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The Cost of Concealment: The Dual Effects of Social Responsibility Text Information Manipulation on Debt Financing Costs

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Abstract. The phenomenon of textual information manipulation in corporate social responsibility reports is frequently observed, yet existing studies have paid insufficient attention to whether it affects pricing in the credit market. Based on information asymmetry theory, this paper takes Chinese A-share listed companies from 2009 to 2024 as samples, employs natural language processing technology to extract social responsibility disclosure scores, and subtracts firms' actual responsibility fulfillment levels from these scores to construct an information manipulation variable. It then empirically examines the effect of this variable on the cost of debt financing. The results show that social responsibility textual information manipulation significantly reduces firms' debt financing costs in the short term, and this effect is mainly achieved by attracting greater analyst coverage. However, such short-term gains exhibit clear temporal limitations, with the effect lasting for only one year before dissipating. Meanwhile, information manipulation also leads to deterioration in stock liquidity, indicating that firms obtain short-term financing advantages at the expense of capital market trading efficiency. Heterogeneity analysis shows that the above effects are more pronounced among non-state-owned enterprises, small-scale enterprises, and firms with relatively high executive shareholding ratios. This paper reveals the unique mechanism through which non-financial information manipulation operates in the credit market and provides empirical evidence for improving the regulatory system of corporate social responsibility reports.

Keywords: social responsibility textual information manipulation, cost of debt financing, analyst coverage, stock liquidity

1. Introduction

The cost of corporate debt financing is directly related to firms' ability to obtain capital and maintain operational flexibility, and has long been one of the core issues in the field of corporate finance. In recent years, regulatory authorities have continuously promoted listed companies to strengthen the disclosure of corporate social responsibility information, aiming to alleviate information asymmetry and optimize the allocation of credit resources. However, in practice, an intriguing phenomenon of "increased quantity but reduced quality" has emerged: although the number of firms disclosing

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social responsibility reports increased from 369 in 2008 to 2,075 in 2023, some firms deliberately employed complex wording or selective disclosure in their reports to conceal insufficient fulfillment of social responsibilities. More puzzlingly, such textual information manipulation behaviors have not triggered punishment from the credit market; instead, they have reduced firms' debt financing costs in the short term [1]. The explanatory power of traditional information theory thus faces challenges in this context.

Focusing on this issue, this paper takes Chinese A-share listed companies from 2009 to 2024 as samples, employs natural language processing technology to measure the textual complexity of corporate social responsibility reports, and constructs an information manipulation indicator by subtracting firms' actual responsibility fulfillment levels from the textual disclosure scores. It further examines the direction of influence and transmission path of this indicator on the cost of debt financing. The empirical results show that information manipulation behavior can reduce firms' debt financing costs in the short term, and an important mediating mechanism behind this effect is analyst coverage, which objectively amplifies the signaling effect of embellished texts. However, this short-term financing advantage is not persistent, and the effect becomes insignificant after a two-period lag. Meanwhile, information manipulation also reduces stock liquidity, indicating that firms obtain such financing advantages at the cost of impaired trading efficiency in the capital market. Grouped tests further reveal that the above effects are more pronounced among non-state-owned enterprises, small-scale enterprises, and firms with relatively high proportions of executive shareholding.

Compared with the existing literature, the contributions of this paper are mainly reflected in two aspects. First, from the behavioral perspective of textual manipulation, this study expands the research boundary concerning the economic consequences of non-financial information disclosure, reveals the paradoxical mechanism whereby "exaggerated claims" in credit pricing can instead generate short-term benefits, and provides new empirical evidence for the debate between the "value hypothesis" and the "tool hypothesis" of social responsibility information. Second, this paper identifies the partial mediating role of analyst coverage, clarifies the transmission path through which textual embellishment generates short-term benefits, and also provides practical and policy implications for enterprises.

2. Literature review and hypothesis development

2.1. Literature review

A large body of empirical evidence supports the negative relation between information disclosure quality and the cost of debt financing [2]. But most existing studies focus mainly on financial information. Less attention has been given to how textual information on social responsibility affects credit pricing. Corporate social responsibility disclosure is mainly made up of narrative text. This gives firms much freedom in choosing wording and tone. Such freedom helps firms present their responsibility fulfillment. It also leaves room for strategic changes in text. Still, many existing studies treat textual features as given from outside. They seldom examine why firms may intentionally adjust report complexity and tone. Firms with poorer social performance are more likely to increase the logical complexity of text and add emotional embellishment [3]. This shows that textual complexity may reflect management's intention to hide weaknesses in responsibility fulfillment.

Studies on non-financial information also show that the role of social responsibility reports in credit pricing is still debated. Some studies support the "value hypothesis." They argue that social responsibility disclosure can send positive signals to creditors and reduce debt financing costs. Other

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studies suggest a different view. When reliable assurance mechanisms are absent, information manipulation may bring negative results instead. At present, existing literature has not clearly and systematically shown how textual manipulation affects creditors' pricing decisions. To fill this gap, this study focuses on textual complexity. It examines the direct effect of social responsibility information manipulation on the cost of debt financing.

2.2. Research hypotheses

According to classical information asymmetry theory, lower information disclosure quality usually increases frictions between firms and creditors. As a result, the cost of debt financing rises. But this theoretical expectation may be challenged when the information is unstructured and hard to standardize, such as corporate social responsibility disclosure. Financial reports contain relatively fixed numerical indicators. By contrast, social responsibility reports mainly depend on narrative text. This gives firms considerable freedom in tone selection, information arrangement, and complexity control. It also creates possible room for strategic textual manipulation. The main difficulty for creditors is the lack of a unified evaluation framework for non-financial information. It is hard for them to verify every detail in the reports within a short time. This evaluative "gray area" gives firms the chance to make textual adjustments. Firms may selectively highlight positive events, use optimistic tones, or simplify complex expressions. These textual intervention methods involve almost no direct cost. In the short term, they can send a strategically polished corporate image to society.

From the perspective of signaling theory, creditors may read embellished texts as signals of lower risk. The deeper reason is that the debt market often relies heavily on surface features, such as "readability," when assessing non-financial information. Studies on the bond market show that a positive managerial tone can significantly reduce bond credit spreads. When the market lacks effective mechanisms to verify the truth of disclosures, tone itself becomes an independent pricing factor [4]. Research on the Chinese bond market also supports this view. Prospectuses with poor readability are often linked to higher credit spreads. Yet bond issuers may manipulate textual readability to hide negative information about future default risk [5]. This means that when firms actively improve the readability and positive tone of social responsibility reports, creditors may lack other reliable verification channels. They may then wrongly read these formally "friendly" textual signals as signs of sound corporate management and controllable risk. As a result, creditors may offer more favorable terms in debt pricing.

The above effect can also continue in the short term because creditors have limited ability to identify the gap between firms' "words" and "actions" in responsibility fulfillment. Studies on corporate greenwashing show that external markets find it difficult to distinguish the truth of firms' responsibility fulfillment in the short run. The reduction in financing costs gained through textual embellishment does exist. But this effect is not sustainable [6]. The reason is that when corporate social responsibility information lacks assurance from independent third parties, creditors cannot effectively compare textual "claims" with firms' actual "practices." Existing studies find that auditors' industry expertise can provide extra information about non-financial social responsibility information. It becomes an important basis for creditors to judge information reliability [7]. Without external assurance, creditors lack a key benchmark for distinguishing real responsibility fulfillment from textual window dressing. Based on the above analysis, from the "absence of an evaluation framework," to the "difficulty of signal identification," and then to the "limits of recognition ability," this paper proposes the following research hypothesis:

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H1: In the short term, the higher the degree of corporate social responsibility textual information manipulation, the lower the firm's cost of debt financing.

To explain the transmission mechanism behind the above phenomenon, this paper argues that analyst coverage plays an important mediating role. On the one hand, textual information manipulation makes reports more positive in tone and simpler in expression. This lowers the threshold for information interpretation and makes the reports more likely to attract analysts' attention. On the other hand, analyst coverage can ease information asymmetry. Analysts' research reports and earnings forecasts can be transformed into credit signals that creditors can use. This helps reduce the cost of debt financing [8]. Even when firms' disclosures contain strategic embellishment, analysts' involvement can further strengthen the market transmission effect of textual signals.

Accordingly, the complete mediating path can be described as follows. Firms carry out textual manipulation in corporate social responsibility reports. This makes the reports more readable and more attractive. The reports then attract more analyst attention and coverage. Through analysts' information processing and transmission functions, creditors face less difficulty in identifying information. They also perceive lower risk during the debt pricing process. In the end, firms' debt financing costs decrease. The reducing effect of textual information manipulation on debt financing costs may also work through other channels. But because of space limits, this paper mainly focuses on this mechanism. Based on this reasoning, the following research hypothesis is proposed:

H2: Social responsibility textual information manipulation attracts greater analyst coverage, thereby reducing firms' cost of debt financing.

3. Research design

3.1. Sample selection and data sources

This paper takes the corporate social responsibility reports of Chinese A-share listed companies from 2009 to 2024 as the research sample. The reports were obtained from the CNINFO website, while other core corporate financial data were collected from the CSMAR database. During the data-cleaning process, samples from the financial industry as well as ST, *ST, and PT companies were excluded. Samples with missing data for key variables were also removed. To ensure that the sample was free from extreme outliers, all continuous variables were Winsorized at the 1% and 99% quantiles. Ultimately, 40,326 valid observations were obtained.

3.2. Model design

To examine the impact of social responsibility information manipulation on the cost of debt financing (Hypothesis H1), this paper establishes the following baseline regression model:

$$Cost_{i,t+1} = \alpha_0 + \alpha_1 Manipulation_{i,t} + \sum \gamma_k Control_{i,t} + \sum Ind + \sum Year + \varepsilon_{i,t} \quad (1)$$

where the explained variable $Cost_{i,t+1}$ represents the debt financing cost of firm (i) in period (t+1), measured by the ratio of financial expenses to total liabilities at the end of the period. The core explanatory variable $Manipulation_{i,t}$ denotes the social responsibility information manipulation indicator, constructed as the difference between the social responsibility disclosure score and the responsibility performance score. To mitigate endogeneity bias potentially caused by reverse causality, the dependent variable is lagged by one period, such that manipulation behavior in period

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(t) is used to explain financing costs in period (t+1). $Control_{i,t}$represents the control variables, while Ind and $Year$ denote industry and year fixed effects, respectively, which are included to absorb macro-level factors and inherent industry differences that do not vary over time and across industries. If$\alpha_1$is significantly negative, it indicates that information manipulation behavior can reduce firms' debt financing costs, thereby supporting Hypothesis H1.

3.3. Variable definitions

3.3.1. Explained variable

This work picks debt financing cost as the explained variable. It follows Wei Zhihua et al. [9].The measure uses end-period financial expenses divided by total liabilities, and the raw ratio is multiplied by 100. This scaling keeps the variable in a reasonable range. It makes regression coefficients easier to interpret and model comparisons simpler.

3.3.2. Explanatory variable

The explanatory variable here is social responsibility information manipulation. It follows the way ESG greenwashing is measured [10]. The variable equals the standardized corporate social responsibility (CSR) disclosure score minus the social responsibility performance score.

Specifically, the social responsibility disclosure score (Disclosure) uses text complexity from natural language processing (NLP) methods. Higher complexity means more likely information manipulation. Firms that meet social responsibilities well use plainer disclosure language. But managers of firms with poor responsibility work prefer complex text to hide shortcomings. Text complexity has three parts [11]: density of adversative words (share of transition words), industry term density, and rare character density (share of uncommon characters). When all three indicators go up together, the social responsibility text becomes more complex. Firms have stronger reasons to hide issues.

The social responsibility performance score (Performance) comes from social dimension ratings in the Huazheng ESG Database and Bloomberg Database. It shows how firms perform in employee rights, supply chain duty, community ties and other responsibility areas.

We standardize the two indicators separately and compute their difference. This gives the social responsibility information manipulation variable (Manipulation). A bigger difference means a firm's text complexity is much higher than its real responsibility work. This points to "overstated claims". A smaller or negative difference means disclosure matches real fulfillment better. This way of building the variable follows past research [12]. The formula is as follows:

$$Manipulation_{i,t} = \left(\frac{Disclosure_{it}-\mu_{Dt}}{\sigma_{Dt}}\right) - \left(\frac{Performance_{it}-\mu_{Pt}}{\sigma_{Pt}}\right) \quad (2)$$

where μ_{Dt} and μ_{Pt} represent the annual industry means of disclosure scores and performance scores, respectively, and σ_{Dt} and σ_{Pt} denote the corresponding standard deviations.

3.3.3. Control variables

To control for the influence of other factors, this paper introduces firm characteristic variables covering financial, governance, and auditing aspects, including leverage ratio (Lev), firm size (Size), return on assets (Roa), ownership nature (SOE), tangibility ratio (Tangibility), audit opinion

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(AuditOpinion), proportion of independent directors (Indep), and shareholding ratio of the largest shareholder (Top1). Detailed variable definitions are presented in Table 1.

Table 1. Variable definitions and symbols

	Variable Name	Symbol	Definition
Explained Variable	Cost of debt financing	Cost	Ratio of financial expenses to total liabilities multiplied by 100
Explanatory Variable	Social responsibility information manipulation	Manipulation	Difference between the standardized social responsibility disclosure score and social responsibility performance score
Control Variable	Leverage ratio	Lev	Ratio of total liabilities to total assets at the end of the period
	Firm size	Size	Natural logarithm of total assets at the end of the period
	Return on assets	Roa	Ratio of net profit to total assets at the end of the period
	Ownership nature	SOE	Assigned 1 for state-owned enterprises and 0 for non-state-owned enterprises
	Tangibility ratio	Tangibility	Ratio of net fixed assets to total assets at the end of the period
	Audit opinion	AuditOpinion	Assigned 0 for non-standard audit opinions and 1 for standard audit opinions
	Proportion of independent directors	Indep	Ratio of the number of independent directors to the total number of board directors
	Largest shareholder ownership	Top1	Ratio of shares held by the largest shareholder to total company equity

4. Empirical results

4.1. Descriptive statistics

Table 2 shows that the mean of the dependent variable Cost is 2.038, which is close to the estimation results of Zheng Jun [13] and others. The mean of the explanatory variable Manipulation is -0.008, with a standard deviation of 1.319, indicating substantial heterogeneity in the degree of information manipulation across firms. The means and distributions of all control variables fall within reasonable ranges.

Table 2. Descriptive statistics of key variables

	Variable	Observations	Mean	Standard Deviation	Minimum	Median	Maximum
Dependent Variable	Cost	40326	2.038	1.409	0.230	1.810	5.999
Explanatory Variable	Manipulation	40326	-0.008	1.319	-3.010	-0.074	3.621
Control Variables	Size	40326	22.219	1.290	19.996	22.008	26.137

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Table 2. (continued)

	Lev	40326	0.415	0.208	0.056	0.405	0.899
	Roa	40326	0.037	0.059	-0.195	0.037	0.190
	Tangibility	40326	0.211	0.157	0.003	0.179	0.670
Control Variables	Top1	40326	34.080	14.923	8.380	31.830	74.570
	Indep	40326	0.377	0.053	0.333	0.364	0.571
	SOE	40326	0.348	0.476	0	0	1
	AuditOpinion	40326	0.956	0.206	0	1	1

4.2. Baseline regression results

Table 3 reports the baseline regression results. Column (1) includes only year fixed effects and industry fixed effects. The coefficient of Manipulation is -0.341, with a t-value of -15.378. It is significantly negative at the 1% level. Column (2) further adds firm-level control variables. The coefficient of Manipulation decreases to -0.077, but it is still significantly negative at the 1% level. These results show that, in the short term, a higher degree of social responsibility textual information manipulation is linked to lower corporate debt financing costs. This suggests a stable negative relation between the two variables. Therefore, Hypothesis H1 is supported.

Table 3. Baseline regression results: social responsibility information manipulation and cost of debt financing

Variable	(1) Cost	(2) Cost
Manipulation	-0.341***(-15.378)	-0.077***(-4.352)
Size		-0.094***(-3.416)
Lev		8.452***(40.022)
Roa		-3.299***(-7.796)
SOE		-0.326***(-5.117)
Tangibility		4.470***(22.644)
AuditOpinion		0.368***(3.782)
Top1		-0.011***(-5.842)
Indep		-0.160(-0.370)
Constant	0.398***(2.586)	-1.932***(-3.404)
R-squared	0.131	0.388
Adj. R-squared	0.129	0.386
N	40326	40326
Industry/Year	Yes	Yes

Note: t-values in parentheses are based on firm-level clustered robust standard errors. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

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4.3. Robustness tests

4.3.1. Alternative measurement of variables

To improve the robustness of the empirical results, this paper replaces the measures of both the explanatory variable and the explained variable.

4.3.1.1. Alternative measure of the explanatory variable

This paper uses industry terminology density, or indensity, in textual complexity as an alternative proxy for corporate social responsibility disclosure. This indicator directly measures how often firms use professional terms in their disclosures. It can also reflect managers' intention to hide insufficient responsibility fulfillment by making information harder to understand. After this indicator is standardized at the industry-year level, it is subtracted from the ESG social dimension score. In this way, a new explanatory variable, Manipult1, is constructed. Column (1) of Table 4 shows that the coefficient of Manipult1 is -0.066. It is significantly negative at the 1% level and is consistent with the baseline results. This indicates that the original findings are robust.

4.3.1.2. Alternative Measure of the Explained Variable

To test whether the baseline results are sensitive to the measure of the dependent variable, this paper redefines the cost of debt financing. The new measure is calculated as "(interest expenses + handling charges + other financial expenses) / total liabilities." This measure can capture the actual cost of corporate debt financing in a more complete way. This approach follows Wei Zhihua et al. [9] Column (2) of Table 4 reports the results based on the alternative dependent variable. The coefficient of the explanatory variable Manipulation remains negative, at -0.778, and is significant at the 1% level. This indicates that the core conclusion is not affected by alternative definitions of debt financing cost. It also confirms the robustness of the main results.

4.3.2. Changing the sample scope

Since the information manipulation indicator, Manipulation, is a standardized difference measure, larger values indicate a stronger tendency toward "exaggerated claims." To further test robustness in a subsample with more explicit manipulation, this paper keeps only observations with Manipulation greater than zero. It then constructs a new variable, Manipult2, for re-estimation. Column (3) of Table 4 shows that the coefficient of Manipult2 is -0.139 and is significant at the 1% level. This result is consistent with the baseline findings. It suggests that the conclusions are not driven by sample selection and remain robust.

Table 4. Robustness tests: alternative measures and sample restrictions

Variable	(1) Cost	(2) Cost2	(3) Cost
Manipult1	-0.066***(-3.746)		
Manipulation		-0.778***(-3.652)	
Manipult2			-0.139***(-3.861)
Controls	Yes	Yes	Yes
Constant	-2.050***(-3.613)	104.687***(12.830)	-3.634***(-4.481)

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Table 4. (continued)

R-squared	0.387	0.030	0.399
Adj. R-squared	0.386	0.028	0.396
N	40326	40326	20232
Industry/Year	Yes	Yes	Yes

4.4. PSM tests

To reduce possible sample selection bias, this paper uses propensity score matching, or PSM, as a robustness test. Firms in the top 30% and top 20% of information manipulation intensity within each industry-year are defined as the treatment group. The remaining firms are used as the control group. Nearest-neighbor matching is conducted with covariates including firm size, leverage ratio, and return on assets. The balance tests show that, after matching, the mean differences across covariates are not statistically significant. The standardized biases are also below 10%. The estimated propensity score is then added to the baseline regression as an additional control variable. The results show that, whether the 30% cutoff or the 20% cutoff is used, the coefficient of Manipulation remains significantly negative at the 1% level. The coefficients are -0.071 and -0.095, respectively. These results are consistent with the main findings. This suggests that the core results are not driven by sample selection bias.

Table 5. Robustness tests: PSM results

Variable	(1) 30% Cost	(2) 20% Cost
Manipulation	-0.071***(-3.087)	-0.095***(-3.800)
Controls	Yes	Yes
Constant	-1.815*(-1.656)	-2.338**(-1.997)
pscore	-0.576(-1.125)	-0.143(-0.205)
R-squared	0.371	0.367
Adj. R-squared	0.371	0.366
N	23922	16520
Industry/Year	Yes	Yes

5. Mechanism analysis

To examine the transmission channel through which social responsibility textual information manipulation affects the cost of debt financing, this paper uses analyst coverage as the mediating variable. It also applies the stepwise regression method proposed by Baron and Kenny [14]. In the first step, the coefficient of the manipulation indicator on analyst coverage is significantly positive, at 0.0279, with $p < 0.01$. This indicates that information manipulation attracts greater analyst attention. In the second step, the coefficient of the manipulation variable on financing cost is significantly negative, at -0.0788, with $p < 0.01$. This confirms the existence of a total effect. In the third step, the manipulation variable and analyst coverage are included in the same model. The coefficient of the manipulation variable decreases in absolute value to -0.0767, with $p < 0.01$. At the same time, the coefficient of analyst coverage is -0.0761, with $p < 0.01$. Both coefficients remain

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statistically significant. These results meet the conditions for a mediation effect. Therefore, Hypothesis H2 is supported.

Table 6. Mechanism analysis: analyst coverage

Variable	(1) analyst	(2) Cost	(3) Cost
Manipulation	0.0279***	-0.0788***	-0.0767***
	(3.985)	(-3.447)	(-3.347)
analyst			-0.0761***
			(-2.836)
Controls	Yes	Yes	Yes
Constant	-8.2735***	0.3296	-0.3003
	(-36.313)	(0.432)	(-0.366)
Industry/Year	Yes	Yes	Yes
N	27896	27896	27896
Adj. R^2	0.327	0.340	0.340

To further test the statistical significance of the mediating effect, this paper uses both the Sobel test and the Bootstrap method. The Sobel test gives an indirect effect of -0.00213, with z = -2.31 and p = 0.021. This indicates significance at the 5% level. The Bootstrap method, based on 500 resamples, produces a 95% confidence interval of [-0.0044, -0.0006]. This confirms that the indirect effect is statistically significant. Overall, these results show that analyst coverage plays a partial mediating role in the relation between social responsibility information manipulation and the cost of debt financing. Specifically, firms can attract greater market attention through manipulated disclosure texts. This, in turn, indirectly reduces external financing costs.

Table 7. Mechanism analysis: statistical significance tests

Test Method	Indirect Effect	Standard Error / Confidence Interval	Statistic / p-value
Sobel Test	-0.00213**	0.0009	z = -2.31, p = 0.021
Bootstrap (500 resamples)	-0.00216**	[95% CI: -0.0044, -0.0006]	p = 0.000 (percentile-based)

6. Further analysis

6.1. Heterogeneity analysis

To examine whether the effect of information manipulation on financing costs differs across firm characteristics, this paper conducts grouped regressions from three perspectives: ownership structure, firm size, and executive ownership.

From the perspective of ownership structure, the grouped regression results show that manipulation behavior significantly reduces financing costs only in non-state-owned enterprises. The coefficient is -0.042, with $p < 0.1$. By contrast, the effect is not significant in state-owned enterprises. This may be because non-state-owned enterprises face stronger financing constraints. Their information disclosure is also more sensitive to market assessment. As a result, manipulation is more likely to produce short-term effects. In contrast, state-owned enterprises face weaker

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financing constraints and have higher perceived information credibility. Therefore, the marginal effect of textual manipulation is not significant.

From the perspective of firm size, the results show that in the small-firm group, the coefficient of the manipulation variable is -0.060, with $p < 0.05$. In the large-firm group, the coefficient is not significant. Small firms usually have less transparent information environments. External investors also rely more on textual disclosures when making evaluations. Therefore, the effect of manipulated disclosure is more obvious.

From the perspective of executive ownership, the grouped regression results show that manipulation significantly reduces financing costs only in firms with higher executive ownership. The coefficient is -0.056, with $p < 0.05$. In the low-ownership group, the effect is not significant. This suggests that higher executive ownership strengthens managers' incentives to use information manipulation for their own benefit. It also increases the effect of manipulation on financing costs. Overall, the interaction effects across the three dimensions pass the significance tests. This confirms the existence of heterogeneity.

Table 8. Heterogeneity analysis: grouped regression results

Variable	Dependent variable: cost					
	Classify by ownership structure		Classify by company size		Classify by executive ownership percentage	
	Non-SOE	SOE	Small Firms	Large Firms	Low Ownership	High Ownership
Manipulation	-0.042*	0.033	-0.060**	0.027	0.018	-0.056**
	(-1.680)	(1.300)	(-2.040)	(1.450)	(0.790)	(-2.020)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-2.143***	0.033	-12.002***	3.294***	-0.927	-0.138
Industry/Year	Yes	Yes	Yes	Yes	Yes	Yes
N	25946	14379	20163	20162	20163	20162
Adj. R^2	0.336	0.364	0.340	0.338	0.340	

6.2. Temporal decay of short-term financing effects

To examine whether the financing cost reduction effect of social responsibility information manipulation is only short-term, this paper further conducts regressions by lagging the dependent variable by two and three periods. The results show that the coefficient of Manipulation is significantly negative in period t+1, at -0.058, with $p < 0.01$. It becomes insignificant in period t+2, at -0.022. It turns positive in period t+3, at 0.019, but remains insignificant. This indicates that although information manipulation can reduce firms' debt financing costs in the short run, the effect weakens quickly and disappears after two years.

Wang et al. [6], based on A-share listed companies in China from 2012 to 2021, also find that the market has a time lag in identifying corporate information manipulation behavior. The financing cost reduction effect is only short-lived. Managerial myopia is a key reason for this phenomenon. The results of this paper are consistent with their findings. This suggests that the benefits of information manipulation are temporary and cannot bring lasting advantages to firms.

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Table 9. Further analysis: dissipation of short-term effects

Variable	t+1	t+2	t+3
Manipulation	-0.058***(-3.042)	-0.022(-1.181)	0.019(1.026)
Controls	Yes	Yes	Yes
Constant	-2.195***(-3.750)	-1.169**(-2.112)	-0.903*(-1.668)
Industry/Year	Yes	Yes	Yes
R-squared	0.332	0.276	0.225
Adj. R-squared	0.332	0.275	0.225
N	31510	31510	31510

6.3. Impact of information manipulation on stock liquidity

To better check whether social responsibility information manipulation brings bad outcomes for firms, this work uses the stock illiquidity measure Amihud as the new dependent variable. This illiquidity measure is computed as the monthly average of daily absolute returns divided by trading volume. This method comes from Amihud's classic study [15] and is widely used in later Chinese research [16].

This measure reflects the price impact of each unit of trading volume. Higher values mean lower market liquidity and higher trading costs. Regression results show the coefficient of Manipulation is clearly positive at 0.019, with $p < 0.01$. This means information manipulation significantly worsens firms' stock liquidity. The key reason is that information manipulation increases information gaps between firms and outside investors. When investors cannot confirm the reliability of disclosed information, they tend to trade less often. They may also demand higher liquidity premiums to offset potential risks. This leads to lower stock liquidity. Besides, if the market finds manipulation, it may hold negative views on corporate governance quality. This further reduces investors' willingness to trade. These results show that although disclosure manipulation brings short-term gains in debt financing, it lowers trading efficiency in the capital market and causes other negative effects.

Table 10. Further analysis: information manipulation and stock liquidity

Variable	Amihud
Manipulation	0.019***(4.850)
Controls	Yes
Constant	5.682***(41.174)
R-squared	0.317
Adj. R-squared	0.315
N	39746
Industry/Year	Yes

7. Conclusion and policy implications

This study finds that information manipulation significantly reduces firms' cost of debt financing in the short term. But this effect is only temporary and disappears after about two years. The mechanism analysis shows that analyst coverage plays a partial mediating role. Specifically, textual manipulation makes reports more readable and more attractive. This increases analyst attention. Analyst attention then helps turn embellished information into credit signals that creditors can

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accept. However, information manipulation also worsens stock liquidity. This indicates that short-term financing gains are achieved at the cost of lower trading efficiency in the capital market. The heterogeneity analysis further shows that these effects are more obvious among non-state-owned enterprises, small firms, and firms with higher executive ownership. Based on these findings, the following policy implications are proposed:

(1) Firms should stop using short-term-oriented textual manipulation practices. Although embellishing social responsibility reports may help firms obtain financing temporarily, such benefits are not sustainable. They may also damage stock liquidity and market reputation. Management should focus on improving real corporate social responsibility performance. Firms should build long-term financing advantages through substantive actions.

(2) Firms should actively introduce external assurance mechanisms. Hiring independent third-party auditors to verify social responsibility reports can effectively limit strategic textual manipulation and improve information credibility. In addition, firms should establish internal disclosure review procedures. This can reduce incentives for manipulation at the source. It can also help firms build a stable and transparent financing image in credit markets.

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