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The Effect of Ownership Structure on the Speed of Achieving Optimal Working Capital in the Firms Listed on the Tehran Stock Exchange

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Abstract

Objectives: This study aims to examine the effect of ownership structure on the speed of achieving optimal working capital in firms listed on the Tehran Stock Exchange. It focuses on understanding how different ownership types—such as institutional, governmental, and managerial—affect financial discipline and operational agility in firms.

Methodology/Design/Approach: The research is applied and employs a causal-comparative (post-event) correlation design. The statistical population includes all firms listed on the Tehran Stock Exchange during 2015–2024. Using a systematic elimination sampling method, a sample of firms was selected for analysis.

Findings: The results indicate that ownership structure positively influences the speed at which firms achieve optimal working capital. Institutional oversight and alignment of managerial interests enhance financial discipline, while government ownership provides credit support that facilitates liquidity adjustments. Overall, the findings highlight ownership structure as a key determinant of operational efficiency in firms.

Innovation: This study contributes to the literature by emphasizing the role of ownership composition in financial and operational performance. The findings provide practical guidance for policymakers and board members on leveraging institutional, governmental, and managerial ownership to enhance the long-term efficiency and liquidity management of firms.

Keywords: Optimal Working Capital, Institutional Ownership, State Ownership, Management Ownership.

1. Introduction

One of the main challenges faced by firms listed on the stock exchange is achieving an optimal level of working capital, such that firms neither suffer from liquidity shortages and reduced operational capacity nor experience diminished operational efficiency due to holding excess and unproductive financial resources. The speed at which firms adjust toward this optimal level of working capital is a critical factor influencing financial efficiency and liquidity stability. Working capital management represents the short-term capital required to finance investment activities and constitutes a substantial portion of firms' balance sheets across various industries. More efficient working capital management is associated with improved firm performance (Nastiti et al., 2019).

Fluctuations in cash flows are among the key determinants of a firm's ability to meet its debt and liability obligations and can significantly increase financial risk. Consequently, effective management of the cash conversion cycle, or short-term working capital, plays a crucial role in preventing firms from encountering financial distress (Fernandez & Sanchez, 2023). Given that a large proportion of firms' assets consist of current assets, the efficiency of working capital management is vital for enhancing firm value. The interval between the cost of purchasing raw materials and the receipt of cash from sales represents the firm's liquidity conversion cycle. A longer cycle indicates a greater need for investment in working capital and, consequently, exposure to liquidity inefficiencies. Conversely, a well-managed liquidity conversion cycle can enhance profitability through increased sales activity (Barros et al., 2021). Therefore, the primary objective of working capital management is to optimize the cash conversion cycle and, in turn, improve working capital efficiency. Inefficient working capital management not only reduces profitability but also increases the likelihood of financial crises (Fernandez & Sanchez, 2023).

One of the factors influencing the efficiency of working capital management is the firm's ownership structure (Sah et al., 2022). As a key component of the corporate governance system, ownership structure can affect the quality of managerial financial decisions and the firm's ability to achieve an optimal level of working capital. In state-owned firms, financial decision-making is often influenced by macroeconomic policies and non-economic considerations, which may slow the adjustment process toward optimal working capital levels. At the same time, easier access to bank financing and government support may exert a dual effect on the speed of adjustment. As a result, it remains unclear whether state ownership ultimately enhances or weakens financial efficiency in this context.

Institutional ownership—characterized by the presence of investment funds, financial institutions, and professional investors—is generally associated with more analytical and professional monitoring. Continuous oversight of managerial performance by institutional investors can accelerate financial decision-making processes and facilitate faster adjustment toward optimal working capital. However, the short-term orientation of some financial institutions may also exert pressure for short-term decisions that could threaten the sustainability of working capital management.

In firms with high managerial ownership, managers tend to be more motivated to maximize firm value due to their equity stakes. This alignment of interests may lead to more efficient working capital decisions aimed at generating maximum returns from cash resources. Nevertheless, excessive concentration of ownership in managerial hands may give rise to conflicts of interest and opaque decision-making, potentially slowing the adjustment toward optimal working capital levels.

Accordingly, an empirical examination of the effects of different ownership structures on working capital adjustment speed within the specific context of the Iranian economy can provide practical and reliable insights for investors, policymakers, and corporate managers. In Iran's turbulent economic environment, working capital management is of particular importance, as a substantial portion of corporate assets

and liabilities consists of short-term items. Any inefficiency in managing these components can have serious consequences for firms' liquidity, profitability, and long-term sustainability.

Most domestic studies have primarily focused on determining the optimal level of working capital, while comparatively less attention has been paid to the speed or timing of adjustment toward this optimal level—a dimension that is both vital and underexplored. Even when the optimal level of working capital is identified, failure to reach it promptly can result in significant opportunity costs and operational losses. Moreover, in recent years, the ownership composition of Iranian listed firms has undergone substantial changes due to privatization, increased participation of financial institutions, and rising managerial shareholdings. These developments have altered financial decision-making patterns and may directly influence financing policies, liquidity strategies, and ultimately the speed of working capital adjustment.

Therefore, investigating this relationship within the real context of the Tehran Stock Exchange is essential for clarifying the practical implications of ownership structure on firms' financial decision-making foundations and for providing empirical evidence to support financial policymaking and investment decisions. The main innovation of this research lies in its focus on the speed of achieving optimal working capital as a dynamic and time-based variable. While most previous studies have concentrated solely on the level of working capital, this study introduces a novel perspective by emphasizing the temporal dimension and adjustment dynamics of firms' financial behavior.

Furthermore, this study simultaneously examines three types of ownership structures—state, institutional, and managerial—within the capital market framework, thereby offering a more comprehensive model of the relationship between ownership structure and financial management efficiency in Iran. The combined analysis of these ownership types and their interactive effects on corporate financial decision-making represents a relatively new and underexplored approach in the Iranian financial management literature. The findings of this research may also contribute to the reform of corporate governance guidelines and the improvement of investment and privatization policies in the country.

The remainder of the study is structured as follows: first, the theoretical foundations, research hypotheses, and empirical background are presented; next, the research methodology and operational definitions of the variables are discussed; finally, the empirical findings and conclusions of the study are reported.

2. Theoretical foundations of research

The term *ownership* refers to "the right that a person has over an object and the ability to make any disposition of it, except where restricted by law." Accordingly, *ownership structure* denotes the composition and distribution of a firm's shareholders and, in some cases, the identification of the ultimate controlling shareholder. Ownership structure is considered a potentially important element of corporate governance (Barzegar et al., 2019).

The foundation of strategic studies in corporations is agency theory, which attributes agency problems to the separation of ownership from control. Agency theory assumes a potential conflict of interest between shareholders and managers, whereby managers may seek to maximize their own benefits at the expense of shareholders. Consequently, identifying the type of ownership structure and the composition of shareholders serves as a governance mechanism for monitoring and controlling managerial behavior within firms (Rahimian et al., 2013).

With the establishment of large joint-stock firms and the expansion of capital markets, ownership of corporate shares has gradually shifted from individuals to institutions, forming the basis for institutional ownership. As capital markets have become more integrated, institutional shareholders—such as insurance firms, investment funds, financial institutions, banks, and holding firms—have emerged as the dominant owners of public firms, particularly in

developed markets. These investors now play a significant role in corporate governance.

Two contrasting perspectives exist regarding the role of institutional investors. One view characterizes institutional shareholders as inherently short-term and passive, primarily concerned with short-term profits rather than long-term value creation. Frequent performance evaluations and ranking systems incentivize such investors to adopt short-term investment horizons, discouraging them from bearing the costs of effective monitoring, as the benefits may not materialize in the short run.

In contrast, another perspective emphasizes the presence of long-term and active institutional investors who focus on firms' long-term performance. These investors have strong incentives to engage in governance activities, including appointing representatives to boards of directors. Their relatively low portfolio turnover motivates them to retain ownership stakes and encourage managers to improve operations and increase shareholder wealth. Through active monitoring of management decisions, these investors enhance managerial accountability and ultimately improve firm performance (Kouhkan & Alinejad, 2017).

In this regard, Lin (2016) examined the impact of two types of institutional ownership on accounting conservatism: (1) short-term institutional investors whose trading behavior is sensitive to current earnings news, showing a negative association with accounting conservatism, and (2) long-term dedicated institutional investors, whose investment horizons and trading strategies are positively associated with accounting conservatism (Kouhkan & Alinejad, 2017).

There are also differing views on how institutional investors influence firms and managerial incentives. Barto et al. (2000) argue that institutional investors are professional, long-term-oriented shareholders whose large investment volumes and expertise lead to enhanced managerial supervision. This oversight encourages a shift away from short-term profit maximization toward long-term firm value maximization. The *Efficient Monitoring Hypothesis* posits that increased institutional ownership leads to more effective oversight, reduced agency conflicts, and improved firm value. Conversely, the *Convergence of Interests Hypothesis* suggests that large institutional shareholders may form strategic alliances with management, potentially resulting in weaker monitoring and a negative relationship between institutional ownership and firm value. Bush (1998) argues that institutional investors monitor firms both explicitly, through governance mechanisms, and implicitly, through information gathering and oversight of managerial operations (Daghani et al., 2019).

Financial theory traditionally assumes that firms aim to maximize shareholder wealth; however, in practice, managers do not always act in shareholders' best interests. Instead, they may pursue personal objectives, leading to information asymmetry and mistrust between owners and managers. Managerial ownership—defined as the proportion of shares held by firm directors—varies across firms and can serve as an indicator of agency conflicts. Firms with higher managerial ownership tend to exhibit greater accounting conservatism, reflecting shareholders' demand for conservatism as a monitoring mechanism.

As the separation between ownership and control intensifies, agency problems become more severe, particularly when managers face limited liability relative to shareholders. In such cases, accounting conservatism emerges as a potential mechanism for mitigating agency conflicts arising from debt and short managerial time horizons. A decrease in managerial ownership intensifies agency problems and increases the demand for conservatism. Jensen and Meckling (1976), in their seminal work *Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure*, argue that managerial shareholding aligns managers' interests with those of shareholders, reducing conflicts of interest. Under such conditions, managers are less likely to deviate from corporate objectives for personal gain, resulting in lower levels of unconditional conservatism and reduced demand for

conditional conservatism as a constraint on opportunistic behavior (Liu, 2019).

State-owned enterprises (SOEs) are defined differently across legal systems. According to Article 4 of the National Management Law, a state-owned firm is an economic entity established by law to perform part of the government's responsibilities under the general policies of Article 44 of the Constitution, with more than 50% of its capital owned by the government. SOEs play a crucial role in many economies, accounting for a significant share of GDP, employment, and capital markets, particularly in strategic sectors such as energy, transportation, and communications. The performance of these enterprises has substantial implications for broader economic activities.

State ownership represents a distinct ownership structure characterized by centralized ownership but limited direct incentives for individual shareholders to monitor management. Due to the absence of personal cash-flow motivations, effective supervision may be weakened, potentially increasing firm risk. However, some argue that political support from the government may create growth opportunities and enhance firm value. State ownership can lead to two main consequences. First, ineffective monitoring may arise because government-appointed supervisors may lack sufficient incentives to safeguard public economic resources. Second, managerial appointments may be based on political relationships rather than professional competence, leading managers to prioritize political advancement over long-term firm performance—an effect known as the *political promotion hypothesis*. According to this hypothesis, managers of SOEs are evaluated based on short-term performance criteria, encouraging investments in short-term projects and the use of aggressive accounting practices that accelerate the recognition of good news relative to bad news, thereby reducing accounting conservatism (Bahari & Shahrabi, 2018).

Working capital management aims to maintain an optimal balance among working capital components while supporting firms' future revenues and cash flows (Fernandez & Sanchez, 2023). Firms can reduce financing costs or allocate liquidity more efficiently within the operating cycle; however, insufficient liquidity may lead to wasted investment opportunities (Vaughn et al., 2019). Although an optimal level of working capital exists, firms continuously strive to achieve it, as effective working capital management balances liquidity and profitability (Azizi & Jokar, 2021).

Norouzi and Aflatoni (2020) emphasize that working capital constitutes a substantial portion of firms' total capital and represents a key responsibility of financial managers, playing a critical role in achieving organizational objectives. Working capital consists of current assets, while net working capital is calculated as current assets minus current liabilities. The optimal level of working capital varies across firms due to differences in financial constraints (Habib & Dalwai, 2023). Mandipa and Sibindi (2022) find that adherence to optimal working capital management practices positively affects financial performance. Failure to maintain sufficient liquidity may hinder firms' ability to exploit short-term investment opportunities, delay the fulfillment of obligations, and ultimately damage corporate credibility.

3. Research Hypotheses

H1: Institutional ownership affects the speed of achieving optimal working capital.

H2: State ownership affects the speed of achieving optimal working capital.

H3: Managerial ownership affects the speed of achieving optimal working capital.

4. Research Methodology

The present study is applied in nature and, from a methodological perspective, adopts a causal (post-event) correlational design. The statistical population comprises all firms listed on the Tehran Stock Exchange, and the study period spans from 2015 to 2024. Firms were selected as the research sample based on the following criteria: to ensure data comparability, the fiscal year-end of the firms must be

March; firms must not have changed their fiscal year during the ten-year study period; complete data for the variables examined in this study must be available; and firms operating in the banking, insurance, and investment sectors were excluded from the sample.

After applying these screening criteria, a total of 115 firms were selected as the final research sample. Data analysis was conducted using a panel data approach and pooled (mixed) data methods. The hypotheses were tested using standard statistical procedures implemented in EViews 12 software.

4.1. Operational definitions of research variables:

4.1.1. Research Dependent Variable: Working Capital Adjustment Velocity (SLCCCC)

The partial adjustment model has been widely used in studies examining the adjustment speed of financial factors (Flannery & Dengan, 2006; Öztekin, 2015). In the partial adjustment framework, actual and optimal working capital must first be estimated; however, the effect of optimal working capital cannot be calculated directly. Therefore, optimal working capital is estimated by incorporating several firm-specific factors that influence firms' working capital, based on theoretical foundations and prior empirical studies. Nevertheless, external factors beyond the firm's control also affect working capital and cannot be fully captured within the model. Consequently, these uncontrollable factors are ultimately reflected in the estimator's error term.

Following Baños-Caballero, García-Teruel, and Martínez-Solano (2010) and Ahangar (2020), the estimation of optimal working capital is conducted using the following model. It is assumed that investment in working capital reflects a longer or shorter cash conversion cycle, and that this cycle is a function of firm-level and macroeconomic variables.

$$LCCC^*_{it} = \beta' x_{it} + u_{it}$$

Where:

LCCCit is the optimal cash conversion cycle length; xit is the characteristic vector explaining the length of the cash conversion cycle presented below, β^' is a coefficient of the estimated estimate of explained vector, and uit is the model's residual value.

The firm's characteristics, as stated following the research of Baños-Caballero, García-Teruel, and Martínez-Solano (2010) and Ahangar (2020), have been selected and used.

- Operating cash flow (CFO): It is equivalent to the ratio of operating cash flow to total assets.
- Financial costs (FCOST) are equivalent to the ratio of financial costs to interest-bearing debts.
- Growth opportunities (MTB): It is equal to the Q tobin ratio and the ratio of the total market value of the firm's shares and the book value of liabilities to the book value of the firm's assets.

Firm size (SIZE): equals the natural logarithm of total assets.

Ratio of tangible fixed assets (TANG): It is equivalent to the ratio of fixed assets to total assets.

Profitability (ROA): It is equivalent to the net profit ratio to total assets.

Financial leverage (LEV) is equivalent to the ratio of total debt to total assets.

Gross Domestic Product Growth (GDPG) is equivalent to the gross domestic product percentage change.

Risk of financial crisis (Z-SCORE): It is equivalent to the score obtained from the Altman model. The final model is as follows:

$$\mathrm{T-score_{it}} = 0.291(\mathrm{X1}) + 2.458(\mathrm{X2}) - 0.301(\mathrm{X3}) - 0.079(\mathrm{X4}) - 0.05(\mathrm{X5})$$

In this model, the T-score represents the score related to financial power as follows:

x1: the ratio of working capital to total assets

x2: the ratio of accumulated profit and loss to total assets

x3: the ratio of operating profit (loss) to total assets

x4: the ratio of book value to the total value of debts

x5 is the ratio of income to total assets.

In the above relation, the indices are the same as the indices of the relation above, and the lower the index obtained for a firm, the more unfavorable the financial

situation is, so if T<-0.14, the probability of the firm's financial crisis is very high.

*Length of cash conversion cycle (LCCC): equal to the length of the receivables collection period (the ratio of accounts receivable to sales, multiplied by 365) plus the length of the inventory conversion period (the ratio of inventory of materials and goods to the cost of goods sold, multiplied by 365) minus the length of the repayment period of accounts payable (the ratio of accounts payable to sales, multiplied by 365).

The optimal working capital can be calculated with the second model by placing the firm's characteristics in the first model.

LCCC is the length of the optimal cash conversion cycle, and u_it is the model residual, and other factors are introduced in detail in the previous paragraph.

The partial adjustment model mentioned above and used in this research to calculate the adjustment speed is the partial adjustment model of Fama and French (2002), which will be combined with the following model, and its theoretical model is as follows. In the following, its explanation and mathematical model are presented:

$$\Delta LCCC_{it} = \lambda(LCCC^{*}{}_{it} - LCCC_{it-1}) + v_{it}$$

Where in ΔLCCCit is the result of subtracting the length of the real cash conversion cycle of period t from the length of the real cash conversion cycle of period t-1; LCCCit, optimal cash conversion cycle length; L_(it-1), the length of the real cash conversion cycle of period t-1; λ, the speed of adjustment; and vit, the specification of one-way residuals, which is subject to the fixed effects of the characteristics of each firm and is actually (uit model 2).

This allows the firm to reduce the gaps between the actual and target cash conversion cycle lengths by one unit per year. A value close to one indicates a higher adjustment speed. The following model was used to obtain the final adjustment speed by combining the above two models.

$$LCCC^{*}{}_{it} = \emptyset_1 CFO_{it} + \emptyset_2 FCOST_{it} + \emptyset_3 MTB_{it} + \emptyset_4 SIZE_{it} + \emptyset_5 TANG_{it} + \beta\emptyset_6 Z - SCORE_{it} + \emptyset_7 ROA_{it} + \emptyset_8 LEV_{it} + \emptyset_9 GDPG_{it} + (1 - \lambda)LCCC_{it-1} + v_{it}$$

where in ∅_1 to ∅_9 is equal to λ β^'; λ is the rate of adjustment, and LCCCit-1 is the real leverage of period t-1. The rest of the components are according to the above model, which was previously introduced to the characteristics of each firm.

The presented model generally shows that firms always seek to make decisions that reduce the distance between the two lengths of the actual cash conversion cycle and the target, and achieve the optimal cash conversion cycle. The primary hypothesis is that all firms move towards the optimal cash conversion cycle at the same speed (Fama and French, 2002). Finally, the adjustment speed was calculated by subtracting the estimated coefficient for LCCCit-1 from one.

The speed of adjustment of working capital = $1 - (1 - \lambda)$

4.1.2. Independent Research Variable:

To measure this variable, following the research of Quiri et al. (2021) as well as previous research such as Kumar (2013), Namazi & Kermani (2010), and Setayesh & Salehinia (2015), three factors—managerial ownership, institutional ownership, and government ownership—have been used.

Manage Own: Indicates the percentage of shares held by the members of the board of directors.

Institutional ownership: The percentage of shares owned by institutional owners, institutional owners including insurance firms, financial institutions, banks, etc., who own more than 5% of the firm's shares.

Government Ownership: Equal to the percentage of shares held by state-owned firms (shares held by the government)

4.1.3. Control variables

SIZE: The natural logarithm of total assets.

ROA: The ratio of net profit to total assets.

IND: The ratio of non-executive directors of the board of directors to the total members.

Sales Growth: Sales revenue minus the sales of the previous period divided by the sales of the previous period.

Cash: The ratio of operating cash to total assets.

LEV: The ratio of total debt to total assets.

5. Regression model

Based on the theoretical and empirical literature, such as Platouni et al. (2020) and Sah et al. (2022), a model consisting of introduced variables has been designed and introduced to test the research hypotheses as follows:

$$\begin{aligned} SLCCC_{it} = {} & \beta_0 + \beta_1 Manag\ own_{it} + \beta_2 Insti\ own_{it} \\ & + \beta_3 gow\ own_{it} + \beta_4\ SIZE_{it} \\ & + \beta_5 ROA_{it} + \beta_6\ LEV_{it} \\ & + \beta_7\ growth_{it} + \beta_8 Cash_{it} \\ & + \beta_9\ IND_{it} + \varepsilon_{it} \end{aligned}$$

6. Research Findings

First, descriptive statistics are presented in the table below to show how the data are dispersed.

Table 1 presents the descriptive statistics of the study variables. Descriptive statistics provide an overview of the distribution and dispersion of the data used in the statistical analyses. Among these statistics, the mean and standard deviation are the most important indicators for understanding the central tendency and variability of the variables.

According to the results, the average speed of adjustment of firms' working capital is **63%**, indicating that, on an annual basis, firms close approximately 63% of the gap between actual and optimal working capital. This finding suggests that firms adjust their working capital toward the optimal level in a relatively dynamic manner.

Furthermore, the average leverage ratio is **55%**, implying that, on average, approximately half of firms' assets are financed through debt. This level of leverage reflects a moderate reliance on external financing among the sampled firms.

According to the results obtained in Table 2, it can be seen that the significance level of the variables in the durability test is less than 5%, indicating the reliability of the variables.

The results reported in the table indicate that the significance levels of the White test and the Breusch–Godfrey test in the research model are below 5%, confirming the presence of heteroskedasticity and serial autocorrelation in the regression residuals. To address these econometric issues, the final estimation of the model was performed using the Generalized Least Squares (GLS) method with robust standard errors.

According to the results presented in Table 3, the Chow and Hausman tests both yield significance levels below 5%, providing evidence in favor of a panel data model with fixed effects. This finding confirms that the fixed-effects specification is the most appropriate estimation approach for the data structure used in this study.

Table 1: Descriptive Statistics

Variable Name	Mean	Max	Min	Stdev
Speed of adjustment of working capital	0.63	0.99	0.12	0.25
Institutional Ownership	58.8	94.9	0.0000	0.85
State Ownership	0.39	0.99	0.000	0.34
Managerial Ownership	0.60	0.99	0.000	0.26
Firm Size	14.72	19.53	11.30	0.52
Return on Assets	0.14	0.59	-0.24	0.15
Leverage	0.55	0.99	0.10	0.20
Sales Growth	0.34	1.65	-0.39	0.42
Liquidity	0.11	0.56	-0.25	0.13
Independence of managers	0.65	1.00	0.20	0.17

Table (2). Stability Test Quantitative Variables

Variable Name	Test Statistics	Sig
SLCCC	-8.53892	0.0000
Insti own	-5.26365	0.0000
Gov. own	-8.91348	0.0000
Manage own	-9.75362	0.0000
SIZE	-12.3134	0.0000
ROA	-9.52959	0.0000
LEV	-13.0833	0.0000
growth	-2.57699	0.0000
CASH	-17.7677	0.0000
IND	-4.23755	0.0000

Table 3: Results of Variance Heterogeneity and Autocorrelation Test

Test Model	Test Statistics	Sig
Normality Test	42.08	0.0000
Variance Heterogeneity	88.18	0.0000
Serial Self-Correlation	26.37	0.0000
F-Limmer	1.52	0.004
Hausman	18.81	0.0159

Although the regression residuals do not strictly follow a normal distribution, this issue does not materially affect the validity of the results due to the large sample size (1,240 firm-year observations) and the use of panel data estimation techniques. Prior studies suggest that, in large samples, deviations from normality do not bias parameter estimates or inference, as the central limit theorem mitigates such concerns (Platouni, 2017).

The results presented in Table 4 indicate that institutional ownership, with a positive coefficient (0.168) and a significance level below 5% (0.003), has a direct and statistically significant effect on the speed of adjustment toward optimal working capital. Accordingly, the first research hypothesis is not rejected at the 5% significance level.

State ownership, with a positive coefficient (0.024) and a significance level below 5% (0.001), also exhibits a direct and significant effect on the speed of achieving optimal working capital. Therefore, the second research hypothesis is not rejected at the 5% error level.

Similarly, managerial ownership shows a positive coefficient (0.031) with a significance level below 5% (0.036), indicating a direct and statistically significant effect on the speed of adjustment toward optimal working capital. Consequently, the third research hypothesis is not rejected at the 5% significance level.

In addition, the control variables of sales growth and firm size have a statistically significant effect on the dependent variable at the 5% error level. The coefficient of determination (R^2) of the model is 0.25, indicating that the independent and control variables included in the model explain approximately 25% of the variation in the dependent variable.

The Durbin–Watson statistic is equal to 2.14, which falls within the acceptable range of 1.50 to 2.50, suggesting the absence of strong serial correlation in the model residuals. Furthermore, the collinearity statistics are below the threshold value of 5, indicating that multicollinearity among the explanatory variables is not a concern. Finally, the F-statistic, with a significance level below 5%, confirms that the overall research model exhibits an acceptable goodness of fit.

Table 4:Testing Research Hypotheses

Variables	Coef	Stdev	T Statistic	Sig	VIF
Insti own	0.168	0.057	2.911	0.003	1.55
Gov. own	0.024	0.007	3.25	0.001	1.21
Manage own	0.031	0.015	2.09	0.036	1.18
SIZE	0.042-	0.016	2.60-	0.009	1.18
ROA	0.057	0.099	0.57	0.56	2.43
LEV	0.056-	0.061	0.91-	0.36	1.92
growth	0.042	0.020	2.10	0.035	1.21
CASH	0.079-	0.074	1.06-	0.28	1.41
IND	0.012-	0.065	0.18-	0.85	1.06
View from the Principal	1.23	0.25	4.82	0.0000	-
Determination Coefficient	0.25				
Watson Durbin	2.14				
Statistic F	2.6037				
Sig	0.0000				

7. Conclusion

The results indicate that firms with a high proportion of state ownership achieve the optimal level of working capital significantly faster. This finding suggests that the presence of institutional support and easier access to formal financial resources—such as bank facilities or government credit guarantees—enhances liquidity and reduces delays in firms' financial decision-making processes. In fact, the state ownership structure, by providing financial backing and formal oversight mechanisms, reduces liquidity risk and accelerates the adjustment of working capital compared to other firms.

From a policy perspective, this result implies that government participation in corporate ownership structures can play a stabilizing role in financial efficiency and liquidity stability, particularly under certain economic conditions or during periods of recession. However, it should be noted that, in the long run, this positive effect may be accompanied by challenges such as non-economic interventions or reduced managerial flexibility in decision-making. Therefore, the existence of effective regulatory mechanisms and robust corporate governance standards is essential to preserve the efficiency of this type of ownership. Overall, the findings demonstrate that state ownership in the context of the Tehran Stock Exchange acts as an effective stimulus for increasing the speed of adjustment toward optimal working capital, mainly due to enhanced financial access and improved liquidity risk management, although its long-term effectiveness depends on the degree of managerial independence and financial transparency within the firm.

The findings also strongly confirm the hypothesis related to institutional ownership. Specifically, firms with a higher proportion of shares held by financial institutions, investment funds, and specialized entities exhibit faster and more systematic adjustments in their working capital levels. This outcome can be attributed to the active and analytical monitoring performed by institutional investors, which reduces delays in financial decisions through continuous evaluation of cash flows, management of accounts receivable and payable, and pressure for the optimal utilization of capital.

At the strategic level, institutional ownership serves a dual role. On the one hand, it enhances managerial transparency and accountability; on the other hand, it increases the dynamism of financial decision-making. The presence of professional institutions in the ownership structure strengthens

managerial incentives to maintain liquidity efficiency and avoid excessive inventory accumulation. This specialized supervision and financial discipline facilitate a faster alignment of the working capital structure with prevailing market conditions. Overall, the results suggest that institutional ownership not only has a direct and positive effect on the speed of achieving optimal working capital but can also be regarded as a key driver of financial dynamism in listed firms. Accordingly, it is recommended that policies aimed at developing institutional investment in the capital market be reinforced to improve financial oversight quality, liquidity efficiency, and asset turnover at the macro level.

The third hypothesis of the study is also supported. The results show that a higher proportion of managerial ownership is associated with a faster adjustment toward the optimal level of working capital. This finding indicates that aligning managers' interests with those of shareholders creates stronger financial incentives for timely and efficient decision-making in liquidity and current asset management. In such firms, managers perceive themselves as direct participants in the gains or losses arising from working capital decisions, making them more inclined to correct liquidity imbalances promptly and reduce unnecessary financial costs.

From a theoretical perspective, this result is consistent with agency theory, which posits that as managerial ownership increases, the divergence between the interests of owners and managers diminishes, leading to improved efficiency in short-term financial decisions. Managers with personal capital invested in the firm tend to be more sensitive to inventory turnover speed, receivables collection, and the settlement of short-term liabilities, thereby accelerating the process of achieving optimal working capital. Consequently, the findings indicate that an appropriate concentration of managerial ownership acts as a driving force in enhancing firms' financial efficiency. Nevertheless, it is essential to calibrate managerial ownership levels carefully to ensure that economic incentives are preserved while preventing opportunistic behavior or self-serving decisions. Accordingly, a balanced combination of managerial ownership and institutional oversight can enhance firms' capacity to achieve optimal working capital both efficiently and rapidly.

8. Practical suggestions to strengthen the alignment of managers' and shareholders' interests

- **Enhancing managerial share ownership:** It is recommended that firms allocate a portion of their shares to executive managers to increase accountability and accelerate decision-making in the areas of liquidity and working capital management. This approach can be implemented through employee stock ownership plans (ESOPs) or performance-based compensation schemes linked to financial outcomes.
- **Employing active institutional monitoring mechanisms:** Firms with institutional shareholders are advised to establish regular, transparent communication channels with these investors and to provide periodic reports on changes in working capital. Such professional oversight by institutional investors can facilitate timely corrective actions, reduce financial risks, and prevent the accumulation of idle or unproductive resources.
- **Specialized management of liquidity and current assets:** Financial managers are encouraged to utilize advanced analytical tools and intelligent software to monitor cash flows, manage accounts receivable, and plan liquidity reserves. These practices enable faster and more accurate decisions regarding optimal working capital levels. In addition, establishing a dedicated working capital committee within firms can improve coordination and speed in decision-making.

- **Optimization of government financing relationships:** In state-owned enterprises, it is recommended that government financial resources be allocated in a targeted and cost-effective manner. Specifically, government facilities should be directed toward activities that accelerate cash flows and enhance the productivity of short-term assets, rather than being used to cover operational losses or inefficient expenditures.
- **Developing regulations for an optimal ownership structure mix:** The Stock Exchange Organization and the Ministry of Economic Affairs and Finance are encouraged to develop guidelines that promote a balanced ownership structure. Maintaining an appropriate mix of state, institutional, and managerial ownership can help preserve financial transparency while simultaneously enhancing the speed and quality of corporate decision-making.
- **Supporting the expansion of professional investment institutions:** The development of specialized investment funds and professional financial institutions can strengthen corporate monitoring and create constructive pressure for more efficient liquidity management. Accordingly, government authorities and the stock exchange organization should facilitate institutional participation through tax incentives and improved access to information.
- **Enhancing corporate information transparency:** Requiring listed firms to disclose periodic reports on working capital management indicators—such as receivables collection periods and payables settlement cycles—to regulators and shareholders can support faster decision-making and reduce information asymmetry and uncertainty.
- **Training and empowerment of financial managers:** Organizing specialized training programs by the Stock Exchange Organization and the Iranian Association of Certified Public Accountants in the fields of liquidity analysis and working capital management can enhance managerial competencies. Such initiatives enable managers to respond more rapidly to cash flow opportunities and align their financial decisions more closely with corporate ownership objectives.

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