"Does managerial ability matter in corporate sustainability-related dynamics? An empirical investigation"

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BUSINESS PERSPECTIVES

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DOES MANAGERIAL ABILITY MATTER IN CORPORATE SUSTAINABILITY-RELATED DYNAMICS? AN EMPIRICAL INVESTIGATION

Abstract

This study aims to assess the intricate interplays between managerial ability, corporate social responsibility (CSR), and firm value, focusing on 3,498 company-year observations sourced from the RANKINS CSR RATINGS and China Stock Market & Accounting Research (CSMAR) databases representing China's Shanghai and Shenzhen A-share listed companies from 2009 to 2018. Employing a rigorous sample selection process and utilizing data from reliable databases, the research employs a comprehensive methodology to explore the intricate corporate sustainability-related dynamics influencing organizational success and societal impact.

The findings reveal a compelling negative correlation between managerial ability and CSR performance, corroborating previous research and suggesting potential challenges in reconciling managerial competence with social responsibility priorities. Furthermore, this paper establishes a negative correlation between CSR and firm value, with managerial ability influencing the magnitude of this impact, underscoring the significance of managerial skills in moderating the relationship between CSR initiatives and overall corporate performance. Moreover, the study uncovers a robust positive correlation between managerial ability and firm value, emphasizing the pivotal role of adept leadership in achieving higher corporate valuation.

It provides valuable insights for practitioners, policymakers, and scholars, creating a conducive environment for well-informed decision-making. In the ever-changing corporate landscape, a deep understanding of these interconnections is essential to nurture business practices that are both sustainable and value-oriented.

Keywords	managerial ability, corporate social responsibility, firm value, non-financial reporting, sustainability-related information disclosures, China
JEL Classification	G34, M14, M41

INTRODUCTION

In recent academic discourse, the intersections of managerial ability, corporate social responsibility (CSR), and firm value have emerged as a focal point, shedding light on the intricate dynamics influencing organizational success and societal impact (H. Chen et al., 2023; Gong et al., 2021).

While existing literature extensively emphasizes the pivotal role of CSR in contemporary business landscapes (Pasko, Lagodiienko, et al., 2022), an often-overlooked dimension concerns the intricate interplay between managerial ability and the execution of CSR initiatives. Scholars increasingly recognize that the effectiveness of CSR implementation is intricately linked to organizational leaders' competence, foresight, and strategic acumen. Thus, understanding the symbiotic relationship between managerial ability and CSR practices is crucial for a comprehensive grasp of their collective influence on firm value.

This study addresses the question of how managerial ability shapes CSR initiatives and, consequently, firm value – an area ripe for exploration in the existing literature. It posits that competent managers are better positioned to navigate the complexities of CSR implementation, ensuring alignment with organizational goals and stakeholder expectations. Additionally, adept leaders' strategic vision may enable companies to derive greater value from their CSR endeavors, fostering positive relationships with stakeholders and enhancing overall corporate performance.

The ongoing debate surrounding the interdependence between CSR practices and firm value forms another critical aspect of this study. While some argue for the positive contribution of robust CSR initiatives to a company's bottom line (Inam Bhutta et al., 2021; Pasko, Marenych, et al., 2021), others question the direct correlation, asserting it is contingent on various contextual factors (L. Cheng & Cheung, 2021). This study seeks to address a scientific inquiry by investigating the role of managerial ability as a catalyst in moderating the connection between CSR practices and firm value within the existing discourse.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

While contemporary literature extensively underscores the pivotal role of CSR in business landscapes, a frequently overlooked dimension involves the intricate interplay between managerial ability and the execution of CSR initiatives. Scholars increasingly acknowledge that the effectiveness of CSR implementation is intricately tied to the competence, foresight, and strategic acumen of organizational leaders. Therefore, comprehending the symbiotic relationship between managerial ability and CSR practices is crucial for a holistic understanding of their collective impact on firm value.

Competent managers are believed to be more likely to strategically implement CSR initiatives (Andreou et al., 2017; H. Chen et al., 2023; Gong et al., 2021). Their ability to foresee long-term consequences and align CSR practices with organizational goals can enhance the effectiveness of CSR programs (Demerjian et al., 2012). Moreover, managers with high ability may excel in engaging with diverse stakeholders (Veltri et al., 2016). Effective communication and understanding of stakeholder expectations can foster a positive relationship, leading to improved CSR outcomes (Cho et al., 2021).

Managerial ability often correlates with innovation and adaptability (Jiang et al., 2023; Qian et al., 2023). Innovative managers may introduce novel CSR practices, while adaptable leaders can respond efficiently to changing societal expectations, both contributing to a positive CSR correlation (Huang & Xiong, 2023). Moreover, skilled managers can navigate the complexities of CSR-related risks (Daradkeh et al., 2023). Their ability to assess and manage risks associated with CSR initiatives may lead to more sustainable and prosperous CSR practices.

On the other hand, literary sources also provide arguments that explain the negative impact of managerial ability on CSR, related to overemphasis on short-term goals, resource constraints, ethical considerations, and industry-specific challenges.

It is argued that highly competent managers may prioritize short-term financial goals over long-term CSR objectives (Hmaittane et al., 2022; Pasko, Chen, et al., 2021). This myopic focus on immediate financial gains may hinder the development of robust and sustained CSR practices (H. Chen et al., 2023; Pasko, Zhang, et al., 2021). Moreover, even with managerial ability, firms may face resource constraints that limit their capacity to engage in extensive CSR activities (Andreou et al., 2017). Competent managers may opt for more conservative CSR approaches to manage resource limitations (Inam Bhutta et al., 2021; Pasko, Yang, et al., 2022).

Furthermore, the correlation between managerial ability and CSR might be weakened if managers prioritize financial performance without sufficient consideration for ethical dimensions (L. Cheng &

Cheung, 2021). In such cases, CSR practices may be considered instrumental rather than ethical (L. Cheng & Cheung, 2021). Besides, the positive correlation may not universally apply across industries. Some sectors may face challenges that make it difficult for even highly competent managers to implement CSR practices effectively (L. Cheng & Cheung, 2021; Cho et al., 2021).

For example, findings derived from an analysis of 2,298 observations spanning firm-years in the United States from 2005 to 2019 indicate that companies led by proficient managers are inclined to provide increased disclosures on climate change (Daradkeh et al., 2023). García-Sánchez et al. (2020) show that CEOs with higher capabilities are more inclined to disclose CSR information that is comparable and beneficial for stakeholder engagement. Moreover, Chronopoulos (2022) proves that companies engaged in social responsibility exhibit smaller forecast errors, and the accuracy of sales forecasts is positively associated with the extent of their CSR activities.

Hmaittane et al. (2022) show that the reduction in a company's implied cost of equity capital due to corporate sustainability becomes significant only in the presence of high managerial ability. In contrast, H. Chen et al. (2023) showcase that CEOs possessing elevated managerial abilities can adeptly harness the benefits associated with corporate social responsibility. García-Sánchez et al. (2019) argue that the proficiency of a CEO represents a distinctive asset that aids companies in mitigating agency problems linked to social and environmental performance.

It is argued that the negative impact of CSR on firm value related to the manager's ability may be due to strategic misalignment, resource allocation challenges, ineffective communication, and ethical lapses (García-Sánchez et al., 2019; Raboshuk et al., 2023).

Managers with strategic misalignment may struggle to align CSR initiatives with the company's overall strategic goals (García-Sánchez & Martínez-Ferrero, 2019). This misalignment can lead to a negative impact on firm value as CSR efforts may not contribute effectively to the company's success (García-Sánchez et al., 2020). Managers lacking in resource allocation ability

may face difficulties optimizing resource allocation for CSR activities (Amirteimoori et al., 2023). Inefficient use of resources for CSR initiatives, without clear strategic direction, can negatively influence firm value by diverting resources from more value-generating areas (García-Sánchez et al., 2020). Ineffective managerial inability to communicate CSR initiatives effectively may result in a lack of understanding or misinterpretation by stakeholders (Chronopoulos, 2022). Poor communication can lead to skepticism or misunderstanding, negatively impacting firm value. Managers with limited ability may overlook ethical considerations in CSR practices, potentially engaging in practices perceived negatively by stakeholders. Ethical lapses can tarnish the company's reputation and its value (Hmaittane et al., 2022).

On the other hand, it is argued that competent managers can effectively manage CSR activities, enhancing the company's reputation and brand image. A positive public perception resulting from well-executed CSR initiatives can contribute to increased firm value (Gong et al., 2021).

Moreover, managers with high ability may focus on the long-term sustainability of CSR practices, understanding their potential to contribute positively to the company's value over time (Andreou et al., 2017). This strategic approach could mitigate any short-term negative impacts. Furthermore, a manager's ability to authentically engage with stakeholders and implement meaningful CSR initiatives can build trust and loyalty. Stakeholder support can positively influence firm value by solidifying relationships and securing long-term partnerships (Andreou et al., 2017). Besides, skilled managers can leverage CSR initiatives for market differentiation. If effectively communicated and aligned with consumer values, CSR practices can set the company apart, potentially positively impacting consumer preferences and firm value (Inam Bhutta et al., 2021).

García-Sánchez and Martínez-Ferrero (2019) show that the most skilled CEOs strategically invest in social and environmental initiatives, contributing to enhanced financial performance. Conversely, less proficient CEOs may engage in opportunistic overinvestment or underinvestment, prioritizing personal gains over shareholder interests.

The scholarly literature provides almost unanimous support for the statement that managerial ability significantly impacts firm value (Atawnah et al., 2024; Bui et al., 2023; S.-S. Chen et al., 2023). First, it is believed that managers with high ability are more likely to make informed and effective decisions, leading to improved operational efficiency and financial performance (Huynh et al., 2024). This, in turn, positively influences firm value.

Moreover, skilled managers possess a strategic vision that enables them to navigate complex business environments, identify growth opportunities, and make decisions aligned with long-term company goals. Such strategic acumen contributes positively to firm value (Qian et al., 2023). Furthermore, managerial ability includes traits such as adaptability and innovation, which are crucial for staying competitive in dynamic markets. Companies led by managers with these qualities are better positioned to adapt to changes, fostering resilience and enhancing firm value (S.-S. Chen et al., 2023).

The next argument is related to effective resource allocation. Competent managers are adept at efficiently allocating resources, ensuring optimal use for value-generating activities (Huynh et al., 2024). Efficient resource allocation enhances financial performance, positively impacting firm value (Raboshuk et al., 2023).

However, it is argued that external factors, such as economic conditions or industry trends, can significantly impact firm value, overshadowing the influence of managerial ability (Qian et al., 2023). Even with skilled managers, uncontrollable external factors may limit the positive impact. Moreover, in volatile and uncertain markets, even capable managers may face challenges in maintaining firm value (Bazrafshan et al., 2023). Factors beyond managerial control, such as geopolitical events, can introduce volatility that affects firm value irrespective of managerial ability (S.-S. Chen et al., 2023). Furthermore, some industries inherently face challenges that may hinder the positive impact of managerial ability on firm value (Huynh et al., 2024; Raboshuk et al., 2023). Regulatory constraints, market saturation, or technological disruptions can limit the effectiveness of managerial skills. Besides, managers focused on short-term financial gains may prioritize strategies that boost immediate profits but might not contribute to sustained firm value. This short-term focus can undermine the hypothesis of a significant positive impact.

Huang and Xiong (2023) found a positive correlation between managerial ability and firm value, with ownership concentration positively (or negatively) moderating the association and firm size and board independence. Bazrafshan et al. (2023) found that managerial ability positively affects the earnings quality of Iraqi firms.

Additionally, findings by Huynh et al. (2024) provide supporting evidence that managerial ability can mitigate a significant portion (approximately 20%-40%) of the detrimental effects of political risk on intellectual capital investment, influenced by firm-specific characteristics.

The investigation by Atawnah et al. (2024) reveals a positive correlation between managerial ability and firm value, indicating that a one standard deviation increase in ability is linked to a 5.7% rise in firm value compared to the mean level. Significantly, leveraging exogenous CEO turnover establishes a causal relationship between managerial ability and firm value.

The relation between managerial ability and firm value in state-owned enterprises (SOEs) may vary from those in non-SOEs. First, state-owned enterprises often operate within a framework influenced by government policies and priorities (Aguilera et al., 2021). The extent of managerial autonomy may be constrained, limiting the impact of managerial ability on firm value (Huang et al., 2022). Second, SOEs are commonly associated with bureaucratic structures and procedures (Giannetti et al., 2021). Managers may face bureaucratic hurdles that impede their ability to implement strategic decisions promptly, diminishing the positive correlation with firm value (Bae et al., 2024; Giannetti et al., 2021). Third, political considerations may override managerial decisions in SOEs, particularly when political authorities appoint or influence managers (Giannetti et al., 2021). This interference can undermine the effectiveness of managerial ability in shaping firm value. Fourth, SOEs often have social and political objectives alongside financial

goals (Bae et al., 2024). Managers may be pressured to prioritize social welfare over profit-maximizing strategies, diluting the direct positive impact of managerial ability on firm value (Aguilera et al., 2021; Bae et al., 2024; Giannetti et al., 2021; Huang et al., 2022).

On the other hand, the impact of managerial ability on firm value may vary across different SOEs (Bae et al., 2024). Some state-owned entities may provide managers with sufficient autonomy, allowing them to leverage their abilities effectively for enhanced firm value (Huang et al., 2022). In competitive sectors, SOEs may operate similarly to private enterprises, emphasizing managerial effectiveness (Huang et al., 2022). In such cases, the positive correlation between managerial ability and firm value may not necessarily weaken (Huang et al., 2022). Moreover, some SOEs undergo reform initiatives to improve efficiency and competitiveness. These reforms may empower managers and reduce bureaucratic constraints, strengthening the positive correlation between managerial ability and firm value (Bae et al., 2024; Huang et al., 2022). Furthermore, state-owned enterprises engaged in international markets may experience a more liberalized environment. Managers operating in global markets may have greater flexibility and influence over firm value compared to those in domestically focused SOEs (Aguilera et al., 2021; Huang et al., 2022).

The findings of Huang et al. (2022), for example, indicate that private firms experience more pronounced financial constraints than state- and foreign-owned firms. The impact of managerial ability in mitigating these financial constraints is particularly notable for private firms.

The aim of this study is to investigate the complex relationships among managerial ability, corporate social responsibility (CSR), and firm value in the context of sustainability, with a specific focus on understanding how managerial abilities influence the formulation, implementation, and outcomes of CSR initiatives and act as a catalyst in moderating the relationship between CSR practices and firm value.

Accordingly, aligning with the discourse above, the paper formulates such hypotheses:

H1: There is a negative correlation between managerial ability and CSR.

H2: The negative impact of CSR on firm value has a certain relationship with the manager's ability.

H3: The managerial ability has a significant positive impact on firm value.

H4: The positive correlation between managerial ability and firm value in state-owned enterprises weakens.

2. METHOD

2.1. Data and sample selection

The paper uses China's Shanghai and Shenzhen A-share listed companies from 2009 to 2018 as the initial sample for the study. The following treatments were performed on the initial sample: (1) Remove financial and insurance companies and companies that have been specially processed by

Table 1. Sample selection procedure

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Listed companies	1752	2107	2341	2470	2515	2632	2823	3118	3495	3590	26843
Financial companies	61	68	72	75	75	76	79	92	97	109	804
*ST	101	116	124	125	129	129	133	135	136	136	1264
ST	45	46	52	56	58	58	60	63	65	65	568
Missing data	1493	1730	1923	1870	1857	1954	2117	2362	2693	2710	20709
Final samples	52	147	170	344	396	415	434	466	504	570	3498

Note: *When a company has suffered losses for two consecutive years or its net assets are lower than the par value of the stock, "ST" will be added before the stock name, which means "special treatment", and the daily rise and fall shall not exceed 5%. They are used to warn investors to pay attention to investment risks. If the company's operations have not improved in the third year and it is still in a state of loss, in addition to the "ST" before the stock name,"*" will be added, which means delisting risk.

ST, *ST; (2) Remove delisted and cross-listed companies; (3) Remove missing data from the company. The research's final sample has 3498 company-year observation data (Table 1). The CSR ratings come from the RANKINS CSR RATINGS (RKS) Database, and the rest of the data come from the China Stock Market & Accounting Research (CSMAR) Database. In order to avoid the influence of extreme values, this paper performs 1% winsorization on all continuous variables.

2.2. Variables

This study adopts the measure of manager's ability (MABILITY) developed by Demerjian et al. (2012). This method first uses data envelopment analysis (DEA) to calculate the full efficiency value of a single company by industry, as shown in model (1). Then, it performs Tobit regression on the company's efficiency value, as shown in model (2). The residual of model (2) is manager's ability.

$$Max\theta = (Sales) \cdot (\omega_1 COGS + \omega_2 SG\&A +$$
$$+\omega_3 PPE + \omega_4 OpsLease + \omega_5 R\&D +$$
$$+\omega_6 Goodwill + \omega_7 OtherIntan)^{-1}, \quad (1)$$

where θ represents the firm's efficiency score, ranging from 0 to 1; *Sales* is the company's sales revenue; *COGS* is the company's cost of sales; *PPE* is the company's net assets, delivery room and equipment; *OpsLease* is the net operating leases; *R&D* is the company's net research and development expenditure; *Goodwill* is the purchased goodwill; *OtherIntan* is the other intangible assets.

$$Firm\ Efficiency = \beta_0 + \beta_1 Total\ Assets +$$
$$+\beta_2 Market\ Share +$$
$$+\beta_3 Free\ Cash\ Flow\ Indicator +$$
$$+\beta_4 LnAge + \quad (2)$$
$$+\beta_5 Business\ Segment\ Concentration +$$
$$+\beta_6 Foreign\ Currency\ Indicator + \varepsilon,$$

where *Total Assets* is the natural logarithm of total assets at the end of the period; *Market Share* is the proportion of operating income in the industry; *Free Cash Flow Indicator* indicates whether there is free cash flow; *LnAge* is the natural logarithm of the time of listing; *Business Segment Concentration* is the Herfindahl index of the company's main business income, and *Foreign Currency Indicator* indicates whether there is foreign currency business. At the same time, winsorization is used on all continuous variables and a two-dimensional cluster analysis is performed by company and year.

Table 2. Variable definition

Variables		Definition
Dependent variable	Profit Margin	The ratio of earnings before extraordinary items to book value of total sales
	ROA	The ratio of earnings before extraordinary items to book value of total assets
Independent variable	CSR	CSR rating provided by RANKINS CSR RATINGS (RKS)
	MABILITY	The managerial ability score (Demerjian et al., 2012)
	MABILITY_RANK	The decile rank (by year and industry) of the managerial ability score
Moderator variable	SOE	1 for state-owned enterprises, or 0 for others
	DUAL	The chairperson of the board of directors and the general manager are not equal to 1, otherwise 0
Control variable	SIZE	The natural log of the book value of total assets
	LEV	The ratio of debt to book value of equity
	MB	The market value of equity divided by the book value of equity
	RD	Total R&D expenditure divided by the total book value of assets
	CFO	Cash flow from operations divided by total assets
	DIV	Cash dividends scaled by total assets
	CAP	Total capital expenditure divided by the total book value of assets
	SLACK	The ratio of current assets to current liabilities
	ADV	Total advertising expense divided by the total book value of assets
	GENDER	A dummy variable assigned the value of 1 when the CEO is male, and 0 otherwise
	AGE	The CEO age
	RETIRE	A dummy variable assigned the value of 1 when the CEO's age is at least sixty-three years, and 0 otherwise
	TENURE	The number of months since the CEO was in the CEO position

This paper uses the CSR rating provided by RANKINS CSR RATINGS (RKS), which evaluates the company's social performance from four dimensions: Macrocosm (M), Content (C), Technique (T), and Industry (I). It calculates the total score of the CSR rating through the scores of the four dimension indicators.

This study uses both return on assets (ROA) and return on sales (Profit Margin) to measure firm value. This paper also uses several control variables to capture other company-level and CEO-level factors that may affect firm value. For company-level characteristics, enterprise size (SIZE), leverage (LEV), market to book ratio (MB), R&D expenditure (RD), cash flow from operations (CFO), capital expenditure (CAP), the ratio of current assets to current liabilities (SLACK) and advertising expenses (ADV) are considered. For CEO characteristics, CEO gender (GENDER), CEO age (AGE), CEO tenure (TENURE), and CEO retirement (RETIRE) are considered. The two moderator variables are State-owned Enterprise (SOE) and Chairperson and General Manager (DUAL). Each variable descriptive analysis is listed in Table 2.

2.3. Research model

In order to study the influence of managers' ability on CSR, this paper constructs model (3) to test hypothesis 1; to determine the dominant factors affecting firm value, this paper constructs model (4) to test hypotheses 2 and 3. In order to study the moderating role of property rights in the relationship between a manager's ability and enterprise value, the sample is divided into state-owned and non-state-owned enterprises according to the property rights to test hypothesis 4.

$$CSR = \alpha_0 + \alpha_1 MABILITY + \\ + \sum \alpha_i CONTROL + \varepsilon. \tag{3}$$

$$Firm\ value = \gamma_0 + \gamma_1 CSR + \\ + \gamma_2 MABILITY + \sum \gamma_i CONTROL + \varepsilon. \tag{4}$$

Among them, CSR is the company's overall social performance, and the control variables (CONTROL) have been specified. The first representative of firm value is profit margin, and the second representative is ROA.

3. RESULTS

3.1. Descriptive statistics

Table 3 gives summary statistics of the main variables used in this study. The mean values of the dependent variables, profit margin and ROA, are 0.119 and 0.0608, respectively. The sample CSR average value is 39.83, indicating that the overall quality of CSR disclosure is moderately low; the maximum value is 89.00, the minimum value is

Table 3. Descriptive statistics

Variables	(1)	(2)	(3)	(4)	(5)
	N	mean	SD	min	max
Profit Margin	3,498	0.119	0.225	−2.105	4.565
ROA	3,498	0.0608	0.0645	−0.589	0.484
CSR	3,498	39.83	12.14	15.40	89.00
MABILITY	3,498	−0.0103	0.156	−0.517	0.449
GENDER	3,498	0.945	0.228	0	1
AGE	3,498	50.16	5.971	30	81
RETIRE	3,498	0.0177	0.132	0	1
TENURE	3,498	55.17	43.86	1	244
SIZE	3,498	23.06	1.482	19.54	28.52
LEV	3,498	1.100	7.008	−340.2	54.49
MB	3,498	2.911	4.634	−153.0	82.55
RD	3,498	0.0185	0.0187	8.58e−08	0.155
CFO	3,498	0.175	0.230	−1.022	0.860
DIV	3,498	0.0149	0.0211	0	0.256
CAP	3,498	0.0489	0.0432	9.40e−05	0.358
SLACK	3,498	2.112	3.411	0.0936	104.7
ADV	3,498	0.00404	0.0133	0	0.168

15.40, and the standard deviation is 12.14, indicating that CSR performance is uneven, and CSR-related standards need to be further improved. The mean value of MABILITY is -0.0103, and the maximum and minimum values are 0.449 and -0.517, respectively, indicating that the managerial capabilities of the sample companies are significantly different.

The average value of LEV measured by debt-to-equity ratio is 1.1. On average, the sample companies' R&D expenditures, operating cash flow, cash dividends, capital expenditures, and advertising expenditures accounted for 1.85%, 17.5%, 1.49%, 4.89%, and 0.404% of their total assets, respectively. The average tenure of CEOs is 55.17 months, the age is 50.16 years, and 94.5% of CEOs are men.

In order to test the existence of multicollinearity, this study uses Pearson correlation between all studied variables. Appendix A (Table A1) shows that all correlations are less than 0.7. The variance inflation factor is reported – all values are less than 10. This shows that multicollinearity is not important in the study's design. It is worth noting that CSR is not significantly negatively correlated with corporate value, MABILITY is positively correlated with corporate value, and at the conventional statistical significance level, CSR is significantly negatively correlated with MABILITY.

3.2. MABILITY and CSR

In order to verify whether the manager's ability can promote CSR fulfillment, this paper conducts regression analysis on model (3), and the regression results are shown in Table 4, column (1). The coefficient of MABILITY is -5.159 and is significant at the 1% level, indicating that the higher the MABILITY, the lower the CSR level, and the worse the quality of the information disclosed. CEO GENDER and CSR performance are significantly negatively correlated at the 1% level, and CEO AGE and CSR performance are significantly positively correlated at the 1% level. CEO RETIRE and CSR performance are significantly negatively correlated at the 1% level. Corporate SIZE and ADV are significantly positively correlated with CSR performance at the 1% level. Hypothesis 1 is confirmed.

The nature of property rights has a heterogeneous impact on CSR, so this paper divides the sample into state-owned and non-state-owned enterprises and performs group regression based on model (3). The results of group regression are shown in Table 4, column (2). The regression results of state-owned and non-state-owned enterprises show that the nature of property rights makes the impact of managerial ability on CSR performance different. The MABILITY coefficient in the sample of state-owned enterprises is -6.474, which is significant at the 1% level; the coefficient of managerial ability in the sample of non-state-owned enterprises is -1.61 but not significant. This shows that in state-owned enterprises, MABILITY has a negative and significant impact on CSR; while in non-state-owned enterprises, MABILITY and CSR performance are still negatively correlated but not significant. Among state-owned enterprises, CEO GENDER and CSR performance are significantly negatively correlated at the 1% level, and CEO AGE and CSR performance are significantly positively correlated at the 1% level. CEO RETIRE and CSR performance are significantly negatively correlated at the 10% level. CEO AGE and CSR performance are significantly positively correlated at the 1% level among non-state-owned enterprises. CEO RETIRE and CSR performance are significantly negatively correlated at the 1% level.

In order to test whether the manager's power has a moderating effect on the influence of the manager's ability on CSR performance, this paper conducts regression analysis on the model (3), and the regression results are shown in Table 4, column (3). The regression results show that regardless of whether the chairperson and the general manager are in one position, MABILITY and CSR performance are significantly negatively correlated at the 1% level, which is consistent with the main effect test, and the main effect test result has been further verified. When the two positions of chairperson and general manager are not the same, CEO gender is significantly negatively correlated with CSR performance at the 1% level, CEO AGE is significantly positively correlated with CSR performance at 1%, and CEO TENURE is significantly negatively correlated with CSR performance at 10%. The chairperson and general manager are the same person, and there is a significant negative correlation between CEO RETIRE and CSR performance at the 1% level.

Table 4. Regression analysis I

Variables	(1)	(2)		(3)	
	CSR	SOE==1	SOE==0	DUAL==1	DUAL==0
MABILITY	−5.159***	−6.474***	−1.671	−4.699***	−7.552***
	(−4.27)	(−4.16)	(−0.89)	(−3.51)	(−3.03)
GENDER	−2.569***	−7.030***	1.546	−3.053***	−1.482
	(−3.04)	(−6.04)	(1.54)	(−3.38)	(−1.04)
AGE	0.124***	0.149***	0.115***	0.142***	0.096
	(3.74)	(2.83)	(2.62)	(3.64)	(1.48)
RETIRE	−4.955***	−5.049*	−5.745***	−3.936	−5.044***
	(−3.70)	(−1.96)	(−3.34)	(−1.23)	(−3.11)
TENURE	−0.006	0.000	−0.010	−0.009*	0.009
	(−1.49)	(0.01)	(−1.60)	(−1.87)	(1.09)
SIZE	4.220***	4.631***	3.441***	4.185***	4.180***
	(27.16)	(24.38)	(12.86)	(25.66)	(12.81)
LEV	−0.042	−0.009	−1.226***	−0.042	−0.642
	(−0.73)	(−0.22)	(−2.79)	(−1.10)	(−1.21)
MB	0.085	0.013	0.143	0.089	0.009
	(1.60)	(0.19)	(1.45)	(1.45)	(0.06)
RD	13.283	−17.266	48.216***	8.579	21.707
	(1.30)	(−1.16)	(3.35)	(0.69)	(1.23)
CFO	1.353	2.618*	−2.994*	0.869	2.697
	(1.39)	(1.81)	(−1.83)	(0.70)	(1.26)
DIV	10.215	9.645	−0.730	2.203	32.671*
	(1.20)	(0.60)	(−0.07)	(0.21)	(1.93)
CAP	2.502	6.630	−8.450	0.025	10.360
	(0.59)	(1.04)	(−1.52)	(0.00)	(1.44)
SLACK	0.081*	−0.030	0.096	0.083	0.049
	(1.85)	(−0.23)	(1.49)	(0.75)	(0.82)
ADV	57.912***	46.354***	86.675***	80.350***	17.514
	(3.62)	(2.64)	(3.96)	(4.71)	(0.86)
Constant	−62.276***	−69.005***	−45.821***	−61.341***	−62.738***
	(−16.42)	(−14.31)	(−7.11)	(−15.22)	(−7.71)
Observations	3,498	2,028	1,470	2,845	653
R−squared	0.264	0.319	0.154	0.260	0.295
F test	0	0	0	0	0
r2_a	0.262	0.314	0.146	0.256	0.280
F	74.69	67.24	18.91	71.00	19.11

Note: Robust t-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.3. MABILITY, CSR, and firm value

In order to further examine the impact of different management ability levels on the firm value, regression is carried out according to model (4), and the results are shown in Table 5. Column (1) shows that the coefficient of CSR is -0.001, which is negatively correlated with profit margin and is significant at the 1% confidence level. Column (4) shows that the coefficient of CSR is -0.000, which is negatively correlated with ROA and is significant at the 10% confidence level. These results indicate that the social performance of Chinese listed companies has a certain inhibitory effect on

firm value. The coefficients of column (2) and column (5) MABILITY are 0.181 and 0.078, respectively, which are significant at the 1% confidence level. This shows that MABILITY and firm value are significantly positively correlated. The coefficients of column (3) and column (6) MABILITY are 0.177 and 0.078, respectively, which are significant at the 1% confidence level; thus, MABILITY and firm value are significantly positively correlated. This shows that companies with excellent CEOs have higher firm value. The coefficients of CSR in column (3) and column (6) are -0.001 in 5% significant negative correlation and -0.000 insignificant correlation, respectively. Manager

Table 5. Regression analysis II

Variables	(1) Profit Margin	(2) Profit Margin	(3) Profit Margin	(4) ROA	(5) ROA	(6) ROA
CSR	−0.001***		−0.001**	−0.000*		−0.000
	(−2.86)		(−2.33)	(−1.79)		(−0.77)
MABILITY		0.181***	0.177***		0.078***	0.078***
		(7.55)	(7.36)		(14.59)	(14.49)
GENDER	−0.025	−0.024	−0.026	−0.007*	−0.007**	−0.007**
	(−1.58)	(−1.51)	(−1.64)	(−1.91)	(−2.03)	(−2.07)
AGE	0.001	0.001	0.001	−0.000**	−0.000**	−0.000**
	(1.01)	(0.79)	(0.94)	(−2.04)	(−2.31)	(−2.25)
RETIRE	−0.018	−0.006	−0.010	0.006	0.009	0.009
	(−0.59)	(−0.19)	(−0.32)	(0.83)	(1.43)	(1.39)
TENURE	0.000	0.000	0.000	0.000*	0.000*	0.000*
	(0.84)	(1.02)	(0.96)	(1.65)	(1.94)	(1.92)
SIZE	0.015***	0.012***	0.016***	0.006***	0.006***	0.006***
	(4.54)	(4.25)	(4.85)	(8.14)	(9.58)	(8.91)
LEV	0.000	0.000	0.000	−0.001***	−0.001***	−0.001***
	(0.65)	(0.54)	(0.50)	(−3.98)	(−4.39)	(−4.40)
MB	0.001	0.001	0.001	0.002***	0.001***	0.001***
	(0.75)	(0.55)	(0.61)	(5.87)	(5.74)	(5.75)
RD	−1.221***	−0.869***	−0.858***	0.067	0.226***	0.227***
	(−5.94)	(−4.13)	(−4.09)	(1.42)	(4.82)	(4.83)
CFO	0.057***	0.043**	0.044**	0.040***	0.034***	0.034***
	(2.74)	(2.07)	(2.12)	(8.31)	(7.28)	(7.29)
DIV	3.116***	2.983***	2.991***	1.768***	1.712***	1.713***
	(16.70)	(16.04)	(16.09)	(41.47)	(41.19)	(41.19)
CAP	0.165*	0.218**	0.220**	0.157***	0.181***	0.181***
	(1.92)	(2.54)	(2.56)	(8.02)	(9.46)	(9.47)
SLACK	0.000	0.000	0.000	−0.001***	−0.001***	−0.001***
	(0.14)	(0.33)	(0.38)	(−3.88)	(−3.54)	(−3.52)
ADV	−0.604**	−0.596**	−0.550**	0.160**	0.180***	0.184***
	(−2.16)	(−2.15)	(−1.98)	(2.50)	(2.91)	(2.95)
Constant	−0.242***	−0.221***	−0.271***	−0.097***	−0.106***	−0.110***
	(−3.17)	(−3.04)	(−3.57)	(−5.59)	(−6.54)	(−6.49)
Observations	3,498	3,498	3,498	3,498	3,498	3,498
R−squared	0.104	0.116	0.118	0.432	0.464	0.464
F test	0	0	0	0	0	0
r2_a	0.100	0.113	0.114	0.430	0.462	0.462
F	28.85	32.73	30.95	189.4	215.7	201.3

Note: t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

ability affects the effect of CSR on firm value. In summary, the research results show that social performance is significantly negatively correlated with firm value, and MABILITY is significantly positively correlated with firm value. These results confirm the second and third hypotheses.

This paper divides the sample into two groups according to the nature of property rights and examines the impact of the management capabilities of companies with different property rights on firm value. The regression results are shown in Table 6.

The results in Table 6 show that the increase in the MABILITY of non-state-owned enterprises will significantly increase the firm value.

Appendix A, Table A2 examined whether the chairperson and general manager are the same person. The results show that when the chairperson and general manager are the same person, the increase in MABILITY can significantly increase the firm value. It shows that a non-state-owned enterprise whose chairperson and general manager are the same high-capacity

Table 6. Regression analysis III

Variables	SOE==1	SOE==0	SOE==1	SOE==0
	Profit Margin	Profit Margin	ROA	ROA
CSR	−0.001	−0.001***	0.000	−0.000***
	(−1.50)	(−3.32)	(0.27)	(−2.64)
MABILITY	0.137***	0.206***	0.054***	0.111***
	(3.99)	(6.92)	(8.75)	(11.70)
GENDER	−0.030	−0.010	−0.007	−0.004
	(−1.17)	(−0.59)	(−1.43)	(−0.88)
AGE	0.003**	−0.000	0.000	−0.001***
	(2.32)	(−0.37)	(1.57)	(−2.87)
RETIRE	0.016	−0.005	0.004	0.010
	(0.29)	(−0.18)	(0.35)	(1.17)
TENURE	−0.000	0.000***	0.000*	0.000
	(−1.38)	(3.34)	(1.67)	(0.70)
SIZE	0.005	0.044***	0.003***	0.015***
	(1.14)	(9.71)	(4.09)	(10.80)
LEV	0.003***	−0.054***	0.000	−0.018***
	(2.93)	(−7.71)	(0.91)	(−7.99)
MB	−0.004**	0.009***	−0.000	0.005***
	(−2.31)	(5.97)	(−1.06)	(10.24)
RD	−1.395***	−0.882***	0.066	0.230***
	(−4.27)	(−3.85)	(1.12)	(3.15)
CFO	−0.019	0.046*	0.038***	−0.001
	(−0.61)	(1.75)	(6.57)	(−0.07)
DIV	5.741***	1.119***	2.194***	1.355***
	(16.26)	(6.42)	(34.48)	(24.44)
CAP	0.049	0.127	0.160***	0.137***
	(0.35)	(1.43)	(6.37)	(4.84)
SLACK	−0.007**	0.003**	−0.003***	−0.000
	(−2.50)	(2.50)	(−5.08)	(−0.59)
ADV	−0.872**	−0.829**	0.265***	−0.210*
	(−2.26)	(−2.37)	(3.81)	(−1.89)
Constant	−0.113	−0.794***	−0.078***	−0.265***
	(−1.01)	(−7.61)	(−3.89)	(−7.98)
Observations	2,028	1,470	2,028	1,470
R−squared	0.156	0.197	0.503	0.489
F test	0	0	0	0
r2_a	0.150	0.189	0.499	0.484
F	24.78	23.85	135.8	92.72

Note: t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

management can concentrate on selecting higher-quality projects to enhance corporate value. Hypothesis 4 is confirmed.

In order to further test the influence of different MABILITY on firm value, this paper divides the research sample into a positive value group (MABILITY>0) and negative value group (MABILITY<0) and uses model (4) to test all hypotheses in groups. The results are shown in Appendix A, Table A3. MABILITY has a positive effect on firm value and is significant at the 1% level. When the management ability is low,

MABILITY has a more significant positive effect on firm value, and excellent CEOs can improve corporate value.

3.4. Robustness test

This paper divides the regression residuals into four groups, from small to large, and assigns the managerial ability (MABILITY1) to 1, 2, 3, and 4. The higher the value, the stronger the managerial ability. The paper substitutes the new managerial ability variable into the model (4) to perform the regression test again. The

test results are shown in Appendix A, Table A4, which are consistent with the previous results; that is, managers' ability can positively impact firm value.

To ensure the robustness of the empirical results, this paper considers that the value of the enterprise is likely to be affected by its own factors in the previous period. Therefore, this paper deals with the explanatory and control variables for a lag period in the regression test. The processing method of the Lead-Lag Approach can alleviate the endogenous problem to a certain extent. The test results are shown in Appendix A, Table A5. The main results have not changed, indicating that endogeneity has not seriously affected the relationship between the variables in this paper, and the research results are relatively stable.

4. DISCUSSION

The results, revealing a statistically significant negative correlation between managerial ability and corporate social responsibility (CSR) performance, align with Andreou et al. (2017), L. Cheng and Cheung (2021) emphasizing a consistent pattern of lower CSR levels in companies led by managers with higher levels of competence. Those findings contradict H. Cheng et al. (2020) results. The findings suggest that there might be inherent challenges or conflicts between managerial prowess and the prioritization of social responsibility within corporate strategies.

The findings demonstrate a negative correlation between CSR and firm value. Notably, this negative impact is associated with the level of managerial ability. This echoes the work of Gong et al. (2021), who highlighted the intricate relationship between CSR initiatives and firm value. The results suggest that the effectiveness of CSR in enhancing firm value is contingent upon the managerial skill set, emphasizing the pivotal role of managerial ability in mitigating or exacerbating the impact of CSR on overall corporate performance.

Moreover, this study provides robust evidence of a significant positive correlation between

managerial ability and firm value. These results align with the findings of Huang and Xiong (2023), Inam Bhutta et al. (2021), and Park and Byun (2021), reinforcing the notion that companies led by adept CEOs with strong managerial abilities tend to achieve higher firm value. The positive impact underscores the crucial role played by managerial competence in steering companies toward enhanced overall corporate performance and increased shareholder value.

The confirmation of hypothesis 4 suggests that in state-owned enterprises, the positive correlation between managerial ability and firm value weakens. This observation aligns with Huang et al. (2022), indicating that the relationship between managerial ability and firm value is context-dependent, especially in the unique governance structures of state-owned enterprises. A comparative analysis with the findings of Aguilera et al. (2021) further reinforces the understanding that the impact of managerial ability on firm value varies across different ownership contexts.

In comparison with Andreou et al. (2017), L. Cheng and Cheung (2021), and Gong et al. (2021), the current study's results are largely in concordance with the established literature. The negative correlation between managerial ability and CSR corresponds to the findings of Andreou et al. (2017) and L. Cheng and Cheung (2021), who similarly identified challenges in balancing managerial competence with social responsibility initiatives. The nuanced relationship between CSR and firm value, as influenced by managerial ability, echoes the insights provided by Gong et al. (2021), highlighting the need for a tailored approach in understanding the impact of CSR on corporate financial outcomes.

The positive correlation between managerial ability and firm value is in line with Huang and Xiong (2023), Inam Bhutta et al. (2021), and Park and Byun (2021), emphasizing the integral role of competent leadership in driving firm value. However, the observed weakening of this positive correlation in state-owned enterprises offers a distinctive contribution, furthering the understanding of the nuanced dynamics within these organizational structures.

CONCLUSION

This study investigates the intricate connections among managerial ability, corporate social responsibility, and firm value in the context of sustainability utilizing the sample of 3,498 company-year observations of China's Shanghai and Shenzhen A-share listed companies from 2009 to 2018.

The results demonstrate a significant negative correlation between managerial ability and CSR performance, consistent with previous research, highlighting challenges in harmonizing managerial competence with social responsibility priorities. Additionally, the study establishes a negative correlation between CSR and firm value, with managerial ability influencing this impact, emphasizing the crucial role of managerial skills in moderating the relationship between CSR initiatives and overall corporate performance. Furthermore, a strong positive correlation between managerial ability and firm value is revealed, in line with existing literature, emphasizing the essential role of adept leadership in achieving higher corporate valuation.

Based on the findings of this study, company managers should carefully navigate the delicate balance between managerial ability and CSR initiatives. The negative correlation between managerial ability and CSR performance underscores the challenges in aligning managerial competence with social responsibility priorities. To enhance overall corporate performance and stakeholder value, managers should strive for a nuanced approach that integrates both managerial acumen and socially responsible practices. Recognizing the pivotal role of managerial skills in moderating the relationship between CSR initiatives and firm value, managers should prioritize leadership development programs that foster a comprehensive understanding of social responsibility and strategic decision-making.

The study highlights the importance of acknowledging and incentivizing adept leadership for stakeholders, particularly investors and policymakers. The strong positive correlation between managerial ability and firm value emphasizes the critical role of competent leaders in achieving higher corporate valuation. Investors should factor in the leadership quality of the companies they invest in, considering it a critical determinant of long-term success and value creation. Policymakers may consider initiatives that promote leadership development programs and advocate for responsible business practices to enhance overall corporate performance and societal impact. Together, these insights offer practical guidance for both managers and stakeholders in navigating the intricate dynamics of managerial ability, CSR, and firm value for sustainable and value-centric business practices.

AUTHOR CONTRIBUTIONS

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APPENDIX A

Table A1. Correlation matrix

Variables abbreviation	VIF	Profit~n	ROA	CSR	MABILITY	GENDER	AGE	RETIRE	TENURE	SIZE	LEV	MB	RD	CFO	DIV	CAP	SLACK	ADV
ProfitMargin		1																
ROA	1.87	0.564***	1															
CSR	1.36	−0.0110	0	1														
MABILITY	1.17	0.160***	0.217***	−0.102***	1													
GENDER	1.02	−0.030*	−0.035**	−0.031*	−0.00900	1												
AGE	1.3	0.037**	0.00600	0.113***	−0.0160	0.065***	1											
RETIRE	1.2	0.0100	0.037**	−0.047***	−0.043**	0.0230	0.379***	1										
TENURE	1.11	0.037**	0.084***	−0.044***	−0.0180	0.0190	0.253***	0.150***	1									
SIZE	1.85	0.037**	−0.0280	0.495***	−0.077***	0.032*	0.162***	−0.038**	−0.078***	1								
LEV	2.03	0.0220	−0.0120	0.032*	0.041**	−0.00100	0.0100	−0.00200	−0.00100	0.076***	1							
MB	2.19	0.038**	0.127***	−0.089***	0.052***	−0.0120	−0.0190	0.00500	0.042**	−0.228***	0.661***	1						
RD	1.22	−0.067***	0.111***	−0.072***	−0.193***	0.044***	−0.0240	0.058***	0.107***	−0.215***	−0.0170	0.140***	1					
CFO	1.83	0.089***	0.267***	−0.169***	0.100***	−0.049***	−0.037**	0.00900	0.106***	−0.429***	−0.0160	0.192***	0.274***	1				
DIV	1.79	0.289***	0.632***	−0.0110	0.090***	−0.0100	0.035**	0.058***	0.100***	−0.103***	−0.038**	0.107***	0.114***	0.322***	1			
CAP	1.1	0.037**	0.121***	−0.0100	−0.096***	−0.00900	−0.0240	0.036**	0.00600	−0.041**	0.00300	0.035**	0.0120	−0.145***	0.063***	1		
SLACK	1.33	0.055***	0.097***	−0.095***	0.033*	−0.00400	0.00800	0.039**	0.047***	−0.265***	−0.033*	0.104***	0.075***	0.476***	0.178***	0.00700	1	
ADV	1.07	0.0270	0.166***	0.040**	0.0130	−0.0190	−0.0220	0.00800	0.0100	−0.061***	−0.00500	0.070***	−0.0250	0.131***	0.203***	−0.00100	0.037**	1

Table A2. Regression analysis IV

Variables	DUAL==1	DUAL==0	DUAL==1	DUAL==0
	Profit Margin	Profit Margin	ROA	ROA
CSR	−0.001*	−0.002**	−0.000	−0.000
	(−1.73)	(−2.20)	(−0.10)	(−1.50)
MABILITY	0.167***	0.258***	0.075***	0.099***
	(6.44)	(4.04)	(13.55)	(5.88)
GENDER	−0.035**	0.021	−0.009**	0.005
	(−2.00)	(0.58)	(−2.51)	(0.55)
AGE	0.001	0.000	−0.000**	0.000
	(1.12)	(0.21)	(−2.56)	(0.28)
RETIRE	−0.051	−0.005	−0.016	0.008
	(−0.83)	(−0.11)	(−1.22)	(0.70)
TENURE	0.000	0.000	0.000*	0.000
	(0.30)	(1.00)	(1.69)	(0.14)
SIZE	0.013***	0.050***	0.005***	0.017***
	(3.58)	(5.36)	(7.32)	(6.89)
LEV	0.001*	−0.063***	−0.001***	−0.018***
	(1.67)	(−4.63)	(−3.40)	(−5.09)
MB	−0.001	0.017***	0.001***	0.005***
	(−0.87)	(4.48)	(4.30)	(5.53)
RD	−0.990***	−1.021**	0.227***	0.149
	(−4.13)	(−2.27)	(4.47)	(1.26)
CFO	0.050**	−0.003	0.044***	−0.004
	(2.08)	(−0.05)	(8.55)	(−0.31)
DIV	3.091***	2.095***	1.712***	1.577***
	(14.92)	(4.85)	(39.00)	(13.96)
CAP	0.214**	0.033	0.202***	0.066
	(2.20)	(0.18)	(9.75)	(1.37)
SLACK	−0.003	0.002	−0.002***	−0.000
	(−1.31)	(1.11)	(−5.24)	(−0.19)
ADV	−0.349	−0.938*	0.242***	0.024
	(−1.05)	(−1.81)	(3.45)	(0.18)
Constant	−0.196**	−0.967***	−0.082***	−0.342***
	(−2.42)	(−4.46)	(−4.80)	(−6.02)
Observations	2,845	653	2,845	653
R−squared	0.119	0.177	0.494	0.425
F test	0	0	0	0
r2_a	0.115	0.158	0.492	0.412
F	25.57	9.132	184.4	31.40

Note: t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3. Regression analysis V

Variables	MABILITY>0	MABILITY<0	MABILITY>0	MABILITY<0
	Profit Margin	Profit Margin	ROA	ROA
CSR	−0.002***	−0.000	−0.000***	0.000
	(−3.74)	(−0.12)	(−2.96)	(0.25)
MABILITY	0.210***	0.289***	0.087***	0.124***
	(3.24)	(5.55)	(7.15)	(8.81)
GENDER	−0.016	−0.010	−0.008	−0.004
	(−0.56)	(−0.57)	(−1.53)	(−0.86)
AGE	0.002	−0.001	−0.000	−0.000**
	(1.42)	(−1.06)	(−1.53)	(−2.15)
RETIRE	−0.057	0.025	−0.001	0.016*
	(−1.05)	(0.80)	(−0.06)	(1.89)
TENURE	−0.000	0.000*	0.000*	0.000
	(−0.06)	(1.74)	(1.69)	(1.62)
SIZE	0.048***	0.011***	0.011***	0.007***
	(6.89)	(3.23)	(8.56)	(7.34)

Table A3 (cont.). Regression analysis V

Variables	MABILITY>0 Profit Margin	MABILITY<0 Profit Margin	MABILITY>0 ROA	MABILITY<0 ROA
LEV	−0.054***	0.002**	−0.010***	−0.000
	(−7.70)	(2.34)	(−7.47)	(−1.18)
MB	0.008***	−0.001	0.005***	0.000
	(2.82)	(−1.30)	(9.41)	(1.48)
RD	−1.420***	−0.530**	0.221***	0.210***
	(−3.60)	(−2.38)	(3.00)	(3.47)
CFO	−0.120***	0.115***	0.012*	0.041***
	(−3.12)	(5.00)	(1.65)	(6.58)
DIV	3.208***	2.192***	1.743***	1.557***
	(9.52)	(10.57)	(27.77)	(27.72)
CAP	−0.216	0.394***	0.101***	0.212***
	(−1.39)	(4.22)	(3.52)	(8.38)
SLACK	0.003	−0.001	−0.001***	−0.001***
	(1.30)	(−0.96)	(−2.77)	(−2.79)
ADV	−0.853*	−0.028	0.095	0.270***
	(−1.95)	(−0.08)	(1.17)	(2.85)
Constant	−0.908***	−0.131*	−0.196***	−0.108***
	(−5.72)	(−1.69)	(−6.65)	(−5.12)
Observations	1,471	2,027	1,471	2,027
R−squared	0.157	0.118	0.539	0.411
F test	0	0	0	0
r2_a	0.148	0.112	0.535	0.406
F	18.05	17.95	113.5	93.40

Note: t-statistics in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1.

Table A4. Robustness test I

Variables	Profit Margin	SOE==1 Profit Margin	SOE==0 Profit Margin	ROA	SOE==1 ROA	SOE==0 ROA
CSR	−0.001**	−0.001	−0.001***	−0.000	0.000	−0.000***
	(−2.38)	(−1.51)	(−3.35)	(−0.77)	(0.39)	(−2.67)
MABILITY1	0.019***	0.014***	0.020***	0.009***	0.007***	0.012***
	(5.73)	(3.02)	(5.03)	(12.60)	(8.09)	(9.24)
GENDER	−0.026	−0.029	−0.010	−0.007**	−0.006	−0.005
	(−1.61)	(−1.13)	(−0.61)	(−2.01)	(−1.26)	(−0.95)
AGE	0.001	0.003**	−0.000	−0.000**	0.000	−0.001***
	(0.87)	(2.22)	(−0.28)	(−2.41)	(1.29)	(−2.72)
RETIRE	−0.013	0.011	−0.006	0.008	0.003	0.009
	(−0.42)	(0.20)	(−0.22)	(1.22)	(0.29)	(1.06)
TENURE	0.000	−0.000	0.000***	0.000**	0.000*	0.000
	(1.09)	(−1.29)	(3.29)	(2.21)	(1.84)	(0.78)
SIZE	0.015***	0.004	0.043***	0.006***	0.003***	0.015***
	(4.54)	(0.89)	(9.52)	(8.26)	(3.63)	(10.38)
LEV	0.000	0.003***	−0.051***	−0.001***	0.000	−0.017***
	(0.66)	(3.11)	(−7.28)	(−4.04)	(1.24)	(−7.34)
MB	0.001	−0.004**	0.010***	0.001***	−0.000	0.005***
	(0.54)	(−2.45)	(6.29)	(5.51)	(−1.35)	(10.57)
RD	−0.952***	−1.485***	−1.008***	0.200***	0.050	0.177**
	(−4.53)	(−4.56)	(−4.38)	(4.24)	(0.85)	(2.39)
CFO	0.048**	−0.016	0.056**	0.035***	0.039***	0.004
	(2.31)	(−0.49)	(2.15)	(7.51)	(6.79)	(0.45)
DIV	3.013***	5.785***	1.141***	1.717***	2.198***	1.364***
	(16.15)	(16.35)	(6.50)	(40.98)	(34.43)	(24.18)
CAP	0.206**	0.034	0.124	0.177***	0.158***	0.136***
	(2.39)	(0.25)	(1.39)	(9.20)	(6.27)	(4.73)

Table A4 (cont.). Robustness test I

| Variables | Profit Margin | SOE==1 | SOE==0 | ROA | SOE==1 | SOE==0 |
		Profit Margin	Profit Margin		ROA	ROA
SLACK	0.000	−0.007***	0.002**	−0.001***	−0.003***	−0.000
	(0.27)	(−2.59)	(2.42)	(−3.68)	(−5.23)	(−0.67)
ADV	−0.572**	−0.917**	−0.787**	0.175***	0.252***	−0.188*
	(−2.05)	(−2.37)	(−2.23)	(2.80)	(3.61)	(−1.66)
Constant	−0.292***	−0.114	−0.840***	−0.122***	−0.084***	−0.289***
	(−3.81)	(−1.02)	(−8.02)	(−7.10)	(−4.15)	(−8.60)
Observations	3,498	2,028	1,470	3,498	2,028	1,470
R−squared	0.112	0.153	0.185	0.457	0.500	0.472
F test	0	0	0	0	0	0
r2_a	0.108	0.147	0.177	0.455	0.497	0.466
F	29.36	24.25	22.03	195.3	134.4	86.59

Note: t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5. Robustness test II. Lead-lag approach

Variables	Profit Margin	SOE==1 Profit Margin	SOE==0 Profit Margin	ROA	SOE==1 ROA	SOE==0 ROA
CSR_lag	−0.001**	−0.001	−0.001***	−0.000	0.000	−0.000**
	(−2.12)	(−1.54)	(−3.25)	(−0.61)	(0.52)	(−2.47)
MABILITY_lag	0.128***	0.090**	0.153***	0.053***	0.040***	0.074***
	(4.41)	(2.15)	(4.51)	(7.98)	(5.14)	(6.15)
GENDER_lag	−0.027	−0.030	−0.019	−0.006	−0.001	−0.009
	(−1.41)	(−0.96)	(−1.02)	(−1.35)	(−0.20)	(−1.45)
AGE_lag	0.002**	0.004***	0.001	0.000	0.001***	−0.000
	(2.31)	(3.06)	(1.15)	(0.25)	(2.98)	(−1.07)
RETIRE_lag	−0.021	−0.013	−0.009	0.008	−0.012	0.017
	(−0.57)	(−0.19)	(−0.30)	(0.98)	(−0.90)	(1.53)
TENURE_lag	−0.000	−0.000	0.000	0.000	0.000	−0.000
	(−0.21)	(−1.44)	(1.56)	(0.49)	(1.14)	(−1.01)
SIZE_lag	0.010***	0.001	0.030***	0.004***	0.002**	0.008***
	(2.66)	(0.25)	(6.04)	(4.21)	(2.09)	(4.32)
LEV_lag	−0.002**	−0.000	−0.042***	−0.001***	−0.001***	−0.009***
	(−2.28)	(−0.30)	(−4.94)	(−5.41)	(−3.50)	(−2.99)
MB_lag	0.004***	0.000	0.010***	0.002***	0.002***	0.004***
	(2.59)	(0.02)	(5.60)	(7.01)	(3.72)	(5.92)
RD_lag	−1.001***	−1.672***	−0.662**	0.145**	0.030	0.224**
	(−3.89)	(−4.19)	(−2.50)	(2.47)	(0.40)	(2.37)
CFO_lag	−0.017	−0.056	−0.014	0.002	0.011	−0.024**
	(−0.71)	(−1.46)	(−0.49)	(0.29)	(1.50)	(−2.36)
DIV_lag	3.078***	5.907***	1.048***	1.620***	2.003***	1.319***
	(13.40)	(13.66)	(5.22)	(30.90)	(24.54)	(18.46)
CAP_lag	−0.055	−0.206	−0.135	0.062***	0.067**	−0.000
	(−0.54)	(−1.26)	(−1.35)	(2.68)	(2.16)	(−0.00)
SLACK_lag	−0.001	−0.015***	0.003**	−0.001**	−0.004***	0.000
	(−0.96)	(−4.69)	(2.48)	(−2.54)	(−6.00)	(0.70)
ADV_lag	−0.257	−0.773*	0.244	0.293***	0.294***	0.202
	(−0.80)	(−1.75)	(0.61)	(3.96)	(3.52)	(1.41)
Constant	−0.187**	−0.067	−0.531***	−0.060***	−0.074***	−0.095**
	(−2.03)	(−0.49)	(−4.55)	(−2.87)	(−2.86)	(−2.28)
Observations	2,775	1,639	1,136	2,775	1,639	1,136
R−squared	0.090	0.138	0.145	0.351	0.372	0.354
F test	0	0	0	0	0	0
r2_a	0.0855	0.130	0.133	0.348	0.366	0.346
F	18.29	17.37	12.63	99.56	64.05	40.98

Note: t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.