International Journal of Finance and Managerial Accounting, Vol.13, No.49, Spring 2028

Investigating the Relationship between Changes in Working Capital and Debt Ratio with Changes in Company Profitability

Reza Mansoorian
Assistant Professor and Faculty Member, Accounting and Finance Department, South Tehran Branch, Islamic Azad University, Tehran, Iran(Corresponding Author)
Mansourian63.reza@gmail.com

Seyyedeh Mahboobeh Jafari
Assistant Professor and Faculty Member, Accounting and Finance Department, South Tehran Branch, Islamic Azad University, Tehran, Iran
jafari.mahboobeh@gmail.com

Asgar Askari
PhD student in Accounting, Department of Accounting, South Tehran Branch, Islamic Azad University, Tehran, Iran
asgaraskari@yahoo.com

Mostafa Khadem Al-Husseini
PhD student in Accounting, Department of Accounting, South Tehran Branch, Islamic Azad University, Tehran, Iran
moostafakhadem1346@gmail.com

Submit: 19/09/2025 **Accept:** 21/10/2025

ABSTRACT

The main objective of this study is to investigate the relationship between changes in working capital and debt ratio with changes in company profitability. The statistical population of the present study is the companies listed on the Tehran Stock Exchange that have been active during the period from 2016 to 2023. The statistical sample is 128 companies based on the screening criteria. This study is an applied research based on the nature and objectives of the study. Also, the data used in this study were collected using banks and information sources of the Tehran Stock Exchange Organization. Then, a mixed data regression model was used to test the research hypotheses. This study has two hypotheses. The results showed that there is a significant relationship between the change in the company's debt ratio and the company's profitability, and there is also a positive and significant relationship between the change in the company's debt ratio and the company's profitability.

Keywords: Working capital, debt ratio, company profitability, working capital changes

1. Introduction

Today, the application of financial management issues has a special place in improving the efficiency of organizations. Therefore, making financing and investment decisions as the two main tasks of financial managers has a special place in improving the organization. In most companies, the main goal of management accounting measures is to control vital sectors and control the company's performance, as well as to hope for the improvement of the company's performance. One of the main sectors that requires proper control and management is the current assets and liabilities sector. In this regard, working capital management is of particular importance as part of the field of financial management issues. Working capital management represents the policies and decisions that are applied in the working capital sector in order to change the types of current assets and short-term financing sources. Minimizing investment in working capital (bold policy) may positively affect the company's profitability. On the other hand, high investment in working capital (conservative policy) may also lead to a decrease in profitability, because maintaining a high level of inventory reduces the potential costs of stopping the production process and the company's losses due to lack of production, and reduces production costs and other benefits (Rahman and Nasr, 2007).

It is believed that current debt should be settled by current assets. In this case, the current assets that remain after paying current debt are the company's net working capital. The company's net working capital is an important factor for granting these credits and facilities to external creditors (banks and credit institutions). In fact, the more this number increases, the more the company's ability to repay debt increases. On the other hand, an excess of working capital can be a mismanagement for the organization's management in terms of not using external resources or maintaining excessive current assets (Jahankhani and Shouri, 2009).

The concept of working capital as a description of a company's operations gained popularity in the 1940s and is now quite common in the United States. The concept of working capital has its roots in the regulatory literature published by the US Treasury Board in Statement No. 43, and the proponents of this statement attempted to provide a definition of working capital that would be appropriate to the company's operating cycle and would be disconnected from the more limited definition of a one-year period. From their perspective, the operating cycle makes it possible to separate short-term obligations from long-term obligations. Fixed assets are not included in the current asset category because their turnover cycle can cover several product turnover cycles (Parsaeiyan, 2009).

Therefore, the present study seeks to find an answer to the main question of whether there is a relationship between changes in working capital and debt ratio and changes in company profitability?

Theoretical foundations

Working capital is considered an important asset of economic units and enterprises, which plays a significant role in financial decision-making. The quantitative and qualitative development of business activities has led to the quantitative and qualitative development of the financial management field, and consequently has made financial management more complex. The continuity of the activities of economic enterprises depends to a large extent on the management of its short-term resources, because operational activities in a normal period, which is usually annual, are related to the recognition of working capital and its optimal management; so that in this way, the expected results are achieved and the possibility of continuing the activity in the long term is provided (Rahnamay Rudposhti and Kiaei, 2008).

Given that working capital is considered a very important issue in the financial management of organizations and the regulation of policies related to it is considered one of the main concerns of managers, and the performance of the company is also an important issue, this research aims to examine the relationship between working capital management and the performance of companies in different industries. Also, the difference in the intensity of the relationship in different industries will be examined. The goal of working capital management is to select a combination of current assets and short-term liabilities for the company in order to achieve a balance between risk and profitability (Noreen et al. 2009). For this purpose, the amount of working capital should be maintained at an appropriate and efficient level with proper management and planning. The efficiency of working capital management includes planning and controlling current assets and current liabilities by avoiding overinvestment in current assets and preventing inappropriate circulation of current assets, to fulfill responsibilities and accountability (Koksal and Oruc 2010). In all companies, the main goal of financial management activities is to control critical sectors, control company performance and hope for performance improvement. One of the main sectors that needs proper control and management is the current assets and liabilities sector. In general, working capital management represents the policies and decisions that are applied in the working capital sector in order to change the types of current assets and short-term financing sources. In the management of working capital of a business unit, there are various strategies that result from the combination of current asset strategy and current liability strategy. Working capital management of a business entity in different circumstances must select appropriate strategies for the company to be able to efficiently manage current assets and current liabilities (Qaedi and Amiri 2010).

Review of Research Background

Domestic Background

Mohammadi et al. (2024) studied the leverage effect and the role of debt ratio in selected companies on the Tehran Stock Exchange. The results of the present study, including the existence of an asymmetric return effect only in bearish market conditions, along with the lack of stability of this effect, indicate that debt ratio cannot explain the behavior of returns and volatility of stock returns.

Gerami et al. (2023) studied the effect of working capital management on company profitability with emphasis on company size. The results showed that working capital management had an effect on company profitability (confirming the first hypothesis of the study) and also that company size had an inverse effect on the relationship between working capital management and company profitability (confirming the second hypothesis of the study).

Nourbakhsh Hosseini and Mohammad Hosseini (2023) studied the effect of working capital on company performance and profitability with regard to the moderating variable of ownership structure in companies listed on the Tehran Stock Exchange. The results of the research show that in the first model there is a significant relationship between performance and working capital, and also between performance and working capital and institutional ownership structure. In the second model there is no significant relationship between profitability and working capital, but there is a significant relationship between the product of profitability and institutional ownership and working capital.

Foreign Background

Zhou et al. (2025) studied working capital management and corporate profitability: The moderating role of foreign ownership. The results of this study showed that longer cash conversion cycles (CCC) significantly reduce operating profit and shareholder returns, especially in companies with above-average CCC or high sales growth. It is worth noting that foreign ownership moderates the aforementioned negative effect. This inverse moderating effect is more prominent, especially in companies with low efficiency in working capital management or low growth rates. This suggests that foreign ownership can help strengthen corporate governance and reduce financial constraints. Managers can enhance profitability by attracting foreign capital, which emphasizes the strategic role of foreign ownership in emerging markets. The findings increase the understanding of the role of foreign ownership in corporate finance and management.

Frankline et al. (2024) conducted a study to examine the relationship between working capital management, liquidity and financial performance in Kenyan SMEs. The results of this study showed that inefficient working capital management has the potential to expose even the most successful companies to failure. Most of the literature reviewed explicitly states that there is a strong correlation between working capital management and profitability. Furthermore, the pivotal role of liquidity, firm size, financial leverage and other financial ratios is evident in this regard, as these factors form integral components of the overall framework of working capital management.

Halil et al. (2024) conducted a study on working capital management and firm performance: A comparative analysis of developed and emerging economies. The findings show that cash conversion cycle (CCC) is inversely related to firm performance in developed and emerging economies – however, there are differences in the components of CCC. While firms in developed economies perform better with longer days' inventory on hand, firms in emerging economies perform worse with longer days' inventory on hand, longer collection periods, and longer payment periods. Firm-specific factors, such as firm size, growth, profitability, and leverage, affect the efficiency of WCM. We also find that country-specific variables, such as gross domestic product (GDP), interest rates, and inflation, have different effects on a firm's WCM.

Orestes (2023) studied the moderating effects of strategy on the relationship between working capital management and profitability. The results of this study showed that a forward-looking (defensive) strategy has a decreasing (increasing) moderating effect on the relationship between WCM and profitability. The empirical findings are not affected by the level of earnings management, the presence of incentives to achieve profit targets, or the level of unreported intangible assets. Furthermore, the empirical results reported in the propensity score matching regression analysis framework remain valid in the presence of nonlinear effects of WCM on profitability and when alternative WCM measures are used, as well as between firms with increasing or decreasing future profitability or different levels of efficiency in net WCM investment.

Research hypotheses

Hypothesis 1: There is a significant relationship between changes in working capital and changes in firm profitability.

Hypothesis 2: There is a significant relationship between changes in firm debt ratio and firm profitability.

Research methodology

This research is an applied research based on the analysis and analysis of information collected from the Tehran Stock Exchange. In this study, first, theoretical foundations related to the research topic are extracted and reported from internal and external sources using the library method. Then, information is collected using the field method and the hypotheses are tested. The testing method, which is analyzed through SPSS software, is correlation analysis and significance testing, which indicates the degree of confidence between two variables. Based on the information collected through data analysis, the validity and reliability of the research hypotheses will be tested and the results obtained will be generalized to the intended statistical population. The outputs of the aforementioned programs will be used and analyzed as the results of the research. The statistical population of this research is all companies listed on the Stock Exchange during the period 2016 to 2023. Among these companies, those that have been continuously active during the research period and have not had a trading break of more than six months were considered.

Research Model and Variables

$$\Delta\pi_{it} = \beta_0 + \beta_1 \Delta WCR_{it} + \beta_2 \Delta DR_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$$

Table No. 1 - Research variables and how to calculate

Variable Name	Type	Abbreviation	Measurement / Calculation Method
Profitability	Dependent	ROA	Gross operating profit divided by net assets
Change in Profitability		ΔROA	Change in gross operating profit divided by net assets
Change in Working Capital	Independent	ΔWCR	Change in the ratio of current assets to current liabilities of the current year compared to the previous year
Change in Debt Ratio		ΔDR	Change in debt ratio compared to the previous year
Firm Size	Control	SIZE	Natural logarithm of the book value of total assets
Financial Leverage		Leverage	Ratio of the book value of total liabilities to the book value of total assets

Research Findings

Descriptive Statistics

Table No. 2 - Descriptive statistics of research hypothesis variables

Statistic	Profitability (ROA)	Change in Profitability (ΔROA)	Change in Working Capital (ΔWCR)	Change in Debt Ratio (ΔDR)	Firm Size (SIZE)	Financial Leverage (Leverage)
Mean	0.141	0.008	-1.409	0.005	5.791	4.819
Median	0.121	0.005	0.005	0.006	5.782	6.124
Minimum	1.551	1.449	-21.968	1.315	7.512	6.215
Maximum	-0.32	-1.348	-931.721	-1.201	4.379	5.321
Standard Deviation	0.159	0.133	36.91	0.179	0.527	0.621
Skewness	1.712	0.089	-25.169	0.841	0.41	0.521
Kurtosis	14.192	46.141	63.91	18.121	13.21	14.231
Jarque-Bera	13.214	41.481	19.231	33.258	18.921	19.324
Significance Level	0.0	0.0	0.0	0.0	0.0	0.0

Results of the hypotheses

Testing the first hypothesis:

The first hypothesis of the research: There is a significant relationship between changes in working capital and changes in the company's profitability.

As can be seen in the table, for the second model, the t values for the coefficients of the width from the origin, changes in debt ratio and company size are greater than the value of this statistic at the 95% confidence level. Therefore, the t values for these independent variables are in the region of rejection of the null hypothesis, in other words, these variables are significant in the regression model. The t statistic values for the coefficient of the variable of changes in working capital ratio are in the region of rejection of the null hypothesis according to the t value of the table and also the t statistic graph; in other words, this independent variable is also significant in the model.

Table No. 3: First hypothesis test

Variable		Description	Coefficient (β)	t-Statistic	Significance (P-Value)
C	Intercept	(β_0)	0.389	4.14	0.00
DELTAWCR	Change in Working Capital	(β_1)	3.21	1.87	0.06
DELTADR	Change in Debt Ratio	(β_2)	-0.12	-2.41	0.00
DELTAWCRDELTADR	Firm Size	(β_3)	-0.04	-3.90	0.00
Coefficient of determination		0.35	F-Statistic		2.20
Adjusted coefficient of determination		0.16	Overall Significance (P-Value)		0.00
			Durbin Watson Statistic		2.21

Testing the second hypothesis

The second hypothesis of the research: There is a significant relationship between the change in the company's debt ratio and the company's profitability.

According to the table above, the t values for the coefficients of changes in the debt ratio, changes in the working capital ratio, and the synergy of these two ratios are greater than the value of this statistic at the 95% level. Therefore, the t values for these independent variables are in the region of rejection of the null hypothesis, in other words, the variables in question are significant in the regression model. The t statistic values for the width from the origin coefficient are not in the region of rejection of the null hypothesis, according to the t value of the table and the t statistic graph; in other words, it is not significant in the model.

In other words, the t value for the width from the origin is equal to 1.82, which is also not in the region of rejection of the null hypothesis and is not significant in the regression model.

Table No. 4 - Testing the second hypothesis

Variable		Description	Coefficient (β)	t-Statistic	Significance (P-Value)
C	Intercept	(β_0)	0.01	1.82	0.05
DELTAWCR	Change in Working Capital	(β_1)	0.00	2.10	0.02
DELTADR	Change in Debt Ratio	(β_2)	-0.13	-4.10	0.00
DELTAWCRDELTADR	Firm Size	(β_3)	0.00	2.10	0.13
Coefficient of determination		0.02	F-Statistic		8.30
Adjusted coefficient of determination		0.03	Overall Significance (P-Value)		0.00
			Durbin Watson Statistic		2.41

Conclusion

The main objective of this study is to investigate the relationship between changes in working capital and debt ratio with changes in the profitability of companies listed on the Tehran Stock Exchange.

The results of the study showed a significant positive relationship between the change in working capital of companies and the change in profitability of companies listed on the Tehran Stock Exchange. This result indicates that the profitability of companies increases with the change in working capital of companies. According to this result, the first research hypothesis was also confirmed. Also, a significant negative relationship was obtained between the size of the company, which was considered as a control variable, and the change in profitability, which is consistent with the concept of political costs, and of course, another reason for this may be the low productivity in large companies. Also, the results of the study showed that there is a significant negative relationship between the change in the ratio of companies and the change in profitability of companies listed on the Tehran Stock Exchange. This result indicates that the profitability of companies also decreases with the change in the debt ratio of companies. According to this result, the second research hypothesis was also confirmed. In this study, a significant positive relationship was found between the change in working capital and the change in profitability of companies listed on the Tehran Stock Exchange, which is not consistent with the results of Abdolrahman and Mohammad Nasr (2007). Also, a negative relationship was found between the change in debt ratio and the change in profitability of companies listed on the Tehran Stock Exchange, which is consistent with the results of Arbabian and Safari-Grayili (2009) and Talebnia and Sepehri (2006).

Suggestions from the research findings

Regarding the results of the research hypotheses, it is suggested:

1) This issue should be examined separately by industry.
2) It is suggested to examine the issue separately by components of working capital management.
3) It is suggested to examine this issue separately by short-term and long-term debt ratios.

References

Jahankhani, Ali, Shouri, Mojtaba (2009) Modern Financial Management (Volume One)

Rahnamay Roudpeshti, Fereydoun and Ali Kiaei (2008). A Study on Explaining Working Capital Management Strategies in Companies Listed on the Tehran Stock Exchange. Accounting Knowledge and Research. Summer, No. 92. pp. 92-1

Qayedi Sh., & Amiri A. (2010). Comparing the Effect of Working Capital Management on the Profitability of Companies in Different Industries. Scientific Journal of New Research Approaches to Management and Accounting, 4(13), 1-18. Retrieved from https://majournal.ir/index.php/ma/article/view/383

Gerami, Ameneh, Heydari Nik, Zahra, Qarkhlovi Naderi, Ghazal and Azizi Baba Ahmadi, Mahtab (2023). The Effect of Working Capital Management on the Profitability of a Company with an Emphasis on Company Size. Accounting and Management Perspective, 6(81), 227-238.

Mohammadi, Timur, Faqhai Kashani, Mohammad Reza and Sameei, Mehdi. (2024). Leverage effect and the role of debt ratio in selected companies of Tehran Stock Exchange. Iranian Economic Research, 29(98), 54-85. doi: 10.22054/ijer.2022.63352.1035

Nourbakhsh Hosseini, Zeinab and Mohammad Hosseini, Elahe, 2023, Investigating the Effect of Working Capital on Firm Performance and Profitability with Respect to the Moderating Variable of Ownership Structure in Companies Listed on Tehran Stock Exchange, 6th International Conference on New Developments in Management, Economics and Accounting, Tehran, https://civilica.com/doc/1861340

Frankline Chasha Sogomi1T Mary Kavele Patrick, Charles Guandaru Kamau(2024) Exploring the Relationship between Working Capital Management, Liquidity, and Financial Performance within the Context of Kenyan SME’s.Review Paper African Journal of Commercial Studies Publisher's Home Page: https://ijcsacademia.com/

Halil Kiymaz T Samina Haque , Ahmed Abir Choudhury(204) Working capital management and firm performance: A comparative analysis of developed and emerging economies .Borsa Istanbul Review Volume 24, Issue 3, May 2024, Pages 634-642.

Koksal, Sen, & Oruc,E. (2010). Relation between the Efficiency of Working Capital Management and Company Size. Faculty of Economics and Administrative Science, PP 522-531.

Noreen, Umara, Sabeen Khurram Khan and Qaisar Abbas, (2009), "International Working Capital Practices in Pakistan", International Research Journal of Finance and Economics, Issue 32, 160-170.

Raheman and Nasr, 2007,”Working Capital Management And Profitability-Case Of Pakistan Firms” International Review of Business Research Papers ,Vol.3, Pp.279 – 300

Siyu Zhou , Bany-Ariffin AN , Matemilola Bolaji Tunde , Yuhua Chen , Keming Xu(2025) Working capital management and corporate profitability: the moderating role of foreign ownership .Finance Research Letters https://doi.org/10.1016/j.frl.2025.107466

Orestes Vlismas(2023) The moderating effects of strategy on the relation of working capital management with profitability. The current issue and full text archive of this journal is available on Emerald Insight at: https://www.emerald.com/insight/1832-5912.htm