

Non-State Shareholder Governance and the Authenticity of Internal Control Information Disclosure: Evidence from China's SOE Mixed-Ownership Reform

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Abstract

This study examines how non-state shareholder governance affects the authenticity of internal control information disclosure (ICID) in Chinese state-owned enterprises (SOEs). Using panel data on A-share SOEs from 2012 to 2023, the results show that appointments of directors, supervisors, and senior executives by non-state shareholders are associated with lower authenticity of ICID, with director appointments having the strongest effect. Robustness checks using propensity score matching confirm the reliability of these findings. Further analysis indicates that the negative association holds in uninsured firms but disappears in insured firms, suggesting that directors' and officers' liability insurance (D&O insurance) may enhance oversight and offset adverse reporting incentives. The study contributes to research on corporate governance and disclosure by showing that governance influence through key appointments shapes internal control reporting quality and that D&O insurance may condition the outcomes of mixed-ownership reforms. The results also carry policy implications for aligning governance rights with accountability to improve the credibility of ICID in SOEs.

Keywords: Internal Control Information Disclosure, Authenticity of Disclosure, State-Owned Enterprises; Non-State Shareholders, Corporate Governance, D&O Insurance, Mixed-Ownership Reform

Introduction

Internal control information disclosure (ICID) is a critical mechanism in modern corporate governance because it enhances transparency, reduces information asymmetry, and enables investors to evaluate the reliability of financial reporting (Ashbaugh-Skaife et al., 2007; Kuang et al., 2024). In response to scandals such as Enron and WorldCom, major economies institutionalized mandatory disclosure regimes, exemplified by the *Sarbanes–Oxley Act* in the United States and similar frameworks in Japan and Canada. In China, the *Basic Standard for Enterprise Internal Control (2008)* and the *Supporting Guidelines (2010)*, collectively referred to as “China SOX,” established a mandatory disclosure system that became fully effective in 2012 (Ji et al., 2019). This regime requires listed firms to issue management self-evaluation internal control reports and obtain external audit opinions on internal control effectiveness.

The credibility of these disclosures has important implications for capital market stability, investor protection, and the efficiency of resource allocation. For regulators, authentic ICID ensures that disclosure regimes fulfill their intended role of safeguarding transparency. For investors, authenticity affects the reliability of signals used in decision-making and risk assessment. For enterprises, credible internal control reporting can lower financing costs and enhance market reputation. Despite these benefits, however, the effectiveness of ICID depends critically on whether firms truthfully report deficiencies.

Despite this regulatory framework, concerns about the authenticity of ICID persist. Nearly all Chinese listed firms, above 98% annually, consistently report effective internal controls. However, external indicators such as regulatory penalties, financial restatements, and modified audit opinions suggest that material weaknesses remain common (Donelson et al., 2017; Mao & Ye, 2023). The persistent divergence between self-reports and market-based signals indicates that ICID may function more as symbolic compliance than as substantive governance (Rice & Weber, 2012; Zhang & Guo, 2014). Authenticity, defined as the alignment between reported effectiveness and actual performance, is therefore central to evaluating disclosure quality.

China’s mixed-ownership reform provides a unique opportunity to examine this issue. A key feature of the reform is the introduction of non-state shareholders into state-owned enterprises (SOEs), with the expectation that their participation will improve governance, professionalize decision-making, and enhance disclosure credibility (Bai et al., 2009; Liu et al., 2016). Beyond capital infusion, the real influence of these investors arises from their ability to appoint directors, supervisors, and senior executives. These appointees directly participate in preparing and approving self-evaluation internal control reports, reviewing internal control effectiveness, and communicating with auditors. By shaping day-to-day operations and disclosure choices, the proportion of executives appointed by non-state shareholders becomes a critical measure of governance influence (Cai et al., 2018; Guan et al., 2021).

Studying this issue is particularly important for three reasons. First, it addresses a pressing regulatory concern in China, where mixed-ownership reform has been promoted as

a cornerstone of SOE reform, yet its effectiveness in improving disclosure quality remains uncertain. Second, it provides insights for international investors who rely on ICID to assess risks in emerging markets, where symbolic compliance often coexists with formal regulatory frameworks. Third, it contributes to global debates on corporate governance by examining how governance appointments interact with disclosure regimes in environments characterized by concentrated ownership and political influence.

This study defines ICID authenticity by comparing self-reported internal control conclusions with externally verifiable events. Following prior work, authenticity is coded as “authentic” when reported weaknesses are consistent with regulatory penalties, financial restatements, or modified audit opinions, and as “inauthentic” when firms report effective internal controls despite clear evidence of deficiencies (Barr-Pulliam et al., 2022; Donelson et al., 2017). This approach highlights disclosure truthfulness rather than disclosure volume or readability and provides a replicable measure for empirical testing (Rice & Weber, 2012).

Using a large panel of Chinese SOEs, this study finds that a higher proportion of directors, supervisors, and senior executives appointed by non-state shareholders reduces the authenticity of ICID. The effect is statistically significant and economically meaningful, suggesting that when non-state appointees gain decision-making power, disclosure credibility declines. Among these appointments, director appointments exert the strongest influence, as directors are more directly involved in approving and certifying internal control reports. This finding refines the literature on non-state shareholder governance and information disclosure by showing that governance seats are decisive in shaping reporting outcomes (Adams et al., 2010; Aghion & Tirole, 1997).

Further analysis indicates that the association between non-state appointments and disclosure authenticity varies according to directors’ and officers’ liability insurance (D&O insurance) coverage. The negative relationship is significant only among uninsured firms, suggesting that appointment-based governance by non-state shareholders is more effective when managerial accountability is not protected by liability insurance. This finding complements prior research highlighting the role of D&O insurance in weakening personal accountability and facilitating moral hazard in disclosure practices (Huang, 2022; Li et al., 2022; Weng et al., 2017). While non-state shareholders may introduce market-oriented governance, the credibility of ICID appears contingent upon the broader institutional environment, including the presence of external risk-sharing mechanisms.

This paper contributes to the literature in several ways. First, it advances the study of internal control by focusing on disclosure authenticity, moving beyond content sufficiency or readability (Agyei-Mensah, 2016; Michelon et al., 2015). Second, it extends research on SOE reform by demonstrating that non-state shareholder governance through executive appointments, rather than ownership shares, significantly influences disclosure credibility (Ji & Liu, 2023; Liu et al., 2016). Third, it integrates the external governance mechanism of D&O insurance into the analysis of disclosure authenticity, offering new insights into how liability protection interacts with mixed-ownership reform.

The findings are significant for both theory and practice. For scholars, they enrich governance and disclosure research by linking ownership reforms to the credibility of internal control

reporting. For regulators and policymakers, they provide evidence that non-state shareholder participation may not enhance disclosure quality without complementary mechanisms such as liability frameworks are necessary. For practitioners and investors, they highlight the importance of considering governance structures and external accountability when interpreting ICID.

The remainder of the paper is organized as follows. Section 2 reviews related literature and develops the hypotheses. Section 3 describes the data, variables and empirical design. Section 4 presents the main results and robustness checks. Section 5 examines heterogeneity with D&O insurance. Section 6 concludes with findings and policy recommendations.

Literature Review

Theoretical Foundations

Agency theory. Agency theory explains how the separation of ownership and control creates incentives to manage disclosure when oversight is imperfect. Managers possess superior information and may pursue private benefits, especially when monitoring is costly or diffuse (Healy & Palepu, 2001; Meckling & Jensen, 1976). In SOEs, multi-layer agency problems and policy burdens weaken market discipline and widen discretion over reporting choices, which can invite symbolic compliance in internal control disclosures (Dong & Putterman, 2003; Ji et al., 2019; Kuang et al., 2024). Mixed-ownership reform changes who monitors management. What matters for disclosure is not only who owns shares but who holds decision rights that shape agenda setting, access to internal information, and approval of reports (Adams et al., 2010; Aghion & Tirole, 1997). This perspective supports using the proportion of directors, supervisors, and senior executives appointed by non-state shareholders as a direct proxy for governance influence over ICID.

Corporate control theory. Corporate control theory highlights that ownership and control rights may diverge, and that effective influence depends on control over agendas, decisions, and appointments rather than equity stakes alone (Adams et al., 2010; Aghion & Tirole, 1997). For SOEs under mixed-ownership reform, this means that the ability of non-state shareholders to appoint directors, supervisors, and senior executives provides a direct channel of influence on disclosure practices. Even when their shareholding ratios are modest, board and management appointments give them access to information flows and decision rights that shape internal control reporting.

Information disclosure theory. Information disclosure theory emphasizes the role of disclosure in reducing information asymmetry between insiders and outside stakeholders (Akerlof, 1970; Spence, 1973; Verrecchia, 1983). By releasing timely and accurate information, firms can lower financing costs, build investor trust, and improve market efficiency (Healy & Palepu, 2001). However, disclosure is costly and strategic. Revealing internal control weaknesses can increase financing costs, attract regulatory penalties, and raise audit scrutiny, which creates incentives for managers to conceal or soften negative information (Ashbaugh-Skaife et al., 2007; Beneish et al., 2008; Ogneva et al., 2007). In SOEs, disclosure choices reflect both political compliance and market pressures. When non-state appointees emphasize valuation and financing, their control over preparation and approval of internal control reports can tilt disclosure toward optimistic outcomes, reducing authenticity.

Empirical Evidence

Research on internal control disclosure has traditionally treated firms' self-reported evaluations as direct proxies for internal control quality. Many studies adopt the internal control conclusions disclosed in annual reports to infer governance effectiveness, assuming these reports truthfully reflect underlying control performance (Agyei-Mensah, 2016; Chen et al., 2017; Wang et al., 2021). However, this approach ignores the possibility that managers may conceal weaknesses or selectively disclose information, leading to systematic overestimation of control effectiveness and misjudgment of disclosure quality (Donelson et al., 2017; Rice & Weber, 2012).

To address this limitation, more recent work develops measures of ICID authenticity by comparing disclosed evaluations with externally verifiable outcomes, such as regulatory penalties, financial restatements, or modified audit opinions on financial or internal control reports (Barr-Pulliam et al., 2022; Mao & Ye, 2023). These observable events provide credible signals of actual control failures and enable researchers to assess whether disclosure aligns with reality. When firms acknowledge deficiencies consistent with these signals, ICID is classified as authentic; when they deny weaknesses despite clear evidence of internal control failures, ICID is deemed inauthentic. This distinction shifts the focus from disclosure sufficiency to disclosure truthfulness, highlighting the gap between symbolic compliance and substantive governance (Kuang et al., 2024; Zhang & Guo, 2014).

Building on this authenticity perspective, recent studies have examined how ownership reforms reshape disclosure behavior in Chinese SOEs. Non-state shareholders are introduced to strengthen monitoring and inject market-oriented governance practices, but their actual influence depends critically on participation in senior governance through appointments of directors, supervisors, and senior executives (Guan et al., 2021; Ji & Liu, 2023). Evidence suggests that such appointments alter managerial incentives, sometimes improving oversight but often creating tensions with state-affiliated governance logics that weaken disclosure credibility (San et al., 2025; Shu & Dan, 2022). In particular, the appointment of non-state executives has been linked to higher agency costs and selective reporting, raising concerns about the authenticity of ICID (Hu & Leung, 2012; Zhai et al., 2022).

A parallel line of research emphasizes external governance mechanisms, among which D&O insurance has attracted increasing attention. D&O insurance modifies the litigation and reputational costs of disclosure, potentially reducing managers' incentives to reveal bad news while shielding them from accountability (Chen & Keung, 2018; Li et al., 2022; Wynn, 2008). Evidence from China indicates that while D&O insurance coverage may strengthen non-financial disclosure (Tang et al., 2024; Zhao & Yang, 2025), it may also weaken internal control reporting credibility when it encourages moral hazard. This heterogeneity suggests that the impact of non-state shareholder governance on ICID authenticity is likely to differ between SOEs with and without D&O insurance.

Taken together, the literature highlights two critical insights. First, reliance on self-reported internal control evaluations obscures the distinction between authentic and symbolic disclosure, requiring an authenticity-based framework for empirical analysis. Second, while non-state shareholder participation in senior governance is intended to enhance

accountability, it may instead undermine ICID authenticity, especially when combined with liability structures such as D&O insurance that alter managerial incentives.

Based on these insights, this study advances the following hypotheses:

H1. The non-state shareholder governance significantly undermines ICID authenticity in SOEs.

H2. The relationship between non-state shareholder governance and ICID authenticity differs between SOEs with and without D&O insurance.

Research Methods

Data Sources and Sample Selection Methods

This study focuses on Chinese state-owned listed firms in the Shanghai and Shenzhen A-share markets. All data were obtained from the China Stock Market and Accounting Research (CSMAR) database. Since Chinese state-owned listed firms were only required to disclose internal control self-evaluation reports after 2012, the sample period covers 2012 to 2023. Following prior studies, firms in the financial sector, firms under abnormal trading conditions, and those with missing data were excluded. The final sample consists of 10,015 firm-year observations from 1,238 SOEs. To reduce the influence of extreme values, all continuous variables were winsorized at the 1% level.

Variables

Dependent variable. The dependent variable is the authenticity of ICID (*ICID_true*). Authenticity of ICID is defined as the consistency between a firm's internal control self-evaluation report and external evidence of internal control effectiveness. Consistent with prior studies (Hermanson & Ye, 2009; Rice & Weber, 2012; Wang, 2020), a firm is classified as having a significant internal control deficiency if it meets one of three conditions: (i) regulatory penalties imposed by the China Securities Regulatory Commission (CSRC), (ii) restatements in annual reports, or (iii) a modified audit opinion on annual reports or internal control disclosure reports. *ICID_true* is coded as 1 if a firm truthfully discloses an existing deficiency or if no deficiency exists. It is coded as 0 when a firm fails to disclose a deficiency that is evident from external signals.

Independent Variables. To capture the governance influence of non-state shareholders, we construct several appointment-based measures, consistent with prior studies (Wang et al., 2024; Zhou et al., 2017). *PrivDirRatio* is the proportion of directors appointed by non-state shareholders among the total board size. *OvPrDirRatio* measures excess appointments relative to shareholding, defined as the difference between the proportion of directors appointed by non-state shareholders and their equity share. *PrivExeRatio* is the proportion of senior executives appointed by non-state shareholders, while *PrivSupRatio* is the proportion of supervisory board members they appoint. Together, these variables capture the extent of non-state shareholders' participation in senior governance, which is the primary channel through which they may influence ICID authenticity.

Grouping variable for heterogeneity analysis. D&O Insurance is considered as an external governance mechanism that alters the personal litigation and reputational risks faced by directors, supervisors, and senior executives. We define this variable as a binary variable equal to 1 if an SOE has purchased D&O insurance in a given year, and 0 otherwise. This variable allows us to assess whether the relationship between non-state shareholder appointments and ICID authenticity differs between firms with and without D&O insurance.

Control Variables. To account for firm characteristics that may influence ICID authenticity, we include controls identified in previous studies (Allaya et al., 2022; Arianpoor et al., 2023; Chen et al., 2017; Khelif & Samaha, 2019). These include firm size (*Size*), financial leverage (*Lev*), growth (*Growth*), profitability (*ROA*), board independence (*IndDirRatio*), liquidity (*Cashflow*), shareholding balance (*ShareBalance*), audit quality (*Big4*), and institutional investor ownership (*InstShrRatio*). Table 1 summarizes the definitions and measurement of all control variables used in this study.

Table 1

Definitions of Control Variables

Variable Name	Symbol	Variable Definition
Company size	<i>Size</i>	Natural logarithm of total assets
Leverage	<i>Lev</i>	Total liabilities divided by total assets
Growth	<i>Growth</i>	Annual growth rate of operating revenue
Return on assets	<i>ROA</i>	Net profit divided by total assets
Independent director ratio	<i>IndDirRatio</i>	Number of independent directors divided by the total number of directors
Cash flow ratio	<i>Cashflow</i>	Net cash flow from operating activities divided by total assets
Shareholding balance	<i>ShareBalance</i>	Shareholdings of the 2nd–5th largest shareholders divided by that of the largest shareholder
Big 4 audit firm	<i>Big4</i>	1 if audited by a Big Four firm (PwC, Deloitte, KPMG, EY), 0 otherwise
Institutional investor shareholding ratio	<i>InstShrRatio</i>	Shareholding ratio of institutional investors among the top ten shareholders

Model Specification

To empirically test the proposed hypotheses, the study employs the following baseline specification:

$$ICID_true_{i,t} = \alpha_0 + \beta_0 PrivSOE_{i,k,t} + \sum \gamma_k Control_{i,k,t} + Industry_{i,t} + Year_{i,t} + \varepsilon_{i,t}$$

Where $ICID_true_{i,t}$ represents the authenticity of ICID for firm i in year t (as defined in Section 3.2). Since the dependent variable is binary, the estimation is conducted using a logit model. The key explanatory variable, $PrivSOE_{i,k,t}$, captures the governance role of non-state shareholders, measured by the proportion of non-state-appointed directors ($PrivDirRatio_{i,t}$), the excess appointment ratio relative to ownership ($OvPrDirRatio_{i,t}$), the proportion of senior executives appointed by non-state shareholders ($PrivExeRatio_{i,t}$), and the proportion of supervisors appointed by non-state shareholders ($PrivSupRatio_{i,t}$) respectively.

The model further incorporates a set of firm-level controls ($Control_{i,k,t}$) reflecting size, leverage, profitability, ownership concentration, and other characteristics described in Section 3.2. Firm heterogeneity across industries is controlled by industry fixed effects, while year fixed effects account for macroeconomic and regulatory shocks common to all firms. Hausman specification tests support the use of fixed effects. Robust standard errors are reported to correct for potential heteroskedasticity.

The coefficient of interest, β_0 , indicates whether non-state shareholder appointments are associated with higher or lower authenticity of ICID. To examine cross-sectional variation, the

analysis is also performed separately for insured and uninsured firms. Specifically, the sample is partitioned according to D&O insurance adoption, and the model is re-estimated for each group. This approach allows for a comparison of effect sizes across sub-samples, highlighting whether liability insurance systematically alters the relationship between non-state shareholder governance and disclosure authenticity.

Descriptive Statistics

Table 2 presents summary statistics for the main variables employed in the analysis. The average value of f_{ICID_true} is 0.74, implying that around 74% of observations reflect authentic disclosure of internal control effectiveness, while approximately one-quarter of firms fail to provide truthful disclosure.

For the governance variables, the proportion of directors appointed by non-state shareholders ($PrivDirRatio$) has a mean of 0.033, with a maximum of 0.444. The corresponding averages for senior executives ($PrivExeRatio$) and supervisors ($PrivSupRatio$) are 0.017 and 0.018, with maxima of 0.400 and 0.333, respectively. The measure of over-representation of directors ($OvPrDirRatio$) averages 0.006, with a maximum of 0.189, indicating that non-state shareholders occasionally appoint more directors than implied by their equity share.

In terms of control variables, firm size ($Size$) averages 22.97, leverage (Lev) 0.51, growth ($Growth$) 0.44, and return on assets (ROA) 0.03. These values suggest that the firms in the sample are relatively large SOEs with moderate leverage and low profitability, consistent with prior evidence. The minimum value of the independent director ratio ($IndDirRatio$) is 0.33, showing that firms generally comply with the CSRC requirements that at least one-third of the board consist of independent directors. The ownership balance measure ($SharesBalance$) has a mean of 0.52 and a median of 0.35, reflecting relatively concentrated ownership structures. For audit quality, the mean of the Big Four indicator ($Big4$) is 0.10, confirming that most SOEs in the sample are audited by non-Big Four firms. Institutional investors hold on average 0.58 of tradable shares ($InstShrRatio$), suggesting substantial institutional participation in the equity structure.

Overall, the distribution of the variables aligns with patterns documented in earlier research on Chinese listed SOEs and provides a reliable basis for subsequent regression analysis.

Table 2

Descriptive Statistics of Variables

Variable Name	Obs	Mean	SD	Min	Median	Max
ICID_true	10015	0.74	0.44	0.00	1.00	1.00
PrivDirRatio	10015	0.033	0.083	0.000	0.000	0.444
OvPrDirRatio	10015	0.006	0.027	0.000	0.000	0.189
PrivExeRatio	10015	0.017	0.066	0.000	0.000	0.400
PrivSupRatio	10015	0.018	0.069	0.000	0.000	0.333
Size	10015	22.97	1.40	20.20	22.82	27.00
Lev	10015	0.51	0.20	0.08	0.51	0.94
Growth	10015	0.44	1.26	-0.71	0.13	9.08
ROA	10015	0.03	0.05	-0.18	0.03	0.17
IndDirRatio	10015	0.37	0.05	0.33	0.33	0.57
Cashflow	10015	0.05	0.06	-0.15	0.05	0.22
ShareBalance	10015	0.52	0.48	0.02	0.35	2.12
Big4	10015	0.10	0.30	0.00	0.00	1.00
InstShrRatio	10015	0.58	0.17	0.20	0.58	0.93

These descriptive statistics reveal meaningful variation across firms in terms of governance structures, financial characteristics, and disclosure behavior. The heterogeneity observed in both the dependent and explanatory variables provides sufficient variation for empirical testing and supports the reliability of the subsequent regression analysis.

Empirical Results

Basic Results

Table 3 presents the baseline logit regression results examining the association between non-state shareholder governance and the authenticity of ICID, proxied by *ICID_true*. All four appointment-based measures, namely *PrivDirRatio*, *OvPrDirRatio*, *PrivExeRatio*, and *PrivSupRatio*, are negatively associated with *ICID_true*, and all coefficients are statistically significant at the 1% level. These results suggest that greater appointment power by non-state shareholders is systematically associated with a lower likelihood of truthful disclosure.

The magnitudes are also economically meaningful. At the sample mean of *ICID_true* (0.74), a one-standard-deviation increase in *PrivDirRatio* corresponds to an estimated 2.4% decline in the probability of authentic disclosure. The comparable figures for *OvPrDirRatio*, *PrivExeRatio*, and *PrivSupRatio* are 1.8%, 1.6%, and 1.5%, respectively¹. This ranking underscores the pivotal role of board-level appointments in shaping disclosure outcomes, as directors are directly responsible for approving and certifying internal control reports.

This evidence aligns with both corporate control theory and information disclosure theory. From a governance perspective, appointment power grants access to strategic information flows and enhances influence over disclosure decision-making (Adams et al., 2010; Aghion & Tirole, 1997). From a disclosure cost perspective, managers and controlling shareholders may anticipate reputational, regulatory, or financing penalties from admitting internal control weaknesses. Such expectations may incentivize them to conceal deficiencies,

¹ Marginal effects are computed using the expression $p(1-p) \times \beta \times \sigma$, where p is the sample mean of *ICID_true* and σ is the standard deviation of the independent variable. This yields the estimated change in the probability of truthful disclosure associated with a one-standard-deviation increase in each appointment-based measure. For *PrivDirRatio* ($\sigma = 0.163, \beta = -1.495$), the estimated marginal effect is $0.74 \times 0.26 \times 1.495 \times 0.163 \approx -0.024$, or a 2.4% decline. Similarly, the estimates are -1.8% for *OvPrDirRatio* ($\sigma = 0.107, \beta = -3.516$), -1.6% for *PrivExeRatio* ($\sigma = 0.130, \beta = -1.284$), and -1.5% for *PrivSupRatio* ($\sigma = 0.132, \beta = -1.149$).

especially when empowered appointees can moderate the internal reporting process (Ashbaugh-Skaife et al., 2007; Beneish et al., 2008; Healy & Palepu, 2001; Ogneva et al., 2007).

The control variables exhibit expected signs and support the robustness of the baseline estimates. Firms with larger size, stronger profitability, and higher operating cash flow are more likely to disclose internal control weaknesses truthfully. Audits by Big Four firms and higher institutional ownership are also associated with greater disclosure authenticity, reflecting enhanced external monitoring. In contrast, higher ownership concentration is negatively associated with authenticity, indicating potential control over the reporting process by dominant shareholders. Firms with faster revenue growth are slightly less likely to disclose truthfully, possibly due to incentives to conceal deficiencies during expansion. Leverage and board independence do not exhibit significant associations, suggesting limited explanatory power in this setting. These patterns are consistent with prior literature on monitoring and internal control reporting. These results highlight that firm-specific and governance-related characteristics play important roles in shaping disclosure credibility. Together, they provide a more comprehensive understanding of the observed relationship between appointment power and ICID authenticity, strengthening the interpretability and internal validity of the regression model.

Overall, the findings support H1. Non-state shareholder participation in internal governance, as reflected through appointments to the directors, senior executives, and supervisory board, is associated with lower authenticity of ICID. Board-level appointments appear particularly salient in influencing disclosure behaviour.

Table 3

The Effect of Non-State Shareholder Appointments on the Authenticity of ICID

	(1)	(2)	(3)	(4)
	ICID_true	ICID_true	ICID_true	ICID_true
PrivDirRatio	-1.495*** (-5.30)			
OvPrDirRatio		-3.516*** (-4.37)		
PrivExeRatio			-1.284*** (-3.76)	
PrivSupRatio				-1.149*** (-3.41)
Size	0.138*** (5.29)	0.145*** (5.57)	0.143*** (5.48)	0.143*** (5.50)
Lev	-0.078 (-0.48)	-0.082 (-0.51)	-0.067 (-0.42)	-0.073 (-0.46)
Growth	-0.039* (-1.85)	-0.040* (-1.87)	-0.038* (-1.78)	-0.039* (-1.84)
ROA	2.049*** (3.51)	1.924*** (3.31)	1.951*** (3.34)	1.886*** (3.24)
IndDirRatio	0.388 (0.82)	0.493 (1.04)	0.522 (1.11)	0.552 (1.17)
Cashflow	1.478*** (3.52)	1.489*** (3.55)	1.471*** (3.50)	1.487*** (3.54)
ShareBalance	-0.113**	-0.169***	-0.144***	-0.150***

	(-2.18)	(-3.36)	(-2.82)	(-2.95)
Big4	0.533***	0.493***	0.505***	0.513***
	(5.02)	(4.67)	(4.80)	(4.85)
InstShrRatio	0.343*	0.342*	0.351**	0.400**
	(1.92)	(1.92)	(1.97)	(2.25)
_cons	-2.570***	-2.744***	-2.732***	-2.755***
	(-4.65)	(-4.99)	(-4.96)	(-4.99)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	10015	10015	10015	10015
Pseudo.R-Square	0.065	0.064	0.063	0.063

Notes: The table 3 presents logit regression results with fixed effects, examining the effect of non-state shareholder appointments on the authenticity of ICID. Columns (1) to (4) correspond to models testing the effect of *PrivDirRatio*, *OvPrDirRatio*, *PrivExeRatio*, and *PrivSupRatio* on ICID authenticity, respectively. Coefficients represent the change in the log-odds of truthful disclosure for a one-unit increase in governance variables, with z-statistics in parentheses below each coefficient. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. The sample includes 10,015 firm-year observations from A-share SOEs, with industry and year fixed effects applied and robust standard errors used to address heteroskedasticity. The following tables follow the same format.

Robustness Test

To verify that the baseline findings are not driven by sample selection, we employ propensity score matching (PSM). The approach constructs matched samples of treated and untreated firms based on observable firm characteristics, industry, and year fixed effects, and then re-estimates the association between non-state appointments and ICID authenticity using weighted logit regressions. This reduces potential bias from differences in firm size, leverage, or other observables that may correlate with governance choices.

Table 4 reports the results after PSM adjustment. Across all specifications, the coefficients on the four appointment-based measures remain negative and significant at the 1% level. Specifically, the estimates for *PrivDirRatio*, *OvPrDirRatio*, *PrivExeRatio*, and *PrivSupRatio* confirm that greater appointment power by non-state shareholders is consistently associated with lower authenticity of ICID. The magnitudes are slightly smaller than in the baseline regressions, reflecting the removal of selection effects, while the direction and significance remain robust.

These findings indicate that the negative association between non-state shareholder governance and ICID authenticity is not an artifact of differences in firm characteristics or industry composition. Instead, the results point to a systematic pattern in which director, senior executive, and supervisory appointments by non-state shareholders reduce the likelihood of truthful internal control reporting. The robustness of these results strengthens support for H1, underscoring that the observed effects persist even after addressing potential endogeneity concerns through PSM.

Table 4

Logit regression results after PSM analysis

	(1)	(2)	(3)	(4)
	ICID_true	ICID_true	ICID_true	ICID_true
PrivDirRatio_g	-0.349*** (-5.26)			
OvPrDirRatio_g		-0.305*** (-3.47)		
PrivExeRatio_g			-0.382*** (-4.21)	
PrivSupRatio_g				-0.290*** (-3.10)
Size	0.101*** (2.70)	0.071 (1.42)	0.079 (1.58)	0.145*** (2.90)
Lev	0.254 (1.15)	0.615** (2.11)	0.736** (2.41)	0.191 (0.59)
Growth	-0.015 (-0.48)	0.044 (1.17)	0.019 (0.44)	-0.010 (-0.22)
ROA	3.432*** (4.15)	3.571*** (3.17)	4.491*** (3.87)	2.133* (1.80)
IndDirRatio	0.183 (0.22)	-0.705 (-0.65)	1.046 (1.00)	0.859 (0.72)
Cashflow	0.605 (1.04)	-0.796 (-1.04)	-0.425 (-0.50)	1.968** (2.43)
ShareBalance	-0.060 (-0.89)	-0.286*** (-3.13)	-0.053 (-0.62)	-0.077 (-0.88)
Big4	0.419*** (2.65)	0.168 (0.59)	0.245 (1.12)	0.591*** (2.89)
InstShrRatio	0.196 (0.83)	0.315 (1.05)	0.128 (0.40)	0.197 (0.59)
_cons	-1.925** (-2.34)	-1.060 (-0.89)	-1.834* (-1.68)	-2.113* (-1.94)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	9993	9719	9731	9764
Pseudo.R-Square	0.071	0.093	0.087	0.091

Notes: Table 4 reports logit regression results after PSM adjustment. Columns (1) to (4) correspond to models testing *PrivDirRatio_g*, *OvPrDirRatio_g*, *PrivExeRatio_g*, and *PrivSupRatio_g*, respectively. These variables are constructed by matching samples with appointments to those without, using kernel matching with default bandwidth. Coefficients are estimated from weighted logit regressions, with z-statistics in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels. Control variables, industry fixed effects, and year fixed effects are included.

Heterogeneity Analysis

To further evaluate Hypothesis 2, this section examines whether the relationship between non-state shareholder governance and the authenticity of ICID differs based on D&O insurance coverage. Firms are grouped according to their insurance status, and logit regressions are estimated separately for insured and uninsured subsamples, with year and industry fixed effects included.

As shown in Table 5, all four privatization-related governance variables (*PrivDirRatio*, *OvPrDirRatio*, *PrivExeRatio*, *PrivSupRatio*) exhibit significantly negative coefficients in the uninsured group, indicating that appointments of directors, supervisors, and senior executives by non-state shareholders are associated with lower authenticity of ICID. In contrast, for firms with D&O insurance, the coefficients are either statistically insignificant or substantially smaller in magnitude, suggesting that the association between non-state governance and disclosure authenticity weakens when insurance protection is present.

This pattern suggests that D&O insurance may play a corrective role by altering disclosure incentives and enhancing external scrutiny. When liability coverage is introduced, it may encourage more rigorous oversight from insurers and related stakeholders, which offsets the opportunistic reporting behaviour facilitated by non-state appointments. This interpretation is consistent with agency theory, which highlights that external monitoring arrangements can reshape managerial incentives (Healy & Palepu, 2001; Meckling & Jensen, 1976). It also resonates with prior evidence that liability insurance can affect disclosure outcomes, not only by lowering personal costs of non-compliance but also by imposing additional monitoring standards (Li et al., 2022; Wynn, 2008). Overall, the findings underscore that the governance consequences of mixed ownership reforms are context-dependent, and that external mechanisms such as D&O insurance may mitigate the negative effects of non-state shareholder participation.

Table 5

Heterogeneity Analysis of the Impact of D&O Insurance on Regression Results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ICID_true	ICID_true	ICID_true	ICID_true	ICID_true	ICID_true	ICID_true	ICID_true
	Insured	Uninsured	Insured	Uninsured	Insured	Uninsured	Insured	Uninsured
PrivDirRatio	-0.192 (-0.21)	- 1.639*** (-5.44)						
OvPrDirRatio			-2.393 (-0.65)	- 3.719*** (-4.47)				
PrivExeRatio					-0.808 (-0.71)	- 1.284*** (-3.57)		
PrivSupRatio							-2.072** (-2.15)	- 1.058*** (-2.93)
Size	0.259** (3.12)	0.114*** (4.03)	0.259** (3.12)	0.121*** (4.31)	0.258** (3.11)	0.120*** (4.25)	0.246** (2.94)	0.121*** (4.31)
Lev	0.406 (0.73)	-0.142 (-0.83)	0.392 (0.71)	-0.140 (-0.82)	0.397 (0.72)	-0.126 (-0.74)	0.452 (0.81)	-0.135 (-0.79)
Growth	-0.023 (-0.36)	-0.037 (-1.63)	-0.023 (-0.36)	-0.038* (-1.67)	-0.024 (-0.37)	-0.036 (-1.58)	-0.031 (-0.49)	-0.037 (-1.62)
ROA	3.870** (2.33)	1.688*** (2.67)	3.954** (2.38)	1.548** (2.45)	3.861** (2.34)	1.583** (2.50)	3.959** (2.36)	1.502** (2.38)

IndDirRatio	2.912*	0.014	2.894*	0.129	2.873*	0.164	2.915*	0.194
	(1.80)	(0.03)	(1.81)	(0.26)	(1.79)	(0.33)	(1.81)	(0.39)
Cashflow	2.548**	1.483***	2.502**	1.493***	2.566**	1.459***	2.573**	1.473***
	(2.06)	(3.31)	(2.02)	(3.34)	(2.07)	(3.27)	(2.08)	(3.30)
ShareBalance	-0.402**	-0.080	-	-	-0.391**	-0.121**	-0.369**	-0.128**
			0.407**	0.146***				
			*					
Big4	(-2.55)	(-1.44)	(-2.63)	(-2.72)	(-2.52)	(-2.21)	(-2.38)	(-2.35)
	0.656**	0.402***	0.646**	0.351***	0.651**	0.366***	0.690**	0.369***
	*		*		*		*	
	(2.73)	(3.22)	(2.71)	(2.82)	(2.73)	(2.94)	(2.85)	(2.95)
InstShrRatio	0.967	0.288	0.932	0.282	0.946	0.292	0.970*	0.339*
	(1.63)	(1.52)	(1.55)	(1.49)	(1.60)	(1.55)	(1.65)	(1.80)
_cons	-	-	-	-	-	-	-	-
	5.421**	2.006***	5.396**	2.195***	5.382**	2.197***	5.197**	2.243***
	*		*		*		*	
	(-2.98)	(-3.36)	(-2.97)	(-3.69)	(-2.97)	(-3.69)	(-2.84)	(-3.76)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1441	8558	1441	8558	1441	8558	1441	8558
Pseudo.R-Square	0.149	0.060	0.150	0.059	0.150	0.059	0.152	0.058

Notes: This table presents logit regression results estimating the impact of non-state shareholder appointments on ICID authenticity, stratified by D&O insurance coverage. Columns (1) to (8) correspond to regressions for *PrivDirRatio*, *OvPrDirRatio*, *PrivExeRatio*, and *PrivSupRatio*, respectively. Governance variables reflect appointment-based control by non-state shareholders. All models control for firm-level covariates, industry, and year fixed effects. Z-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Conclusion

This study investigates how non-state shareholder participation in governance affects the authenticity of ICID in Chinese SOEs. Using a large panel of A-share SOEs, the analysis provides consistent evidence that a higher proportion of directors, supervisors, and senior executives appointed by non-state shareholders is associated with lower authenticity of ICID. The effect is both statistically and economically significant, with director appointments exerting the strongest influence, reflecting their central role in approving and certifying internal control reports. Propensity score matching confirms that these results are not driven by sample selection, underscoring the robustness of the baseline findings.

Further analysis reveals that the relationship between non-state appointments and ICID authenticity is conditional on the firm's insurance environment. In uninsured firms, non-state appointments reduce disclosure credibility, while in insured firms this negative effect disappears. This suggests that D&O insurance functions as an external governance mechanism that can strengthen oversight and reduce the adverse reporting incentives associated with non-state appointments. The evidence indicates that the governance outcomes of mixed-ownership reform are not uniform but depend on how internal governance interacts with external institutional arrangements.

These findings contribute to the literature in several ways. First, they highlight that governance influence through personnel appointments is a critical determinant of disclosure quality. Second, they extend the discussion of ICID by shifting attention from formal compliance to the credibility of disclosed information. Third, they show that external governance mechanisms such as D&O insurance can reshape the effects of non-state shareholder governance by mitigating potential negative consequences of non-state shareholder involvement.

The results also provide important policy implications. Regulators and policymakers should recognize that the presence of non-state shareholders in governance does not necessarily guarantee more credible disclosure. Instead, the effectiveness of mixed-ownership reforms depends on the institutional context and the external mechanisms that interact with internal governance structures. Designing policies that align appointment rights with accountability frameworks, while considering the role of external oversight tools, is essential for improving disclosure authenticity in SOEs.

Overall, this study shows that while mixed ownership aims to improve governance discipline, non-state appointments can reduce the authenticity of internal control reporting, especially when external accountability is weakened. Future research may explore additional institutional factors, including regulatory enforcement and market competition, that interact with ownership structure to shape disclosure outcomes.

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