding, and company age. Other moderating factors that may affect the boundary of the forcing effect, such as industry attributes (heavy pollution vs. non-heavy pollution), regional institutional environment, and the level of enterprise digital transformation, have not yet been explored. In the future, the heterogeneity analysis framework can be expanded to better understand the mechanisms underlying the differential impacts of ESG rating variations.

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Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

This paper is an output of the science project.

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