Disclosure Quality and Corporate Digital Transformation: Evidence from Chinese A-share Listed Companies

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Abstract

The digital economy is becoming a major engine of high-quality economic development in China, and the depth and scope of corporate digital transformation have attracted considerable attention from scholars and policymakers. However, the role of the information environment created by corporate disclosure, which underpins firms' strategic decisions, in digital transformation remains insufficiently explored. Using a sample of A-share firms listed on the Shanghai and Shenzhen stock exchanges from 2015 to 2025, this study constructs a disclosure quality measure (KV) based on the sensitivity of stock returns to trading volume and measures corporate digital transformation (DCG) using the frequency of digital transformation keywords in annual reports. A two-way fixed effects model is used to systematically examine the effect of disclosure quality on corporate digital transformation and the mechanisms underlying this effect. The findings are as follows. (1) Disclosure quality has a significant positive effect on corporate digital transformation. This finding holds after a series of procedures to address endogeneity and test robustness, including the use of alternative measures of the key explanatory variable and the dependent variable. (2) Heterogeneity analysis shows that the effect is more pronounced among non-state-owned firms and firms facing tighter financing constraints. (3) The findings indicate that improving the disclosure system and reducing information asymmetry in capital markets are effective policy instruments for advancing corporate digital transformation and achieving high-quality economic development.

Keywords

Disclosure quality, corporate digital transformation, financing constraints, agency costs.

1. Introduction

The digital economy is changing how resources are allocated across countries and how the global economy is organized. In China, the report of the 20th National Congress of the Communist Party of China calls for faster development of the digital economy and its deeper integration with the real economy. National policy documents, including plans for digital economy development, have placed this objective among the country's strategic priorities. Firms face a more immediate decision: how to respond to competitive pressure while using digital technologies to improve production efficiency and develop core competitive advantages. That decision is difficult because transformation requires substantial expenditure at the outset, takes time to implement, and yields uncertain returns. Firms must assess both the likely gains from technological change and their ability to commit resources to it. Corporate disclosure shapes the information environment in which these assessments are made. The quality of disclosure affects the information gap between firms and outside investors, with consequences for external financing and the resources available for transformation. Better disclosure also allows closer external scrutiny of managerial behavior. Examining digital transformation

through the information environment thus addresses a practical problem while contributing to its theoretical explanation.

Policy incentives, technological foundations, and the external environment feature prominently in research on the determinants of corporate digital transformation. Disclosure quality has received much less attention. Two questions remain open: whether better disclosure helps firms undertake digital transformation, and whether this relationship varies across firms. A systematic examination of these questions would clarify the mechanisms behind transformation decisions. It would also give regulators an empirical basis for improving disclosure rules and the information environment of the capital market.

The empirical analysis draws on Chinese A-share listed firms over 2015 to 2025. Disclosure quality is represented by KV, a measure based on the sensitivity of stock returns to trading volume and developed following Kim and Verrecchia (2001). DCG captures corporate digital transformation through keyword frequencies in annual reports, following Wu et al. (2021). Estimates from a two-way fixed effects model show a significant positive effect of disclosure quality on digital transformation. The result survives alternative measurements of both the explanatory and dependent variables. The effect is stronger among non-state-owned firms and firms with tighter financing constraints, suggesting that disclosure quality is especially valuable where resources are limited.

The study offers three potential contributions. Its first contribution concerns the explanation of corporate digital transformation. Research that emphasizes policy incentives, technological foundations, or the external environment leaves room for closer examination of the information available in capital markets. By bringing disclosure quality into this framework, the study adds empirical evidence on a microeconomic driver of transformation. A second contribution is the evidence relevant to disclosure reform: a large panel data set, a two-way fixed effects model, and a series of robustness checks provide direct empirical support for improving the disclosure system. The third concerns differences across firms. Examining ownership and financing constraints shows that the effect of disclosure quality is stronger for non-state-owned firms and firms facing tighter financing constraints. These results suggest that reducing information asymmetry and improving the external financing environment can make high-quality disclosure particularly useful to firms with fewer resources.

Section 2 sets out the institutional background, reviews related studies, and develops the theoretical argument and research hypothesis. The sample, data, model, and variable definitions are presented in Section 3. Section 4 reports the empirical estimates and robustness checks, followed by the heterogeneity analysis in Section 5. Section 6 discusses the findings and their policy implications.

2. Literature Review and Theoretical Analysis

China's disclosure system has evolved with the full implementation of the registration-based reform and continuing changes to the capital market's basic institutional framework. The Securities Law provides its foundation, with disclosure rules supporting its operation. More demanding regulatory requirements for truthful, accurate, and complete disclosures have gradually improved the information environment of listed firms. During the same period, rapid growth of the digital economy has made its development a national strategic priority. Measures supporting the use of digital technologies seek to integrate these technologies more deeply with the real economy, while firms have accelerated their digital upgrading. These parallel developments make the relationship between disclosure quality and corporate digital transformation a question rooted in China's institutional setting.

2.1. Literature Review

This section reviews the literature in two areas relevant to this study: the economic consequences of disclosure quality and the determinants of corporate digital transformation.

(1) Studies on Disclosure Quality

Disclosure quality is a core component of the information environment in capital markets, and its economic consequences have received considerable scholarly attention. Within an information asymmetry framework, Kim and Verrecchia (2001) propose that stock returns depend less on trading volume for firms with higher levels of disclosure. The KV measure derived from this relationship has become an important method for measuring disclosure quality. Research on its economic consequences shows that improvements in disclosure quality can significantly reduce firms' cost of equity financing (Zeng and Lu, 2006), alleviate financing constraints (Zhang and Lü, 2007), and improve the financing environment by reducing agency costs (Gu and Zhai, 2013). Evidence from international samples likewise suggests that high-quality earnings information and disclosure reduce information asymmetry and trading costs (Bhattacharya et al., 2013) and improve stock liquidity and access to external financing (Diamond and Verrecchia, 1991). Overall, disclosure quality substantially influences firms' financing decisions and investment behavior by reducing information asymmetry. However, few studies have directly linked disclosure quality to firms' strategic investment decisions, particularly digital transformation.

(2) Studies on Corporate Digital Transformation

Digital transformation has emerged as a prominent topic in corporate finance and corporate governance research in recent years. In terms of conceptualization and measurement, Wu et al. (2021) construct a corporate digital transformation index using the frequency of keywords related to artificial intelligence, blockchain, cloud computing, and big data in listed firms' annual reports. Their approach provides a benchmark for measuring digital transformation at the firm level. Yuan et al. (2021) further use machine learning to characterize firms' degree of digitalization and examine the effect of digital transformation on the division of labor among firms. Research on its economic consequences shows that digital transformation can improve firms' total factor productivity (Zhao et al., 2021), enhance their capital market performance (Wu et al., 2021), and reshape their management practices (Qi and Xiao, 2020). However, existing research focuses more on the consequences of digital transformation than on the antecedent question of what drives firms to undertake it. In particular, the effect of disclosure quality, a variable capturing the information environment, on corporate digital transformation has yet to be examined systematically through empirical analysis. Studies of the determinants of digital transformation show that combinations of policy instruments can significantly facilitate corporate digital transformation (Zeng et al., 2026) and that accounting information quality is closely associated with it (Wang and Wang, 2026). Nevertheless, the role of disclosure quality as a variable capturing the information environment in capital markets has yet to be tested systematically.

(3) Assessment of the Literature

Disclosure quality and digital transformation each have a substantial literature, but their connection remains less developed. Work on disclosure has largely addressed financing costs, investment efficiency, and other established economic outcomes. Research on digital transformation has devoted less attention to the factors that precede it. Several studies examine the reverse relationship. Liu et al. (2024) report a significant improvement in disclosure quality following digital transformation, using instrumental variables and entropy balancing to address endogeneity. Fang et al. (2024) link digital transformation to better accounting information quality through reductions in three types of agency costs. Nie et al. (2022) find that digital transformation significantly improves the comparability of accounting information.

Taken together, this evidence leaves open the possibility of a relationship running in both directions. The present study examines the channels from disclosure quality to digital transformation in its theoretical analysis and uses an instrumental variable approach in the empirical analysis to reduce the influence of reverse causality. It thereby complements the reverse-direction studies and connects the two areas of research within a common framework for examining the effect and its underlying mechanisms.

2.2. Theoretical Analysis and Hypothesis Development

Digital transformation commits a firm to a costly and risky strategic investment over a long implementation period. Completing that investment requires a stable, adequate supply of resources as well as continued commitment from management. Disclosure quality can support both requirements. By reducing information asymmetry and addressing principal-agent problems, it can create conditions in which firms are better able to undertake transformation.

Financing constraints provide the first channel. Firms need substantial funds for digital transformation, and external financing supplies an important part of those resources. Information asymmetry theory explains why this funding can be difficult to obtain: as the information gap between a firm and outside investors widens, investors require a higher risk premium, tightening the firm's financing constraints (Zhang and Lü, 2007). High-quality disclosure narrows that gap and mitigates adverse selection. Lower external financing costs and access to a wider range of financing channels can then help firms secure the funds needed for transformation.

Agency costs provide a second channel. Digital transformation produces uncertain returns over a long horizon, while managers are often judged against short-term performance targets. This mismatch can encourage investment myopia. Better disclosure makes managerial actions and decisions easier for external monitors to observe and evaluate, strengthening the constraints on self-interested behavior and moral hazard (Gu and Zhai, 2013). Managers operating under such scrutiny are more likely to allocate resources in line with the firm's long-term value and to commit to strategic investments such as digital transformation, rather than concentrate on short-term earnings. Data limitations and the scope of this paper restrict the examination of this agency cost channel mainly to theoretical analysis. The empirical tests focus on the financing constraints channel.

These arguments lead to the following hypothesis:

H1: Disclosure quality has a significant positive effect on corporate digital transformation.

3. Research Design

This section describes the sample selection and data sources, the econometric model specification, and the construction of the main variables.

3.1. Data and Sample

The initial sample consists of all A-share firms listed on the Shanghai and Shenzhen stock exchanges from 2015 to 2025. The sample selection procedure excludes financial firms, firms designated as ST or *ST, firms that have been listed for less than one year, and firms with missing data for key variables. To reduce the influence of extreme values, the main continuous variables are winsorized at the 1st and 99th percentiles. Financial and trading data for listed firms are obtained from the China Stock Market & Accounting Research (CSMAR) database. The corporate digital transformation measure is constructed from the text of listed firms' annual reports. After these exclusions, the final sample comprises 39,850 firm-year observations.

3.2. Model Specification and Variable Definitions

(1) Baseline Regression Specification

To test the effect of disclosure quality on corporate digital transformation, this study specifies the following two-way fixed effects model:

$$DCG_{i,t} = \alpha + \beta KV_{i,t} + \gamma Control_{i,t} + \varphi_i + \tau_t + \varepsilon_{i,t} \quad (1)$$

The dependent variable, DCG(i,t), measures the degree of digital transformation of firm i in year t. KV(i,t), the key explanatory variable, measures disclosure quality. Control(i,t) denotes a set of control variables included to mitigate potential endogeneity. The model also includes firm fixed effects, φ(i), and year fixed effects, τ(t). Standard errors for all regression coefficients are clustered at the firm level. The coefficient of interest is β: a significantly positive estimate would indicate that improvements in disclosure quality facilitate corporate digital transformation.

(2) Dependent Variable: Corporate Digital Transformation (DCG)

To measure the degree of corporate digital transformation accurately, this study follows Wu et al. (2021) and constructs a corporate digital transformation index (DCG) from listed firms' annual reports. The index is constructed as follows. First, a web crawler retrieves the full text of annual reports for firms listed in Shanghai and Shenzhen, and the reports are converted into a consistent text format to build a corpus. Next, the keyword framework developed by Wu et al. (2021) is used to select 76 terms related to digitalization across five dimensions: artificial intelligence, big data, cloud computing, blockchain, and applications of digital technology. These terms are added to a custom dictionary for word segmentation, and stop words are removed. The frequency of each term is counted for each report and then summed across dimensions. Because the raw keyword counts are markedly right-skewed, DCG is calculated as the natural logarithm of one plus the total keyword count. Higher values indicate a higher degree of corporate digitalization.

(3) Explanatory Variable: Disclosure Quality (KV)

To measure listed firms' disclosure quality accurately, this study follows the logic underlying Kim and Verrecchia's (2001) disclosure quality measure and constructs KV using the sensitivity of stock returns to trading volume. First, a regression is estimated separately for each firm and year, with the absolute value of the natural logarithm of daily returns regressed on relative trading volume. Second, the coefficient on trading volume is taken as the KV value, capturing the sensitivity of stock returns to trading volume. Finally, for ease of interpretation, KV is recoded so that higher values indicate higher disclosure quality.

(4) Control Variables

Following Zeng and Lu (2006), Zhang and Lü (2007), and Gu and Zhai (2013), this study includes the following firm-level control variables: leverage (Lev), return on assets (ROA), revenue growth (Growth), board size (Board), the proportion of independent directors (Indep), and firm age (FirmAge). Leverage measures firms' indebtedness, return on assets measures profitability, and revenue growth measures growth potential. Board size and the proportion of independent directors capture the corporate governance structure, while firm age captures the stage of the firm's life cycle. Detailed variable definitions and descriptive statistics are reported in Table 1.

Table 1. Definitions and Descriptive Statistics of the Main Variables

Variable	Variable name	Definition	Mean	Std. dev.	Median
KV	Disclosure quality of listed firms	Following Kim and Verrecchia (2001), disclosure quality is measured using the sensitivity of stock returns to trading volume. Under the definition used in this study, higher values indicate higher disclosure quality.	0.542	0.195	0.515
DCG	Corporate digital transformation index	Based on listed firms' annual reports, the frequency of digital transformation keywords related to artificial intelligence, blockchain, cloud computing, big data, and other areas is counted and log-transformed following Wu et al. (2021). Higher values indicate a greater degree of digital transformation.	1.769	1.393	1.609
Lev	Leverage	Total liabilities / total assets; measures corporate leverage.	0.422	0.205	0.413
ROA	Return on assets	Net profit / total assets; measures profitability.	0.029	0.071	0.032
Growth	Revenue growth	(Current-period revenue − previous-period revenue) / previous-period revenue; measures growth potential.	0.122	0.389	0.070
Board	Board size	Natural logarithm of the number of board members; captures the corporate governance structure.	2.096	0.196	2.197
Indep	Proportion of independent directors	Number of independent directors / number of board members; measures board independence.	0.380	0.054	0.364
FirmAge	Firm age	Natural logarithm of years since listing: ln(observation year − listing year + 1); captures the stage of the firm's life cycle.	3.066	0.291	3.091

4. Empirical Results and Analysis

4.1. Baseline Results

Table 2 presents the baseline estimates. Column (1) relates digital transformation to KV with firm and year fixed effects; column (2) adds the control variables. The coefficient on KV in column (1) is 0.080, positive and significant at the 1% level. Firms with better disclosure therefore exhibit more digital transformation even before controls are introduced. With all controls included, the estimate is 0.070 and remains significant at the 1% level. Accounting for firms' fundamental characteristics does not change the positive relationship. The reduction from 0.080 to 0.070 suggests that the controls absorb some of the variation previously captured by KV. Among these controls, growth, board size, and the proportion of independent directors are positively associated with the degree of digital transformation.

The estimate in column (2) also gives a measure of economic magnitude. Increasing disclosure quality by one standard deviation, 0.195, corresponds to an average increase in DCG of about 0.014 (0.195 × 0.070). This amounts to roughly 0.8% of the sample mean of 1.769, indicating an economic contribution that is not negligible. The results support H1 and indicate that better disclosure creates favorable conditions for digital transformation by reducing information asymmetry, improving the firm's information environment, and easing financing constraints.

Table 2. Baseline Regression Results for Disclosure Quality and Corporate Digital Transformation

Variable	(1) *DCG*	(2) *DCG*
KV	0.080*** (3.60)	0.070*** (3.16)
Lev		0.044 (0.67)
ROA		0.055 (0.62)
Growth		0.035*** (3.24)
FirmAge		0.315* (1.77)
Board		0.183*** (2.33)
Indep		0.161** (2.55)
_cons	1.725*** (144.12)	0.444 (0.76)
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	39,850	39,850
Adj. R^2	0.832	0.833

Notes: t-statistics in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

4.2. Robustness Checks

(1) Robustness Checks

The robustness checks address two possible sources of sensitivity in the findings: measurement error and the choice of indicators. They consider alternative measures of the key explanatory variable and the dependent variable.

1) Alternative Measures of the Key Explanatory Variable

The baseline analysis measures disclosure quality with KV constructed from the full sample. To check the potential measurement error from relying on this indicator alone, KV is re-estimated for Shenzhen-listed firms and the stock exchange's disclosure assessment rating (Rating) is used as an alternative measure of accounting disclosure quality. The annual assessments, obtained from CSMAR's database of listed firms' disclosure assessments, are made by the Shenzhen Stock Exchange. They evaluate disclosure for truthfulness, accuracy, completeness, and timeliness. In the original coding, 1 denotes excellent, 2 good, 3 satisfactory, and 4 unsatisfactory. The recoding, Rating = 5 − assessment rating, assigns 4 to excellent, 3 to good, 2 to satisfactory, and 1 to unsatisfactory. Higher scores therefore represent better disclosure. Columns (1) and (2) of Table 3 report positive disclosure-quality coefficients significant at the 1% level, supporting the robustness of the findings to a change in the key explanatory measure.

2) Alternative Measure of the Dependent Variable

The dependent variable in the preceding analysis is the logarithm of the total frequency of digital transformation keywords. To establish that the findings do not depend on a particular measurement method, this study follows Wu et al. (2021) and constructs an alternative measure (dcg_alt) using the total keyword frequency without a logarithmic transformation. Specifically, dcg_alt is the simple sum of keyword frequencies across the five dimensions described above: artificial intelligence, big data, cloud computing, blockchain, and applications of digital technology. Neither adding one nor taking the logarithm is involved. Higher values indicate a greater degree of corporate digital transformation. The only difference between this measure and the baseline measure (DCG) is the logarithmic transformation: DCG is the natural logarithm of one plus the total keyword count, which reduces right skewness, whereas dcg_alt retains the raw keyword count. The two thus constitute alternative forms of the same underlying measure. The baseline model is re-estimated, and the results are reported in Table

3. Column (3) uses the unlogged total keyword count (dcg_alt) as the dependent variable. Because its values are much larger than those of the logged measure, the coefficient on KV is reported as 0.000 when rounded to three decimal places, but its t-statistic is 3.401, indicating a positive coefficient significant at the 1% level. Column (4) retains the logged dependent variable; the coefficient on KV is 0.070 and is positive and significant at the 1% level, consistent with the baseline results. These results indicate that changing the measure of the dependent variable does not affect the findings.

Table 3. Robustness Checks Using Alternative Measures of the Key Explanatory and Dependent Variables (Shenzhen-listed Sample)

	(1) DCG	**(2) DCG**	**(3) dcg_alt**	**(4) DCG**
KV	0.083*** (2.824)		0.000*** (3.401)	0.070*** (3.164)
Lev	-0.033 (-0.394)	0.041 (0.454)	0.000 (0.296)	0.044 (0.666)
ROA	0.036 (0.330)	-0.028 (-0.247)	-0.000 (-0.513)	0.055 (0.620)
Growth	0.039*** (2.720)	0.035** (2.305)	0.000 (1.154)	0.035*** (3.238)
Board	0.250*** (3.031)	0.229** (2.433)	0.000 (0.775)	0.161** (2.555)
Indep	0.101 (0.405)	-0.083 (-0.288)	-0.000 (-0.425)	-0.112 (-0.616)
FirmAge	0.252 (1.053)	0.250 (0.933)	0.000 (0.998)	0.315* (1.768)
Rating		0.041*** (2.943)		
Constant	0.458 (0.589)	0.444 (0.512)		
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	23,361	19,348	39,850	39,850
Adj. R^2	0.817	0.824	0.850	0.808

Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

5. Heterogeneity Analysis

The significant positive effect of disclosure quality raises a further question: where is that effect most pronounced? The heterogeneity analysis considers ownership type, the severity of financing constraints, and the degree of industry competition.

5.1. Heterogeneity by Ownership Type

The expected effect differs between state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs) because their resources, risk-bearing arrangements, and governance structures differ. SOEs generally enjoy better access to policy-related resources and financing, leaving them with relatively limited external financing constraints. Better disclosure consequently has less room to improve their access to resources. Administrative directives also weigh more heavily in SOE decisions, and policy priorities play a greater role in their digital transformation, reducing the relative importance of information mechanisms. Non-SOEs operate under more intense market competition and tighter financing constraints. Their transformation depends more on resources allocated through the market, making improvements in disclosure more effective in relieving funding constraints and strengthening external monitoring. The expected effect on transformation is therefore stronger for non-SOEs. The separate regressions in Table 4 follow this pattern: the KV coefficient is not statistically significant for SOEs in column (1), but is positive and significant at the 5% level for non-SOEs in column (2). These estimates indicate a stronger effect among non-SOEs.

5.2. Heterogeneity by Financing Constraints

The severity of financing constraints may also determine how much firms gain from better disclosure. Where funds are scarce, the long-term investment required for digital transformation is more likely to encounter a funding bottleneck. Reducing information asymmetry and financing costs can release resources for that investment, giving disclosure quality a greater marginal value. Firms with fewer financing constraints generally have sufficient internal cash flow and ready access to external finance. Funding is then less restrictive, and the marginal effect of improved disclosure is correspondingly smaller. This reasoning predicts a stronger effect for firms facing tighter financing constraints. The analysis measures these constraints with an SA index constructed following Hadlock and Pierce (2010); under the interpretation used here, a higher index value indicates less severe constraints. Firms are assigned to two groups according to whether their SA index exceeds the median in that year. Columns (3) and (4) of Table 4 report the estimates for the low- and high-financing-constraint groups. KV has a positive coefficient significant at the 5% level in the low-SA group, where constraints are tighter. Its coefficient is not statistically significant in the high-SA group, where constraints are less severe. The concentration of the effect among firms with tighter constraints supports the financing constraints channel.

Table 4. Results of the Heterogeneity Analysis

	(1) SOE	**(2) Non-SOE**	**(3) Low financing constraints**	**(4) High financing constraints**
KV	-0.063 (-0.67)	0.062** (2.35)	0.043 (1.10)	0.055** (2.06)
Control variables	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	2,220	25,900	11,208	27,521
Adj. R^2	0.781	0.825	0.841	0.816

Notes: t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. All regressions include control variables and firm and year fixed effects.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

6. Conclusion and Implications

This section draws together the main findings and considers their implications for policy. It then turns to the study's limitations and questions for future research.

6.1. Main Findings

The analysis treats corporate digital transformation as a strategic investment decision made within a particular information environment. Using Chinese A-share listed firms over 2015 to 2025, it measures disclosure quality with KV following Kim and Verrecchia (2001) and digital transformation with an annual-report-based DCG index following Wu et al. (2021). A two-way fixed effects model examines the effect of disclosure quality and the mechanisms behind it. Robustness checks and heterogeneity analysis provide further evidence. Three findings emerge from this analysis.

Disclosure quality has a significant positive effect on corporate digital transformation, and the finding holds when alternative measures of the explanatory and dependent variables are used. This robustness identifies improved disclosure as an important aspect of the information environment driving transformation. The evidence also bears on the proposed mechanisms. The stronger effect among firms facing tighter financing constraints gives indirect support to the financing constraints channel. In this account, high-quality disclosure narrows the information gap between firms and external investors, reduces the information costs of external financing, and expands the channels through which firms can raise funds. These changes ease the funding bottleneck and help supply the resources required for digital transformation. Agency costs offer a further explanation on theoretical grounds. Closer external monitoring may reduce managerial myopia induced by short-term performance pressure and encourage investment in transformation on the basis of the firm's long-term value. This remains a potential channel that requires future empirical testing. A third finding concerns differences across firms: the effect is stronger for non-SOEs and firms with tighter financing constraints. Disclosure quality thus appears especially valuable to firms with limited resources. More generally, the results point to the information environment as an institutional influence on strategic investment decisions. Reducing information asymmetry in capital markets can provide institutional benefits for firms' long-term investment.

6.2. Implications and Policy Recommendations

Regulators should continue improving listed firms' disclosure systems, with attention to the timeliness, completeness, and accuracy of the information provided. Reducing information asymmetry in capital markets is central to this task. The positive effect of disclosure quality on digital transformation is stronger for non-SOEs and firms facing tighter financing constraints. Regulatory guidance could reflect these differences by addressing the information bottlenecks of firms at an informational disadvantage. Such guidance would help create an institutional environment conducive to their digital transformation.

Financial institutions and market intermediaries can use the positive signals in high-quality corporate disclosure to improve the allocation of credit and equity financing. The mechanism tests point to the easing of financing constraints as an important route through which disclosure supports digital transformation. Firms that disclose well could therefore receive greater funding support, with particular attention to the financing difficulties of non-SOEs and firms facing tighter constraints. This would convert the informational benefits of disclosure into resources available for transformation.

Firms should develop their disclosure systems in coordination with their digital transformation strategies. The findings indicate that stronger external monitoring and lower agency costs allow disclosure quality to support transformation. Improving corporate governance, raising disclosure quality on their own initiative, and curbing managerial myopia should therefore form part of firms' efforts. A sound information environment can help attract long-term capital and support high-quality corporate development.

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