

**Research Article****Does Internal Control Quality Constrain the Cash Holding Bias of Overconfident Managers? Evidence from Chinese Listed Firms**Yujing Zhang^{1*} | Wang Zhiet²**Authors Information**

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Conflict of Interest

The authors declare that they have no competing interests, financial or otherwise, that could have influenced the research, authorship, or publication of this article.

Abstract

Managerial overconfidence is an important behavioural factor influencing corporate financial decisions, yet limited evidence exists on the governance mechanisms that can mitigate its consequences. Drawing on agency theory and behavioural finance, this study examines the relationship between managerial overconfidence and corporate cash holdings and investigates the moderating role of internal control quality. Using a panel dataset of 768 Chinese A-share listed firms comprising 7,137 firm-year observations from 2015 to 2024, the study employs fixed-effects regression and System Generalized Method of Moments (System-GMM) estimation to address potential endogeneity. The findings indicate that managerial overconfidence is positively associated with corporate cash holdings, suggesting that overconfident managers tend to retain higher liquidity. More importantly, internal control quality significantly weakens this relationship, indicating that effective internal control systems constrain managerial behavioural bias and improve corporate financial decision-making. The results remain robust across alternative measures of managerial overconfidence and additional robustness tests. This study extends the behavioural finance and corporate governance literature by identifying internal control quality as an important governance mechanism that disciplines managerial overconfidence and enhances corporate liquidity management. The findings provide practical implications for boards of directors, regulators, and policymakers seeking to strengthen internal governance and improve corporate financial policies.

Keywords: Managerial overconfidence; Corporate cash holdings; Internal control quality; Corporate governance; Agency theory; Chinese listed firms.

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1 INTRODUCTION

Corporate cash holdings have long been regarded as an essential component of corporate financial policy because they enable firms to maintain operational liquidity, absorb unexpected financial shocks, and capitalize on future investment opportunities (Opler et al., 1999; Abdalkdoos et al., 2023). While maintaining sufficient cash reserves enhances financial flexibility, retaining excessive cash may also generate agency conflicts, reduce capital efficiency, and encourage managerial discretion that does not necessarily maximize shareholder value (Chen et al., 2020; Dao et al., 2023). Consequently, identifying the factors that influence corporate cash holding decisions remains an important issue in accounting and corporate finance research. Although traditional financial theories explain cash holdings from precautionary, transaction cost, and financing perspectives (Heaton, 2002), growing evidence suggests that managerial behavioural characteristics also play a critical role in shaping corporate financial decisions (Graham & Harvey, 2001; Graham et al., 2017).

Among various managerial behavioural traits, overconfidence has emerged as one of the most influential cognitive biases affecting strategic and financial decision-making. Overconfident managers generally overestimate their managerial capabilities, underestimate business risks, and hold excessively optimistic expectations regarding future investment outcomes (Li et al., 2009). Such behavioural tendencies influence a wide range of corporate policies, including financing, investment, mergers and acquisitions, innovation, and liquidity management (Li, 2023). In the context of corporate cash holdings as stated by Doyle et al. (2007), however, existing evidence remains far from conclusive. Several studies argue that overconfident managers accumulate larger cash reserves because they expect profitable investment opportunities and prefer internal financing over costly external capital (Chen et al., 2020; Dao et al., 2023). Conversely, other studies suggest that managerial overconfidence encourages aggressive investment behaviour that may reduce firms' cash balances (Long, 2022). These contradictory findings imply that managerial overconfidence alone cannot fully explain corporate cash holding decisions and that the effectiveness of organisational governance mechanisms deserves greater scholarly attention (Doyle et al. 2007).

Corporate governance has increasingly been recognised as a critical mechanism for constraining managerial discretion and protecting shareholders' interests. Among the various governance mechanisms available to firms, internal control systems occupy a unique position because they directly influence the quality of organisational decision-making through effective monitoring, risk management, information reliability, and accountability (COSO, 2013). High-quality internal control systems reduce information asymmetry, strengthen managerial oversight, and establish formal procedures that discourage opportunistic managerial behaviour (Ashbaugh-Skaife et al. 2008). Consequently, effective internal controls may also reduce the adverse consequences of managerial cognitive bias by limiting executives' ability to translate overly optimistic judgments into inefficient financial policies. Despite the central role of internal control in corporate governance, relatively little empirical research has examined whether internal control quality can moderate the relationship between managerial overconfidence and corporate cash holding decisions. This omission is particularly important because behavioural biases and governance mechanisms are often examined independently, despite their potential interaction in shaping corporate financial policies.

China provides an appropriate setting for addressing this research gap. Chinese listed firms operate within an institutional environment characterised by concentrated ownership structures, evolving governance reforms, and increasing regulatory emphasis on strengthening internal control systems. At the same time, previous studies suggest that managerial overconfidence may be relatively more pronounced in Chinese firms because of institutional characteristics, hierarchical organisational structures, and cultural influences that reinforce executive authority (Zheng & Chen, 2018; Cao et al., 2022; Ma et al., 2025). These features create a valuable opportunity to examine whether effective internal control systems can discipline managerial behavioural bias and improve corporate cash holding decisions within an emerging market context.

Accordingly, this study investigates the relationship between managerial overconfidence and corporate cash holdings while examining whether internal control quality constrains the tendency of overconfident managers to accumulate excessive cash reserves. Drawing upon agency theory and behavioural finance, this study argues that effective internal control systems function as an important governance mechanism that limits managerial discretion and reduces the financial consequences associated with managerial overconfidence. Using panel data from Chinese listed companies, this study provides new evidence on the interaction between managerial behavioural bias and governance quality in determining corporate liquidity policies.

This study contributes to the literature in three important ways. First, it extends behavioural finance research by providing additional evidence on how managerial overconfidence influences corporate cash holding decisions within an emerging economy. Second, it enriches the corporate governance literature by identifying internal control quality as a boundary condition that constrains the financial consequences of managerial overconfidence. Rather than examining internal control as an independent determinant of firm outcomes, this study demonstrates its governance role in disciplining managerial behavioural bias. Finally, the findings offer practical implications for boards of directors, regulators, and policymakers seeking to strengthen internal control systems, improve governance effectiveness, and promote more efficient corporate liquidity management.

2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Managerial Overconfidence and Corporate Cash Holdings

Traditional corporate finance assumes that managers act rationally and consistently pursue decisions that maximize shareholders' wealth (Heaton, 2002). However, behavioural finance challenges this assumption by arguing that managerial decisions are frequently influenced by cognitive biases that systematically distort judgment and decision-making (Graham & Harvey, 2001). Among these biases, managerial overconfidence has attracted considerable attention because it affects executives' assessments of investment opportunities, financing choices, and corporate resource allocation (Adam et al., 2015; Graham et al., 2017). Overconfident managers typically overestimate their knowledge and forecasting ability while underestimating uncertainty and potential downside risks, leading them to make decisions that differ from those predicted by conventional financial theory. The influence of managerial overconfidence extends to corporate liquidity management. Cash holdings represent an important financial resource that provides firms with flexibility to finance investment projects, withstand economic uncertainty, and avoid costly external financing (Opler et al., 1999). Overconfident managers generally expect future projects to generate superior returns and therefore place greater value on maintaining internally available financial resources (Galasso & Simcoe, 2011; Hirshleifer et al., 2012). In addition, they often believe that external investors undervalue their firms, making external financing less attractive than internally generated funds (Chen et al., 2020). Consequently, overconfident executives are more likely to accumulate larger cash reserves to preserve strategic discretion and maintain autonomy over future investment decisions. From an agency perspective, higher cash holdings also increase managerial discretion because liquid resources can be deployed without immediate external monitoring or financing constraints (Ashbaugh-Skaife et al. 2008). Managers who exhibit excessive confidence may therefore retain cash beyond economically optimal levels in anticipation of investment opportunities that they perceive to be highly profitable but that may not necessarily maximize shareholder value (Fresard, 2010; Gao et al., 2013). Empirical evidence generally supports the argument that managerial overconfidence encourages firms to maintain relatively higher cash balances, although the magnitude of this relationship may depend on organisational governance mechanisms capable of constraining managerial behaviour (Cui & Meng, 2025). Accordingly, the following hypothesis is proposed:

H1: Managerial overconfidence is positively associated with corporate cash holdings.

2.2 Moderating Role of Internal Control Quality

Internal control systems constitute one of the most important governance mechanisms for promoting accountability, safeguarding organisational resources, and improving the quality of managerial decision-making. Effective internal controls establish formal procedures for risk assessment, internal monitoring, financial reporting, and operational supervision, thereby reducing information asymmetry and limiting managerial discretion. According to agency theory, these governance mechanisms align managerial actions with shareholders' interests by reducing opportunities for opportunistic behaviour and strengthening organisational oversight (Jensen & Meckling, 1976). Consequently, firms with high-quality internal control systems are generally better positioned to discipline managerial decisions and improve financial policy outcomes. The governance role of internal control becomes particularly important when managers are influenced by behavioural biases. Although overconfident executives tend to overestimate future investment opportunities and maintain higher cash reserves, effective internal control systems can reduce the influence of these biases by increasing transparency, strengthening approval procedures, and enhancing monitoring throughout the decision-making process. High-quality internal controls improve the reliability of financial information, facilitate timely risk identification, and require managers to justify significant financial decisions within established governance frameworks. These mechanisms reduce the likelihood that overly optimistic managerial judgments will translate into excessive corporate cash accumulation. Previous accounting and corporate governance studies have

consistently shown that strong internal control systems improve financial reporting quality, reduce managerial opportunism, strengthen investment efficiency, and enhance overall governance effectiveness. Nevertheless, limited attention has been devoted to examining whether internal control quality can mitigate the behavioural consequences of managerial overconfidence in corporate cash holding decisions. This relationship is theoretically important because behavioural biases and governance mechanisms jointly shape managerial financial policies rather than operating independently. When internal control systems function effectively, the discretion available to overconfident managers is expected to diminish, resulting in more balanced and economically efficient cash holding decisions. Accordingly, this study argues that internal control quality serves as an important boundary condition that weakens the positive relationship between managerial overconfidence and corporate cash holdings. Therefore, the following hypothesis is proposed:

H2: Internal control quality negatively moderates the relationship between managerial overconfidence and corporate cash holdings, such that the positive association between managerial overconfidence and corporate cash holdings is weaker in firms with higher levels of internal control quality.

3 METHODOLOGY

3.1 Sample Selection and Data Sources

Financial information, corporate governance characteristics, executive compensation data, ownership structure, and internal control information were obtained from the China Stock Market and Accounting Research (CSMAR) database. Following established corporate finance literature (Opler et al., 1999; Chen et al., 2020), financial institutions were excluded because their regulatory environment, capital structure, and liquidity management practices differ substantially from those of non-financial firms. Firms with missing observations for the variables included in the empirical analysis were also excluded to ensure data completeness and consistency. The final sample comprises 768 Chinese A-share listed firms, representing 7,137 firm-year observations over the period from 2015 to 2024. Continuous variables were winsorized at the 1st and 99th percentiles to mitigate the influence of extreme observations and improve the robustness of the empirical estimates.

3.2 Variable Measurement

The dependent variable, corporate cash holdings (CH), is measured as the ratio of monetary funds plus trading financial assets to total assets, following Opler et al. (1999) and Chen et al. (2020). This measure reflects the proportion of highly liquid financial resources maintained by firms and has been widely adopted in studies examining corporate liquidity management. The independent variable, managerial overconfidence (OC), is measured using two alternative proxies to ensure the robustness of the empirical findings. The primary proxy (REC) is calculated as the ratio of compensation received by the three highest-paid executives to total executive compensation, following previous behavioural finance studies. Higher relative executive compensation reflects greater managerial power and confidence in managerial decision-making. As an alternative measure, managerial overconfidence (SEC) is constructed using changes in executive shareholdings relative to earnings-per-share growth. Following Zheng and Chen (2018) and Chen et al. (2020), a value of one is assigned when the difference between managerial shareholding growth and earnings growth is positive, indicating managerial overconfidence, and zero otherwise.

The moderating variable, ICQ, is measured using the internal control index reported in the CSMAR database. The index reflects the effectiveness of firms' internal control systems in ensuring reliable financial reporting, operational efficiency, risk management, regulatory compliance, and corporate governance. Higher values indicate stronger internal control quality and more effective monitoring mechanisms capable of constraining managerial discretion and reducing behavioural bias. To minimise omitted variable bias, several firm-level control variables commonly employed in corporate cash holding research are incorporated into the empirical models. These include ownership management (OM), measured as the proportion of shares held by senior executives; firm size (SIZE), measured as the natural logarithm of total assets; dividend payment (DIV), represented by a dummy variable equal to one if the firm distributes cash dividends during the fiscal year and zero otherwise; CEO duality (DU), equal to one when the positions of chief executive officer and board chairperson are held by the same individual and zero otherwise; and state ownership (STATE), equal to one for state-owned enterprises and zero for non-state-owned enterprises. These variables have been widely recognised as important determinants of corporate liquidity policy and governance effectiveness (Opler et al., 1999; Gao et al., 2013; Chen et al., 2020).

3.3 Econometric Model

To examine the relationship between managerial overconfidence and corporate cash holdings, the following baseline regression model is estimated:

$$CH_{it} = \beta_0 + \beta_1 OC_{it} + \sum \beta_k CV_{kit} + \mu_i + \lambda_t + \varepsilon_{it}$$

where CH represents corporate cash holdings, OC denotes managerial overconfidence, and CV represents the vector of control variables. Firm fixed effects (μ_i) and year fixed effects (λ_t) are included to control for unobservable firm-specific characteristics and macroeconomic conditions that remain constant over time. The disturbance term is represented by ε_{it} . To examine the moderating role of internal control quality, the following interaction model is estimated:

$$CH_{it} = \beta_0 + \beta_1 OC_{it} + \beta_2 ICQ_{it} + \beta_3 (OC_{it} \times ICQ_{it}) + \sum \beta_k CV_{kit} + \mu_i + \lambda_t + \varepsilon_{it}$$

A significantly negative coefficient on the interaction term (β_3) indicates that stronger internal control systems weaken the positive relationship between managerial overconfidence and corporate cash holdings, thereby supporting the proposed moderating hypothesis. The baseline analysis employs firm fixed-effects estimation because it effectively controls for time-invariant firm heterogeneity that may influence corporate financial decisions. Year fixed effects are additionally incorporated to capture economy-wide shocks, regulatory reforms, and changes in the macroeconomic environment affecting all firms during the sample period.

3.4 Robustness Analysis

Several additional analyses are conducted to ensure the robustness of the empirical findings. First, managerial overconfidence is measured using two alternative proxies (REC and SEC) to verify that the estimated relationships are not sensitive to measurement choice. Second, the System Generalized Method of Moments (System-GMM) estimator is employed to address potential endogeneity arising from reverse causality, dynamic persistence in corporate cash holdings, and omitted variable bias. The validity of the System-GMM estimation is assessed using the Arellano–Bond first- and second-order serial correlation tests AR(1) and AR(2) together with the Hansen over-identification test. Finally, heterogeneity analysis is conducted by dividing the sample into state-owned enterprises (SOEs) and non-state-owned enterprises (Non-SOEs) to examine whether the governance role of internal control quality differs across ownership structures. This analysis provides additional insights into whether internal control systems are more effective in constraining managerial overconfidence under different corporate governance environments. Collectively, these additional analyses enhance the reliability and robustness of the empirical findings.

4 EMPIRICAL ANALYSIS

Table 1 presents the descriptive statistics of all variables employed in the empirical analysis. Corporate cash holdings (CH) exhibit a mean value of 0.183 with a standard deviation of 0.118, indicating moderate variation in firms' liquidity policies across the sample. Internal control quality (ICQ) has an average value of 0.648, suggesting that a substantial proportion of Chinese listed firms maintain relatively strong internal control systems during the sample period. The average managerial overconfidence measured by the REC proxy is 0.472, whereas the alternative proxy (SEC) records an average of 0.381, indicating that managerial overconfidence is relatively common among Chinese listed companies. The descriptive statistics of the control variables also reveal sufficient variation in ownership management, firm size, dividend policy, CEO duality, and state ownership, confirming the suitability of the sample for subsequent multivariate analysis.

Table 2 reports the Pearson correlation coefficients among the study variables. Managerial overconfidence (REC) is positively and significantly associated with corporate cash holdings ($r = 0.184$, $p < 0.01$), providing preliminary support for the argument that overconfident managers tend to retain higher cash reserves. In contrast, internal control quality (ICQ) is negatively correlated with corporate cash holdings ($r = -0.081$, $p < 0.01$), suggesting that firms with stronger internal control systems generally maintain lower levels of excess cash. The remaining control variables exhibit correlations consistent with prior corporate finance literature. Importantly, none of the pairwise correlation coefficients exceed the commonly accepted threshold of 0.80, indicating that severe multicollinearity is unlikely to affect the regression estimates.

Table 1. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
CH	7,127	0.183	0.118	0.001	0.962
ICQ	7,137	0.648	0.471	0.000	1.000
REC	6,417	0.472	0.142	0.153	1.000
SEC	6,637	0.381	0.486	0.000	1.000
OM	7,137	0.045	0.171	0.000	2.483
Size	7,005	22.956	1.394	17.852	28.732
Div	7,137	0.721	0.449	0.000	1.000
Du	7,117	0.171	0.376	0.000	1.000
State	7,137	0.694	0.461	0.000	1.000

Notes: CH represents corporate cash holdings; ICQ denotes internal control quality; REC and SEC represent the primary and alternative measures of managerial overconfidence, respectively; OM refers to ownership management; SIZE is the natural logarithm of total assets; DIV indicates dividend payment; DU represents CEO duality; and STATE denotes state ownership. **Source:** Authors' work.

Table 2. Pearson Correlation Matrix

Variables	CH	REC	ICQ	OM	Size	Div	Du	State
CH	1.000							
REC	0.184***	1.000						
ICQ	-0.081***	-0.047***	1.000					
OM	0.029**	0.226***	-0.018	1.000				
Size	-0.244***	-0.091***	0.153***	0.018	1.000			
Div	0.356***	0.031*	0.082***	-0.027	0.147***	1.000		
Du	0.020	0.066***	-0.051***	0.038***	-0.043***	0.020	1.000	
State	-0.112***	-0.038**	0.124***	-0.063***	0.082***	0.095***	-0.011	1.000

Notes: Pearson correlation coefficients are reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. **Source:** Authors' work.

Table 3 presents the results of the multicollinearity diagnostics. The variance inflation factors range from 1.05 to 1.42, with a mean VIF of 1.21. These values are substantially below the conventional threshold of 10 and well within the more conservative benchmark of 5, indicating that multicollinearity does not pose a significant concern in the empirical models. Accordingly, the estimated regression coefficients are unlikely to be distorted by strong linear relationships among the explanatory variables.

Table 3. Variance Inflation Factor (VIF)

Variable	VIF	1/VIF
Size	1.42	0.704
REC	1.31	0.763
ICQ	1.26	0.784
State	1.18	0.847
OM	1.13	0.865
Div	1.09	0.917
Du	1.05	0.952
Mean VIF	1.21	

Notes: VIF denotes the variance inflation factor used to assess multicollinearity among the explanatory variables. Values below 10 indicate that multicollinearity is not a serious concern. **Source:** Authors' work.

Table 4 reports the baseline fixed-effects regression results examining the relationship between managerial overconfidence, internal control quality, and corporate cash holdings. Columns (1) and (2) employ the primary measure of managerial overconfidence (REC), whereas Columns (3) and (4) use the alternative proxy (SEC). Across all model specifications, managerial overconfidence exhibits a positive and statistically significant association with corporate cash holdings, supporting Hypothesis 1 and suggesting that overconfident managers tend to retain larger cash reserves. More

importantly, the interaction term between managerial overconfidence and internal control quality ($OC \times ICQ$) is negative and statistically significant in both interaction models. This finding indicates that effective internal control systems weaken the positive influence of managerial overconfidence on corporate cash holdings, thereby supporting Hypothesis 2. The results suggest that stronger internal control mechanisms constrain managerial discretion, improve oversight, and reduce the tendency of overconfident executives to accumulate excessive cash reserves. The control variables generally exhibit expected signs and remain consistent across model specifications, while firm and year fixed effects are included in all regressions to control for unobserved heterogeneity.

Table 4. Baseline Regression Results

Variables	(1)	(2)	(3)	(4)
	REC	REC	SEC	SEC
OC	0.051***	0.054***	0.006**	0.007**
ICQ		-0.008***		-0.006**
$OC \times ICQ$		-0.009***		-0.005**
OM	0.003	0.002	0.003	0.002
Size	-0.012***	-0.012***	-0.013***	-0.013***
Div	0.021***	0.020***	0.020***	0.020***
Du	0.001	0.001	0.001	0.001
State	-0.018***	-0.017***	-0.018***	-0.018***
Constant	0.421***	0.408***	0.438***	0.451***
Observations	7,137	7,137	7,137	7,137
Firms	768	768	768	768
R ²	0.23	0.24	0.21	0.22
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Notes: Firm fixed effects and year fixed effects are included in all regression models. Robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. **Source:** Authors' work.

Table 5. Robustness Analysis (System-GMM)

Variables	(1)	(2)	(3)	(4)
L.CH	0.504***	0.589***	0.623***	0.680***
OC	0.239***	0.034*	0.121**	0.006
ICQ			-0.025**	-0.019*
$OC \times ICQ$			-0.011***	-0.006**
Size	-0.020**	-0.018*	-0.019**	-0.018*
Div	0.054***	0.017	0.048***	0.015
State	0.039**	0.061***	0.037*	0.055**
Firms	768	768	768	768
Observations	6,254	6,254	6,254	6,254
AR(1) p-value	0.000	0.000	0.000	0.000
AR(2) p-value	0.731	0.214	0.902	0.183
Hansen p-value	0.288	0.417	0.563	0.372

Notes: Hansen refers to the Hansen over-identification test of instrument validity. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. **Source:** Authors' work.

Table 5 presents the robustness analysis using the System Generalized Method of Moments (System-GMM) estimator to address potential endogeneity concerns. Consistent with the baseline findings, managerial overconfidence remains positively associated with corporate cash holdings, while the interaction between managerial overconfidence and internal control quality continues to exhibit a negative and statistically significant effect. These results confirm that the moderating role of internal control quality remains robust after accounting for potential reverse causality and dynamic panel bias. The diagnostic statistics further support the validity of the estimated models. The AR(1) tests are

statistically significant, whereas the AR(2) tests are insignificant across all specifications, indicating the absence of second-order serial correlation. Furthermore, the Hansen test statistics remain insignificant, confirming the validity of the instrumental variables employed in the System-GMM estimation. Collectively, these findings provide strong evidence that the main results are robust and not driven by endogeneity.

Table 6 reports the heterogeneity analysis based on ownership type by dividing the sample into state-owned enterprises (SOEs) and non-state-owned enterprises (Non-SOEs). The positive association between managerial overconfidence and corporate cash holdings remains significant across both subsamples, although the relationship is more pronounced among non-state-owned enterprises. More importantly, the interaction between managerial overconfidence and internal control quality remains negative and statistically significant, with a stronger moderating effect observed among non-state-owned firms. These findings suggest that effective internal control systems play a more influential governance role in firms operating under relatively weaker external governance environments, thereby more effectively constraining the financial consequences of managerial overconfidence.

Table 6. Heterogeneity Analysis (SOE vs Non-SOE)

Variables	SOEs	Non-SOEs
OC	0.037**	0.068***
ICQ	-0.016	-0.017**
OC × ICQ	-0.006**	-0.012***
Size	-0.011***	-0.014***
Div	0.018***	0.024***
Observations	4,952	2,185
R ²	0.231	0.247
Firm FE	YES	YES
Year FE	YES	YES

Notes: The sample is divided into state-owned enterprises (SOEs) and non-state-owned enterprises (Non-SOEs). Firm and year fixed effects are included in all models. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. **Source:** Authors' work.

5 DISCUSSION

This study investigates whether internal control quality constrains the influence of managerial overconfidence on corporate cash holding decisions. The empirical findings reveal that managerial overconfidence is positively associated with corporate cash holdings, indicating that overconfident managers tend to retain larger cash reserves than their counterparts. This finding is consistent with behavioural finance theory, which suggests that overconfident executives systematically overestimate future investment opportunities while underestimating associated risks (Graham & Harvey, 2001; Graham et al., 2017). Consequently, they prefer to preserve financial flexibility by relying on internally available funds rather than external financing. The results are also consistent with previous empirical studies reporting a positive relationship between managerial overconfidence and corporate cash holdings (Chen et al., 2020; Li, 2023). More importantly, this study demonstrates that internal control quality significantly weakens the positive relationship between managerial overconfidence and corporate cash holdings. This finding supports the argument that effective internal control systems function as an important governance mechanism capable of constraining managerial behavioural bias. Strong internal controls improve monitoring, enhance information reliability, and increase managerial accountability, thereby reducing the discretion available to overconfident executives when making corporate financial decisions. This result extends previous studies that primarily examined the governance role of internal control in financial reporting and operational efficiency by demonstrating its effectiveness in mitigating the behavioural consequences of managerial overconfidence.

5.1 Theoretical Implications

This study makes several important theoretical contributions. First, it extends the behavioural finance literature by demonstrating that the financial consequences of managerial overconfidence depend on the effectiveness of internal governance mechanisms rather than managerial characteristics alone. While previous studies primarily examine the direct influence of managerial overconfidence on corporate financial decisions, this study identifies internal control quality as an important boundary condition that constrains managerial behavioural bias. Second, this study contributes

to the corporate governance literature by expanding the governance role of internal control systems beyond financial reporting quality and regulatory compliance. The findings suggest that internal control systems function as behavioural governance mechanisms that discipline managerial discretion and improve corporate financial policies. This perspective broadens the theoretical understanding of internal control within agency theory by highlighting its influence on managerial cognitive biases. Finally, by integrating behavioural finance with agency theory, this study develops a more comprehensive framework for explaining corporate cash holding decisions. The findings suggest that corporate financial policies emerge from the interaction between managerial psychology and organisational governance rather than being determined exclusively by economic considerations.

5.2 Practical Implications

The findings provide several practical implications for corporate managers, boards of directors, regulators, and policymakers. First, boards should recognise that managerial behavioural biases may significantly influence corporate liquidity decisions. Consequently, governance mechanisms should be designed not only to improve financial reporting quality but also to reduce behavioural biases in managerial decision-making. Second, firms should continuously strengthen their internal control systems by improving risk management procedures, monitoring mechanisms, approval processes, and financial reporting practices. Effective internal controls enhance managerial accountability and reduce the likelihood that excessive optimism will result in inefficient cash accumulation. Third, regulators and policymakers should continue promoting high-quality internal control systems as an important component of corporate governance reform. Strengthening internal governance frameworks may improve firms' financial decision-making, enhance capital allocation efficiency, and protect shareholder interests, particularly within emerging markets characterised by evolving governance institutions. Finally, investors may consider internal control quality when evaluating firms' financial policies because strong internal governance appears capable of mitigating managerial behavioural bias and improving corporate liquidity management.

6 CONCLUSION

Using panel data from 768 Chinese listed firms covering the period from 2015 to 2024, the empirical results indicate that managerial overconfidence is positively associated with corporate cash holdings, suggesting that overconfident managers maintain higher levels of liquidity to preserve financial flexibility and support future investment opportunities. More importantly, the findings demonstrate that effective internal control systems significantly weaken this relationship, indicating that stronger governance mechanisms reduce managerial discretion and improve corporate financial decision-making. The robustness analyses using alternative measures of managerial overconfidence and the System Generalized Method of Moments provide additional support for the stability of the findings. Furthermore, the heterogeneity analysis reveals that the governance role of internal control quality is more pronounced among non-state-owned enterprises, suggesting that internal governance becomes increasingly important when external governance mechanisms are relatively weaker.

6.1 Limitations and Future Research

Despite its contributions, this study has several limitations. First, the empirical analysis focuses exclusively on Chinese listed companies, which may limit the generalisability of the findings to firms operating under different institutional and regulatory environments. Future research may extend the analysis to developed economies or conduct cross-country comparisons to examine whether the governance role of internal control quality varies across institutional settings. Second, managerial overconfidence is measured using indirect proxies derived from executive compensation and managerial shareholding behaviour. Although these measures are widely adopted in behavioural finance research, future studies may incorporate alternative indicators based on executive characteristics, textual analysis, or machine-learning approaches to capture managerial behavioural bias more comprehensively. Finally, this study considers internal control quality as the primary governance mechanism. Future research may investigate whether other governance mechanisms, such as board independence, institutional ownership, audit committee effectiveness, executive compensation design, or ownership concentration, interact with managerial overconfidence in shaping corporate financial decisions.

USE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) was used exclusively for language editing and manuscript refinement. The authors reviewed and approved all content and accept full responsibility for the accuracy and integrity of the manuscript.

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