

# The study of the effect of the working capital policies on the risk and the performance (profitability) of the enterprises

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## Abstract

The main objective of this study is to investigate the effects of the conservative working capital policies on the profitability and risk of the accepted enterprises in Tehran Stock Exchange. The importance of the working capital management and the effect of the present policies in the working capital management scope, and its effects on the profitability and the risk of the enterprises are proven, but these issues are rarely taken into consideration. One of the most important management discussions in a business enterprise (profit organization), is the management of its working capital, because it directly affects the profitability and liquidity of the business enterprise. The management of the working capital is divided into two groups, namely the management of the current assets and the management of the current liabilities. The management of the working capital includes the planning and controlling the current assets and liabilities, in such a way that by removing the risk results from inability in payment of the short term commitments on the one hand, and by avoiding from extensive investments in these assets on the other hand, makes an equilibrium between the risk and the profitability and makes more profit for the business enterprise. Although the management of the working capital has a significant role in the profitability of the business enterprise, but up to now, rare studies have been conducted in this field on the Iranian enterprises. The present study seeks to investigate the relation between the conservative working capital policies and the profitability and the risk of the enterprises.

**Keywords:** profitability, risk, working capital policies.

## Introduction

In today literature, the financial management is more focused on these three issues: the decisions related to the capital structure, the decisions related to the capital budgeting and the decisions related to the working capital. From the above-mentioned issues, in the today literature, the Working Capital has a great importance because the management of the working capital has important effects on the profitability and liquidity of the enterprise (Shobeiri 2011). An effective and efficient management of the working capital includes proper planning and effective control of the current assets and liabilities, and these working capital can reduce the risk of the inability to pay back the commitments on the one hand, and the risk of the excessive investments in the current assets on the other hand, and can lead the enterprise to more profitability (LG, 2004). Different guidelines are taken into consideration for working capital management. The business enterprises by using from different approaches and guidelines related to the working capital management, can affect the liquidity and profitability of the company. These guidelines define the amount of risk and performance (profitability) of them. About the working capital, the policies are ranged from conservative to aggressive policies. With regard to the conditions and the desired solutions of the company, the proper policy is selected (Hashem-Valipur and Hora Hosseini, 2009).

## Research background

Delov (2003) found that all conducted studies in the small to large enterprises seek to find factors in

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these enterprises in order to identify the strong relation between the working capital management and the profitability of the company. He also suggested that the enterprises with the higher degree of profitability need less time to pay back their liabilities, and vice versa. They investigate the relation between the net business credit facilities and the profitability of the companies in the USA Stock Exchange between 1974 and 1995. The finding show that with reduction in the credit facilities, the profitability of the enterprises increases.

Summilang and Dimmirness (2008) conducted a study in which they investigated a sample consists of Turkish Manufacturing Companies between 1998 and 2007, in order to find the present relation between the profitability and the working capital management; Their obtained results showed that Receivable Accounts Period, Inventory List Period and the Levers have a negative and significant effect on the profitability of the company while the company growth (Almost in all sales) has a positive and significant effect on the profitability of the company. Nevertheless, the Cash Conversion Cycle, the Enterprise Size and the Fixed Financial Assets Lever, has no significant statistical effect on the profitability of the studied enterprises. The results suggest that the profitability of the company will increase through reduction of the receivable accounts and the Inventory List.

Gill and Biger and Mathur (2010), investigated the present relation between the working capital and profitability of a sample consists of 88 American Enterprises in the New York Stock Exchange between 2005 and 2007. The results of their study show that there is a statistical relation between the Cash Conversion Cycle and the Profitability. Also, the Demand Recovery period for the managers should be optimized in order to gain more profit for the company.

Fritz Shobeiri (2011) in his research investigated the relation between the conservative and aggressive Working Capital policies and the Profitability and the Risk of the Enterprises. Their sample consists of 59 different weaknesses and Exchange Bank of Amman between 2004 and 2008. The results of their study showed that there is a negative relation between the measured profitability and the aggressive policies for the working capital of the company.

Javad Rezazade conducted a study in order to find the empiricalevidence about the relation between the Working Capital Management and the

Profitability of the Iranian Enterprises. For this purpose, a sample consists of accepted Iranian enterprises in the Tehran Stock Exchange between 1998 and 2007 was studied and from these enterprises, 1356 Year-Enterprise observations were collected as data. The results of this study show that the management make and create value for the enterprise by reducing the assets and the period of the demand recovery. In addition, the shorter Cash Conversion Cycle will lead to more profitability for the company.

Abazari (2001) in his study investigated the working capital strategies in Medicine Manufacturing Enterprises. In this study, the fiscal information of the Medicine Manufacturing Enterprises which were accepted in Tehran Stock Exchange between 1994 and 1999, were analyzed in order to define the working capital policies. The methodology used in this study was a descriptive approach and its findings showed that the Medicine Manufacturing Enterprises do not use a common working capital policy and also it is shown that the performance of the enterprises in terms of defining the working capital policy has a significant effect on their performance, and also there is a negative relation between the expected risk and the profitability (performance) of the investment and the adopted policy.

SoheiliTorghe (2009) investigated the relation between the working capital management and the profitability of the assets in short and medium size enterprises in Tehran Stock Exchange, and she found that there is a negative relation between the Demand Recovery Period of the Assets and the Cash Conversion Cycle and profitability of the enterprise; and also the liability payback period is directly related to the profitability.

## Methodology

The present study in terms of objective is categorized as an applied research, and in terms of the methodology is a descriptive research. And, from the descriptive researches, this is a correlational research. The analysis and test of the hypotheses were done according to the proposed hypotheses and functional definition of the dependent and independent variables based on the Pierson correlation coefficients and by using from multi-variable regression analyze at the 5% Significance Level. Also by defining the  $R^2$  coefficient, the changes of the dependent variables versus independent variables were ana-

lyzed. In the present study, the Student statistics (t) was used in order to investigate the accuracy of the research hypotheses and the Fischer statistics (f) was used in order to investigate the adequacy (efficiency) of the proposed model. Also, in order to investigate the normality of the data which is prerequisite of the accuracy test of the hypotheses, Kolmogorov-Smirnov test was used, and finally in order to analyze the hypotheses and supplementary tests in order to validate the regression model, SPSS software is applied.

### Statistical Population (Sample)

In this research, the enterprise with the following attributes is considered as the statistical Population (Sample):

- March is the end of their Fiscal Year
- They are not from the financial and investment enterprises
- Their information are available
- They are accepted in Tehran Stock Exchange at least from 2007

This sample covers all of the industries except financing, investment and financial intermediation industries.

Investment and Financial intermediation Enterprises, Banks and credit institutes because of the nature of their activities and lack of their required information in order to calculate some of the research variables are excluded from the statistical population. Between all of the members of this population for the research, the hypotheses of 115 enterprises were selected in order to be analyzed.

### Research Hypotheses

In order to achieve the above mentioned objectives, the following hypotheses are proposed:

*First Main Hypothesis: There is a significant relation between the conservative working capital policy for the current assets of the enterprise and its profitability and risk.*

- First complementary hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the profitability (performance) of the assets.

- Second complementary hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the Return on Equity (ROE).

- Third complementary hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current

assets and the Tobin' Q Ratio.

- Fourth complementary hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the Risk results from the financial lever.

- Fifth complementary hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the business risk of the enterprises.

*Second Main Hypothesis: There is a significant relation between the conservative working capital policy for the current liabilities of the enterprise and its profitability and risk.*

- First complementary hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the profitability (performance) of the assets.

- Second complementary hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the Return on Equity (ROE).

- Third complementary hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the Tobin' Q Ratio.

- Fourth complementary hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the Risk results from the financial lever.

- Fifth complementary hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the business risk of the enterprises.

### Research Variables and How to Measure Them

1.1. The Conservation Criteria of the Current Asset AIP Ratio measures this criterion:

$$AIP = \frac{\text{Total Current Assets (TcA)}}{\text{Total Assets (TA)}}$$

$$AIP = \frac{\text{Total Current Asset}}{\text{Total Asset}}$$

2.1. The Conservation Criteria of the Current Liabilities

$$AFP = \frac{\text{Total Current Liability (TCL)}}{\text{Total Assets (TA)}}$$

$$AIP = \frac{\text{Total Current Liabilities}}{\text{Total Asset}}$$

In order to investigate the effect of the conservative working capital policy on the profitability of the enterprises is calculated by Return of Assets (ROA) ratio, Tobin' Q Ratio and the Return on Equity (ROE) Ratio, as follow:

$$RoA = \frac{\text{NetEarningAfterTaxes (NEAT)}}{\text{BookValueAssets (BVA)}}$$

or

$$RoA = \frac{EBT_i}{TA}$$

The Tobin' Q model is one of the other models for defining the value, which is used in enterprises and by investors.

$$\text{Tobin' } q = \frac{\text{MarketValueoffirm (MVF)}}{\text{BookValueofAssets (BVA)}}$$

$$\text{Tobin' } Q = \frac{\text{Market Value of the Enterprise}}{\text{Book Value of the Assets}}$$

The Return on Equity (ROE) which is one of the dependant variables is as follow:

$$ROE = \frac{\text{Net Profit}}{\text{Totsl of Equity}} \quad RoE = \frac{EBiT}{\text{Totsl of equity}}$$

Generally the working capital is defined the current assets minus the current liabilities.

Working Capital = Current Asset - Current Liabilities WC

Business Risk:

Operating Lever or the Business Risk is calculated as follow:

$$\begin{aligned} \text{Business Risk (Operating Lever)} &= DoL = \\ &= \frac{\% \Delta EBiT}{\% \Delta S} = \frac{\frac{EBiT_2 - EBiT_1}{EBiT_1}}{\frac{S_{2-S_1}}{S_1}} \end{aligned}$$

In which S is the Sale and EBiT is the Profit before tax and interest.

Financial Risk:

$$\text{Financial Lever} = DFL = \frac{EBiT}{EBT} = \frac{\% \Delta DS}{\% \Delta EBiT}$$

The Financial Lever is calculated by the following formula:

$$DFL = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

## Results and Discussion

*First Main Hypothesis: There is a significant relation between the conservative working capital policy for the current assets of the enterprise and its profitability and risk.*

1. Generally, the more conservative activities of the enterprise in the working capital policies about the assets lead increase of the return on assets (ROA) and business risk and reduction in the risk results from the financial lever of the company, and the management by more investments in the current assets, can gain more profitability and more performance, and this should be taken into consideration that this increase in the profitability will lead to increase in the business risk, so there should be a balance between the profitability and the risk in the company; Because according to the findings of the experiments, the increase in the Return on Assets (ROA) and Tobin' Q Ratio results from adaption of the conservative policies about the current assets, will lead to an increase in Risk, So the management should consider the balance between the profitability and the Risk.

According to the obtained results from the Pearson Correlation Coefficient Test, sig = 0.044 (sig < 0.05), it can be concluded that there is a significant and positive relation between the conservative policies of the current assets and the Return on Assets (ROA). It means in an enterprise with conservative working capital policies about its current assets, the Return on Assets (ROA) will increase, and the efficiency of the assets is more, in other words, the more investments of the enterprise in the current assets, and the more conservation in its policies, and also by using from these current assets in the production process, the more efficiency and performance will be achieved. The obtained result from the analysis of this hypothesis is consistent with the results obtained from the studies conducted by Grablivski

(1976), Fritz Shobeiri (2011) and Abzari (2007).

2. Second minor hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the Return on Equity (ROE).

According to the obtained results from the Pearson Correlation Coefficient Test,  $\text{sig} = 0.215$ , there is no significant relation between the conservative policies about the current assets and the Return on Equity (ROE), so this hypothesis is not proven, and no relation can be found between the Return on Equity (ROE) and the conservative working capital policy. It means that conservative activities have no effect on the Return on Equity (ROE) in the enterprise.

3. Third minor hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the Tobin' Q Ratio.

About this hypothesis, this conclusion can be made that with regard to the obtained correlation coefficients,  $\text{sig} = 0.005$ , this hypothesis is accepted and there is a direct relation between the Tobin'Q Ratio and the conservative working capital policies about the assets, it means the more conservative working capital management of the enterprise and the more investments in the current assets, the performance and the value of the enterprise will increase and therefore, the profitability of the company will increase too. The above mentioned conclusion is consistent with the results obtained from the studies conducted by Grablovski (1976), Troll and Solano (2007), Abzari (2007) and Hassan Pour (2009).

4. Fourth minor hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the Risk results from the financial lever.

According to the obtained correlation coefficient,  $\text{sig} = 0.121$ , this conclusion can be made that this hypothesis is rejected and no significant relation can be found between conservative policies about the current assets and the risk results from the financial lever. In the other words, adaption of this policy has no effect on the risk result from the financial lever.

5. Fifth minor hypothesis from the first main hypothesis: There is a significant relation between the conservative working capital policy about current assets and the business risk of the enterprises.

About this hypothesis and with regard to the correlation coefficient ( $\text{sig} = 0.000$ ), there is a positive and significant relation between the conservative policies about the current assets and the business

risk of the enterprise, so adaption of the conservative policies about the current assets can lead to an increase in the business risk or the operating lever, which in this study is calculated by sale to asset variance (ratio); and although by more investments in the current assets, the enterprises can achieve more profits, but this can lead to an increase in the business risk too.

The results obtained from analyze of this hypothesis is supported by the results found in the studies conducted by Afza and Nazir (2007), Samilong (2008), Fritz Shobeiri (2011), Abzari (2007) and SoeiliToroghi (2008).

Second Main Hypothesis: There is a significant relation between the conservative working capital policy for the current liabilities of the enterprise and its profitability and risk.

According to the obtained correlation coefficients ( $\text{sig} = 0.044$ ) it can be concluded that there is a positive and significant relation between the conservative policies about the current liabilities and the profitability and the risk of the companies, and then adaption of these conservative policies can lead to an increase in the business risk. In the other words, if the much of liabilities of an enterprise is current liabilities, this fact leads to an increase in the risk of the enterprise. According to the results from this study, it is recommended that the enterprises adapt the conservative policies in their current assets in order to gain more profits and decrease the risk of the enterprise, but adaption of the conservative policies about the current liabilities has no effect on the profitability and only leads to an increase in the business risk on the one hand, and reduction of the financial lever of the enterprise on the other hand; and because of the above mentioned facts, this is not recommended. So, generally adaption of the conservative policies about the current asset and more investments in the current assets, will lead to more profitability.

About the conservative working capital policies about the liabilities, the obtained results are in consistent with the results obtained from the studies conducted by Amir AbdolNezhad (2007), Fritz Shobeiri (2011) and Falp and Elgio (2009).

1. First minor hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the profitability (performance) of the assets.

According to the correlation coefficient ( $\text{sig} = 0.044$ ), about this hypothesis this conclusion can be made that there is a significant and positive relation

between the conservative policies about the current liabilities and Return on Assets (ROA), and if an enterprise has a conservative working capital policy about its liabilities, then more cash will be available for this enterprise and by investing these cash flow in the current assets and production, the performance and profitability of the enterprise will increase. The obtained results from this hypothesis is consistent with the results obtained from studies conducted by Grablovski (1976), Fritz Shobeiri (2011) and Abzari (2007).

2. Second minor hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the Return on Equity (ROE).

About the effect of the conservative policies about the current liabilities on the Return on Equity (ROE), with regard to the obtained correlation coefficient,  $\text{sig} = 0.928$ , no significant relation can be found between these two independent and dependent variables.

3. Third minor hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the Tobin' Q Ratio.

According to the obtained correlation coefficient,  $\text{sig} = 0.084$ , it can be concluded that this hypothesis is rejected, and therefore there is no significant relation between conservative policies about current liabilities and the Tobin' Q ratio.

4. Fourth minor hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the Risk results from the financial lever.

The obtained correlation coefficient,  $\text{sig} = 0.102$ , is larger than acceptable value (0.05), therefore this hypothesis is rejected. It can be concluded that there is no significant relation between conservative policies about the current liabilities and the financial lever of the enterprise. It means that conservative policies of an enterprise about its liabilities have no effect on the risk associated with the financial lever.

Fifth minor hypothesis from the second main hypothesis: There is a significant relation between the conservative working capital policy about current liabilities and the business risk of the enterprises.

According to the correlation coefficient,  $\text{sig} = 0.003$ , this hypothesis is proven, and it can be said that there is a significant and positive relation between conservative working capital policies about the current liabilities and the business risk of the enterprises. So this conclusion can be made that adap-

tion of conservative policies about current liabilities, will increase the business risk of the enterprise, therefore more attention should be paid to adaption of these policies by the managers.

Generally according to the results obtained from analyzing the second main hypothesis, it can be said that adaption of these policies can lead to an increase in Return on Assets (ROA) on the one hand, and an increase in the business risk on the other hand.

## References

- Abdoli, M.R. Shurvarzi, M.R. & Davodi Farokhad, A. (2012). Economic value added vs. accounting residual income; which one is a better criterion for measurement of created shareholders value? *World Applied Sciences Journal* 17 (7), 874-881,
- Abdoli, M.R. & Jalali, M. (2013). The Relationship between the capital and ownership structures with the created shareholder value in Tehran stock exchange. *Middle-East Journal of Scientific Research* 14 (2), 185-192.
- Abdoli, M., R. Lashkary, & M. Dehghani (2012). Corporate governance and Its effect on the Corporate Financial Leverage, *Journal of Basic and Applied Scientific Research*, 2(9), 8552-8560.
- Abdolnezhad, A. (2007). Evaluation of the correlation level between working capital strategies and the profitability and share profit, Master's Thesis, Tehran University
- Alivar, A. (1998). Financial statements, Sixth Edition, Audit Organization, 58
- Faulkender, M. & Wany (2006). Corporate financial policy and value of cash. *Journal of Finance*, 61.
- Gill, A., Biger, N., & Mathur, N. (2010). Relationship between working capital management and profitability: Evidence from the united states, *Business and Economics journal*, BEJ-10
- Grablovsky, B.J. (1976). Mismanagement of accounts receivable by small business, *Journal of Small Business*, 14
- Jalali, M. & Jalali, F. The Impact of the board of directors' structure on tax avoidance in the companies listed in Tehran stock exchange, *Technical Journal of Engineering and Applied Sciences*, 3 (17), 2070-2076.
- Linton, L. (2005). Food industry return on investment guideline. Available at [www.iarw.org](http://www.iarw.org).

- Matthew, D., Kelly, W., & Highfield, M. (2010). Net operating working capital behavior: A first look, *Financial Management*, 783-805
- Nofreseti, L. (2009). Evaluation of the effect of the working capital strategies on the investment profitability in the accepted enterprises in chemical and food industries, *Master's Thesis*, Qazvin Azad University
- Raheman, & Nasir (2007). Working capital management and profitability-case of Pakistan firms, *International Preview of Business Research Paper*, 3, 279-300.
- Rahnamaye Roodposhti, F & Kiaee, A. (2008). Evaluation and defining the working capital strategies of the accepted enterprises in Tehran stock exchange, *Accounting Science and Research Journal*, 13, 66-70.
- Reily, F., & Demirnes, K. (2008). Principle of managerial finance, Irwin, 43-44.
- Samilong, F., & Demirnes., K. (2008). The effect of working capital Management on firm profitability, Evidence from Turkey, *The International Journal Of Applied Economies And Finance*.
- Talebi, M. (1998). Evaluation of the present working capital situation in Iran, PhD Dissertation, Tehran University.
- Valipoor, H., & Hosseini., Z. (2009). Working capital policies and stock profitability, *Financial Researches*, 1, 15.
- Van Horn, J. (1992). Financial management, University Science Publication.
- Yaghubnezhad, A. (2010). The correlation between the working capital management and profitability of the accepted enterprises in Tehran Stock Exchange, *Financial Engineering and Management Journal*, 2, 117-137.