

An empirical study on corporate governance and working capital from the perspective of earnings quality



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ABSTRACT

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Working capital is a crucial component of corporate assets and is essential for maintaining daily operational continuity. Improving working capital management (WCM) efficiency is therefore a key managerial objective that supports firms' sustainable growth. This study conducts an empirical analysis using a panel dataset of 9,933 A-share listed firms on the Shanghai and Shenzhen Stock Exchanges from 2012 to 2023. A corporate governance index is constructed through principal component analysis, and panel regression models are employed to examine the impact of corporate governance on WCM efficiency. The results show that corporate governance has a significant and positive effect on working capital efficiency. Further analysis reveals that this effect is more pronounced in firms ultimately controlled by non-state entities than in state-owned enterprises. In addition, higher governance standards are consistently associated with more efficient WCM practices. When profit quality is incorporated as a mediating variable, it partially mediates the relationship between corporate governance and working capital efficiency. Overall, the findings provide both theoretical insights and practical implications for firms seeking to enhance working capital management.

Contribution/ Originality: The triangular nexus of working capital efficiency, earnings quality, and corporate governance remains largely unexplored. Our research fills this gap, offering original perspectives and empirical clarity that enhance scholarly discourse in this field.

1. INTRODUCTION

As the primary source of a business's short-term financial resources, working capital is an essential component that connects the full value chain of sales, manufacturing, and procurement. Its managerial effectiveness serves as the "lifeline" for long-term corporate operations and immediately affects a company's short-term solvency, operational vitality, and market responsiveness. A company's liquidity risks may be considerably decreased, operational efficiency can be improved, and market competitive advantages can be strengthened via effective working capital management, which is a crucial first step toward accomplishing sustainable development objectives (Almomani, Almomani, & Obeidat, 2021).

However, the steadily decreasing effectiveness of working capital management (WCM) is presently posing a serious problem to Chinese businesses. According to available data, the mean cash conversion cycle for enterprises has risen from 134 days in 2020 to 265 days in 2023. This increase indicates both a reduction in turnover speed and an increase in capital occupancy. This reduces industrial and supply chain resilience in addition to limiting

profitability. From an institutional standpoint, the insufficiency of corporate governance procedures is closely linked to this problem. Academically, corporate governance is characterized as a framework of institutional arrangements that delineates the rights and obligations of shareholders, the board of directors, and management. Its principal function is to steer top executives toward making decisions that align with the enduring interests of the company. This is achieved through mechanisms such as equity structure design, board independence enhancement, supervisory board oversight strengthening, and management incentive and restraint systems. Short-term behavior tendencies among senior executives, such as heedlessly increasing inventory for temporary revenue growth, loosening credit policies that result in past-due accounts receivable, or causing capital misallocation due to insufficient supervision, can be readily induced by deficiencies in governance mechanisms. These behaviors ultimately worsen the decline in working capital management efficiency.

It is clear that corporate governance stands as the foundational institutional element influencing the effectiveness of WCM. Strengthening corporate governance frameworks represents a pivotal starting point in addressing the challenges associated with working capital management within the manufacturing industry. Such improvements will promote streamlined business operations and facilitate the attainment of high-caliber growth.

2. THEORETICAL FOUNDATION AND LITERATURE REVIEW

2.1. Theoretical Foundation

The principal-agent theory suggests that decision-making processes are shaped by the distinct objectives of the involved parties, given the divergent utility functions between the principal (shareholders) and the agent (board of directors). As owners, shareholders typically emphasize the organization's capacity for sustained profitability and enduring growth in their strategic considerations. Through the implementation of a strong business plan, they are committed to maximizing their return on investment (Ngatno, Apriatni, & Youlianto, 2021). To attain this long-term objective, shareholders require the board of directors to exercise fiscal diligence and uphold strong accountability in the domains of strategic planning, cost control, and risk reduction. However, as agents, the board of directors might prioritize their individual interests and focus on short-term performance enhancement. This includes, but is not limited to, raising pay, promoting employees, and improving one's reputation in the workplace. Board members sometimes put the greatest amount of short-term profit ahead of long-term strategic planning for the firm, perhaps embracing high-risk, high-reward tactics. The conflict of interest between the two parties is undoubtedly exacerbated by this disparity in utility functions. Creating an effective corporate governance structure is essential to resolving this conflict and promoting the long-term, healthy growth of the company. By defining roles, improving oversight systems, and implementing efficient incentive programs, the corporate governance mechanism reduces information asymmetry and agency costs between the two sides, making the board of directors' decision-making process more open and accountable. Through fostering alignment between the interests of the board of directors and shareholders, this approach encourages collaborative endeavors aimed at advancing the firm's sustained, long-term growth. Furthermore, good corporate governance reduces operational risks and boosts market competitiveness in addition to regulating management practices and company operations at all organizational levels (Agbo, Gina, & Biwei, 2022). Organizations may achieve consistent profit growth and better adjust to market variations by strengthening their internal governance system.

2.2. Literature Review

The following important areas have been the primary focus of empirical research conducted by the majority of academicians on the effectiveness of WCM.

An examination reveals that the effectiveness of WCM is shaped by an interplay of both firm-specific and external determinants. Exogenous factors influencing WCM performance include macroeconomic indicators such as Gross National Product and lending rates (Baños - Caballero, García - Teruel, & Martínez - Solano, 2010) as well as

institutional and socio-economic conditions including corporate engagement in social responsibilities (Jiao, Wen, & Zhang, 2021) economic policy uncertainty (Qiang & Yang, 2021) and macro-financial volatility (Phan, Nguyen, Nguyen, & Hegde, 2017). Furthermore, interfirm relationships such as those with customers (Sun & Zhai, 2019) and suppliers (Iqbal & Hayat, 2020) are identified as materially affecting WCM outcomes. On the endogenous side, organizational variables like ownership structure and the consolidation of executive functions (Liao, Liu, & Chen, 2022) contribute significantly to WCM efficacy. Operational mechanisms involving procurement, sales, and the administration of receivables and payables are also critical (Sun, Wang, Du, Wang, & Wang, 2020). Financial dimensions, including asset integrity, leverage ratios (Mulyono, 2018), and corporate risk strategies (Subbarayudu, Naveena, & Ravikishore, 2020), further shape WCM performance. Additionally, the demographic and professional profiles of top management, such as executive compensation, CFO expertise (Zhu & Sun, 2015), team size, median age, gender diversity, and academic credentials (Sun & Zhang, 2018), exert notable influence on WCM practices.

The evaluation of WCM efficacy constitutes a fundamental focus within financial studies, centering principally on the dual aspects of liquidity and profitability. Liquidity-based assessments are widely employed to gauge WCM efficiency. Since its original conceptualization by Hager (1976), the Cash Conversion Cycle (CCC) has served as a fundamental metric for evaluating WCM performance; subsequent research has sought to refine and expand upon this construct. Shin and Soenen (1998) contributed to this effort by proposing the Net Operating Cycle as an alternative tool for initial appraisal. Mun and Jang (2015) stressed the importance of metric selection in analyzing WCM success, contending that the formulation of scientifically sound and logically consistent indicators is essential for capturing the quality of WCM operations. Kaplan, Gruffydd-Jones, van Gemert, Kirenga, and Medford (2013) observed that unitary measures are insufficient for holistic evaluation, advocating instead for developing a multidimensional framework capable of accommodating the intricacies of WCM. Gosman and Kelly (2003) emphasized that WCM strategies are context-dependent, varying by industry, and thus performance metrics must be aligned with sector-specific attributes. Haron and Nomran (2016) highlighted working capital requirements and net current balance as vital measures, noting the role of debt-to-asset ratios in mediating WCM effectiveness, illustrating the intersection of capital structure and liquidity management. Dhole, Mishra, and Pal (2019) explored the strategic design of WCM, which recommends that firms tailor approaches to their operational profiles and adopt specific indicators (e.g., cash ratio, cash conversion period) for evaluation. Jiao and Wen (2020) constructed a composite WCM assessment system by embedding the Performance Prism Model within a management accounting structure, applying it to Fuyao Group with 22 indicators across four domains; weighted aggregation was used to produce an integrated appraisal. Drawing on the 3E (Economy, Efficiency, Effectiveness) theory, Chakraborty, Patra, and Sharma (2021) proposed that WCM performance be evaluated through these triple lenses, allowing firms to develop tailored models consonant with strategic priorities.

The economic implications of WCM have also attracted considerable academic interest. Gao (2019) conducted an empirical investigation using data from manufacturing firms listed on the Shanghai and Shenzhen exchanges between 2015 and 2017, revealing that proficient WCM enhances operational efficacy and identifies an inverse relationship between corporate performance and extended turnover durations for inventory, payables, and receivables. Kayani, Gan, Choudhury, and Arslan (2025) explored the interrelations among firm performance, governance mechanisms, and WCM conclude that both governance and WCM exert substantial influence on performance, urging organizations to implement structured WCM systems as strategic levers. Likewise, Akbar, Akbar, Nazir, Poulouva, and Ray (2021) applied a system GMM regression approach to assess the effect of WCM on both performance and market risk across publicly traded firms in 12 sectors. Their results indicated a positive association between working capital levels and enterprise performance, whereas stock volatility was negatively correlated, implying that firms adopt WCM strategies that promote stability and long-term growth. Empirical findings from Zhou and Xu (2021), which focused on the retail sector, identified a non-linear relationship linking the working capital cycle and profitability levels. Specifically, profitability was found to improve with cycle length up to

an inflection point, beyond which additional elongation reduces returns. This suggests the presence of an optimal WCM range: below it, marginal increases in working capital may boost profitability, whereas beyond it, inefficiencies and diminishing margins emerge.

2.3. Summary of Literature Review

Currently, the CCC serves as a widely adopted indicator in numerous academic studies for assessing the efficiency of WCM. The efficacy of WCM has been thoroughly analyzed concerning macroeconomic variables, such as GDP, lending interest rates, and economic instability. The impact of corporate governance on the outcomes of WCM has undergone thorough examination, with governance typically being dissected into four key components: executive leadership, shareholders, the board of directors, and the supervisory board. However, these characteristics are frequently investigated in isolation, resulting in a fragmented understanding of their cumulative impact on the efficacy of WCM.

This study fills the research gap by amalgamating governance attributes across four designated factors to produce a composite corporate governance index. The effectiveness of WCM can be comprehensively analyzed by this multidimensional index, which accounts for the full impact of corporate governance. Moreover, the research advances beyond conventional techniques that mostly analyze the governance–WCM relationship using a linear framework. It incorporates profit quality as a mediating variable, elucidating the underlying transmission mechanism by which corporate governance indirectly affects WCM efficiency. This mediating channel enriches the understanding of corporate governance's role in optimizing working capital strategy and presents novel theoretical perspectives.

3. THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

3.1. Theoretical Framework

An effective corporate governance framework establishes a stable and efficient operational environment for businesses, mitigates internal contradictions and conflicts of interest (Amanamah, 2024), facilitates optimal resource allocation and utilization, and consequently underpins enhancements in working capital management efficiency. Enhancing corporate governance fosters a stable internal operating environment and facilitates the judicious and effective allocation of corporate resources to critical areas by standardizing decision-making processes and power distribution, thereby directly advancing the efficiency of WCM. Furthermore, as a crucial catalyst for efficient corporate financial supervision (Almashhadani, Almashhadani, & Almashhadani, 2022), robust corporate governance markedly improves the precision and clarity of financial reporting. This transparency not only strengthens investor and stakeholder confidence but also contributes to improved earnings quality. High-quality earnings reflect a firm's true financial condition and operational performance, offering reliable indicators for internal and external stakeholders alike. For management, such quality earnings data serve as a vital informational foundation, enabling the development of more scientifically grounded and rational WCM policies based on accurate and timely financial insights. Importantly, the connection between corporate governance and WCM efficiency is not one-dimensional; instead, it is somewhat influenced by earnings quality, as seen in Figure 1. The dependability and transparency of financial disclosures, characteristics of superior earnings, directly guide management choices for the distribution of financial resources, thereby affecting the operational efficiency of working capital procedures. Accordingly, there exists a dynamic and interdependent relationship among corporate governance, earnings quality, and WCM efficiency. These components combine synergistically to influence the efficacy of corporate working capital strategies and enhance the firm's overall financial well-being.

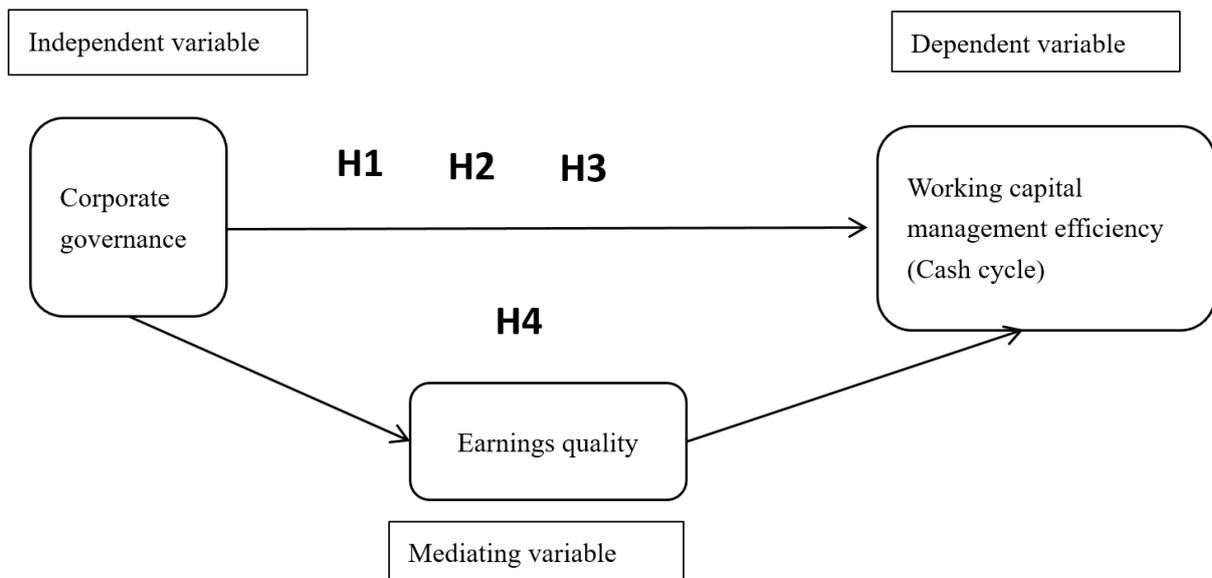


Figure 1. Theoretical framework.

3.2. Research Hypothesis

Based on data from listed companies in Ghana, Fiador (2016) found that corporate governance structure significantly influences working capital management efficiency. Ahmad, Ahmed, and Samim (2018), in a study of manufacturing firms in Pakistan, demonstrated that CEO tenure, audit committee effectiveness, and board size have significant effects on working capital efficiency. Kengatharan and Tissera (2019) identified a positive correlation between board meeting frequency, CEO tenure, firm size, and working capital management efficiency. Using a sample of non-financial enterprises in Pakistan from 2009 to 2018, Naz, Ali, Rehman, and Ntim (2022) revealed that both corporate governance quality and working capital management efficiency are positively correlated with corporate performance. Similarly, Ahmed, Ali, and Hågen (2023), examining non-financial firms listed on the Frankfurt and Oslo Stock Exchanges from 2017 to 2021, showed that board meetings, board and CEO compensation, and CEO tenure exert a significant positive influence on working capital management.

In summary, corporate governance affects the overall efficiency of working capital management through its impact on the mechanisms and processes of working capital operations. Based on this, the first hypothesis of this study is proposed as follows.

Hypothesis 1: Under the control of other factors, corporate governance has a significant positive impact on the efficiency of WCM.

China is a country where the public ownership economy takes a dominant position, with state-owned or state-controlled enterprises serving as the main players in the market economy. Enterprises with different ownership structures show significant differences in how internal control influences their operating capital (Guan & Tang, 2018). Specifically, in 2023, the cash turnover cycle for privately owned listed companies in China was 148 days, while that for state-owned listed companies was 162 days. The operational financial management efficiency of privately listed firms exceeds that of state-owned listed enterprises. This indicates that the actual controller of the firm is a private entity, which generally has a stronger motivation to improve internal control and effectively manage the flow and use of operational funds. This supervisory system may enhance the rapid turnover of funds and reduce inefficient capital allocation, thereby increasing the overall efficiency of the enterprise's operational fund management. Thus, unlike publicly listed companies with state-owned businesses as their true controllers, the attributes of the real controllers of private organizations markedly improve internal control and the optimization of operational fund management.

The study posits the second hypothesis based on the preceding analysis.

H₂: The effectiveness of working capital management is more significantly impacted by the corporate governance of listed corporations with non-state-owned actual controllers than by state-controlled listed firms.

Because managers may act more in their own best interests than those of shareholders, which might result in less-than-optimal operational performance, agency theory holds that managers and shareholders are naturally in conflict. Effective corporate governance may reduce the conflict of interest between shareholders and management. Efficient corporate governance procedures, including shareholder behavior governance, board governance, stakeholder governance (Li & Jiang, 2007; Zhang & Lu, 2012), and robust supervisory methods (Fang & Jin, 2013), can mitigate the company's inefficient business practices. An elevated level of corporate governance mitigates inefficient managerial conduct. A robust corporate governance framework entails a comprehensive oversight mechanism and enhanced transparency, which can more effectively regulate and limit the actions of company management, hence preventing the misuse or inefficient allocation of working capital. Under the framework of robust corporate governance, an enterprise's decision-making procedures become increasingly structured, participatory, and streamlined. Such a governance environment ensures that working capital is channeled towards the most productive projects and investments, thereby enhancing the efficiency of capital deployment. Superior corporate governance is typically associated with heightened risk management capabilities. Enterprises are better positioned to detect and alleviate potential financial risks, encompassing liquidity and credit risks, thereby safeguarding their working capital reserves.

Drawing on the foundation of previous studies, this research advances the following third hypothesis.

H₃: Compared to low-level corporate governance, high-level corporate governance exerts a more profound influence on the efficacy of a company's WCM.

The relationship between corporate governance structures and the effectiveness of WCM is significantly mediated by the quality of earnings. By reinforcing supervisory frameworks, implementing checks and balances, and establishing rigorous internal control systems, enhanced corporate governance effectively curtails managerial manipulation of earnings. Consequently, this substantially improves the veracity and dependability of financial disclosures (Burlacu, Robu, & Munteanu, 2024), thereby elevating the overall quality of reported earnings. As Salehi, Ammar Ajel, and Zimon (2023) have noted, these enhancements underscore the considerable and far-reaching impact that sound corporate governance has on the precision of financial reporting. Conversely, high-quality earnings data, serving as a genuine indicator of an enterprise's fiscal well-being, provides management with precise and comprehensive insights into the company's financial standing and operational outcomes. This information forms a crucial bedrock for assessing the firm's operational efficiency and profitability, and also serves as a vital basis for crafting a scientifically sound and rational working capital management strategy. As a result, through high-quality earnings data, management can accurately identify the enterprise's capital needs and operational constraints, thereby optimizing capital allocation, improving capital utilization efficiency, and ultimately achieving a significant improvement in WCM effectiveness.

Consequently, a vital connection between corporate governance frameworks and the efficacy of WCM is the quality of profits. It translates these enhancements into observable improvements in working capital performance, in addition to reflecting the governance system's function in guaranteeing high-quality financial reporting. This dynamic emphasizes the inherent interdependence among corporate governance, earnings quality, and WCM efficiency, offering both theoretical foundations and practical insights for businesses seeking to improve working capital efficiency through better governance procedures and higher-quality earnings.

The fourth hypothesis put out by this study is based on the analysis above.

H₄: The relationship between corporate governance and working capital management effectiveness is somewhat mediated by earnings quality.

4. RESEARCH DESIGN

4.1. Sample Selection

The research sample for this study, covering the years 2012–2023, includes A-share listed companies on the Shanghai and Shenzhen Stock Exchanges. Since the China Securities Regulatory Commission changed the company's sector, data collection began on January 1, 2012. As the 2024 financial data for publicly listed firms has not yet been released, the data is current as of 2023. Observations from publicly traded financial companies, those subject to special treatment by ST, and observations lacking relevant variables are excluded to maintain the integrity of accounting information, ensure consistency of accounting standards, and assess the business's operational continuity. In total, 9,933 observations are excluded. All continuous variables are subjected to Winsorization, which limits extreme values by adjusting data at both the upper and lower 1% thresholds.

4.2. Data Source

This study relies exclusively on secondary data, all of which were obtained from the China Stock Market & Accounting Research Database (CSMAR). Designed as a specialized platform for economic and financial research, the CSMAR database was developed to meet the needs of academic inquiry. It incorporates China's unique institutional context while aligning with the professional standards of established global databases such as CRSP, COMPUSTAT, and Thomson Reuters.

CSMAR has been widely recognized in recent scholarly work as a credible and methodologically sound source for extracting financial information on publicly listed companies in China (e.g., (Chen & Xie, 2019; Guo & Xu, 2021; Huang, Li, & Xu, 2023; Li, Zhang, & Wang, 2022)). Currently, numerous universities throughout China have acquired licensing rights to the database, which is made available through their respective institutional library websites.

4.3. Variable Description

4.3.1. Explained Variables

Drawing on the Cash Conversion Cycle (CCC) as the primary measure, this study adopts the computational approach outlined by Iqbal, Manzoor, Akhtar, and Amin (2020) and Mahmood et al. (2022) to evaluate WCM efficiency.

The CCC is calculated by summing the inventory turnover period and the accounts receivable collection period, then subtracting the accounts payable deferral period. This adjusted metric, accounting for supplier credit terms, reflects the time needed for a firm to monetize its investments in inventory and receivables. A shorter CCC indicates more efficient working capital use, improved liquidity, and stronger operational management.

4.3.2. Explanatory Variables

The corporate governance index serves as a composite measure designed to evaluate multiple dimensions of governance quality. It produces a unified score that reflects a firm's overall governance standing. In line with the approaches of Zhou, Xu, and Lu (2020) and Wang (2022), this study replaces the broad incentive mechanism with two specific proxies: management shareholding and executive compensation. Board monitoring capacity is captured by the proportion of independent directors on the board. Additionally, the ownership structure's supervisory function is represented by the shareholding percentage of institutional investors and the degree of equity dispersion. Lastly, managerial decision-making power is approximated by whether the roles of chairman and general manager are held by the same individual.

These seven variables are integrated via Principal Component Analysis (PCA), with the first principal component serving as the composite corporate governance index. A higher value on this index indicates a more effective and well-structured governance system.

4.3.3. Mediating Variables

The quality of a firm's earnings, which encompasses the substance, reliability, and sustainability of such earnings, is referred to as earnings quality. High-quality earnings typically suggest that a company's earnings are consistent, robust, and accurately reflect its inherent value. The investigation conducted by Lv (2016) is the subject of this study. The research employs the absolute value of discretionary accruals (Absda) as a measure for earnings quality and the annual cross-sectional modified Jones model to estimate discretionary accruals (DA). Create the modified Jones model as follows.

$$TA_{i,t}/A_{i,t-1} = \alpha_1 (1/A_{i,t-1}) + \alpha_2 [(\Delta REV_{i,t} - \Delta AR_{i,t}) / A_{i,t-1}] + \alpha_3 (PPE_{i,t}/A_{i,t-1}) + \varepsilon_{i,t} \quad (1)$$

$TA_{i,t} = NI_{i,t} - CFO_{i,t}$ $TA_{i,t}$ represents the total accrued profits of Company i in year t, $NI_{i,t}$ denotes the net profit of Company i in year t, $CFO_{i,t}$ signifies the net cash flow from operating activities of Company i in year t, $\Delta REV_{i,t}$ is the change in the main business income of company i in year t relative to year t-1, $\Delta AR_{i,t}$ is the change in accounts receivable of company i in year t relative to year t-1, $PPE_{i,t}$ is the net value of the fixed assets of firm i at the end of year t, $A_{i,t-1}$ represents the total assets of firm i at the end of year t-1, and all variables are standardized by the total assets at the end of year t-1 to eliminate the impact of differences in company size. Utilizing the sample data's annual cross-sectional data, the model is regressed by least squares to obtain the estimated values of α_1 , α_2 , and α_3 for each year. Then α_1 , α_2 , and α_3 are substituted into the model to obtain the residual $\varepsilon_{i,t}$, which is the discretionary accruals (DA). Its absolute value (Absda) is taken as a substitute variable for earnings quality. The larger the ABSDA, the worse the earnings quality.

4.3.4. Control Variables

This study integrates a suite of control variables to bolster the validity and robustness of the empirical results, thereby minimizing the potential impact of extraneous factors on the effectiveness of corporate WCM. Based on insights from previous research, the following control variables are incorporated: firm scale (Zhang, Zou, Liu, & Zhang, 2020), the debt-to-asset ratio (Yang & Wang, 2021), asset return (Wang & Ge, 2023), and the firm's growth prospects (Alshirah et al., 2022). Moreover, operating leverage (Xie & Liu, 2016), ownership concentration, and the system of equity checks and balances (Chen, Li, & Zhang, 2020) are also taken into account. Building upon Jiang, Xue, and Xue's (2018) methodological framework, this research employs industry and year fixed effects to account for unobserved variations stemming from inter-industry disparities and temporal shifts in working capital management practices.

A detailed definition and elucidation of each variable employed in this study are provided in Table 1.

Table 1. Variable definitions and descriptions.

Variable nature	Variable name	Variable symbol	Variable measurement
Explained variable	Working capital management efficiency	CCC	CCC=Accounts receivable turnover + inventory turnover - accounts payable turnover
Explanatory variables	Corporate governance	CGI	The seven variables represent the four dimensions of corporate governance and are calculated using principal component analysis.
Mediating variable	Earnings quality	Absda	The Jones model is employed to determine the absolute value of accrual earnings management.
Control Variables	Company size	Size	Ln (Average total assets)
	Debt-to-asset ratio	Lev	Liabilities/assets
	Return on assets	Roa	EBIT/Average assets at the commencement and conclusion of the year
	Growth capability	Growth	Operating income growth rate
	Degree of operating leverage	Dol	$(\Delta EBIT/EBIT)/(\Delta Q/Q)$

Variable nature	Variable name	Variable symbol	Variable measurement
	Equity concentration	Ocr	The shareholding ratio of the top five shareholders (TOP5)
	Equity balance	Ebd	The ownership ratio of the largest shareholder is divided by the sum of the shareholding ratios of the second-largest through tenth-largest stakeholders.
	Industry	Industry	Dummy variable that denotes the industry to which the sample pertains
	Year	Year	A dummy variable that denotes the year to which the sample corresponds

4.4. Research Model

This work references the research of Xie and Liu (2016) to validate Hypotheses 1, 2, and 3, and creates the following model.

$$CCC = \beta_0 + \beta_1 CGI + \sum Control + \sum Industry + \sum Year + \varepsilon \quad (2)$$

This study employs the research design of Wang (2018) and implements a three-step testing technique to validate hypothesis 4. The initial phase involves reiterating model (1), while the subsequent steps employ models (2) and (3) for evaluation. To ensure the accuracy and reliability of the mediation effect assessment, this paper also performs a Sobel-Goodman test.

$$Absda = \gamma_0 + \gamma_1 CGI + \sum Control + \sum Industry + \sum Year + \varepsilon \quad (3)$$

$$CCC = \lambda_0 + \lambda_1 CGI + \gamma_2 Absda + \sum Control + \sum Industry + \sum Year + \varepsilon \quad (4)$$

Table 2. Descriptive statistics of variables.

Variables	N	Min.	Mean	Max.	SD
CCC	9933	-396	126.104	599	126.573
CGI	9933	0.0285	2.018	4.837	0.608
Absda	9933	0	0.048	1.032	0.051
Lev	9933	0	0.251	1	0.433
Growth	9933	0	8.439	4796	87.885
Size	9933	18	22.121	28	1.123
Dol	9933	0	1.043	35	0.606
Roa	9933	0	0.001	1	0.027
Ocr	9933	14	57.952	101	14.239
Ebd	9933	0	0.786	4	0.745

4.5. Descriptive Statistics of Related Variables

Table 2 contains the descriptive statistics for each variable. The enterprise sample's average cash conversion cycle (CCC) is 126.104 days, with a maximum of 599 days, a minimum of -396 days, and a standard deviation of 126.573 days, according to the data. Significant heterogeneity in the cash conversion cycles among the organizations is suggested by these figures, which underscore disparities in their efficacy of working capital management. The sample firms' average internal control index is 2.017638, with a minimum of 0.0285, a maximum of 4.837, and a standard deviation of 0.608. This variability suggests that the sample has substantial disparities in corporate governance quality, with some firms exhibiting high governance standards and others revealing lower standards.

Table 3. Correlation coefficients of main variables.

Variable	CCC	CGI	Absda	Lev	Growth	Size	Dol
CCC	1.0000						
CGI	-0.160***	1.0000					
Absda	0.07**	-0.023**	1.0000				
Lev	-0.112***	0.155***	0.058***	1.0000			
Growth	-0.055***	0.072***	0.008	0.062***	1.0000		
Size	-0.192***	0.404***	-0.006	0.320***	0.099***	1.0000	
Dol	0.02**	0.001	0.012	0.015	-0.007	-0.066***	1.0000
Roa	-0.13***	0.009	0.043***	-0.015	-0.001	0.004	-0.002
Ocr	-0.045***	-0.073***	0.051***	-0.127***	0.011	-0.151***	0.003
Ebd	0.026***	0.223***	0.025**	-0.015	0.005	-0.062***	0.011
	Roa		Ocr		Ebd		
Roa	1.0000						
Ocr	-0.014		1.0000				
Ebd	0.013		0.017*		1.0000		

Note: ***, **, * represent 1%, 5%, and 10% significance levels, respectively.

4.6. Correlation Analysis of Main Variables

The Pearson correlation test results for the sample variables are presented in Table 3. At the 1% significance level, Table 3 demonstrates a substantial negative correlation between the corporate governance index (CGI) and the currency conversion cycle (CCC). This implies that a shorter cash transition period and greater efficacy in working capital management are associated with superior corporate governance. At the 1% level, the mediating variable, earnings quality, demonstrates a substantial positive correlation with CCC, while other control variables exhibit robust relationships with CCC at either the 1% or 5% significance levels. However, these results are indicative of fundamental mechanical relationships and do not support the theoretical claims made in this study. To verify these findings and explore the underlying relationships, additional regression analysis is required.

5. ANALYSIS OF EMPIRICAL RESULTS

5.1. Test of Hypothesis 1

Table 4 presents the estimation results derived from four regression specifications.

Column (1) reports an estimate without control variables and without accounting for year and industry effects. The results reveal a statistically significant negative relationship between the cash conversion cycle (CCC) and the corporate governance index at the 1% level. Column (2) incorporates year and industry fixed effects but still omits control variables. Again, a significant negative association between the corporate governance index and the CCC is observed at the 1% significance level. Column (3) includes control variables, though it does not adjust for temporal or sectoral heterogeneity. Even under this specification, the corporate governance index remains negatively and significantly correlated with the CCC at the 1% level. Column (4) presents the full model, including control variables as well as year and industry fixed effects. The estimates continue to indicate a significant negative correlation between the corporate governance index and the CCC at the 1% level.

Across all four models, a higher corporate governance index correlates with a shorter cash conversion cycle, implying more efficient working capital management. These findings provide empirical support for the first hypothesis.

This outcome may be explained by several mechanisms. First, sound corporate governance is generally associated with more efficient and transparent decision-making processes, allowing firms to respond more effectively to market changes and adjust business strategies promptly. Such adaptability likely enhances the allocation and utilization efficiency of working capital. Second, a well-structured governance framework typically strengthens internal controls, enabling early detection and remediation of weaknesses and risks related to working capital management. Third, strong governance mechanisms may encourage the adoption of more disciplined financial policies, such as tighter

management of receivables, inventory, and payables, which can accelerate capital turnover, reduce idle capital, and ultimately improve the efficiency of working capital utilization.

Table 4. Regression results of the corporate governance index and working capital management efficiency.

Variables	(1)	(2)	(3)	(4)
	CCC	CCC	CCC	CCC
CGI	-20.449*** (-10.13)	-11.351*** (-4.92)	-18.041*** (-8.41)	-11.166*** (-4.60)
Lev			-5.255** (-2.36)	-0.781 (-0.34)
Growth			0.018 (0.17)	0.012 (0.21)
Size			-2.642*** (-3.21)	-2.949*** (-2.94)
Dol			1.881* (1.75)	1.857* (1.71)
Roa			-5.439 (-0.18)	-25.888 (-0.82)
Ocr			0.267*** (3.09)	0.292** (2.54)
Ebd			-0.921 (-0.55)	-3.656** (-2.01)
Constant	169.871*** (35.08)	156.564*** (29.22)	207.423*** (10.44)	123.462*** (5.76)
Year	No	Yes	No	Yes
Industry	No	Yes	No	Yes
Observations	9,933	9,933	9,933	9,933
R-squared		0.27		0.29
Number of id	2,057	2,057	2,057	2,057

Note: z-statistics in parentheses.
***, **, * represent 1%, 5%, and 10% significance levels, respectively.

5.2. Test of Hypothesis 2

The sample was divided into two groups to assess Hypothesis 2, as proposed in this study: one consisting of 2,149 companies with state-owned ultimate controlling shareholders and the other comprising 7,784 organizations with non-state-owned ultimate controlling shareholders.

The regression results for both cohorts are presented in Table 5. The regression results for firms with state-owned controlling shareholders are shown in Column (1) of Table 5. The correlation between the currency conversion cycle and the corporate governance index is statistically insignificant, as demonstrated in Column (1). Conversely, the regression findings for companies with non-state-owned controlling owners are displayed in Column (2) of Table 5. At the 1% significance level, this indicates a strong inverse relationship between the CCC and the corporate governance index.

In non-state-owned listed businesses, corporate governance has a statistically significant and more substantial impact on the efficacy of WCM than in state-owned businesses, according to a comparative analysis of the regression findings in Table 5, supporting Hypothesis 2. This suggests that publicly traded, non-state-owned companies tend to have more market-driven, adaptable, and varied corporate governance structures, which lead to improved working capital management efficiency.

However, limitations that publicly traded state-owned businesses may face, such as strict governance structures and convoluted decision-making processes, might make WCM less effective.

Table 5. Regression results of the corporate governance index and the working capital management efficiency of enterprises with different actual controllers.

Variables	(1)	(2)
	CCC	CCC
CGI	41.855 (1.15)	-8.225*** (-2.96)
Lev	127.927 (0.92)	-29.780*** (-3.36)
Growth	0.008 (0.11)	0.005 (0.59)
Size	16.145 (1.1)	0.951 (0.82)
Dol	0.877 (0.04)	1.882 (1.62)
Roa	-159.696 (-0.64)	-145.430*** (-8.73)
Ocr	0.603 (0.28)	0.214 (1.64)
Ebd	-13.281 (-0.29)	-0.8 (-0.26)
Constant	-418.63 (-1.19)	141.206*** (5.46)
Year	Yes	Yes
Industry	Yes	Yes
Observations	2,149	7,784
R-squared	0.25	0.43
Number of id	435	1,764

Note: z-statistics in parentheses.
*** represent 1% significance levels.

5.3. Test of Hypothesis 3

To examine Hypothesis 3, which proposes that superior corporate governance exerts a stronger positive influence on WCM efficiency, firms were stratified into two cohorts based on the mean value of the corporate governance index: a lower-governance group (below the mean) and a higher-governance group (above the mean). The outcomes of separate regression analyses for each subgroup are reported in Columns (1) and (2) of Table 6.

Column (1) displays results for entities with relatively weak governance mechanisms, where no statistically significant association between the CCC and the corporate governance index was detected.

In contrast, Column (2) presents estimates for firms characterized by more robust governance structures, revealing a significant negative relationship between the CCC and the corporate governance index at the 1% level.

By conducting a comparison of the regression results in Table 6, the study concludes that high levels of corporate governance exert a more pronounced and statistically significant influence on working capital management efficiency, thereby validating Hypothesis 3.

This suggests that, relative to firms with lower governance levels, firms with robust corporate governance structures significantly enhance decision-making efficiency, enabling quicker and more accurate responses to market changes. Furthermore, strong governance improves risk management and internal controls, thus safeguarding the stability and security of working capital.

Transparency and precision in financial reporting are also prioritized by high-level governance, which enhances the firm's capacity to raise capital, maintain a positive market reputation, and increase investor confidence. Additionally, effective incentive systems and robust checks and balances motivate management and employees, fostering innovation and improving overall operational performance.

Table 6. Regression results of different levels of corporate governance and working capital management efficiency.

Variables	(1)	(2)
	CCC	CCC
CGI	2.866 (0.61)	-18.123*** (-4.21)
Lev	-34.555*** (-2.88)	-31.260*** (-2.69)
Growth	-0.009 (-0.46)	0.004 (0.57)
Size	2.957* (1.92)	-0.126 (-0.09)
Dol	2.470 (1.28)	0.642 (0.48)
Roa	-120.627*** (-5.44)	-106.892*** (-5.05)
Ocr	0.276 (1.45)	0.444*** (2.67)
Ebd	-3.455 (-0.64)	-4.939 (-1.46)
Constant	70.543** (2.00)	141.206*** (5.46)
Year	Yes	Yes
Industry	Yes	Yes
Observations	4,764	5,169
R-squared	0.27	0.43
Number of id	1,359	1,764

Note: z-statistics in parentheses.
***, **, * represent 1%, 5%, and 10% significance levels, respectively.

5.4. Test of Hypothesis 4

As displayed in Column (1) of Table 7, a statistically significant negative relationship is observed between the CCC and the corporate governance index at the 1% level. Column (2) indicates a significant negative correlation between the corporate governance index and earnings quality at the 5% level, implying that corporate governance exerts a considerable influence on earnings quality. Column (3) presents regression outcomes after incorporating the mediating variable, earnings quality. The results demonstrate a significantly positive association between earnings quality and the CCC at the 1% significance level, while a significantly negative correlation persists between the corporate governance index and the CCC, also at the 1% level. Notably, the coefficient of the corporate governance index decreases from -11.166 to -10.162 after including the mediator. This attenuation suggests that the influence of corporate governance on the CCC is partially mediated by earnings quality.

Table 7. Regression results of the partial mediation effect.

Variables	(1)	(2)	(3)
	CCC	Absda	CCC
CGI	-11.166*** (-4.60)	-0.5** (-2.45)	-10.162*** (-4.60)
Absda			35.395*** (2.59)
Lev	-0.781 (-0.34)	0.005** (2.49)	-0.784 (-0.34)
Growth	0.002 (0.21)	0.001 (0.27)	0.002 (0.21)
Size	0.624 (0.67)	0.000 (0.27)	0.624 (0.67)
Dol	1.857* (1.71)	0.001 (1.15)	1.856* (1.71)
Roa	-25.888	0.112***	-25.977

Variables	(1)	(2)	(3)
	CCC	Absda	CCC
	(-0.82)	(4.28)	(-0.83)
Ocr	0.292** (2.54)	0.001*** (5.55)	0.292** (2.53)
Ebd	-3.656** (-2.01)	0.002 (1.56)	-3.657** (-2.01)
Constant	123.462*** (5.76)	0.007* (1.84)	123.451*** (5.76)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
Observations	9,933	9,933	9,933
R-squared	0.29	0.34	0.29
Number of id	2,057	2,057	2,057

Note: t-statistics in parentheses.
***, **, * represent 1%, 5%, and 10% significance levels, respectively.

The following are the Sobel-Goodman Mediation Tests.

Table 8. Sobel-Goodman mediation tests.

Test	Coef.	Std. Err	Z	P> Z
Sobel	-0.2001	0.1055	-1.965	0.04770
Goodman-1 (Aroian)	-0.2001	0.1078	-1.981	0.04330
Goodman-2	-0.2001	0.1031	-1.982	0.04217
Effect	Coef.	Std. Err	Z	P> Z
a coefficient	-0.0040	0.0009	-4.2364	0.00002
b coefficient	50.3311	23.7070	2.1230	0.03375
Indirect effect	-2.0014	1.0545	-1.9650	0.04770
Direct effect	-17.8192	2.2835	-7.8036	0.00000
Total effect	-18.0193	2.2819	-7.8966	0.00000
Proportion of the total effect that is mediated				0.1122
Ratio of indirect to direct effect				0.1111
Ratio of total to direct effect				1.1122

To ensure the robustness of the mediation effect test, this study further employs the Sobel-Goodman test. As shown in Table 8, the p-values for the Sobel, Goodman-1, and Goodman-2 tests are all below 0.05, indicating that earnings quality plays a significant mediating role in the relationship between corporate governance and WCM efficiency. Specifically, corporate governance enhances WCM efficiency by improving earnings quality.

Table 8 reports that the proportion of the total effect mediated is 11.22%, indicating that 11.22% of the overall impact of corporate governance on working capital efficiency is transmitted through earnings quality. The ratio of the indirect effect to the direct effect is 11.11%, and the total effect is 111.22% of the direct effect, confirming the presence of significant partial mediation. These results support Hypothesis 4.

5.5. Robustness Test

This study included an additional analysis using an alternative variable technique to verify the robustness of the regression results. The dependent variable, the currency conversion cycle, was replaced with the working capital management efficiency ratio (WCME). Xie and Liu (2016) evaluated WCM effectiveness using WCME as a benchmark. The WCME is calculated according to their methodologies as follows.

Operating profit for the current period is divided by net working capital to determine WCME.

Table 9 displays the regression results obtained by replacing the dependent variable with WCME. At the 5% significance level, the results indicate a substantial positive correlation between WCME and the corporate governance

index. This implies that improved corporate governance is associated with a higher working capital management efficiency ratio. These results further verify the regression findings reported in this research.

Table 9. Regression results of the Robustness test.

Variables	(1)	(2)	(3)	(4)
	WCME	WCME	WCME	WCME
CGI	0.098*** (3.66)	0.271*** (4.08)	0.080** (2.57)	0.239*** (3.33)
Lev			0.102 -0.97	0.427* -1.82
Growth			0.001 (0.7)	0.002 (0.33)
Size			0.005 (0.28)	0.039 (1.32)
Dol			0.025 (0.93)	0.024 (0.76)
Roa			1.740*** (5.77)	1.512*** (3.38)
Ocr			0.003*** (2.67)	0.006* (1.73)
Ebd			0.009 (0.34)	-0.047 (-0.61)
Constant	-0.105** (-2.18)	-0.451*** (-2.92)	-0.310** (-2.06)	-1.892*** (-2.79)
Year	No	Yes	No	Yes
Industry	No	Yes	No	Yes
Observations	9,933	9,933	9,933	9,933
R-squared		0.25		0.27
Number of id	2,057	2,057	2,057	2,057

Note: z-statistics in parentheses.
***, **, * represent 1%, 5%, and 10% significance levels, respectively.

6. RESEARCH CONCLUSIONS AND FUTURE PROSPECTS

6.1. Research Conclusions

This research examines the connection between profit quality, WCM effectiveness, and corporate governance using agency theory. A sample of 9,933 Chinese publicly traded companies is used. The empirical results provide the following insights.

First, corporate governance greatly improves working capital management performance when other aspects are taken into account. This implies that increases in the corporate governance index lead to improved WCM. Second, the efficacy of WCM is more impacted by higher corporate governance levels than by lower ones. Third, compared to their state-owned counterparts, publicly traded corporations with non-state-owned ultimate controlling shareholders demonstrate a more significant and critical influence of corporate governance on the efficiency of WCM. This suggests that non-state-owned companies' governance frameworks are better at enhancing working capital management effectiveness. The relationship between corporate governance and the efficiency of WCM is partially mediated by earnings quality. Earnings quality improvements act as a partial mediating factor between corporate governance and WCM performance. These findings highlight the crucial role that profit quality plays in ensuring that the efficacy of governance aligns with the successful management of financial resources and provide insightful information on the processes linking corporate governance to financial performance.

This study makes the following policy suggestions in light of the aforementioned research findings:

Primarily, firms must integrate the improvement of corporate governance with optimal WCM. They must establish a comprehensive corporate governance framework to enhance the effectiveness of WCM after a thorough evaluation of their deficiencies in this domain.

Secondly, to guarantee the efficacy and efficiency of WCM, companies should proactively implement strategic measures, including enhancing internal controls and augmenting transparency and accountability, to perpetually improve and refine the corporate governance framework. This is due to the beneficial impact of corporate governance on the effectiveness of WCM.

Thirdly, the governance of state-owned listed firms should receive more attention and investment from state-owned enterprises when the controllers are state-owned organizations. They should continuously improve governance effectiveness to better serve the improvement of WCM efficiency by strengthening internal management mechanism reforms, such as adding key indicators like the CCC and operating profit margin of working capital into the senior executive performance evaluation system, and improving management mechanisms.

Fourthly, to ensure the scientific nature of financing decisions from the outset, listed companies should regard earnings quality control as a vital part of WCM. Specifically, by standardizing accounting procedures and minimizing earnings manipulation practices, they can enhance profit quality. This allows earnings quality to serve as a bridge connecting corporate governance and working capital management, helping firms accurately identify funding bottlenecks and allocate capital resources efficiently. They should establish a capital management system based on high-quality earnings data to achieve these goals.

6.2. Future Research Prospects

This research has the following limitations, even though it has conducted empirical tests on the intrinsic link between corporate governance, profit quality, and WCM efficiency, and has made specific policy suggestions.

Firstly, there is insufficient coverage of sample and industry heterogeneity. Except for financial and ST enterprises, the sample is limited to A-share listed businesses in Shanghai and Shenzhen. It is not broken down into layers based on industry features. Because different industries have different working capital structures and governance requirements, the findings may not apply to a single industry. Additionally, the sample is restricted to the Chinese market, and there is no cross-country comparison with other developing or developed markets, making it impossible to determine how the institutional environment affects the fundamental transmission mechanism.

Secondly, the variable measurement's single dimension. Although the operational profit margin of working capital is employed for the robustness test, the CCC is the primary indication of WCM efficiency. Because inventory turnover and accounts receivable efficiency are not separated, it is difficult to identify the distinct effects of governance on each working capital link. The description of the intermediate impact is incomplete as the actual earnings management index is excluded, and the manipulable accrual profit (ABSDA), as determined by the modified Jones model, is the sole metric used to assess earnings quality.

Thirdly, there are no situational factors or segmentation of property rights. Only "state-owned" and "non-state-owned" are used to describe the nature of property rights. There is no distinction made between the several categories of non-state-owned businesses, including private, foreign-funded, and mixed ownership. The "governance advantages of non-state-owned holding enterprises" are not well explained since various non-state-owned property rights topics have varied governance goals.

In light of the aforementioned flaws, this paper's primary future research directions are:

Firstly, broaden the study on industry stratification and sample size. The sample may be extended to other sectors in the future, allowing for comparison and analysis of the diverse effects of corporate governance on the effectiveness of WCM in labor-intensive, capital-intensive, and technology-intensive companies. The emphasis is on how industrial traits, including inventory reliance and the accounts receivable ratio, affect regulation.

Secondly, enhance multi-dimensional analysis and variable measurement. Both manipulable accrual profits and real earnings management indicators are included in terms of earnings quality to compare the differences in the intermediary effects of the two types of earnings management. In terms of WCM efficiency, the turnover periods of

accounts receivable, inventory, and accounts payable serve as sub-indicators to meticulously analyze the distinct impact of company governance on each component of working capital in conjunction with the cash cycle.

Thirdly, further investigate the division of property rights and situational adaptation. Five categories, "wholly state-owned, state-owned holding, private holding, foreign-owned holding, and mixed ownership," are used to categorize the nature of property rights. The governance benefits of non-state-owned holding companies are identified by comparing the governance effects of these enterprises.

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