

# Working Capital Management and Profitability Evidence from Firms Listed on Karachi Stock Exchange

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## Abstract

Efficient working capital management is an essential component of overall corporate strategy to boost shareholders value. The aim of our study is to examine the relationship between working capital management and profitability of Pakistani firms listed on Karachi Stock Exchange for a period of 6 years during 2008-2013. Correlations analysis using panel data and panel least square was conceded to check the impact of working capital management on profitability. The study found considerable negative relationship between the measure of profitability and Average Payment Period, Average Collection period, Inventory turnover in days, Cash conversion cycle and Debt while positive relationship was found between ROA and Size, GDPGR and Sales growth of Pakistani firms. The study suggests that shareholders wealth can be maximize by well-organized management of working capital. The study suggest that managers can improve the profitability and value of their firms by dropping accounts receivable days, accounts payable days, inventory turnover in days and also make substantial efforts towards maintaining an optimal cash conversion cycle level.

**Keywords:** working capital management, ROA, account receivables, accounts payable, CCC, inventories, pakistani firms, KSE, debts

## 1. Introduction

Working capital management (WCM) is very important for a firm to continue to exist, because of its effects on a firm's profitability and risk, and consequently its value (Smith, 1980). Working capital Management directly affects the liquidity and profitability of a company (Rahman & Nasr, 2007). WCM is the day-to-day function of management of a firm. Efficient WCM is very vital for the long-term endurance of a business. Due to increase in cost of operations in current circumstances, management of working capital has become more important for a firm survival. WCM is the indispensable concern of all firms and it is very essential for all the firms to manage their working capital effectively. Element of Working capital are current assets and current liabilities. Currents assets include cash, AR, Inventories and other current assets while current liabilities are short term loans, AP, and other current liabilities.

WCM is the most significant module of finance and has an undeviating impact on the liquidity and profitability of a firm. Both profitability and liquidity are very vital in terms of a firm. Liquidity demonstrates the capability of company to pay its temporary debts. Liquidity of a company is associated with the ability of a firm to perform its short term obligations. It is the responsibility of financial managers to keep an optimum level of current assets to its total assets; because firm profitability can be affected negatively by holding too many current assets while few current assets can create low liquidity and stock out circumstances for a firm.

The reminder of the paper is organized as follows. Section 2 presents literature review, followed by research methodology and the variables of the study in section 3. Section 4 portrays and discusses the results and data analysis and the paper concludes in section 5.

## 2. Literature Review

Considering the effect of working capital on profitability, numerous studies have attempted the issue. The most important are:

Eljelly (2004) carried out a study on 29 Saudi Arabian joint stock companies and found a significant negative relationship between profitability and the larger cash conversion cycle while companies having shorter cash

conversion cycle have insignificant negative relationship with profitability. A significant positive relationship was found between the size of the firm with both shorter and longer cash conversion cycle in the manufacturing and agricultural sector.

Raheman and Nasr (2007) investigated 94 firms listed on KSE during 1999-2004. Their results suggest that net operating profitability have significant negative relationship with average collection period, average payment period, and Inventory turnover in days, debt ratio and CCC while company size and profitability are positively related.

Kulkanya Napompech (2012) examines the effects of working capital management on profitability and found that gross operating profits are negatively linked with receivables collection period and inventory conversion period of companies listed on Thailand Stock Exchange during 2007-2009. Their results suggest that profitability can be increase by minimizing the receivable collection period, CCC and inventory conversion period.

Taghizadah, Akbari and Ebrati (2012) found that firm growth and size have positive impact while leverage, conservative and aggressive investment policies have negative impact on firm's value and profitability of Iranian firms.

Al-Mwalla (2012) found positive relation between economic growths, firm's size and sales growth with measure of Value (Tobin's Q) and profitability. The results elucidate that firm's value and profitability have a positive impact from conservative investment policy while negative impact was noticed with aggressive financing policy on both value and profitability.

### 3. Research Methodology

#### 3.1 Sample Size and Sample Selection

The desired data needed for the empirical research were obtained from the financial statement of firms listed on Karachi Stock Exchange for a period of 6 years during the period 2008-2013. Firms with complete required data over the periods 2008-2013 were selected. Firms with missing data were eliminated. The final sample of this study involves 85 firms.

#### 3.2 Variables

Return on Assets (ROA) is used as a dependent variable while Average Collection Period (ACP), Average Payment Period (APP), Inventory Turnover in days (ITID), and Cash Conversion Cycle (CCC) are used as independent variables.

Table 1. Variables of the study

Variable	Abbreviation	Measurement
Return on Asset	ROA	Earnings before tax and interest (EBIT)/Total Assets
Average collection period	ACP	Account Receivable/Sales*365
Average payment period	APP	Accounts Payable/Purchases*365
Cash conversion cycle	CCC	Average collection period + inventory turnover in days – Average payment period
Inventory turnover in Days	ITID	Inventories/Cost of goods sold*365
Debt Ratio	Debt	Financial Debts/Total Assets
Firm Size	Size	Natural logarithm of sales
Sales Growth	SG	Current year sales – Last year sales/Last year sales.

#### 3.3 Descriptive Statistics

Table 2 shows descriptive statistics for 85 non financial firms for a period of 6 years. Standard deviation of different variables with the minimum and maximum values and mean and median are presented in table 2.

The firm has 61 days of ACP and 40 days of APP with standard deviation of 48 days and 57 days respectively. Maximum time taken by firm to collect its payment is 185 days with a minimum of 0 days. The maximum days for APP are 197 while minimum are 0 day for APP. ROA has a mean value of 16% and the standard deviation of 17%. The maximum value of ROA is 72% and minimum value is -63%. CCC has a mean value of 75 days. It acquires 54 days on average to trade inventory with maximum of 398 days and with 61 days standard deviation. Size, Debt, SGROW and GDPGR has the average values 14.36, 0.329, 1.31 and 0.0722 respectively with standard deviation 1.85, 2.59, 0.58 and 0.23.

Table 2. Descriptive statistics

Variables	ROA	ACP	APP	ITID	CCC	SIZE	DEBT	SGROW	GDPGR
Mean	0.1610	61.22	39.78	53.73	75.17	14.36	0.329	1.31	0.0722
Median	0.15	59.35	43.57	40.67	54.45	14.39	0.16	1.22	0.13
SD	0.17	47.87	56.79	61.48	49.45	1.85	2.59	0.58	0.23
Minimum	-0.631	0.000	0.000	0.000	-126.9	9.23	0.000	0.09	-0.361
Maximum	0.72	184.8	197.1	398.3	422	18.38	2.18	11.99	0.71

### 3.4 Correlation Analysis

Table 3 presents the correlation matrix of all variables included in the analysis to detect multi co linearity. No rigorous case of multi co linearity is found in our results.

The results suggest that ACP, Inventory, APP and CCC are negatively associated with ROA. The results suggest that profitability decreases with the longer average collection period. A negative coefficient (-0.721) is found between ROA and ACP. Highly significant Negative coefficient (-0.525) between ROA and APP suggests that firms that wait longer to pay their bills are less profitable. Firms can be profitable if they make faster payments to their suppliers. The Correlations coefficients (-0.735) between ROA and ITID shows the same negative tendency as between ROA and APP and ACP. The negative coefficients suggest that those firms are less profitable that keeps inventory for a longer period than those firms who sell their inventory in a shorter span of time. All the three Variables of CCC (AP, Inventory and AR) has a negative relation with the measure of profitability and CCC also has a negative coefficient -0.197. The negative relation shows that firms can increase its profitability by decreasing its CCC. Lesser the CCC, the firm shall be more profitable. The coefficient (0.035) between ROA and Size of firm is positively related. It means that larger firms are more profitable than smaller firms in Pakistan and vice versa. Similarly sales growth has a positive relation with ROA. The positive coefficient (0.321) of sales growth reflects that as the sales of the firm's increase its profitability will reflect in positive side. The coefficient between ROA and Debt is also negative (-0.420). The correlation between CCC and AP is 0.322, CCC and Inventory is 0.021 and CCC and AR is 0.238, Debt and Sales growth is 0.325, GDPGR and ROA is -0.676 and the correlation between Size and ITID is 0.213.

These results suggest that if the firms efficiently manage their working capital management, it will lead the firm to increase its profitability.

Table 3. Panel data estimates of effects of WCM on return on Assets (ROA)

Variables	ROA	ACP	ITID	APP	CCC	SIZE	SGROW	DEBT	GDPGR
ROA	1								
ACP	-0.721	1							
ITID	-0.735	0.535	1						
APP	-0.525	0.571	0.215	1					
CCC	-0.197	0.238	0.021	0.322	1				
SIZE	0.035	0.114	0.213	-0.102	0.097	1			
SGROW	0.321	0.021	0.125	-0.215	0.129	0.313	1		
DEBT	-0.420	0.247	-0.236	0.035	0.029	0.141	0.325	1	
GDPGR	-0.676	0.224	-0.652	0.156	0.174	0.039	0.141	-0.188	1

Different variables are studied in table 4. ACP, APP, ITID, CCC, Size and Debt are independent variables and Return on Assets is the dependant variable. The results show both positive and negative relationship between return on assets and different variables. ACP, ITID, CCC and Debt have negative relationship with Return on assets. The negative relationship between Inventory turnover in days and Return on assets shows that with increase in Inventories, decreases Return on Assets and decrease in Inventories will increase ROA. Similarly ACP, CCC and Debt have inverse relationship with ROA. An increase in ACP, CCC and Debt will have a negative effect on ROA while a decrease in ACP, CCC and Debt will affect ROA positively. There is a positive relationship between Size of the firm and ROA. If the size increases, ROA will increase and vice versa. SGROW and GDPGR also have

positive relationship with ROA. R square demonstrates change in dependent variables due to the change in independent variables. Adjusted R square adjusts the variables of the model. F statistics illustrate the significance of the model that whether the model is significant or not.

Table 4. Measurement of WCM and Firm performance by return on Assets (ROA)

Variable	Coefficient	Prob.
C	-27.9079	0.0413
ACP	-0.0591	0.0127
APP	0.0607	0.0201
ITID	-0.0104	0.0346
CCC	-0.0373	0.0639
SIZE	5.0741	0.0090
DEBT	-0.0014	0.5853
SGROW	0.0618	0.0119
GDPGR	0.1578	0.6901
R-Squared	0.3710	
Adjusted R-Square	0.3119	
Durbin Watson	1.1708	
Sum squared residual	14221.5537	
F-statistic	7.9972	0.0000

Note. Dependant Variable: ROA; Method: Panel Least Square; Sample: 2008-2013.

#### 4. Conclusion

The research found a significant negative relationship between the measure of profitability and variables of the study (Average Collection Period (ACP), Average Payment Period (APP), Inventory Turnover in days (ITID) and cash conversion cycle) for the firms listed on Karachi stock exchange.

Empirical results of the study affirm that profitability can be increase by minimizing and shortening the Cash Conversion Cycle (CCC), Inventory Turnover in days (ITID), ACP and APP in Pakistani firms. The inverse relationship between return on assets and selected variables suggest that profitability can be increase by efficient management of working capital management. We found a strong negative relationship between return on assets and APP.

The negative relationship between profitability and APP is consistent with the view that less profitable firms wait longer to pay their bills. Firms need to identify potential cost savings and efficiencies which in turn enable them to improve their accounts payable processes and other payment. Positive relationship was found between ROA and Size, SGROW and GDPGR. These results also suggest that Size, SGROW and GDPGR have also a significant impact on the firm profitability. It is the prime responsibility of managers to maximize shareholders wealth. Our results suggest that if these firms appropriately handle their cash, Accounts Receivables and inventories in a suitable way, this will eventually boost profitability of these companies. By considering the roles and driver of working capital management and acting to attain the precise intensity of working capital, company can diminish risk, get ready for uncertainty and improve overall performance.

The conclusion is in confirmation with the study of Rahman & Nasr (2007), Eljelly (2004), Deloof (2003) and Shin and Soenan (1998). All these studies found a strong negative relationship between the measures of working capital management, ACP, ITID, average APP and cash conversion cycle with corporate profitability.

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