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The Impact of Corporate Strategic Deviance on ESG Performance: Evidence from Chinese Listed Companies

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ABSTRACT

This study examines the relationship between corporate strategic deviance and environmental, social, and governance (ESG) performance using a sample of listed A-share companies in Shanghai and Shenzhen from 2010 to 2020. The findings reveal that companies with a higher degree of strategic deviance tend to exhibit poorer ESG performance. This result still holds after a series of robustness tests. Furthermore, the study conducts heterogeneity analysis and uncovers that non-state-owned companies, those with lower managerial capacity companies are more vulnerable to the negative effects of strategic deviance on ESG performance.

KEYWORDS

Corporate strategic deviance; ESG performance; Resource tightness

1. INTRODUCTION

From a broad perspective, ESG (Environmental, Social, Governance) can be understood as an extension of the concept of corporate social responsibility investment. ESG encompasses a wide range of factors and initially emerged in the stock market as socially responsible investment and ESG responsible investment, transforming ESG into a "non-financial performance" of companies and defining it as the "fourth financial statement." It serves as an indicator of a company's sustainable operational capabilities and constitutes an integral part of the concept of sustainable investment. Socially responsible investment and ESG responsible investment are investment practices that consider environmental, social, and governance factors, aiming to achieve long-term competitive financial returns and positive social impacts. In 2017, the European Union revised the Shareholder Rights Directive, explicitly incorporating ESG issues into specific regulations, achieving comprehensive coverage of the three elements of ESG. Research on the influencing factors of ESG is vital for companies seeking long-term competitiveness, financial returns, and positive social impacts. By identifying and comprehending the impact mechanisms of different factors on ESG performance, we can assist companies in recognizing potential risks and implementing appropriate measures to enhance their ESG performance. This research also contributes to the dissemination of ESG concepts in business practices and provides substantial support for building a sustainable economy and society. Currently, most studies on the factors influencing ESG focus on two areas: 1. Internal governance characteristics of companies, such as the gender of corporate managers (Borghesi & Houston, 2014; McGuinness et al., 2017), age (Borghesi et al., 2014), confidence level (McCarthy et al., 2017), and political stance (Di Giuli & Kostovetsky, 2014). 2. External governance characteristics of companies, such as ownership features (family ownership, institutional investor ownership, state ownership) (Chen et al., 2020; Abeysekera & Fernando, 2020; Gillan et al., 2020; Boubakri et al., 2019), media monitoring (Wang & Xu, 2018), and external institutional pressures (Li

et al., 2011). Upon reviewing the relevant literature, it becomes evident that although extensive research focuses on exploring the impact factors of corporate social responsibility and ESG, the influence of strategic differences within companies on their ESG performance has been overlooked.

Corporate strategy, as a long-term decision-making process, is based on a nuanced understanding of the enterprise's internal workings and the broader global landscape. It serves as the bedrock for whether the firm can generate value returns for its shareholders, creditors, and stakeholders, and therefore is a pivotal factor in determining the overall success or failure of the business. Over time, as an industry develops, a rich tapestry of successful and failed experiences is woven, which sets the stage for the emergence of conventional strategies that are commonly adopted by players in the field. Enterprises determine their strategic positioning based on their own unique resource endowments, with most firms opting for conventional industry strategies that promote systematic operations and consistent performance while minimizing business risks. However, differentiated strategies may present opportunities for competitive advantage and sustainable development, but they also come with inherent risks and uncertainties. Research on the impact of differentiated strategies has predominantly focused on financial indicators, such as corporate financial performance (Zheng et al., 2011), corporate risks (Wang et al., 2011; Shi & Liu, 2019), accounting information quality (Ye et al., 2014), and financing costs (Wang et al., 2017). However, Yuan et al. (2020) approached the relationship between corporate strategy and sustainability performance from the perspective of corporate social responsibility (CSR) and found that corporate strategy significantly determines sustainability performance. Moreover, Habib (2023) contends that without sound business strategy and efficient environmental, social, and governance (ESG) practices, effective management of corporate resources is unattainable. While existing research indicates the influence of corporate strategy on sustainable development, there remains a relative dearth of studies examining the impact of strategic deviance on ESG performance. In light of this, this paper raises the following questions that are worth exploring: (1) How does the degree of strategic deviation under different strategic types influence corporate ESG performance? (2) If strategic deviance do influence corporate ESG performance, what is the nature of this impact—positive or negative?

According to the resource-based theory, competition among firms is based on their own capabilities and resources. If a firm can effectively leverage its capabilities and resources, it can achieve outstanding performance and sustainable competitive advantage (Barney, 1991). Likewise, this study posits that deviations in strategic differences can hinder a firm's ability to effectively manage its resources, resulting in a lack of robust and efficient environmental, social, and corporate governance practices. This study utilizes Bloomberg ESG ratings to empirically investigate the impact of corporate strategic deviance on ESG performance, using a sample of 948 listed companies in China from 2010 to 2020. The underlying mechanism is examined, revealing that corporate strategic deviance leads to heightened corporate risk and a reduction in non-deposit-based redundant resources, both of which consume varying degrees of corporate resources, resulting in a decrease in investment in ESG/CSR practices. As a result, financial flexibility, as a financial resource and a skill that enables enterprises to respond flexibly to environmental changes, can offer a certain degree of material security for corporations that engage in strategic deviance, thereby mitigating the adverse impact on corporate ESG performance by easing resource constraints. Furthermore, the impact of corporate strategic deviance on ESG performance is contingent upon the nature of property rights and managerial ability, with the negative correlation between the two being more pronounced in non-state owned companies and those with weaker managerial ability. To ensure robustness, a series of rigorous tests, including endogeneity tests, are conducted, and the results remain consistent. In summary, this study provides important insights into the impact of corporate strategic deviance on ESG performance and its underlying mechanism in a sample of Chinese listed companies, offering valuable guidance for business management practices and policy-making.

The possible marginal contributions of this research are as follows. (1) It elucidates the ramifications of corporate strategic deviance on ESG performance, thereby accentuating the pivotal role of

corporate strategic deviance as a fundamental determinant of non-financial performance—an area that has been considerably overlooked in existing scholarly discourse. In this regard, we are the first to investigate the relationship between corporate strategic deviance and ESG performance in the context of the Chinese market, and to examine the distinct effects of strategic deviance on various dimensions of ESG performance. Our findings demonstrate that strategic deviance impedes ESG performance, with the most pronounced effect observed in the social responsibility dimension of ESG. This not only enriches the literature on the economic consequences of strategic divergence, but also offers novel insights into the determinants of corporate ESG practices.

(2) The study contributes to the ongoing debate regarding the nature of ESG as a responsible investment concept, by demonstrating that ESG performance serves as a corporate governance tool for achieving sustainable development. This finding provides decision-making support for governments seeking to regulate companies that deviate from conventional strategies, and offers theoretical and practical guidance for firms seeking to strengthen their information disclosure systems with regard to ESG performance.

The subsequent sections of this paper are set out as follows. In Section 2, we elucidate the formulation of our hypotheses. Section 3 presents the methodology, measurement of variables, and model specification in the study. Section 4 provides a detailed analysis of the empirical results. Section 5 presents the heterogeneity analysis. Lastly, in Section 6, we present our conclusions and discuss the implications of our findings.

2. HYPOTHESIS DEVELOPMENT

In essence, strategic change refers to the degree to which a company's resource allocation pattern on key strategic dimensions changes over time (Zhang, 2006), whereas strategic variation reflects the extent to which a company's resource allocation pattern on those dimensions deviates from its own historical experience. However, in situations where firms change their resource allocation patterns on key strategic dimensions in response to changes in the industry's competitive environment (e.g., due to technological disruptions or significant industry consolidation through mergers and acquisitions), the strategic deviance of individual firms may actually correspond to the industry's central tendency. In such cases, a company's strategic deviation may be less risky because the company can learn from and emulate the parallel strategies of peer companies in the industry. Therefore, strategic differentiation encompasses both the degree to which a firm's current resource allocation pattern deviates from its own historical experience and the degree to which such deviance differ from industry central tendencies (Carpenter, 2000; Deephouse, 1999; Deephouse, 1996; Finkelstein & Hambrick, 1990; Geletkanycz & Hambrick, 1997). This concept of strategic differentiation is based on the view of strategy as a model of corporate resource allocation (Mintzberg, 1978) and captures more comprehensively the experimental and risk-taking aspects of strategic change in firms, as companies with high levels of strategic change not only differ significantly from their own historical experience, but also deviate from the industry's central trends. A company's strategic positioning is a crucial determinant of its development goals and path planning, and is tightly intertwined with its business context. Each industry has its own set of development rules, and as enterprises conduct their business operations, they tend to develop a set of "conventional" mainstream strategies. According to the new institutional theory, companies tend to conform to industry norms due to the avoidance of legitimacy challenges that impede resource acquisition and make it easier to obtain resources. Legitimacy challenges can significantly impede a company's ability to secure resources from stakeholders, such as customers, suppliers, and regulators, and limit resource availability when potential trading partners are unwilling to provide resources to the company due to a lack of shared strategy or a belief that the company's strategy is not rational. Furthermore, the risk of failure is higher for firms that lack legitimacy (Baum & Oliver., 1991; DiMaggio & Powell, 1983), so companies that follow industry conventions are able to benefit from exogenous factors, lower operating costs, reduced operational

uncertainty, and improved corporate viability (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Geletkanycz & Hambrick, 1997). These "defensive companies," committed to "steady growth," are oriented toward cost management and seek more stable growth in their existing product lines, resulting in more fixed business models. When a company's strategy is relatively sustainable and stable, the business process can reduce deviance from common industry practices, enabling disciplined operations and learning curves that can leverage short-term operational efficiencies to achieve consistent performance and facilitate the coordination of the business predictability necessary for complex organizational activities, thereby minimizing operational risk (Sull, 1999). However, following industry strategies is often a conservative choice for companies. Market environments are constantly in a state of flux, and companies that seek to gain an additional competitive advantage by adhering to industry norms may not always make the best choice. Companies that deviate from industry norms are more likely to achieve success than those that conform to the norm. Such companies tend to pursue innovation and pioneering, constantly seeking out product market opportunities and reducing the likelihood of being copied and imitated (Chen & Miller, 1994). The degree of strategic deviance is directly proportional to the likelihood of a company achieving either extremely positive or negative financial outcomes, as strategic deviance increases the volatility of a company's financial performance (Finkelstein & Hambrick, 1990). Companies that choose to implement a differentiation strategy are typically more innovative, possess flexible systems, and require significant upfront financial resources for business expansion and R&D innovation. Additionally, these companies often lack prior experience and face heightened uncertainty and operational risk in the future. Furthermore, external fund providers, such as banks, evaluate the creditworthiness of companies with highly differentiated business strategies, and due to the potential business risks involved, tend to increase financing costs and seek risk compensation, resulting in higher loan interest rates, lower loan amounts, and shorter loan terms. Therefore, companies with substantial strategic differences must allocate more human and financial resources to address the uncertainty caused by risks, such as potential financial distress or investment opportunities. In terms of external monitoring, firms that deviate from industry norms are subject to greater surplus uncertainty as their performance significantly diverges from industry norms, causing analysts to struggle in making accurate judgments about the firms' future business performance and development due to the lack of historical experience, thereby increasing the cost of obtaining relevant company information (Carpenter, 2000). Consequently, the reduced number of analysts following companies (Baum & Mezias, 1992) reduces the reference base for other investor stakeholders, potentially leading to lower regulatory oversight and the possibility of unethical manipulation by firm management for personal gain. Meanwhile, auditors must allocate more resources and effort to evaluate firms with significant strategic differences, resulting in higher audit fees and increased monitoring costs. Aupperle et al. (1985) suggest that socially responsible activities (e.g., philanthropy, environmental protection, community development, etc.) may attract capital and other resources to firms. Furthermore, Preston and O'Bannon (1997) propose that a company's long-term profitability may enhance the firm's ability to finance discretionary projects, including social performance, thereby increasing the likelihood of improved environmental and social responsibility performance. Therefore, a company's surplus level exerts a strong influence on its ESG performance, suggesting that companies should invest resources to enhance their ESG performance.

Accordingly, we posit the following alternative hypothesis:

H1: The greater the degree of strategic deviance, the worse the ESG performance of the corporation.

However, companies that engage in social responsibility/ESG practices do not necessarily experience improved corporate performance, or any such improvement may be difficult to demonstrate in the short term. Given the high earnings volatility of companies with significant strategic differences, these companies must invest more resources. As the decision-makers and executors of CSR/ESG, management, particularly executives, are more inclined to decrease investment in CSR/ESG practices and avoid taking responsibility for relevant stakeholders to preserve resources for maintaining

company operations. Consequently, the ESG performance of companies with significant strategic differences is often inferior to that of companies with stable strategies. Corporate executives may also use ESG performance enhancement as a tool for personal gain. In other words, driving companies to actively enhance their ESG performance may stem not only from altruistic motives but also from non-altruistic motives, such as instrumental or strategic considerations. The use of non-traditional financial performance metrics, such as ESG performance enhancement, to gain the trust of other stakeholders, such as employees, government, and customers, sends positive signals regarding strong corporate social responsibility and good governance mechanisms. The pursuit of CSR/ESG performance by firms may lead to unexpected transient insurance benefits (Wang et al., 2016). Strong ESG performance can help companies accumulate moral capital among their stakeholders, thereby reducing negative reactions to adverse events and enabling them to build strong relationships with their stakeholders. Stakeholders are more likely to view such events as incidental rather than malicious, providing companies with the opportunity and time to correct their mistakes. Additionally, ESG performance helps companies obtain financial support from government and other institutions, thereby alleviating the resource constraints caused by strategic differences. Based on the above discussion, this paper proposes the following hypotheses.

H2: The greater the degree of strategic deviance, the better the ESG performance of the corporation.

3. METHODOLOGY

3.1. Sample Selection and Data Sources

This study utilizes A-share listed companies in Shanghai and Shenzhen as the initial sample from the period of 2010 to 2020, with ESG data sourced from the Bloomberg database. Subsequently, a screening process is conducted based on the following principles: (1) exclusion of listed companies labeled as PT, ST, *ST to mitigate potential negative effects of samples with abnormal financial conditions on statistical outcomes; (2) exclusion of the financial sector sample; (3) exclusion of samples with missing values for relevant variables. To mitigate the impact of extreme values, the continuous variables utilized in this study are scaled at the 1st and 99th percentiles, resulting in a dataset comprising 9486 annual observations. The financial data, excluding the ESG rating scores, are sourced from the CSMAR database, while the data processing software employed comprises Stata and Excel.

3.2. Measurement

3.2.1. Dependent variables

ESG ratings: In this paper, we use ESG rating scores provided by the Bloomberg database to measure the ESG performance of companies. The Bloomberg ESG data covers a wide range of topics, including climate change, water, health and safety, and governance. It includes reports for over 600 companies and calculates key performance indicators. The standardized ESG data covers 80% of a company's operations and employees, providing a better representation of the company's business impact. The Bloomberg ESG score ranges from 0.1 (for companies with the lowest level of ESG data disclosure) to 100 (for companies with full disclosure of every data point collected by Bloomberg). Each data point is weighted according to its importance and adjusted based on the industry sector of the company.

3.2.2. Independent variable

Strategic deviance: This paper measures the extent to which a company's strategy deviates from the conventional strategy of its industry using a measure called strategic deviance. We calculate companies' resource allocation in six key strategic dimensions, following Tang (2011) et al. and Geletkanycz (1997): (1) financial leverage ((short-term borrowing + long-term borrowing + bonds

payable)/total owner's equity); (2) degree of fixed asset renewal (net fixed assets/original value of fixed assets); (3) capital intensity (net fixed assets/number of employees); (4) R&D intensity (net intangible assets/operating revenue); (5) advertising and promotion expenses (selling expenses/operating revenue); and (6) overhead investment (overhead/operating revenue). Each indicator reflects the resource allocation of the enterprise from a different perspective and reflects the strategic model of the enterprise. In other words, each of these six indicators reflects a certain aspect of the enterprise's strategy. To perform the calculation, we follow Ye et al. (2014) and use cost of sales and net intangible assets instead of advertising expenses and R&D expenditures, respectively, since reliable data for these variables are not available for listed enterprises in China. Specifically, we subtract each of the six strategic dimension indicators of each company from the industry's average value of the same indicator for the same year, standardize the result by dividing it by the standard deviance of the indicator, and take the absolute value. We then calculate the average value of the six standardized strategic indicators for each company to obtain the strategic variance indicator (STRA). The larger value of STRA, the greater the deviance of the company's strategy from the conventional strategy of its industry.

3.2.3. Control variables

By compiling the relevant literature, this paper uses other factors that may have an impact on CSR and ESG performance as control variables, and controls for firm size (Size), firm efficiency ratio (ROA), financial risk (Lev), firm cashflow (Cashflow), board independence (Indep), executive compensation (PAY), listing age (FirmAge) Institutional investors (INST), management shareholding (Mshare), board size (Board) and other related indicators are controlled. The year (i.Year) and industry dummy variables (i.Industry) are also set, as shown in Table 1.

3.2.4. Moderating variables

Managerial competencies

This paper draws on Demerjian et al. (2012) to measure managerial competencies using a two-stage model that combines data envelopment analysis and Tobit model. In the first step, a multi-stage variable scale DEA model is used to calculate the efficiency of the firm's input-output ratio. In using the DEA method to calculate productivity, this paper uses net fixed assets (PPE), net intangible assets (NI), goodwill (Goodwill), net R&D expenditures (R&D), cost of doing business (COGS), and sum of selling and administrative expenses (SG&A) as input variables (Inputs) in the DEA analysis, and operating income (Sales) as the only output variable, and the efficiency value is calculated by data envelopment analysis.

$$MAX\,\sigma_{i,t} = \text{Sales}/(\partial_1 PPE + \partial_2 R\&D + \partial_3 NI + \partial_4 Goodwill + \partial_5 COGS + \partial_6 SG\&A) \quad (1)$$

In the second step, since the efficiency values calculated from the data envelopment analysis are influenced by both firm and managerial factors, the paper further separates the effects of the two dimensions using Tobit model based on model (1). The Tobit regression is conducted using model (2) to remove the effects of five aspects of firm inherent characteristics, including total asset size, market share, free cash flow, years in the market, and firm diversification, on efficiency, and the residual obtained is the effect of managerial characteristics on firm efficiency, i.e., managerial competence.

$$\begin{aligned} FirmEfficiency = {} & \delta + \lambda_1 Ln(Assets) + \lambda_2 MarketShare + \lambda_3 FreeCashFlowIndicate + \\ & \lambda_4 Ln(Age) + \lambda_5 Bu\sin essSegmentConcentration + Year + \varepsilon \end{aligned} \quad (2)$$

The definitions of the variables are in Table 1:

Table 1. Variable definitions

Variable type	Variable name	Variable symbols	Variable measures
Interpreted variables	Corporate ESG Rating	$ESG_{i,t}$	A composite measure using Bloomberg's ESG scores for listed companies
Explanatory variables	Strategic deviance	$STRA_{i,t}$	The metrics for the six dimensions are averaged, as defined in the text
Control variables	Corporate size	$Size_{i,t}$	Take the natural logarithm of the total assets
	Corporate efficiency rate	$Roa_{i,t}$	Net profit of the company for the year divided by the average balance of total assets
	Financial Risk	$Lev_{i,t}$	Total liabilities at the end of the year divided by total assets at the end of the year
	Corporate Cash Flow	$Cashflow_{i,t}$	Net cash flow from operating activities divided by total assets
	Board Independence	$Indep_{i,t}$	Independent directors divided by the number of directors
	Executive Compensation	$PAY_{i,t}$	Take the natural logarithm of total compensation for corporate executives
	Age of listing	$FirmAge_{i,t}$	Number of years a company has been listed
	Institutional Investors	$INST_{i,t}$	Total number of shares held by institutional investors divided by management's shareholding percentage of outstanding share capital
	Management shareholdings	$Mshare_{i,t}$	Total number of shares held by management divided by total share capital

3.3. Model Specification

To test the relationship between the degree of corporate strategic deviance and corporate ESG performance, the paper sets up the model:

$$ESG_{i,t} = a_0 + a_i STRA_{i,t} + a_j Cntrols_{i,t} + a_k \sum Industry_{i,t} + a_l \sum Year_{i,t} + \varepsilon \quad (3)$$

Where $ESG_{i,t}$ is the explanatory variable representing ESG performance, $STRA_{i,t}$ represents Strategic deviance, and $Controls_{i,t}$ represents the control variables, and the regressions use year and industry fixed effects to control for the effects of unobservable and omitted factors. The specific definitions of the variables are shown in Table 1.

4. EMPIRICAL ANALYSIS AND RESULTS

4.1. Descriptive Statistics

Table 2 reports the descriptive statistics of the main variables, including the means, medians, and standard deviance related to the degree of differences in corporate strategies, corporate ESG scores, and corporate characteristics variables. As can be seen from Table 2, the minimum value of ESG is 8.678, the maximum value is 49.174, and the standard deviance is 6.685, which indicates that there are significant differences in ESG performance among individual companies in China, and most of the companies have low ESG scores, most of them have average ESG performance, and the overall ESG performance of Chinese listed companies needs to be improved. The mean value of STRA is

0.499, and the standard deviance is 0.267, indicating that the strategy chosen by Chinese companies differs significantly from the industry average strategy level.

Table 2. Descriptive statistics of the main variables

Variables	count	mean	sd	min	p50	max
ESG	9486	20.504	6.685	8.678	19.835	49.174
STRA	9486	0.499	0.267	0.111	0.433	1.894
Size	9486	23.067	1.293	20.109	22.955	26.395
Cashflow	9486	0.056	0.068	-0.196	0.053	0.258
Lev	9486	0.474	0.201	0.044	0.485	0.896
ROA	9486	0.047	0.061	-0.301	0.040	0.241
FIRST	9486	0.365	0.160	0.075	0.350	0.807
Board	9486	2.177	0.200	1.609	2.197	2.708
Mshare	9486	0.078	0.155	0.000	0.000	0.682
FirmAge	9486	2.891	0.343	1.386	2.944	3.555
PAY	9486	15.561	0.754	13.581	15.517	18.059
Indep	9486	0.375	0.055	0.308	0.364	0.600

4.2. Descriptive Statistics and Correlation Analysis

Table 3 verifies the correlation between corporate strategic deviance and corporate ESG performance and with ESG performance in individual dimensions of ESG based on model (1), the adjusted R2 in the model with the main variables of strategy differences and ESG performance is 0.286, which is consistent with the previous research literature. The regression coefficient is -1.223, which verifies hypothesis H1. This may be due to the fact that for companies with greater strategic differentiation, the reputational capital accumulated and resources obtained from practicing ESG are not sufficient to mitigate the operational risks and resource constraints associated with strategic differentiation, and therefore prefer to practice ESG on the basis of satisfying their own operational development. We also discover that among the three dimensions of corporate strategy difference on corporate environment, corporate social responsibility and corporate governance, the effect of corporate strategic deviance on environmental performance is not significant, but the regression coefficients with corporate social responsibility performance and corporate governance performance are -1.646 and -0.715, respectively, which are significant at the 1% level. Therefore, corporate strategic deviance mainly have a negative impact on the social responsibility and corporate governance aspects of ESG performance.

Table 3. Corporate strategic deviance ESG performance

	(1)	(2)	(3)	(4)
Variables	ESG	E	S	G
STRA	-1.223***	-0.286	-1.646***	-0.715***
	(-5.121)	(-0.884)	(-4.448)	(-3.789)
Control variables	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	9486	8006	9256	9486
adj. R^2	0.286	0.237	0.159	0.208

Notes: This table shows the regression results of corporate strategic deviance and corporate ESG Performance and corporate ESG Performance of Individual Dimensions. The variables are defined in Table 1. The F-test (p-value) describes the significance of the observations, and F is the statistical

value of the f-test. The t-Statistics are reported in parentheses with ***, **, and *, indicating significance at the 10%, 5%, and 1% levels, respectively.

4.3. Robustness Testing

An array of robustness tests is conducted to ensure the validity and universality of the results from the present study. First, we changed the measure of strategic variability and replaced the data for ESG ratings. Second, we lagged the data on strategic variance by one and two periods respectively to alleviate the two-way causality problem. Third, we used the generalized-moment estimation method (IV-GMM) to address the endogeneity of reverse causality. Fourth, to alleviate the possible omitted variable problem, the PSM propensity score matching method was used to test.

4.3.1. Alternative measurement methods of dependent variable and independent variable

In the previous paper, we used cost of sales and net intangible assets to replace advertising and R&D expenditures in the calculation of strategic deviance, but this method may bring some errors, so we borrow from Tang (2011) and others to eliminate these two dimensions and reconstruct strategic variance based on the remaining four dimensions (capital intensity, degree of fixed asset renewal, operating expense ratio and financial leverage).The original dependent variable, Bloomberg ESG data, which has been used as the basis for the calculation of strategic variance, is substituted by ESG ratings from China-Securities. Compared with the evaluation indicators of overseas markets, CSI incorporates more indicators that are relevant to the current development stage in China, such as the quality of information disclosure, SEC penalties, and precision poverty alleviation, and updates them on a quarterly basis. In addition, the in-depth cooperation between CSI and Wind on ESG data will provide richer basic tools and application scenarios for domestic ESG investment research. Therefore, CSI ESG indicators have the characteristics of being close to the Chinese market, wide coverage, high timeliness and high availability, so the replacement of Bloomberg ESG data with CSI ESG ratings can still effectively support the research of this paper Hypothesis. The results in Table 5 show that the variables related to the degree of strategic deviance are still negatively correlated with the variables related to ESG ratings and are significantly correlated at the 1% significance level, further supporting the idea that corporate strategic differences reduce the ESG performance of companies.

Table 4. Regression results for replacing dependent variable and independent variable

	(1)	(2)
Variables	ESG	ESG_1
STRA		-0.315***
		(-6.821)
STRA_1	-0.604***	
	(-3.871)	
Control variables	Yes	Yes
Industry	Yes	Yes
Year	Yes	Yes
N	9486	9486
adj. R^2	0.284	0.144

Note: This table reports the test results of replacing dependent variable and independent variable. The detailed explanations of the variables, as well as the explanations of the F and t statistics, are provided in a similar manner as the annotations in Table 3.

4.3.2. Lagging explanatory variables alleviate the two-way causal problem

We test whether the degree of strategic deviance in the past years is correlated with future corporate ESG performance. We run separate regressions again using a one-year lagged STRA (L_STRA) and

a two-year lagged STRA (L2_STRA). As shown in columns (1) and (2) of Table 5, the one-year lagged firm strategic deviance and the two-year lagged firm strategic deviance still significantly reduce the company's ESG performance, and the basic regression results are robust.

4.3.3. The instrumental variable method

In this paper, the competitive intensity of product markets is used as an instrumental variable. The reason is that the degree of strategic deviance of a listed company at a point in time is related to the competitive intensity of the product market, which does not have a direct impact on the ESG performance of the company in the current period. To examine the validity of the instrumental variables, the main tests of unidentifiability, weak instrumental variable test and over-identification test are conducted. The Kleibergen-Paap rk LM statistic is used to test the unidentifiable problem (545.065) and the Kleibergen-Paap rk Wald F (2063.742) statistic is used to test the weak instrumental variable problem since the assumption of independent homogeneous distribution of the disturbance terms is not made. Overall, the results of the instrumental variables test indicate that it is valid to use the intensity of product market competition as an instrumental variable. Column (3) of Table 5 reports the regression results of the generalized-moment estimation method (IV-GMM), where the STRA coefficient remains significantly negative. Therefore, the conclusions of this paper still hold after considering the endogeneity issue.

4.3.4. PSM Method

To mitigate the selection bias problem, this paper uses PSM to test for endogeneity. The sample is divided into two groups based on the median of the corporate strategic deviance, and each observation in the original sample is matched with a highly similar observation in the other group according to the 1:1 nearest neighbor matching rule, and then regressed using the newly generated sample, and the coefficients of STRA is significantly positive at the 1% level, a result that remains consistent with the baseline regression findings.

Table 5. Consider two-way causation, Instrumental variable and PSM method

	(1)	(2)	(3)	(4)
Variables	ESG	ESG	ESG	ESG
L_STRA	-1.236***			
	(-3.780)			
L2_STRA		-1.371***		
		(-3.644)		
STRA			-0.800**	
			(0.318)	
treated				-0.674***
				(0.137)
Control variables	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	6654	5614	9,452	9,486
adj. R^2	0.285	0.290	0.039	0.003

Note: This table reports the test results of lagging STRA (L_STRA; L2_STRA), Instrumental variable and PSM method. The detailed explanations of the variables, as well as the explanations of the F and t statistics, are provided in a similar manner as the annotations in Table 3.

5. HETEROGENEITY ANALYSIS

5.1. The Impact of the Nature of Property Rights on the Relationship between Strategic Deviance and Corporate ESG Performance

Drawing on China's distinctive institutional background, companies with differing property rights exhibit notable disparities in their operational and financial activities. In this regard, we explore the heterogeneous impact of strategic deviance on ESG performance across firms with varying property rights. State-owned enterprises (SOEs), as the primary representatives of public ownership in the country, embody corporate governance structures that are enmeshed with the Party organization, thereby establishing an intrinsic link between SOEs and the government. Given their dual identities as "economic persons" and "social persons," SOEs' actions reflect the will and interests of the government, which, in turn, imbues them with greater economic, social, and livelihood responsibilities than non-state-owned enterprises. Consequently, SOEs should not exclusively prioritize economic interests, but also attend to corporate social responsibility practices as a means of actively responding to national policies and assuming a leadership role. Moreover, the Chinese government still retains control over a significant number of scarce resources and administrative approvals, and possesses considerable discretionary power. This linkage enables SOEs to acquire production factors and resources at lower prices than market rates, while also enjoying advantages in taxation, government subsidies, and access to regulated industries. Such advantages facilitate their ability to coordinate and resolve energy and material needs in the course of their business operations, resulting in a higher level of risk-taking compared to non-SOEs. Therefore, when firms confront business risks stemming from strategic deviance, SOEs possess greater resources to engage in ESG practices due to their special attributes, with the government providing them with human, financial, and factor resources, as well as relevant policy support, to help overcome their difficulties based on social and macro factors.

In summary, it is expected that the decrease effect of increasing strategic deviance in SOEs on corporate ESG performance is small. Considering the characteristics of the grouping variables of the nature of property rights, this paper uses grouping regressions to test them, and the relevant results are presented in Table 6. Columns (1) and (2) of Table 6 show that the significance and absolute value of the coefficient of STRA in the group of state-owned enterprises (State) is smaller than that in the group of non-state-owned enterprises (Non-Sate). Therefore, it verifies our speculation that the decrease effect of increasing strategic deviance in SOEs on firms' ESG performance is smaller compared to non-SOEs.

5.2. The Impact of the Nature of Managerial Ability on the Relationship between Strategic Deviance and Corporate ESG Performance

Managerial ability is a crucial factor in a company's development, as it reflects a manager's cognitive level and capacity to handle complex issues. Accordingly, we aim to explore the heterogeneous impact of strategic deviance on ESG performance across firms with varying managerial abilities. According to management theory, managers with robust managerial competencies excel in risk control, resource integration, opportunity identification, and learning, whereas firms with greater strategic differentiation face greater risks. Consequently, firms with strong managerial ability are better equipped to calmly and methodically control risk and make optimal decisions when faced with significant discrepancies in corporate strategies. Given these observations, we hypothesize that firms with strong managers have greater resources to engage in ESG practices, thereby mitigating the impact of increased strategic differences on ESG performance.

In summary, companies with high managerial ability are expected to have a less impact on corporate ESG performance due to increased strategic deviance. We divide the sample of companies into two groups of high and low managerial capability based on the median of the industry years of managerial

capability in the sample, and then run group regressions. The related results are presented in Table 6. Columns (3) and (4) of Table 6 show that the coefficient of STRA in the group with high managerial competency is -0.168, which is not significant, while the coefficient in the group with low managerial ability is -1.376, which is significant at the 1% level. Therefore, this validates our speculation that the increased strategic deviance has a lesser impact on corporate ESG performance in the group of companies with stronger managerial capabilities.

Table 6. Results of heterogeneity analysis of property rights, managerial ability and the level of pollution

	(1)	(2)	(3)	(4)
Variables	State	Non-Sate	High-MA	Low-MA
STRA	-0.672*	-0.804***	-0.168	-1.376***
	(-1.709)	(-2.710)	(-0.424)	(-4.428)
Control variables	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	4606	4880	4153	5333
adj. R^2	0.300	0.267	0.246	0.329

Note: This table reports the heterogeneity analysis of property rights and managerial ability. The detailed explanations of the variables, as well as the explanations of the F and t statistics, are provided in a similar manner as the annotations in Table 3.

6. CONCLUSIONS AND IMPLICATIONS

As global sustainability continues to advance, incorporating ESG norms into corporate social responsibility and management systems is an indispensable route to practice. To assess the impact of intra-firm strategy on ESG performance, this study examines the relationship between corporate strategic deviance and corporate ESG performance using empirical data from Chinese A-share listed companies between 2010 and 2020. The empirical results reveal that excessive corporate strategy differences significantly reduce ESG performance, a finding that remains robust even after addressing endogeneity issues and conducting a series of empirical tests. This suggests that excessive corporate strategy differences are not conducive to corporate ESG practices and sustainable development. Furthermore, the impact of corporate strategic deviance on ESG performance is more pronounced in non-state-owned enterprises, likely influenced by the nature of property rights. Notably, the stronger the managerial capability, the weaker the negative effect of corporate strategic deviance on ESG performance, highlighting the critical role of managerial ability in promoting sustainable corporate development.

This paper contributes to the literature on the economic consequences of strategic deviance and ESG influencing factors, providing valuable insights for enterprises, investors, regulators, and other stakeholders to better understand the impact of corporate strategic deviance on decision-making. The practical value of this paper is reflected in the following aspects: (1) Corporate strategy plays a pivotal role in determining the development direction of enterprises. Relevant strategies can affect enterprise risks and resource utilization in an unreasonable manner. Thus, enterprises should select an appropriate degree of strategic difference to enhance investment efficiency and make resource utilization more rational. (2) For enterprises adopting unconventional strategies, government departments should strengthen the supervision of ESG practices. Improving ESG performance can facilitate sustainable development for enterprises, especially for those adopting unconventional strategies. Good ESG performance may serve as a "safety net" in the face of uncertain business crises. (3) Non-state-owned enterprises should pay more attention to the business consequences of

implementing strategic differences compared to state-owned enterprises. Strengthening information disclosure construction can reduce the adverse effects of corporate strategic differences.

The research in this paper has the following limitations: (1) The measurement indicators of strategic differences are mainly centered on six dimensions, and there are limitations to the measurement of strategic differences, and future research can explore more comprehensive measurement indicators of strategic differences. (2) This paper only analyzes corporate risk and non-deposit redundant resources to explore the paths of strategic differences affecting corporate ESG performance, and there may be some important paths affecting corporate ESG performance that have not been explored, and future research can be conducted in more depth from each stakeholder subject to investigate the results and paths of strategic differences affecting them.

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