

The Relationship between Working Capital Management and Firm Characteristics: Evidence From Tehran Stock Exchange (TSE)

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Abstract

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 aspects of cash investment, the maintenance of certain level of inventories and managing of receivable and payable accounts. The main aim of this study is to investigate the relationship between working capital management and firm characteristics. We used factors such as firm size, financial leverage and Q Tobin ratio for evaluating firm characteristics and net liquidity balance as a criterion for evaluating working capital management. For testing the research hypotheses, financial statements' data of 80 companies accepted in Tehran Stock Exchange has been used and for analyzing and testing hypotheses, Stepwise regression model is used. Research results show that there is a positive relationship between working capital management (NLB) and firm size, while there is a negative relationship between working capital management and financial leverage. Moreover, the results show that no relationship exists between working capital management and Q Tobin.

Keywords: Working capital management, firm size, financial leverage, Q Tobin.

1-Introduction

Traditional concept of working capital is the difference 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 the 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 divided into financial and non-financial items. 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 a lower level of liquidity and stock outs resulting in difficulties in maintaining smooth operations (Van Horne and Wachowicz, 2004).

Working capital management processes involve crucial decision on multiple aspects, including the investment of available cash, maintaining a certain level of inventories, managing account receivables, and account payables. However, working capital management is not limited to these tasks, but is implicated in multiple levels of interactions both internally and between external parties as suppliers, customers, distributors, bankers and retailers (Duran, 2008). The main goal of working capital management is to teach and keep an optimized balance between each component of working capital (Gitmen, 2009). Business success heavily depends on the ability of financial executives to effectively manage receivables, inventory, and payables (Filbeck and Krueger, 2005). Investigating the determinants of working capital management in an organizational setting provides valuable information that can be used in formulating an effective working capital management strategy (Duran, 2008).

Improving working capital management is reasonable important for companies to withstand the impacts of economic turbulence (Reason, 2008). Alternatively, efficient working capital management is also essential for companies during the booming economic period (Lo, 2005), for the reason that working capital management is related to all aspect of managing current assets and current liabilities (Emery, Finnerty, Stowe, 2004, Hampton and Wanger, 1989, Hill and Sartoris, 1992). Working capital management is not only to immunize corporations from financial upheaval but can be managed strategically to improve competitive position and profitability (Duran, 2008).

An overview of prior research indicates that the firm characteristics have relation with components of working capital management such as Net Liquidity Balance (NLB) and Working Capital Requirements (WCR). According to Shin and Soenen found that working capital management is correlated in a positive way to firm size (Mongrut et al, 2007). Also, 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 affects 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 affect on firm characteristics?

We address this question using estimation equation based on a sample of Tehran Stock Exchange (TSE) firms from 2005 to 2009 with available annual data. Also we use firm size, financial leverage and Q Tobin ratio 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 firm size, financial leverage and the working capital management (NLB). But, there is not a relationship between Q Tobin working capital management. The remainder 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.

2-Literature Review

According to Eljelly (2004) efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet short term obligations on one hand and avoids excessive investment in these assets on the other hand (Alhshubiri, 2011). 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 Redy (2011) studied the relationship between working capital management and companies profitability in Hendoostan Stock Exchange for a period of 2000-2009. The research findings show that the components of working capital affect on corporate performance.

Charitou et al. (2010) empirically investigate the effect of working capital management on firms 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 .

Chiou and Cheng (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 affect 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.

Pandey and Parera (1997) found that most companies in Sri Lanka have informal working capital policy and company size has an influence on overall working capital policy (Alshubiri , 2011) .

3-Data, hypotheses and methodology

3-1-Hypotheses Development An overview of prior research indicates that the firm characteristics have relation with components of working capital management such as Net Liquidity Balance (NLB) and Working Capital Requirements (WCR).According to Shin and Soenen found that working capital management is correlated in a positive way to firm size (Mongrut et al , 2007) .Also , 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 affects 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 affect on firm characteristics?To address the research question, we intended to test the relationship between working capital management with firm characteristics. In other words, we want to know whether working capital management have impact on firm characteristicsamong companies listed on TSE or not?So we makefour main hypothesis that they are examined in among companies listed on TSE.These hypothesis are as follow:

H1: Thereis a significant relationship between working capital management and firm size .

H2: There is a significant relationship between working capital management and Q Tobin ratio .

H3: There are a significant relationship between working capital management and debt to total assets .

H4: There are a significant relationship between working capital management and long term liabilities to equity .

3.2-Research method

Regression is employed to test the hypotheses in order to ascertain the relationship betweenworking capital management and firm characteristics . The regression model in this study is presented below :

$$NLB_{it} = \alpha + \beta_1 LEV1_{it} + \beta_2 LEV2_{it} + \beta_3 SIZE_{it} + \beta_4 Q\ Tobin_{it} + \varepsilon_{it}$$

Where :

NLB = (cash and cash equivalentents + short – term investments) – (short – term debt + commercial paper payable + long – term debt a year term) . These considerations of company financial decisions are irrelevant to the operation cycle . Thus , it is called Net Liquid Balance (Chiou et . al , 2006) .

LEV 1 : firm leverage as measured by the total debt to total assets .

LEV 2 : firm leverage as measured by the long – term debt to equity .

SIZE : natural log of the firm total assets .

Q Tobin : market value of firm / book value of assets

3-3- Sample selection

In this study, we have used the companies accepted in Tehran Stock Exchange (TSE) across the period from 2005 to 2009. 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 80 companies among accepted companies in Tehran Stock Exchange (TSE).

4. Results

A. Descriptive Statistics

Results of descriptive statistics have shown in table1.

Table 1 -Descriptive Statistics

Descriptive Statistics							
	N	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
NLB	320	1.15E10	1.98E13	8.7447E11	1.40343E11	2.51054E12	6.303E24
LEV 1	320	.10	.86	.5715	.00784	.14020	.020
LEV2	320	-.78	41.61	2.0398	.17381	3.10920	9.667
SIZE	320	4.29	7.87	5.8088	.03247	.58088	.337
QTOBIN	320	.00	3.14	.5952	.02871	.51355	.264

Based on table 1, the average percentage of LEV 1 ,LEV 2 and firm size equal .5715 , 2.039 , 5.80, respectively , while average amount of Q Tobin is .5952 .The table provides some information about NLB variable , which ranges from 1.15 to 1.98 and a standard deviation of 2.510 . In relation to LEV 1 ratio,the results reveal a range from .10 to .86 with a standard deviation of .14020 . Also the LEV 2 ratio ranges from -.78 to 41.61 with a standard deviation of 3.10 ,while the SIZE ranges from 4.29 to 7.87 .

B . Regression results

In order to test the hypothesis , we employed the Stepwise regression analysis . The results of this analysis has present in following tables :

Based on table 2 , there is a significant relation between working capital management and firm size (sig = .000) .The results also show a negative and significant relation between working capital management andleverage (sig = .002) .

Table 2 – Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.514E13	1.090E12		-13.893	.000
	SIZE	2.757E12	1.867E11	.638	14.769	.000
2	(Constant)	-1.382E13	1.158E12		-11.930	.000
	SIZE	2.760E12	1.842E11	.639	14.984	.000
	LEVERAGE	-2.352E12	7.633E11	-.131	-3.082	.002

Table 3 - Excluded Variables

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
1	LEVERAGE	-.131 ^a	-3.082	.002	-.171	1.000
	LEV2	-.091 ^a	-2.106	.036	-.117	.990
	QTOBIN	-.044 ^a	-1.013	.312	-.057	.981
2	LEV2	-.057 ^b	-1.266	.206	-.071	.903
	QTOBIN	-.087 ^b	-1.961	.051	-.110	.906

According to table 3 , there is not a relation between Q Tobin and working capital management . also , the result show that no relationship between working capital management and leverage 2 . Thus , regression model is propose as below :

$$NLB = 2.760 \text{ SIZE} - 2.352 \text{ LEVERAGE}$$

5-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 main goal of working capital management is to teach and keep an optimized balance between each component of working capital (Gitmen, 2009). Business success heavily depends on the ability of financial executives to effectively manage receivables, inventory, and payables (Filbeck and Krueger, 2005). Investing the the determinants of working capital management in an organizational setting provides valuable information that can be used in foraulating an effective working capital management strategy (Duran , 2008).

An overview of prior research indicates that the firm characteristics have relation with components of working capital management such as Net Liquidity Balance (NLB) and Working Capital Requirements (WCR). According to Shin and Soenen found that working capital management is correlated in a positive way to firm size (Mongrut et al , 2007) .Also , 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 affects on short term financial performance(profitability) as well as long term performance(maximum firm value).

We address question using estimation equation based on a sample of Tehran Stock Exchange (TSE) firms from 2005 to 2009 with available annual data. We are tested hypothesis with the use of Stepwise Regression analysis . . Research results show that there are positive relationship between working capital management (NLB) and firm size , while there is a negative relationship between working capital management and financial leverage . Also , there is not a relation between working capital management and Q Tobin .

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