



## **A Nexus between Working Capital Management and Profitability: A Case Study of Pharmaceutical Sector in Pakistan**

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### **ABSTRACT**

Amongst all the issues of financial management, the issue of routine capital management is critical one. The reason is; it always elucidates a direction to help out a firm to acquire energy in short-run. In broader sense, working capital is the sum of those items exposed on firm's balance sheet as short-term assets i.e., cash, marketable securities, account receivables and inventories. The central point of this research study is to critically discuss the impact of working capital management (WCM) on financial outcomes of Pharmaceutical Sector in Pakistan. To attain this land mark researcher also observed the affiliation between independent variables utilized to gauge working capital and profitability measured by return on investment (ROI) and return on equity (ROE) of the firm. The present study used secondary data for the analysis. The data utilized in this study is extracted from the annual reports of pharmaceutical companies quoted in Karachi Stock Exchange. The current research used different statistical tests to examine the impact of WCM on profitability. According to the results of regression analysis, the null hypothesis of the study is rejected because all the variables related to working capital negatively affect the profitability of pharmaceutical firms measured in terms of ROI and ROE. Results of correlation analysis indicate that there is negative relationship between working capital and profitability which is significant at 1% level. Findings of present work suggest that managers can increase the profitability of the firm by keeping the cash conversion cycle to an optimum level.

**Keywords:** Working Capital Management, Profitability, Pharmaceutical Sector in Pakistan

**JEL Classification:** G3

### **1. INTRODUCTION**

Working capital management (WCM) is the key to success for a business. The Finance Manager ponders upon and takes variety of decisions to guarantee smooth operations of business. Ample time and hard work is required to manage day to day operating capital because it is interlinked with profitability and liquidity of a firm (Naser et al., 2013). WCM is considered to be the prime element of financial management. Financial manager has to make key decisions to overcome certain issues related to working capital. For this reason it is required by the firm to maintain the balance between assets and liabilities relating to short-term. The optimal level of both these variables improves the liquidity position

(Sial and Chaudhry, 2012). In general, total investment in current assets that are used in routine business operations is called as working capital.

Furthermore, this working capital is a financial resource which transforms into other resources i.e., inventory to account receivables (Gitman and Flanagan, 2002). WCM is a burning issue for global business and has become more and more important for an organization where key personnel think and work hard to recognize the need and project the appropriate level of working capital (Lamberson, 1995). Emery et al. (2004) stated that generally there are two main forms of working capital i.e., gross working capital and net working capital (NWC). In order to

avoid any terrible circumstances manager must preserve best mix of these. As a result WCM is a solution for routine business problems. WCM is a financial tool used to manage current assets effectively which in turn increases its paying ability (Naser et al., 2013). Brigham and Daves (2002) elucidated that both creation and adopting of working capital policies are the basic mechanism of WCM in daily business.

Almost all business set ups do arrange reasonable amount of working capital to cover up their short-term liabilities well in time and for future operating expenses. This state assures smooth operation of the firm (Naser et al., 2013). All the businesses have one aim to hit i.e., profit maximization and cost minimization. All managers closely watch profitability and liquidity of a firm. In general the research suggests that only permanent working capital is accountable for profit generation whereas, few others are of the view that if a firm doesn't invest minimum level in working capital, it cannot achieve its major goal of profitability (Bashir and Ahmad, 2013). The amount of capital which is required by the firm to finance its day to day operating activities is regarded as working capital (Reddy and Patkar, 2004). Raheman et al. (2010) scrutinized the outcome of capital at work on firm's profitability of those firms having manufacturing business. Generally liquidity is the firm's capacity to recompense its current obligations in time while profitability is the earning capacity of the firm. Working capital comprises all those assets which are for short-term and are used in daily activities. Firm's short-term debts can easily be paid via measuring its liquidity because working capital itself is an indicator (Alavinasab and Davoudi, 2013). Any firm which has proper composition of liquidity has enough cash to pay its short debts well in time.

On the other hand, if a firm has improper composition, it cannot pay its debts in time (Pike and Neale, 2006). To avoid stock outage, big business units keep huge inventory which helps the achieve business boom with the use of a liberal credit policy. It is therefore suggested that non-stop supervision of short-term financial activities is a must (Long et al., 1993). Petersen and Rajan (1997) stated that a firm by using its credit for trading purpose, used in stock up inventories and account receivable can suffer from lower amount of financial return. Financial managers can't deny its importance and vitality at any point in time during routine operations. Perfect amalgamation of both variables (current assets and current liabilities) is WCM (García-Teruel and Martínez-Solano, 2007). Joshi (1995) stated that the bad management of working capital may affect firm's profit generation. Policies related to WCM are utmost important for endurance and enlargement of a business entity. The basic infrastructure and mechanism of a firm needs good combination of current assets and liabilities. Sagner (2001) said that although capital in use have involved in investment and financing of short-term resources and sources; yet sometimes it remains unobserved (which leads to create financial crunch) while taking crucial decisions. However, it is really a difficult task for managers to ensure smooth and profitable operation with high risk of variability between components of working capital during the entire process.

Manufacturing business always strengthens the economy. To ensure economic development, pharmaceutical sector is vital in Pakistan. It formulated an apparent layout structure to boost up the entire economy. To attain useful chunk of profit from this sector, each and every one related to it needs to positively move in a certain direction. As this sector is facing serious problem of liquidity that's why, pharmaceutical firms often need to invest more in current assets as compared to fixed assets by following conservative working capital policy. In Pakistan, pharmaceutical sector meets local demand in connection with healthy foreign exchange via exports.

## 2. REVIEW OF RELATED LITERATURE

Working capital deals with current assets and liabilities to create the best mix to support current business as well as ensure survival. In addition to the above, it discusses the nexus among current assets and liabilities which positively participated in firm's investment and financing strategies (Jain and Khan, 2005). There are three type of policies related to working capital i.e., conservative, aggressive and moderate policy. Conservative policy is a state where company makes maximum investment in current assets by sacrificing greater return. Secondly in aggressive or bold policy, maximum investment with higher returns is preferred. While, moderate policy maintains equilibrium between current assets and current liabilities. It implies that current assets should be financed with current liabilities while fixed assets should be financed by long-term liabilities (Mojtahedzadeh et al., 2011). Weinraub and Visscher (1998) have discussed the policies of WCM like aggressive and conservative. Managers formulate policies related to working capital; one should make best mix of aggressive and conservative working capital policies. Deliberate management and control of working capital can guarantee the successful completion of business objectives (Filbeck and Krueger, 2005). Islam and Rahman (1994) examined movement of working capital of business activities in Bangladesh. They reached at the conclusive result that finest level of working capital facilitates a business good credit position, allows the firm to pay its obligation well in time. Smith (1980) pointed out that by following conservative policy managers arrange adequate cash balance and avoid stock outs but sacrifice greater returns and *viz.*, in case of aggressive policy. Siddiquee and Khan (2009) have made an observation that, firms with improved and managed working capital are capable to formulate repeated progress to gain competitive advantage over competitor. They try to generate finance from inside source and also face minor trouble while generating finance from external source. Moreover working capital policies have been main concern for developing countries.

To perform routine obligations and to secure the business from unfavorable atmosphere one must need adequate working capital. Agrawal (1976) examined large manufacturing concerns both in public sector and private sector and highlighted the role and efficiency of organization of working capital and concluded that working capital mainly decides the success or failure of overall operations. McCormick (1999) declared that firms in the growing financial system have many issues such as low level of investment and sales and lack of resources. Von Eije et al. (2002)

suggested that financial compliance officer should manage capital at work to bring quality to current dealing and to enhance paying ability in short-run. Profitability will be lower at that time when an investment is made in CA, which in turn lowers the level of uncertainty (Ng et al., 1999; Wilner, 2000). Narware (2004) in his experiential research investigated both negative and positive connection among variables. The researcher made a conclusive end note that the amount of drop off in working capital was less than increase in the profitability of a company.

Financial management has a wide area with so many crucial issues. Besides others, these also include management of short-term and long-term resources. Some research scholars have paid attention to check the matrix of profitability and working capital. In this study the researchers examined 131 registered companies of Athens Stock Exchange from 2001 to 2004. The prime concern of this research was to find significant association among cash conversion cycle (CCC) and profitability which was calculated by gross operation profit, account payable, account receivable and inventory turnover was taken as component of CCC. Final outcome elucidated inverse connection among account payable and account receivable turnover and inventory and profit (Lazaridis and Tryfonidis, 2006). Others worked on elements of capital in use and checked its effect on cash (Cote and Latham, 1999) and some has focused on trade credit (Pike and Cheng, 2001). Globally many research studies have been made. Some concluded that the shorter the CCC the longer would be the life of a firm with higher amount of operating profit. Others emphasized on credit terms affiliated with accounts receivable generation and management (Besley and Meyer, 1987). Bardia (2004) and Sur et al. (2001) made research study on an Indian industry manufacturing aluminum; they noticed positive relationship linking the liquidity and profitability and this examination is same as derived by Narware (2004). Christopher and Kamalavalli (2009) used measures of operating capital i.e., cash turnover ratio, current ratio (CR), and leverage inversely affect current assets to operating income. Howorth and Westhead (2003) discussed basic mechanism of analysis confirmed the credentials of four different kinds of companies with regard to pattern of WCM. It is clarified that small companies expect to improve marginal return if they pay attention on areas of WCM. Hassanpour (2007) investigated 101 registered firms of Tehran Stock Exchange for the time span 2004-2008 and tried to find the relation among WCM and profitability. An inverse connection among CCC and profitability was noticed. Whereas average period of inventory showed in their findings was not significant. In case a financial set up has low working capital resources from its specific benchmark level, it faces liquidity problems like deteriorating to pay short-term debts well in time and forgo opportunity of taking discounts for quick payment (Cote and Latham, 1999). Falope and Ajilore (2009) noticed inverse association among profitability and CCC elements. Şen and Oruç (2009) studied relationship of capital at work with profitability by taking a section from large population from registered firms on Istanbul stock market.

The scholar used relevant variables to check variation of WCM: CR, net liquid balance, CCC, receivables turn over and inventory turnover. For profitability measurement researcher used return on assets (ROA). Negative significant relationship between all

variables was noticed. Finally, the derived results were almost consistent between all firms. Izadinia and Taki (2010) cross matched capital in use and operating profit of registered firms on Tehran stock exchange. The time span of research study was 2001-2008. Two proxies' CCC and ROAs were used to check the efficiency of capital in use and profitability respectively. The outcome specified strong inverse affiliation among both these variables. Mohammadi (2009) studied Tehranian Stock Exchange's registered 92 firms empirically to check the effect of capital at work on profitability. Conclusively he noticed inverse association among all these variables relating to working capital with profitability. Shin and Soenen (1998) worked on the WCM by studying the financial mechanism of American firms for the period of 1975-1994 by comparing CCC and profitability. Final recommendation of researcher is to minimize CCC up to reasonable level which can create value for shareholders. Hutchison et al. (2007) pointed out a direct link between smaller CCC and higher profitability. Kamath (1989) made research on retailing firms and concluded inverse relation between both these variables as well. It certainly means that profitability will improve by decreasing the CCC. According to Ching et al. (2011) there is some kind of resemblance among operating capital and company's profitability; to confirm above mentioned saying he conducted research by taking sample from Brazilian-listed companies. Their study identified inverse connection among these variables. Mohammad (2011) studied 1063 business set ups registered on Tehran Stock Exchange and concluded inverse association among profitability and number of day's receivables. On the other hand financial managers are supposed to handle elements of working capital in the best possible manner to facilitate them to make payment of obligations just in time and ease the probability of over and under investment. Gupta (1969) and Gupta and Huefner (1972) studied the variations in financial ratios of a firm. Their first and second studies showed inequality between liquidity, activity, leverage and profitability ratios among firms. Johnson (1970) expanded similar study by utilizing cross sectional analysis with the help of ratios for both retailers and primary manufacturers. The study of Mohamad and Saad (2010) was based on secondary statistics related to 172 Malaysian firms from 2003 to 2007. Researcher performed step wise evaluation by checking the effect of routine capital on operating profit. To attain this objective they utilized ratios as independent variables as current assets to total assets, current liabilities to total assets, CR, CCC and debt ratio. In addition to above mentioned variables they used dependent variables as well i.e., return on invested capital, ROAs. The final outcome suggests that there was an inverse association among dependent and independent variables of firms. It signified the importance of WCM to enhance the firm's profitability and value of market.

To check and ascertain the connection among capital at work and profitability, Karaduman et al. (2011) examined 5 years information of non-financial companies listed on Istanbul Stock Exchange. ROA was chosen as a measure of profitability while CCC was used to gauge WCM. Only effective management and control over CCC gave higher returns. Dănuleşiu (2010) studied the shape of working capital efficiency on the financial outcome of 20 firms of Alba country over a period of 5 years i.e., 2004-2008. This research study clarified that there is an inverse association

among profitability and working capital components. Rezazadeh and Heidarian (2010) concluded that firms can make a proper time assessment by carrying inventories, shortening periods for receivables, squeezing CCC to improve profitability. Shah and Sana (2005) found negative association between gross profit and capital in use ratios.

### 3. HYPOTHESIS OF THE STUDY

H<sub>0</sub>: There exists no relationship between WCM and profitability of Pakistan Pharmaceutical sector.

H<sub>1</sub>: There exists a significant relationship between WCM and profitability of Pakistan Pharmaceutical sector.

### 4. RESEARCH METHODOLOGY

In current study secondary data has been taken from published reports of Pharmaceutical Companies. In Karachi Stock Exchange (KSE) pharmaceutical sector is combined with chemical sector. Therefore only listed companies are selected for this study. There are total 08 Pharmaceutical Companies listed on KSE. But financial data of 07 companies from 2005 to 2012 is available which is gathered from the published annual reports of Pharmaceutical Companies available on website of State Bank of Pakistan. In the first phase, data is collected from the financial reports and then analyzed through statistics software SPSS. The compiled information is tested through different formulas and models (correlation analysis, regression analysis) in second phase. Finally results are drawn after the complete analysis of available information.

#### 4.1. Detail of Variables

The ultimate goal of current study is to find the connection among WCM and Pharmaceutical Companies' profitability. For this purpose, current study used return on investment (ROI) and return on equity (ROE) as dependent variables to measure the profitability of Pharmaceutical Companies. Similarly, NWC, CR, acid test/quick ratio (QR), operating cycle (OC) and CCC are used as independent variables to measure the WCM of Pharmaceutical Companies.

#### 4.2. Research Models

Based on above literature review, current study used the following econometric models for empirical analysis:

Model 1

$$ROI_{it} = \alpha_0 + \alpha_1 NWC_{it} + \alpha_2 CR_{it} + \alpha_3 QR_{it} + \alpha_4 OC_{it} + \alpha_5 CCC_{it} + \epsilon_{it}$$

Model 2

$$ROE_{it} = \alpha_0 + \alpha_1 NWC_{it} + \alpha_2 CR_{it} + \alpha_3 QR_{it} + \alpha_4 OC_{it} + \alpha_5 CCC_{it} + \epsilon_{it}$$

Where, i = Number of companies (1, 2, 3,...7), t = Time (1, 2, 3,...8 years), NWC = Net working capital, CR = Current ratio, QR = Quick ratio, OC = Operating cycle, CCC = Cash conversion

cycle, ROI<sub>it</sub> = Return on investment, ROE<sub>it</sub> = Return on equity, α<sub>0</sub> = The intercept of equation, α<sub>1</sub>, α<sub>2</sub>, α<sub>3</sub>, α<sub>4</sub>, α<sub>5</sub> = Slope coefficient or regression coefficient, ε<sub>it</sub> = Unexplained variable or error term.

## 5. DATA ANALYSIS

### 5.1. Descriptive Analysis

Table 1 awards a clear picture of descriptive statistics of Pharmaceutical Companies. The average NWC of pharmaceutical firms is 12.3 million with a SD of 16.3 million. The firm's highest NWC in a particular year is 46.2 million and the minimum is 0.70 million. The mean value of CR is 1.46 with SD of 1.65. While the highest and lowest values are 23.9 and 0.47 correspondingly. To obtain conservative results of the liquidity of pharmaceutical firms, QR has been used. The results demonstrate that the average QR for pharmaceutical firms is 1.19 and SD of 1.58. The minimum value for the QR is 0.35 while the maximum value is 13.8.

The mean value of OC is 74 days with SD of 221 days. It implies that empirical worth of the OC can move away from mean to left and right by 221 days. Whereas, the maximum value for the OC is 288 days and minimum 152 days for a firm in a year. On average the value of CCC is 61 days with SD of 215 days. The mean value of ROI is 18.5%, and SD is 27.7%, meaning that firm's profitability can move away from mean to both sides by 27.5%. The minimum value of ROI is -65% while the maximum value is 59%. The average ROE for pharmaceutical firms is 27.9% with a SD of 15.4%. The highest and lowest values of ROE in a particular year are 62% and -48% respectively.

### 5.2. Correlation Analysis

To check the affiliation among variables of WCM and profitability calculators, Pearson's correlation analysis is utilized. Inverse relation has been noticed between measures of working capital and profitability variables. Pearson correlation coefficients of all variables are shown in Table 2.

The coefficients of correlation between NWC, CR, QR, OC, CCC and ROI are -0.817, -0.457, -0.633, -0.149, -0.110 respectively with P < 0.01. It indicates that there is significant and opposite link among all measures of WCM and profitability. Similarly, the coefficients of correlation between NWC, CR, QR, OC, CCC and ROE are -0.281, -0.492, -0.527, -0.702, -0.882 respectively. From Table 2, it is noticed that all the P < 0.01. It indicates that there is significant and opposite link among profitability and all measures of WCM. It means that if the pharmaceutical firms decrease their number of days in OC, it can increase its

**Table 1: Descriptive statistics**

Variables	Minimum	Maximum	Mean	Standard deviation
NWC	0.70	46.20	12.2857	16.32936
CR	0.472	23.91	1.4643	1.65196
QR	0.351	13.76	1.1929	1.58364
OC	151.66	288.99	73.9000	221.12467
CCC	-295.52	353.39	60.9671	215.01262
ROI	-0.65	0.59	0.1850	0.2775
ROE	-0.48	0.62	0.2786	0.1544

NWC: Net working capital, CR: Current ratio, QR: Quick ratio, OC: Operating cycle, CCC: Cash conversion cycle, ROI: Return on investment, ROE: Return on equity

**Table 2: Correlation analysis**

	NWC	CR	QR	OC	CCC	ROI	ROE
NWC	1						
CR	0.650**	1					
QR	0.000		1				
OC	0.764*	0.835*		1			
CCC	0.046	0.019			1		
ROI	-0.182**	-0.096	-0.115*			1	
ROE	0.000	0.838	0.026	0.665*			1
	-0.142**	-0.160**	-0.355*	0.039	1		
	0.761	0.000	0.004	-0.149**	-0.110**	1	
	-0.817**	-0.457**	-0.633**	0.000	0.000	0.000	1
	0.004	0.000	0.007	-0.702**	-0.882**	0.503**	
	-0.281**	-0.492**	-0.527**	0.000	0.009	0.000	
	0.003	0.000	0.000	0.000	0.000	0.000	

\*0.05 level, \*\*0.01 level. NWC: Net working capital, CR: Current ratio, QR: Quick ratio, OC: Operating cycle, CCC: Cash conversion cycle, ROI: Return on investment, ROE: Return on equity

profitability. Further, CCC is a broad calculator of WCM efficiency and negatively related with profitability.

**5.3. Regression Analysis**

Table 3 shows the multiple regression outcomes of the general association that exists among WCM and profitability. In this study various independent variable are utilized to calculate WCM that includes; NWC, CR, QR, OC and CCC while ROI and ROE are used as dependent variables to compute profitability of pharmaceutical firms.

**5.3.1. Regression analysis (Model 1)**

Table 3 shows that coefficient of NWC is negatively related and is highly significant at 1% level. This means that change in NWC significantly have an effect on the firm’s profitability position.

The coefficient of CR is -0.29 which is significant at 1% level and has inverse impact on ROI. QR is used in this study to measure the liquidity in a more conservative way. Results show that QR is not significant and has positive relationship with dependent variable i.e., ROI. The coefficient of OC is negatively and highly significant at 1%. The CCC as measure of WC also has a negative impact on financial outcome. Results depict that the coefficient of CCC is -0.36 and is significant at 1%. It means that any change in CCC considerably have an effect on profitability.

In order to judge the overall significance of the model, ANOVA test is applied as shown in Table 4.

The results in Table 5 indicate that overall model is significant that shows the impact of all independent variable on dependent variable i.e., ROI. The value of F = 10.362 and a P < 0.01.

Table 5 shows the model summary. The adjusted R<sup>2</sup> = 52.3%, implies that model is in position to explain the profitability up to 52.3%. To check the autocorrelation among residuals, Durbin–Watson test is applied. The value of Durbin–Watson is 1.652. As this value ranges from 1 to 3, so there is no autocorrelation among residuals.

**5.3.2. Regression analysis (Model 2)**

Table 6 shows that coefficient of NWC is negatively and highly significant at 1% level. The coefficient of CR is -0.227 which is significant at 1% level and has negative influence on ROE.

**Table 3: Multiple regression analysis (Model 1)**

Model	Unstandardized coefficients		Standardized coefficients	t	Significant
	B	Standard error	Beta		
1					
(Constant)	57.828	29.523		3.195	0.002
NWC	-20.346	17.319	-1.032	-3.389	0.000
CR	-12.121	40.274	-0.288	-2.682	0.004
QR	0.398	27.303	0.096	2.196	0.061
OC	-0.018	1.354	-0.713	-3.301	0.000
CCC	-0.052	1.493	-0.358	-3.250	0.000

<sup>a</sup>Dependent variable: ROI. NWC: Net working capital, CR: Current ratio, QR: Quick ratio, OC: Operating cycle, CCC: Cash conversion cycle, ROI: Return on investment, p<0.01,

**Table 4: ANOVA test<sup>a</sup>**

Model	Sum of squares	Df	Mean square	F	Significant
1					
Regression	541957.105	5	108391.421	10.362	0.002 <sup>b</sup>
Residual	79559.222	1	79559.222		
Total	621516.326	6			

<sup>a</sup>Dependent variable: ROI. ROI: Return on investment, <sup>b</sup>p<0.01

**Table 5: Model summary (Model 1)**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Standard error	Durbin–Watson
1	0.783 <sup>a</sup>	0.613	0.523	282.06	1.652

<sup>a</sup>Dependent variable: ROI. ROI: Return on investment

**Table 6: Multiple regression analysis (Model 2)**

Model	Unstandardized coefficients		Standardized coefficients	t	Significant
	B	Standard error	Beta		
2					
(Constant)	2.776	1.755		2.811	0.006
NWC	-0.023	0.032	-0.371	-3.160	0.000
CR	-0.030	0.074	-0.227	-2.985	0.000
QR	-0.113	0.233	-0.472	-2.129	0.041
OC	-0.002	0.002	-0.468	-3.431	0.000
CCC	-0.002	0.003	-1.421	-3.714	0.000

<sup>a</sup>Dependent variable: ROE. NWC: Net working capital, CR: Current ratio, QR: Quick ratio, OC: Operating cycle, CCC: Cash conversion cycle, ROE: Return on equity, p<0.01, p<0.05

QR is significant at 5% and has negative relationship with dependent variable, ROE. It implies that when there is increase in QR it will inversely have an impact on financial outcome of the pharmaceutical firm. It is noticed that change in OC will significantly affect the firm's profitability because of OC's coefficient i.e., -0.46, which is negative and highly significant. The CCC that collectively determines management of working capital also has an inverse impact on profitability. Results show that the coefficient of CCC is -1.421 and significant at 1%. It means that change in period of cash conversion significantly affect the firm's profitability i.e., ROE.

In order to evaluate the overall significance of the model, ANOVA test is applied as shown in Table 7.

The results indicate that overall Model is significant that shows the impact of all independent variable on dependent variable, ROE. The value of  $F = 4.274$  and a  $P < 0.01$ .

Summarized outline has been shown in Table 8. In a multiple linear regression model, adjusted  $R^2 = 48.7\%$ .

It implies that model is in position to explain the profitability up to 48.7%. To check the autocorrelation among residuals, Durbin-Watson test is applied. The value of Durbin-Watson is 1.822. This value is  $>1$  and  $<3$ , so there is no autocorrelation among residuals.

In statistical examination researcher utilized correlation and regression models which specified that there is an inverse connection among components of WCM and financial outcome of pharmaceutical firms in Pakistan. On the basis of above findings, the null hypothesis of the study is rejected, as results of correlation and regression analysis revealed that there is a significant and negative relationship between WCM and profitability of pharmaceutical firms in Pakistan. The conclusive results of the regression models are as same as the results of Deloof (2003), Raheman and Nasr (2007), Shin and Soenen (1998), García-Teruel and Martínez-Solano (2007), Padachi (2006) and Mathuva (2009), who got an inverse connection among CCC and profitability. Shin and Soenen (1998) emphasized on basic phenomena that negative association of the firm's CCC and profitability is supporting by saying that declining investment in current assets can assist in enhancing profits. This is certain, the liquid assets of the business

is not kept in idle state and therefore used in some profitable opportunities to increase profitability.

## 6. IMPLICATIONS AND LIMITATIONS OF THE STUDY

The rational of current study is to check and determine the connection between WCM and profitability of pharmaceutical firms in Pakistan. During normal course of action positive working capital helps constantly. In fact the significance of WCM cannot be denied at any stage in an organization; in this case pharmaceutical sector's relative officials always keep in mind the day to day operational expenses as well as creditors demand at any time in point.

Following are some limitations noticed in this study:

- The sample data consist of seven companies analyzed over the span of 8 years from 2005 to 2012. 56 numbers of observations were made, which is a small number
- The outcome is only related to Pakistan's circumstances
- Two dependent and five independent variables are engaged to access the relationship between working capital and profitability; future research can be carried out by enhancing the number of variables to obtain more accurate results.

## 7. CONCLUSION

This research study empirically explored the effect of WCM on firm's profitability by utilizing data of seven pharmaceutical firms over the period of 8 years. The null hypothesis of the study is rejected because the findings of the results indicate that all the variables relating to working capital used in this study are significantly and negatively linked with pharmaceutical firm's profitability. The outcomes are in support of Deloof (2003), Eljelly (2004), Shin and Soenen (1998), Lazaridis and Tryfonidis (2006) and Raheman and Nasr (2007), who also explored a strong negative link between the measures of WCM and corporate profitability. It is further concluded that efficient and effective management of working capital can enhance the firm's profitability index. Management of working capital means "managing current assets and current liabilities." If the firms precisely handle their cash, account receivables and inventories, eventually this will boost up profitability.

In this research review, contrary affiliation among profitability (measured through ROI and ROE) and the CCC which (gauge of WCM) is noticed. Findings of present work suggest that managers can enhance the profitability of the firm by keeping the CCC at an optimum level. Hence in routine operations direction of profitability helps managers perform their duties up to the mark.

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**Table 7: ANOVA<sup>a</sup>**

Model	Sum of squares	Df	Mean square	F	Significant
2					
Regression	5.684	5	1.137	4.274	0.000 <sup>b</sup>
Residual	0.266	1	0.266		
Total	5.950	6			

<sup>a</sup>Dependent variable: ROE. ROE: Return on equity, <sup>b</sup> $p < 0.01$

**Table 8: Model Summary (Model 2)**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Standard error	Durbin-Watson
2	0.712 <sup>a</sup>	0.507	0.487	212.56	1.822

<sup>a</sup>Dependent variable: ROE. ROE: Return on equity

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