



The relationship between working capital management and criterions for value-based performance of the companies listed in Tehran Stock Exchange

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ABSTRACT

Objective: This study aims at exploring relationship between Working Capital Management with criterions for value-based performance. **Methodology:** Therefore, the information of 107 companies listed in Tehran Stock Exchange between 2007-2011 was studied and the effect of various variables for Working Capital Management (including Days Sales Outstanding, Days Sales of Inventory, Days Payable Outstanding, and Cash Conversion Cycle) on criterions for value-based performance (including Economic Value-Added (EVA), Market Value-Added (MVA), and Q Tobin index) was tested through employing 3 hypotheses and 9 sub-hypotheses all along with the main research question. **Results:** Test of hypothesis was carried out by multiple regression analysis by Estimated generalized least square (EGLS). **Conclusion:** Findings of the study show that the increase of Days Sales Outstanding results in the increase of both Economic Value-Added (EVA) and Market Value-Added (MVA), and the increase of Days Sales of Inventory also results in the decrease of criterion for value-based performance of both Economic Value-Added (EVA) and Market Value-Added (MVA).

1. Introduction

Edwards believes a high spiritual intelligence with information about different spiritual intelligence. This distinction between practical and theoretical knowledge to Working capital management of a firm has been recognized as an important area in financial management. This field can include decisions about amount and the combination of current assets and financing them. The process of working capital management includes decisions about different aspect of cash investment, the maintenance of certain level of inventories and managing of receivable and payable accounts. The main goal of working capital management is to teach and keep an optimized balance between each component of working capital (Gitmen et al., 2015). Business success heavily depends on the ability of financial executives to effectively manage receivables, inventory, and payables (Filbeck and Krueger, 2005). Firms can reduce their financing costs and/or increase the funds available for expansion projects by minimizing the amount of investment tied up in current assets. Most of the financial managers' time and effort are allocated in bringing non-optimal levels of current assets and liabilities back toward optimal levels (Lamberson, 1995). Excessive levels of current assets may have a negative effect on the firm's profitability whereas a low level of current assets may lead to lower level of liquidity and stock outs resulting in difficulties in maintaining smooth operations (Van Horne and Wachowicz, 2005). Traditional concept of working capital is the different between assets and current liabilities. This definition doesn't provide an accurate concept of corporate liquidity because the components of working capital have different levels of liquidity, as some of components (for example cash investment in marketable securities and treasury bills) have financial essence with a high liquidity. Other components have non-financial essence with a low liquidity (for example receivable, payable accounts and inventory). So, the working capital components can be dividend to financial and non-financial items. Shulman and cox (1985) dividend financial items as net liquidity balance (NLB) and non-financial items as working capital requirement (WCR). However, the liquidity of

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NLB is different from liquidity of WCR but they are related to each other. For example, with decreasing the period of receiving the receivable accounts, will decrease WCR and NLB as cash in value will increase. A company can perform short term warranties on time if it has the high amount of working capital; this subject redound to increase capacity of receivable loan in company and to decrease in the risk of non-payment of the debts, so efficiency in working capital management effects on short term financial performance (profitability) as well as long term performance (maximum firm value).

This framework leads us to address research question:

Does working capital management effect on accounting important variable? We address this question using estimation equation based on a sample of Tehran Stock Exchange (TSE) firms from 2003 to 2007 with available annual data. Also, we use return on equity, return on assets and market value to book value ratios for evaluation performance and component of working capital (net liquidity balance) for estimating working capital management. Our results indicate that there is significant relationship between performance variables and the component of working capital (NLB). The reminder of the paper is organized as follows. Section 2 describes research literature. Section 3 describes research design, hypotheses and findings. Section 4 summarizes and concludes the study.

1.1 Literature Review

In this section we summarize recent researches with study designs and research methods similar to ours or relevance to Working capital management. Karaduman et al. (2011) investigated the relationship between working capital management and companies' profitability in Estantol Stock Exchange for a period of 2005-2009. They use return of assets as criterion for profitability evaluating and cash cycle for evaluation of working capital management. Results show that decrease in cash cycle has positive effect on return of assets. Rajesh and Reddy (2011) studied the relationship between working capital management and company's profitability in Hendoostan Stock Exchange for a period of 2000-2009. The research findings show that the components of working capital effect on corporate performance. Charitou et al. (2010) empirically investigate the effect of working capital. Management on firm's profitability in emerging market. Their data set consists of firms listed in Cyprus stock exchange for the period 1998 – 2007. using multivariate regression analysis, their results indicate that the cash, their results indicate that the cash conversion cycle and all its major component are associated with the firms profitability. Gill et al. (2010) seek to the relationship between wcm and profitability in united states. in this paper, a sample of 88 American firms listed on New York stock exchange for a period of 3 tears from 2005 to 2007 was selected. they found statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. Dong and Su (2010), evaluated the relationship between working capital management and company's profitability in Vietnam during the years 2006-2008 years. Results show that there is a negative relationship between profitability and cash conversion cycle. When the cash conversion cycle increase, profitability decrease; so, managers can optimality direct cash conversion cycle and increase created value for stockholders. Raheman et al. (2010) investigated the impact of working capital management on firms performance in Pakistan for the period 1998 to 2007. the results indicate that the cash conversion cycle, net trade significantly affecting the performance of the firm. the study also concludes that the firm in in Pakistan are following conservative working capital management policy and the firm are needed to concentrate and improve their collection and payment policy. Samiloglu and Demirgunes (2008) did a research about the effect working capital management on corporate profitability in Turkey for a period of 1998-2007. They use regression method and some accounting variables for evaluating working capital management. Results show that receivable collection period, inventory turnover and leverage have negative effect on corporate profitability but corporate size affects positively on profitability. Singh and Pandey (2008) carried out a research about the effect working capital management on corporate profitability during the years 1990-2008. They find that current ratio, acid test ratio and receivable turnover have sizable effect on working capital. Anwar and Sun (2011) investigated relationship between working capital management and corporate performance. They use panel data method and companies accepted in Malaya Stock Exchange for a period of 1996-2006. Also, they use cash conversion cycle as evaluating criterion of working capital management. Research findings show that there is meaningful relationship between cash conversion cycle and corporate profitability. Chiou et al. (2006) examined the effect some factors on working capital management for a period of 2000-2005. In this study, it is stated that different factors like firm scale, the effect of industry, operating cash flow, growth opportunities, firm size and firm performance can have effect on working capital management. Results show that leverage and operating cash flow has significant relationship with net liquidity balance and working capital requirement. In the other side scale, the effect industry, growth opportunities, firm performance and firm size can provide compatible results for WCR and NLB.

1.2 Data, hypotheses and methodology

1.2.1 Hypotheses Development

An overview of prior research indicates that the working corporate performance have relation with components of working capital management such as Net Liquidity Balance (NLB) and Working Capital Requirements (WCR). A company can perform short term warranties on time if it has the high amount of working capital; this subject redound to increase capacity of receivable loan in company and to decrease in the risk of non-payment of the debts, so efficiency in working capital management effects on short term financial performance (profitability) as well as long term performance (maximum firm value). This framework leads us to address research question: Does working capital management effect on accounting important variable? To address the research question, we intended to test the relationship between working capital management with corporate performance. In other words, we want to know whether working capital management have impact on corporate performance among companies listed on TSE or not? Some make three main hypotheses that they are examined in among companies listed on TSE. These hypotheses are as follow:

H1: There is a significant relationship between working capital management and return on owner's equity

H2: There is a significant relationship between working capital management and return on total asset

H3: There are a significant relationship between working capital management and market value to book value ratio.

2. Materials and methods

The correlation method is used in this study. Correlation researches are researching that researcher try to determine relationship between different variables using with correlation coefficient. In these researches, appointment coefficient is criterion that that describes relationship between independent and dependent variables. Amount of this coefficient states what percentage of changes in dependent variable is described by independent variable. Also, we used descriptive statistics such as central indexes as well as dispersion for data analyzing. Using the theoretical literature and previous researches, in this study to test hypothesis regression correlation model was used that will be described as follows.

$$NLB_{it} = \alpha + \beta ROA_{it} + \beta ROE_{it} + \beta P/B_{it} + \varepsilon_{it} \quad (1)$$

In this model the dependent variable is:

NLB = (cash and cash equivalents + short-term investment) - (short-term debt + commercial paper payable + long-term debt during year). And independent variables are:

ROA: Return on assets (net income/total assets)

ROE: Return on equity (net income/owner's equity)

P/B: Price to Book value

2.1 Sample selection

In this study, we have used the companies accepted in Tehran Stock Exchange (TSE) across the period from 2003 to 2007. This sample includes companies which have the following condition to signify:

- 1- Financial year is ended to March
- 2- Corporate financial reports should be represented to during the mention time.
- 3- Corporate shouldn't be in loss.
- 4- Corporate shouldn't be investment companies or financial and credit institute.
- 5- Companies shouldn't have a trade pause more than 30 days.
- 6- During this time, they shouldn't change their business or their financial year.
- 7- The required items for accounting variables should be existed during its time.

Total firms in Tehran Stock Exchange are 431, According to these terms, statistical sampling of study includes 56 companies among accepted companies in Tehran Stock Exchange (TSE).

3. Discussion and results

3.1 Hypotheses analysis and results

We use correlation test for testing research hypothesis. Results of descriptive statistics have shown in Table 1.

Table 1. Descriptive Statistics

Standard deviation	observations	Minimum	Maximum	Mean	variables
85593	282	-329607	6161115	-2049	NLB
0/3274	263	-0/68	1.91	0/3325	(ROE)
0/3274	263	-0/68	1.91	0/3325	(ROE)
3.5984	263	-0/50	33.01	2.5362	(P/B)

Based on Table 1, the average percentage of ROE, ROA and P/B ratios equal to 0.3325, 0.3325 and 2.5362, respectively, while average amount of NLB is -2049. The table provides some information about NLB variable, which ranges from -329607 to 6161115 and a standard deviation of 85593. In relation to ROE ratio, the results reveal a range from -0.68 to 1.91 with a standard deviation of 0.3274. Also, the ROA ratio ranges from -0.68 to 1.91 with a standard deviation of 0.3274, while the P/B ratio ranges from -.50 to 33.01. Correlation Analysis Table 2,4,6 reports Pearson Correlation Analysis and regression for all companies in the sample. Tables 3,5,7 contains the results from the linear regression model used to test the respective hypothesis 1,2,3.

Table 2. Results of testing the hypothesis 1

variable	Correlation coefficient	R-squared	Adjusted R-squared
ROE	.179	.32	.28

Table 3. Regression results

Model	Unstandardization Coefficients		Standardized Coefficients	t	Significant
	B	Std.Error	Beta		
Constant	-17886.11	7679.96		-2.329	/.21
ROE	48499.032	16471.57		2.944	/.4

Results in Table 2 have shown that Correlation coefficient is $.179$ in the entire sample companies' level. It means that there is a significant relationship between working capital management and return on owner's equity. Whereas the adjusted r-squared of test is $.028$, thus changes in corporate performance have described by working capital management.

Results of testing the second hypothesis have shown in Table 4.

Table 4. Results of testing the hypothesis 2

variable	Correlation coefficient	R-squared	Adjusted R-squared
ROA	/.146	/.21	/.18

Table 5. Regression results

Model	Unstandardization Coefficients		Standardized Coefficients	t	Significant
	B	Std.Error	Beta		
Constant	-14960.66	57745.19		-1.932	/.54
ROA	131384	55130.415		2.383	/.18

3.2 Standard deviation

3.2.1 observations Minimum Maximum Mean variables

Results in Table 4 have shown that Correlation coefficient is 0.146 in the entire sample companies' level. It means that there is a significant relationship between working capital management and return on total assets. Whereas the adjusted r-squared of test is $.018$, thus changes in corporate performance have described by working capital management. Results of testing the second hypothesis have shown in Table 6.

Table 6. Results of testing the hypothesis 3

variable	Correlation coefficient	R-squared	Adjusted R-squared
P/B	/.320	/.102	/.99

Table 7. Regression results

Model	Unstandardization Coefficients		Standardized Coefficients	t	Significant
	B	Std.Error	Beta		
Constant	-21713.32	6348.17		-3.420	/.1
P/B	7866.73	1443.80		5.449	/....

Results in Table 6 have shown that Correlation coefficient is 0.320 in the entire sample companies' level. It means that there is a significant relationship between working capital management and P/B. whereas the adjusted r-squared of test is 0.099 , thus changes in corporate performance have described by working capital management.

4. Conclusion

Working capital management is the most important decisions in knowledge of financial management. The ability of corporate for long term activity related to this subject that financial managers apply optimum management for working capital management. The manager can create balance between corporate profitability and liquidity and get optimum working capital management. This framework leads us to address two research questions relating to the components of working capital: Are there any relationship between working capital management (Net Liquidity Balance) and corporate performance? We address question using estimation equation based on a sample of Tehran Stock Exchange (TSE) firms from 2002 to 2006 with available annual data. We are tested hypothesis with the use of correlation method. These Results indicate that there is significant relationship between corporate performance and components of working capital (net liquidity balance).

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