

Working Capital Management and Firm Performance: Evidence from Pakistan

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Abstract

Study analyzes the effect of the proper management of working capital on financial performance of cement sector in Pakistan. The sample period of the study is five years i-e from 2007 to 2011. The data was taken from dissimilar sources that used in this study from Karachi Stock Exchange, Published reports of SBP and respected firm site. The dependent variable of the study is Return on assets which is used as a proxy for firm financial performance. There are independent variables are account receivable in days, inventory turnover in days, (CCC) and payable turnover in days. Panal Data methodology used to analyze the impact of Working Capital Management on performance or profitability of Cement sector. Results derived that CCC, Net Trading Cycle, Number of Days Receivable has strongly positive relation with performance and these are significant whereas, Number of Days Inventory turnover and Number of days payable turnover in Days have negative relation with firm performance and is insignificant.

Keywords: Cash Conversion Cycle, Net Trade Cycle, Receivable Turnover in Days, Inventory Turnover in Days & Payable Turnover in Days.

INTRODUCTION

Working Capital Management has an important role in any kind of industry, especially for manufacturing concerns. As manufacturing firms have shifted their major assets in working capital, so their management also requires attention, Consequently reduce total cost of the product manufactured, less stock pile up, sufficient cash availability to pay their creditors, to enable pay short term liabilities in time etc. Working capital performance can be measured by using different methods like Cash Conversion Cycle (CCC), Net Trade Cycle (NTC), Receivable Turnover in Days (RTD), Number of Days in Inventory, Number of Days in Payable, & Return on Asset (ROA). The study consist of cement sector that covered the five years from 2007 to 2011. Working Capital Management must acceptably derived and payable the different parts, properly controlled and regularly reviewed in order to have sufficient and capable flow of working capital. This depend on mostly owing to the cause that, at time the financial feasibility of the firm was linked through their liquidity.

The efficiency of the Working capital management its implication has been decorated by a many researchers such as (Afza, T., & Nazir, S. 2008. Chowdhary, A., & Amin, M.M,2007. Deloof, M. 2003 Lazaridis & Tryfonidis, 2006; Padachi, 2006; Deloof, 2003; Wang, 2002; Shin and Soenen, 1998; Smith et al., 1997; and Jose, Lancaster and Stevens, 1996).

The present study on management of working capital which firms listed on KSE by using financial data. The study predictable to create the following important contributions on the current literature. The study examine the performance of cement by predictor management of the working capital by using proxy of CCC, NTC, Collection policy, policy of the inventory, policy of the payment, liquidity and compare to profitability using financial data the firms listed in the KSE. Purpose of this study to calculated the working capital management efficiency in cement sector by different working capital management tools such as CCC, Net Trading Cycle, Inventory Turnover in Days, Number of Receivable Turnover, PTD, RTD compare with the cement firms to check the proper working management, can effect on the performance of the firm.

LITERATURE REVIEW

In this study the main concern of author is to find the impact of working capital management on profitability/performance of the firms. Many researchers discussed in their research papers different proxies of the working capital management.

They describe the working capital management required a smaller amount of interest into literature than lengthy tenure investment. The most important for the firm performance that the managers time and interest that they

invested in the firm. Working capital management influence the performance and profitability of firm. If firms can't properly manage the working capital management, It will result in reduce performance or profit. The huge capital used for earning profit though insufficient capital break off the firm operation and also affect the profitability (Verlyn, & Laughlin, 1980). Literature demonstrated that WCM policy of firms influence on the current assets and more than current assets that change the return on assets (Zyzewski, & Hieks, 1992).

Lamberson, (1995) Analysis the effect of economy action on the policy of working capital management. Data consists of 50 US firms as a sample, during the period of time from 1980 to 1992. The study outcome demonstrated that economic development can't maximize the working capital investment during a particular time period.

Firm's profitability and risk factors are strongly affected by working capital management which deviate the firm worth. Further the study examined the strong relation between WCM and profitability increase firm performance with suitable management policies (Smith, 1997). Better WCM affected the shareholder wealth. The proper management of working capital attract the shareholders, they examine little NTC is important for company profitability and small NTC linked the higher risk that affected the higher returns. Study in Spain has a negative influence on company profitability/ performance (Shin, & Soenen, 1998).

They analyze cash conversion cycle and liquidity relationship in Greece manufacturing industry. The results found strongly linked between current ratio, average age of inventory and CCC and average collection period. They also found negative relationship among period of average payments and cash conversion cycle (Lyroudi, & Lazaridis, 2000).

Wang, (2002) study observed the relationship among management of liquidity and corporate values of firm performance in Japan & Taiwan. He originated negative correlation among return on assets, CCC and return on equity which are very important factors for firm. The study show that financial system of Taiwan and Japan are different, so consistent management of liquidity increase firm performance. The study conduct on UAE Company the researcher hit upon the relationship among profitability and delay in cash. They found there is strongly negative relationship themselves (Eljelly, 2004).

Rakshit, (2005) Investigate the pharmaceutical Indian industry, result reveals that there is no important relationship between liquidity and firm profitability, Study sample time period is 5 years i-e 2001 to 2005. Researcher determine the impact of working capital management on financial performance, utilized the ratio of working capital. Author used proxy for working capital are inventory turnover, average collection period and average payments period. Finally the study results conducts cross profit inverse impacts with all ratios of working capital expect the amount of payable days (Amir Shah, & Sanal, 2006).

The study conduct on manufacturing small firms, Analyzed the relation of working capital management with its profitability by mature manufacturing firm used as a sample. Period of related study was 6 years i-e 1998 to 2003. Variables are used payable in days, receivable in days, inventory turnover and Cash Conversion Cycle (CCC) as independent variables and ROA used as dependent variables. They find out the finally results with the help of regression analysis. They conduct the industry of the printing and industry profitability; if heavily invest in inventory and receivable accounts (Padachi, 2006).

Study on the firm efficiency of working capital management from the industry of telecommunication equipment. These variables are utilized to show working capital, the outstanding sales days, outstanding inventory days, and payable days of outstanding, working capital management days though firm liquidity and profitability show by the efficiency of cash conversion, total assets and net sale income. The results found that working capital day's negative effect on the firm profitability (Ganesan, 2007).

The research investigate that their strong relationship between different variable CCC that affect the profitability and working capital management .It shows that cash conversion cycle are increase , that will decrease the profitability. The manager can make positive worth for shareholders by minimize the period of cash conversion cycle as well as possible (Rahmen, & Nasir, 2007).

The study relative connection between aggressive WC guide rule tow hundred and eight public ltd co, Registered in KSE since 1998 to 2005. With the help of model of Cross-sectional regression finding the relation of conservative on investment method and working capital financing. The studies indicate the findings are negative relations between aggressiveness level and firm profitability methods (Afza, & Nazir, 2007).

The pharmaceutical firms affected by working capital policies. Two types of data primary and secondary for measure the WCM polices. The results show the firm performance and management of the working capital have strong positive relationship among each other. Questioners' data used to indicate the firm properly manages the current assets and current liability in pharmaceutical firm (Chowdhary, & Amen, 2007).

The WCM affect the corporate profitability investigate by Rehman and Nasir using more than ninety firms that listed in KSE .They examine negative relationship among corporate profitability and management of working capital but size have a positive effect on profitability and leverage liquidity are inverse relation with profitability (Nasir, & Rehman, 2007).

They investigate the effect of working capital policies on the Indian industry of electronic; they showed that receivable and period of stock holding inversely associated with the performance of the firm and period of payment positively affect the firm performance (Vishnani, & Shah, 2007).

They examine that the factors that are necessary for working capital, sample selected two hundred and four firms in 16 manufacturer sectors in time period of 1998-2006. Their study found the role of working capital management very important for firm profitability, worth and its risk (Afza, & Nazir, 2008).

Investigate the working capital management efficiency within 7 banks related Indian state bank during the period of 1990-1991 to 2003-2004. Measure the working capital management efficiency used the entire index efficiency. The study results showed that the performance of overall associated banks is not poor, but individual performance of the banks varies (Bardhan, 2009).

Analysis between EBIT, the paper industry and management of working capital efficiency in India. The result shows that industry properly manages the working capital and A/C payable had strongly inverse impact on EBIT and performance of overall industry is well (Ramachaandran, & Jankiramam, 2009).

The study selected one hundred sixty six Turkish firms as a sample than compared the cash conversion cycle with firm size and profitability and find out the relationship nature, the result showed firm size and profitability are inversely related by cash conversion cycle (Uyar, 2009).

Results conduct negative among between performance of corporate and cash conversion cycle in Vietnam and corporate performance and payable accounts have positive relation between each other. The managers can increase the profits by decreasing the amount of account payables days and inventories and increase the profit of the firm in delay for the payments their account payable (Dong, & Su, 2010).

Firm data used listed in a stock exchange of the Cyprus, the results indicates that negative relationship among the profitability of firm and inventory in days CCC, outstanding sales days and period of the creditors payments (Charitiu, 2010).

Working capital management determine by using cash conversion cycle. The results of the study if cash conversion cycle minimized the return on assets are positively affected (Karaduman, 2011).

In this study takes 14 companies from cement industry for examine the relationship among profitability and working capital management. The results show that there is sensible relationship among them (Hoq, 2011). They analyzed the relationship among the profitability of corporate and working capital management. They used sample and it's divided in 2 groups these are intensive capital fixed and intensive working capital intensive working capital.

RESEARCH METHODOLOGY

Secondary data used analyzing efficiency management of working capital working capital in cement sector the period of time period 2007 to 2011. The working capital methods include number of days in Receivable, Inventory Turnover in Days (ITID), Number Payable Turnover in Days, Cash Conversion Cycle (CCC) and Net Trade Cycle (NTC). ROA shows the firm profitability. Cash Conversion Cycle is measured the source of three parts Number of Days Receivable, ITID and Number of Days Payable. All these parts of CCC help to examine the gathering, inventory conversion and policy of the payment on sectored basis. Net Trade Cycle used as amount of profitability management of working capital.

Cash conversion cycle: (CCC)

The CCC start when the raw material purchase and not pay at the spot. The stay in giving the due is the outcome in delay in delay in the payable duration. The firm uses the raw material which will be converting into finished goods for sale.

Cash Conversion Cycle = Receivable Turnover in Days + Inventory Turnover in Days – Payable Turn over in Days

Receivable Turnover in Days: (RTD)

The receivable turn over in days is very significant part of present assets the average time of the length that compulsory converting Receivables Turnover in Days into cash.

Receivable Turnover in Days = Accounts Receivable / Net Sales * 365

Payable Turnover in Days: (PTD)

The average period of length among material that purchased and labors the payment to them in the form of cash. The firm required to more time for payment of their dues, the delay in payment of the firm dues has positive impact on the firm profitability.

Payable Turnover in Days = Accounts Payable / Net Purchase * 365

Net Trading Cycle: (NTC)

NTC is another compute of measuring Efficiency the management of Working Capital. The performance of firm rises with minimize in the Net Trading Cycle. The management effort must minimize the duration of the NTC.

$NTC = (\text{Accounts Receivable} / \text{Net Sales} * 365) + (\text{Inventory}/\text{Cost of Goods Sold} * 365) - (\text{Accounts Payable}/\text{Net Purchases} * 365)$

Return on Assets: (ROA)

Firm performance can be measured with the help of Return on Assets and calculate the operating revenue related to the return on assets. Return on Assets calculates the income before tax divided through total assets.

$ROA = \text{Earnings before Interest \& Tax} / \text{Total Assets}$

Inventory Turn Over in Days: (ITID)

ITID is key of the component management of working capital also called as period inventory conversion. It is time period that necessary to convert raw materials into ended goods and then to sell those products.

$\text{Inventory Turn Over in Days} = \text{Inventory} / \text{Cost of Goods Sold} * 365$

Data Analysis: The data used cement sector contains 20 firms who are registered in KSE. Much method's used, Descriptive Statistics Correlation Matrix Fixed Effect Results to check the data efficiency.

RESULTS AND DISCUSSION

In this section derived results from descriptive statistics Correlation Matrix Fixed Effect Results to check the data efficiency. These methods are discussed in detailed.

Table 1.Descriptive Statistics

	CCC	RTD	PTD	ROA	ITID	NTC
Mean	362	124.42	449.99	2.73	75.23	-312.81
Median	367	22.07	167.44	0.97	38.42	-76.81
Maximum	586	1812.29	6063.24	34.1	677.13	1291.88
Minimum	112	0.22	19.34	-28.2	0.03	-5801.2
Std. Dev.	103	300.35	938.23	11.9	110.34	932.18

The mean of the cash conversion cycle 362 and standard deviation is 103. The mean of the Receivable Turnover in Days is 124.42 and the standard deviation is 300.35. Payable Turnover in Days mean 449.9865 and the standard deviation is 938.23. Return on Assets mean 2.73 and standard deviation 11.9. ITID mean 75.23 and standard deviation 110.34. NTC mean -312.81 and standard deviation 932.18.

Table 2.Correlation Matrix

	CCC	RTD	PTD	ROA	ITID	NTC
CCC	1					
RTD	0.1041	1				
PTD	-0.0345	0.1061	1			
ROA	0.2902	-0.2049	-0.2244	1		
ITID	0.2102	0.3162	0.1201	-0.1741	1	
NTC	0.0902	0.1069	-0.9424	0.1611	0.0327	1

Describe the relationship between the CCC, RTD, PTD, ROA, ITID and NTC.

The effect of RTD and CCC positive because both are increased. The PTD relationship with CCC is inverse due to PTD decreased. ROA positive relationship with CCC than both is increased. Positive relationship between CCC and ITID, both are increased. NTC has positive relationship with CCC, NTC and CCC both increased.

PTD and RTD have positive relationship so both are increased. ROA has inverse relation with RTD. ITID and RTD have a positive relationship. The relationship between NTC and RTD are positive.

ROA has negative relation with PTD. ITID and PTD have a positive relationship. The negative relation between NTC and PTD so NTC increased. ITID has inverse relation with ROA. NTC and ROA have positive relationship each other. The ITID and NTC have positive relationship.

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.0000	5.0000	1.0000

Table 3. Fixed Effect Results

Dependent Variable: ROA

Method: Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.3379	0.2337	10.0057	0.0000
NTC	0.0041	0.0010	4.2850	0.0001
ITID	0.0068	0.0055	1.2527	0.2144
RTD	-0.0047	0.0013	-3.7401	0.0004
PTD	0.0040	0.0008	4.7450	0.0000
CCC	0.0000	0.0000	4.5207	0.0000
R-squared	0.7826	Mean dependent var		2.7347
Adjusted R-squared	0.6968	S.D. dependent var		11.8989
S.E. of regression	6.5518	Akaike info criterion		6.8349
Sum squared resid	3047.7241	Schwarz criterion		7.5904
Log likelihood	-312.7429	Hannan-Quinn criter.		7.1406
F-statistic	9.1263	Durbin-Watson stat		1.9680
Prob(F-statistic)	0.0000			

Fixed Effect Results

The change in depended variable due to change in depended variable, if one percent change in inepended variable than same change in depended variable. The NTC .0041 will be change than similar change in ROA. NTC is significant because its probability less than .05. Change in ITID in .0068 similar changes ROA, ITID is insignificant. If RTD change at -.0047 the RTD decreases than RTD inversely affect the ROA, RTD is significant. PTD can change .0040 than ROA also similar, PTD is significant. CCC change at .0 the ROA cannot change, CCC is significant because its probability is less than .05.

CONCLUSION

The study analysis the impact of Working Capital Management on performance of cement sector in Pakistan. The duration of the study is from 2007 to 2011. The data used in this study was taken from, Karachi Stock Exchange. Return on assets was used as the dependent variable in order to test the impact of Working Capital Management on firm's profitability. Independent variables were RTD, number of day's inventory, Cash Conversion Cycle and PTD.

Panel Data method is used to study the impact of Working Capital Management on Cement sector performance or profitability. Results show that cash conversion cycle, Net Trading Cycle, Receivable Turnover in Days has positive relationship with profitability and these are significant whereas, Inventory turnover in Days and payable turnover in Days have negative relation with firm performance and probability is insignificant.

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