Pak J Commer Soc Sci
Pakistan Journal of Commerce and Social Sciences
2014, Vol. 8 (1), 134- 148

The Impact of Working Capital Management on Corporate Performance: A Study of Firms in Cement, Chemical and Engineering Sectors of Pakistan

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Abstract

The objective of this study is to investigate the impact of working capital management (WCM) on corporate performance in cement, chemical and engineering sectors of Pakistan. Data is obtained from annual reports of the companies during 2007-2011. Pooled ordinary least squares method is used to estimate the relationship between the measures of working capital management and performance. WCM measures include average age of inventory, average collection period, average payment period, operating cycle, and the cash conversion cycle whereas return on equity is used as a measure of firm performance. Leverage and firm size are taken as control variables. Results indicate that average payment period negatively and significantly whereas cash conversion cycle positively and significantly relate with return on equity. While, average collection period and operating cycle positively and insignificantly whereas average age of inventory negatively and insignificantly relates to the return on equity. In short WCM influences the corporation's performance.

Keywords: average collection period, average age of inventory, average payment period, operating cycle, cash conversion cycle, return on equity.

1. Introduction

Generally we believe that finance covers three main topics that are capital budgeting, capital structure and working capital management. Budgeting and structure of capital are associated with decisions of investments while working capital management deals with the short term management and financing decisions and dealing with the current assets as well as fixed assets. So management and dealing of finance in short time period is known as working capital management (Gitman, 2005).

Efficiency is essential in the short term financial management due to the fact that most part of total assets comprises of fixed assets (Raheman & Nasr, 2007). According to literature, bankruptcy of firms is caused by inappropriate practice of working capital management procedures, despite of positive returns or profitability due to such practice (Samiloglu & Dermigunes, 2008). So it would be risky to just focus on profitability while ignoring working capital management also to focus just on liquidity while ignoring profitability. So what firms have got to do is to achieve a balance between profitability and liquidity.

In firms where management is putting efforts to identify the elements that effect and speedup efficient management of working capital policy in which the ration of current assets is low contrast to total assets or it can choose higher ratio of current liabilities contrast to total liabilities. A higher rate of current assets may effect the firm negatively while low rate results in low liquidity and decrease in stocks which will lead to challenges that the organization will have to face(Belt, 1979). So it has become essential for organizations to study working capital and its management.

Working Capital Management efficiency is very important as it directly affects the profitability and liquidity of firms (Raheman & Nasr, 2007) as it has a major influence on profitability and liquidity of a firm. This fact couldn't be denied that its management is found to be very crucial function among other functions of the organization regardless of nature of business and size of that organization.

To keep liquidity and profitability of an organization, its working capital should be maintained up to sufficient level (Eljelly, 2004), involving the decision of the amount and composition of current assets and the financing of these assets. Higher ratio of current assets reduces the risk of inadequate or non-availability of cash so all the main elements of working capital including cash, marketable securities, receivables and inventory have their own importance in the management of a company which would lead to value creation for the shareholders.

Considering the importance of working capital management the researchers focused on evaluating the working capital management and profitability relationship such as Samiloglu & Dermigunes (2008), Lazaridis & Tryfonidis (2006), Padachi(2006) among others. However, there are a few studies with reference to Pakistan like Afza & Nazir (2007), Ali (2011), Raheman & Nasr (2007) and Ali & Ali (2012).

In this context the objective of this study is to provide empirical evidence about the effect of working capital and its components on profitability of a sample of 38 firms listed on Karachi stock exchange during the period of 2007-2011 for three sectors; cement, chemical and engineering.

The study is structured as follows; the second section deals with brief review of important studies on the working capital management and profitability of firms as well as the objectives of this study, third section describes the sample variables definitions and methodology used in the study; the fourth section deals with analysis and findings of the study and finally fifth section discusses the conclusion of the study.

2. Literature Review

There are many studies in different markets and countries which examined the relationship between working capital and profitability of firms but majority of them

concluded a negative relationship between them. These studies used various variables and methodologies for analysis. Some of these studies related to our study are briefly presented in the following section in order to assess the research gap.

Deloof (2003) examined the correlation of Working Capital Management. The sample consisted of 1009 non-financial Belgian companies from 1992 to 1996. Results showed a significantly negative relationship between Gross Profits and the Average Period of Receivables, the Average Period of Inventories, and Average Period of Payables. Greater the periods of receivables, inventories and payables, lesser will be the Profitability of the firm. It was also suggested that the managers could create value for stockholders if they were to reduce the time periods of receivables and inventories to reasonably minimum levels.

To empirically investigate the relationship between liquidity and profitability, a sample of 29 joint stock companies for five year (1996-2000) was taken by Eljelly (2004) and correlation and regression analysis was used for estimation. The results revealed that a negative significant relationship exists between profitability and liquidity. Also profitability is mostly influenced by current ratio that is an important liquidity measure. However Cash Gap (CCC) is more important than Current Ratio in affecting profitability. Size is also having a little influence on profitability. But in labor intensive sector (services), profitability is less affected by cash gap.

Samiloglu & Dermigunes (2008) in Turkey evaluated the effect of working capital on firm profitability. The purpose of the study was to consider consequences of relationship statistically between firm profitability and the constituents of cash conversion cycle. Sample consisted of Istanbul stock exchange listed manufacturing companies for period 1998 to 2007. Multiple regression model was used for analysis. The results of the study proved that inventory period, accounts receivable period and leverage negatively affect firm's profitability while growth in sales positively affects firm's profitability. Thus as the accounts receivables, inventory and leverage increases, the profitability of the firm decreases but as growth in terms of sales increases, profitability also increases.

The effect of elements of working capital management on profit of corporations was observed by Mathuva (2010) in Kenya comprising of a sample of 30 firms listed on Nairobi stock exchange for the period of 1993 to 2008.. Pooled OLS and fixed effect regression models were used. A notably negative link was found between the time period of converting stock into cash and profitability i -e Greater sales would result in greater profit. In addition to this a positive relation is found between the time of payment of obligations of firm and profitability.

Akinlo (2011) investigated the influence of working capital management on profitability in Nigeria. Dynamic panel data technique was used for this purpose. Data was taken from Nigerian firms as sample for the period of 1999-2007. The study found that growth (sales) and profitability are positively related to each other so firms can earn profit and advantages like monopoly or bargaining power due to growth as it reflects economies of scale. Leverage and profitability are negatively related to each other. Also cash conversion cycle and average collection period are positively related to each other.

To explore the relationship between working capital management and profitability of a firm, Ali (2011) conducted a research on textile sector of Pakistan. Cash conversion efficiency, days' operating cycle and days' working capital were variables used to test the

efficiency of working capital while return on asset, economic value added, return on equity and profit margin on sales were used as proxies for profitability. Sample comprised of 160 textile firms for the period of 6 years (2000-2005). Ordinary least square and fixed effect model was used for estimation. The results showed a significant and negative relationship between return on assets, average days' receivables and average days' payables while positive and significant relation between average age of inventory and return on assets. Also a positive relationship was found between return on asset and cash conversion cycle which shows that stretching cash conversion cycle would be more profitable for textile sector.

Sharma & Kumar (2011) took a sample data of 263 non-financial BSE 500 firms listed on Bombay stock exchange from year 2000-2008 and used OLS multiple regression model as analysis technique. The results show positive and significant relationship of profitability and working capital management. Inventory of number of days and number of days accounts payable are having negative correlation with profitability while number of days accounts receivable and cash conversion cycle are positively related with profitability showing that in Indian companies, stretching of number of days accounts receivables and cash conversion cycle would be profitable.

Vural, Sokmen & Cetenak (2012) developed five models to check the relationship between working capital management and firm's performance. Data was taken from 75 companies selected from Istanbul stock exchange during period 2002-2009. Tobin's q and operating profit are taken as proxies of profitability and firm value. Panel data technique was used for analysis. It was concluded form the results that cash conversion cycle and average collection period are having negative relation with profitability which means that by reducing both of them profitability will increase. But the relationship between other components of working capital and profitability is insignificant.

Abuzayed (2012) conducted a study in Jordan. The purpose of the study was to examine the effect of working capital management on firm's performance. The sample was taken from Amman stock exchange for the period 2000 to 2008. One accounting and one marketing measure was taken with the assumption that the main interest of shareholders is to maximize their own wealth. The study used panel data analysis, fixed and random effects and generalized methods of moments. The results recommended that firms should keep a balance between profitability and liquidity as it has to run the business both efficiently and profitably. Firm's profitability is proved to have a positive relation with the cash conversion cycle. Greater the cash conversion cycle, lesser will be the profitability.

3. Objectives of this study

The purpose of this study is to explore those factors that affect the profitability of non-financial firms listed on KSE in Pakistan. Past studies focused mainly on the developed economies and there is less work done on management of working capital in less developed countries like Pakistan as most of the firms are unfamiliar with the importance of working capital management and thus don't bother to pay much attention on the management of working capital and its consequences. Some work has been done previously on textile sector which is the largest sector of Pakistan while these sectors have not been taken under consideration. So this study considers these three major sectors having number of companies large enough for meaningful, satisfactory, realistic and

defendable results. This study investigates those elements that effect profitability. It considers the effect of cash conversion cycle on profitability as well as the effect of its components i-e AAI, APP, ACP and OC individually on profitability while taking leverage and firm size as control variables.

4. Data and Variables

4.1 Sample and data

Our sample consists of 38 firms from Cement, Chemical and Engineering sectors of Pakistan listed on KSE. The reason for choosing listed firms is the reliability and availability of data that is taken for the period of five years (2007-2011). Those firms who are having signs of balance sheet and income statement components opposite to our expectations have been ignored i-e current assets, fixed assets, current liabilities, long term liabilities and capital. The original sample consisted of 40 companies narrowed to become 38 non-financial firms. A balanced panel dataset of 185 firm year observation was obtained**.**

Table1: Industry-wide distribution of firms

Name of Sector	No. of firms	Percentage (%)
Chemical	15	39.473%
Cement	15	39.473%
Engineering	8	21.050%
Total	38	100%

4.2 Variables

In order to analyze the impact of working capital on the profitability of cement, chemical and engineering sectors and profitability was measured by return on equity (ROE), which is defined as Ratio of profit before taxation to total shareholder equity. ROE was used as an independent variable. The reason for choosing ROE as a measure of profitability instead of ROI (return on investment) is that equity is the sum of capital contributed by shareholders plus retained earnings which is a net total of profits and losses while ROI just considers profits and losses and investments i.e earnings are not retained in it. Average collection period (ACP), average age of inventory (AAI) and average payment period (APP) were used as the independent or explanatory variables and were considered for measuring working capital as they are components of cash conversion cycle. The reason for selecting ACP, AAI and APP as independent variables is that this research will examine the effect of these components independently and collectively as OC and CCC on profitability. In this respect, ACP is calculated as trade debts/ (sales/360). It measures the average number of days that accounts receivables are outstanding. The number of days between sending invoices to customers and collecting payments is calculated in ACP. The higher the value, the more will be the investment in accounts receivables. Average age of inventory (AAI) calculates how quickly the inventory is converted into sales. It's an excellent measure of the efficiency of the company in managing the inventory. The important decision regarding inventory is that how much amount of cash

should be tied up in inventory while meeting the other operations and functions of the business and demands of customers. It is calculated as 360/ (CGS/average inventory). Average payment period (APP) is the average time period for which the payables are outstanding. Also we can say that it is the approximate amount of time that a business takes to pay payments to its customers and clients. The longer the period the more advantageous for the firm so that funds can be put to other uses. It can be calculated as Trade debts/ (purchases/360). By adding average age of inventory(AAI) and average collection period(ACP), operating cycle (OC) is calculated which shows the average time period between buying inventory and receiving cash proceeds from sales. It is expected to have a negative relationship with profitability i-e shorter the OC, greater will be the profitability. Taking together average collection period, average age of inventory and average payment period, cash conversion cycle is calculated. It states the length of time that a company takes to convert resource inputs into cash flows. It measures the time cash input is tied up in the production and sales process before it is converted through sales into cash. It considers the amount of time to sell the inventory, collect the receivables and to pay bills. It is expected to have a negative relationship with profitability as a lower value of CCC shows less investments in current assets and also signifies higher liquidity, which easily converts its short term investments in current assets to cash while a higher value of CCC signifies greater investment in current assets and therefore shows the greater need of financing of current assets.

Apart from these variables, leverage and size of the firm were taken as control variables. Firm size was measure as taking natural logarithm of assets (SIZE) and leverage is measured by taking ratio of total debt to total assets (LEV).

4.3Methodology

The primary aim of this study is to investigate the impact of working capital on corporate profitability of cement, chemical and engineering sectors. This is achieved by developing a methodology and empirical framework as used by Afza and Nazir (2009), Samiloglu and Dermigunes (2008), Abuzayed (2012). The Following OLS regression equations were used to obtain the estimates:

1. $ROE_{it} = \beta_0 + \beta_1 ACP_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$
2. $ROE_{it} = \beta_0 + \beta_1 AAI_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$
3. $ROE_{it} = \beta_0 + \beta_1 APP_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$
4. $ROE_{it} = \beta_0 + \beta_1 OC_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$
5. $ROE_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$

Where ROE_{it} is the return on equity for the *i*th firm at the time *t*, $ACP_{it}$is the average collection period of *i*th firm at time *t*,AAI_{it} is the average age of inventory of the *i*th firm at time *t*, APP_{it} is the average payment period of the *i*th firm at time *t*,OC_{it} is the operating cycle of the *i*th firm at time *t*, CCC_{it} is the cash conversion cycle of *i*th firm at time *t*, LEV_{it} is the leverage of the *i*th firm at time *t*, $SIZE_{it}$is the size of the *i*th firm at time *t*, β_0 is the intercept, ε_{it} is the random error term for the *i*th firm at time *t*. β_1-β_3 are the coefficients of the concerned variables.

4.4Descriptive Statistics

Table.2 presents the descriptive statistics for all the regression variables computed from financial statements, the average (median) return on equity (measured as profit before taxation/ total shareholder equity) is 0.1628 (0. 1466). Also the average (median) of average collection period calculated as trade debts/ (sales/360) is 18.3714 (10.0948) days. The average (median) of average age of inventory (measured as 360/ inventory turnover) is 64.4548 (48.3341) days and the average (median) of average payment period [measured as trade debts/ (purchases/360)] is 208.9368(138.2180) days. The average (median) of cash conversion cycle (measured as [average age of inventory + average collection period)-average payment period] is -126.1123 (-31.4368) days and the average (median) of operating cycle (measured as average age of inventory + average collection period) is 82.8262(65.1457) days. The average (median) firm size (measured as using logarithm of assets) is 15.4416 (15.7575) and the average (median) leverage (measured as total liabilities/ total assets) is 49.80% (0.5337).

Table 2: Descriptive Statistics

Variables	Observations	Mean	Std. Dev.	Median	Maximum	Minimum
ROE_{it}	185	0.1628	0.2748	0.1466	1.3785	-0.6215
ACP_{it}	185	18.3714	19.1943	10.0948	86.4021	0.0000
AAI_{it}	185	64.4548	56.5030	48.3341	372.0734	0.1159
APP_{it}	185	208.9386	200.1708	138.2180	1000.731	0.1115
OC_{it}	185	82.8262	61.8131	65.1457	372.0734	0.1284
CCC_{it}	185	-126.1123	227.9269	-31.4368	283.0389	-936.8243
$SIZE_{it}$	185	15.4416	1.6521	15.7575	18.3629	9.8135
LEV_{it}	185	0.498	0.1858	0.5337	0.9317	0.0058

We test for possible degree of multi co-linearity among the explanatory variables in table.3 According to the findings of table.5 return on equity is positively correlated with average collection period, firm size and cash conversion cycle while negatively correlated with average age of inventory, average payment period and leverage. Similarly average collection period is having positive correlation with return on equity, average age of inventory, leverage cash conversion cycle and operating cycle and negative correlation with average payment period and firm size. Average age of inventory is having positive correlation with average collection period, cash conversion cycle and operating cycle and has negative correlation with return on equity, average payment period, firm size and leverage. Similarly return on equity, average collection period, average age of inventory, cash conversion cycle and operating cycle are having negative correlation with average payment period while leverage and growth are having positive correlation with average payment period. Firm size (natural logarithm of asset) is having positive correlation with return on equity, average payment period and leverage and negative correlation with

average collection period, average age of inventory, cash conversion cycle and operating cycle. Return on equity, average age of inventory, cash conversion cycle and operating cycle are negatively correlated with leverage while average collection period, average payment period and firm size are positively correlated with leverage. Cash conversion cycle is positively correlated with return on equity, average collection period, average age of inventory and operating cycle while negatively correlated with average payment period, firm size and leverage. Similarly return on equity, average payment period, firm size and leverage are negatively correlated with operating cycle while average collection period, average age of inventory and cash conversion cycle are positively correlated with operating cycle.

Table 3: Correlation matrix

Variables	ROE_{it}	ACP_{it}	AAI_{it}	APP_{it}	$SIZE_{it}$	LEV_{it}	CCC_{it}	OC_{it}
ROE_{it}	1.0000	0.0078	-0.0156	-0.2027	0.0880	-0.1335	0.1747	-0.0119
ACP_{it}	0.0078	1.0000	0.1197	-0.1929	-0.4548	0.1082	0.2833	0.4200
AAI_{it}	-0.0156	0.1197	1.0000	-0.2908	-0.2230	-0.1022	0.5134	0.9512
APP_{it}	-0.2027	-0.1929	-0.2908	1.0000	0.3764	0.2529	-0.9665	-0.3257
$SIZE_{it}$	0.0880	-0.4548	-0.2230	0.3764	1.0000	0.0334	-0.4242	-0.3450
LEV_{it}	-0.1335	0.1082	-0.1022	0.2529	0.0334	1.0000	-0.2383	-0.0598
CCC_{it}	0.1747	0.2833	0.5134	-0.9665	-0.4242	-0.2383	1.000	-0.5572
OC_{it}	-0.0119	0.4200	0.9512	-0.3257	-0.3450	-0.0598	0.5572	1.0000

5. Results and Analysis

Table 4 to Table 8 presents the results obtained after regression equations (1),(2),(3),(4) and (5). Pooled OLS estimation method is used here for analysis of the impact of explanatory variables

Table 4: Effect of average collection period on profitability (ROE)

Variable	Coefficient	Std. Error	*t*-Statistics	Prob.
C	-0.0870	0.2247	-0.3870	0.6992
ACP_{it}	0.0011	0.0011	1.0041	0.3167
$SIZE_{it}$	0.0217	0.0137	1.5860	0.1145
LEV_{it}	-0.2172	0.1092	-1.9879	0.0483
R^2	0.0317			
Adjusted R^2	0.0157	Mean dependent var.		0.1628
S.E regression	0.2727	S.D. dependent var.		0.2748
F-statistics	1.9807	Probability (*F*-statistic)		0.1184

Table 5: Effect of average age of inventory on profitability (ROE)

Variable	Coefficient	Std. Error	*t*-Statistics	Prob.
C	0.0345	0.2081	0.1660	0.8683
AAI_{it}	-4.65E-05	0.0003	-0.1265	0.8995
$SIZE_{it}$	0.01505	0.0125	1.2029	0.2306
LEV_{it}	-0.2033	0.1090	-1.8651	0.0638
R^2	0.0264			
Adjusted R^2	0.0103	Mean dependent var.		0.1628
S.E regression	0.2734	S.D. dependent var.		0.2748
F-statistics	1.6410	Probability (*F*-statistics)		0.1815

Table 6: Effect of average payment period on profitability (ROE)

Variable	Coefficient	Std. Error	*t*-Statistics	Prob.
C	-0.1867	0.2015	-0.9265	0.3554
APP_{it}	-0.0003	0.0001	-3.1791	0.0017
$SIZE_{it}$	0.0309	0.0128	2.4091	0.0170
LEV_{it}	-0.1117	0.1093	-1.0218	0.3082
R^2	0.0778			
Adjusted R^2	0.0626	Mean dependent var.		0.1628
S.E regression	0.2661	S.D. dependent var.		0.2748
F-statistics	5.0959	Probability (*F*-statistic)		0.0020

Table 7:Effect of operating cycle and profitability (ROE)

Variable	Coefficient	Std. Error	*t*-Statistics	Prob.
C	0.0080	0.2197	0.0368	0.9707
OC_{it}	6.02E-05	0.0003	2.1729	0.8629
$SIZE_{it}$	0.0161	0.0130	1.2446	0.2149
LEV_{it}	-0.2010	0.1086	-1.8503	0.0659
R^2	0.0265			
Adjusted R^2	0.0104	Mean dependent var.		0.1628
S.E regression	0.2734	S.D. dependent var.		0.2748

Table 8: Effect of cash conversion cycle on profitability (ROE)

Variable	Coefficient	Std. Error	*t*-Statistics	Prob.
C	-0.2300	0.2106	-1.0924	0.2761
CCC_{it}	0.0002	9.86E-05	2.8850	0.0044
$SIZE_{it}$	0.0317	0.0132	2.4032	0.0173
LEV_{it}	-0.1237	0.1095	-1.1298	0.2600
R^2	0.0691			
Adjusted R^2	0.0537	Mean dependent var.		0.1628
S.E regression	0.2673	S.D. dependent var.		0.2748
F-statistics	4.4852	Probability (*F*-statistic)		0.0046

5.1 Effect of Average Collection Period on Profitability

According to the results indicated in table 4, average collection period (p=0.3167) is not significant but having a positive relationship with profitability (return on equity). This positive relationship indicates that as the average collection period increases, the profitability of the firm also increases which means that greater the average collection period, higher will be the profitability. According to the corporate finance theory, less number of days of accounts receivable will add more profits to the firm but the results of this study contradict with the theory of corporate finance. It is due to the reason that customers of these sectors do not require more time to assess the quality of products they buy from these firms (Akinlo, 2011). Also firms with higher profits have more finance to lend to customers so they charge high margins on credit granted to customers for greater time period. These high margins cause the profitability of the firm to increase, (Sharma & Kumar, 2011), (Abuzayed, 2012).

5.2 Effect of Average Age of Inventory on Profitability

The results shown in table.5 indicate that average age of inventory (p=0.8995) is not significant and is having a negative relationship with profitability (ROE). This shows that decreasing average age of inventory will increase profitability (ROE) while increasing average age of inventory will negatively affect profitability (ROE) which means that firms must have to reduce number of days of inventory to increase profitability. Moreover firms with higher inventory turnover in days earn less profit as compared to firms having lower inventory turnover. This result is consistent with the theory of corporate finance that lower number of days of holding inventory will result in higher profitability of firms. (Alipour, 2011), (Napompech, 2012) (Vural, Sokmen & Cetenak, 2012), (Sharma & Kumar, 2011), (Deloof, 2003), (Lazaridis & Tryfonidis, 2006), (Raheman & Nasr, 2007), (Samiloglu & Dermigunes, 2008), (Raheman & Afza, 2010), (Bagchi, Chakrabarti & Roy, 2012).

5.3 Effect of Average Payment Period on Profitability

The results of table.6 show a significant but negative relationship of average payment period (p=0.0017) with profitability (ROE). This shows that lengthening the average payment period may negatively impact profitability (ROE) while by shortening average payment period, the profitability (ROE) will increase. This result also contradicts with the theory of corporate finance which states that greater the payment period of a firm, greater will be its profitability. the reason behind this negative relationship would be that less profitable firms take longer time to pay their bills to creditors. Due to low profits, firms do not have more cash available to them so they delay their payables. Deloof (2003) also proved the same result that less profitable firms stretch their payables. According to Ali (2011) firms stretch their payments to creditors and accrue inventories when they are making less profit. Thus we can say that firms earning more profits pay their bills earlier as compared to less profitable firms (Bagchi, Chakrabarti & Roy, 2012), (Alipour, 2011), (Napompech, 2012) (Vural, Sokmen & Cetenak, 2012), (Sharma & Kumar, 2011), (Deloof, 2003), (Padachi, 2006), (Lazaridis & Tryfonidis, 2006), (Raheman & Nasr, 2007), (Samiloglu & Dermigunes, 2008), (Abuzayed, 2012).

5.4 Effect of Operating Cycle on Profitability

In table.7 the results of pooled OLS estimation suggest that operating cycle (p=0.8629) has positively insignificant relationship with profitability (ROE). This result shows that by stretching operating cycle, the profitability will increase while by shortening operating cycle, profitability will be affected negatively. The theory of corporate finance states that short operating cycle is profitable for the firm but the results of this study contradicts with the theory of corporate finance. This positive relation perhaps is due to the positive relationship of average collection period with profitability. Moreover by advancing more cash to customers operating cycle increases, hence increasing the profitability (Sharma & Kumar, 2011). Also resources are blocked at different stages of supply chain which stretches the operating cycle (Akinlo, 2011).

5.5 Effect of Cash Conversion Cycle on Profitability

The combined effect of all the three variables is analyzed by estimating the relationship of profitability and cash conversion cycle in table.8. Results show that cash conversion cycle (p=0.0044) is having a significant and positive relationship with profitability (ROE). The relationship is consistent with the view that increase in cash conversion cycle positively impacts the profitability while a decrease in cash conversion cycle will negatively affect profitability. Also it indicates that firms earning high profits are less motivated to manage their cash conversion cycle. In the process of supply chain, the operating cycle is lengthened due to the reason that the resources got stuck at different level and the cost of blocked capital is less as compared to holding stock and advancing credits (Akinlo, 2011). Also relaxed credit terms resulting in greater level of receivables, longer cash conversion cycle and operating cycle results in increased profits (Sharma & Kumar, 2011). Moreover more profitable firms are less motivated to manage cash conversion cycle (Abuzayed, 2012), (Gill, Biger & Mathur, 2010).

5.6 Effect of Control Variables on Profitability

Leverage and size are control variables used in this study. According to the results leverage is having a negative relationship with profitability while size is having a positive relationship. This shows that decreasing leverage will have a positive impact on profitability and increasing size will positively influence profitability. (Bagchi, Chakrabarti & Roy, 2012) (Alipour, 2011) (Napompech, 2012) (Vural, Sokmen & Cetenak, 2012) (Gill, Biger & Mathur, 2010) (Gill, 2011) (Sharma & Kumar, 2011) (Samiloglu & Dermigunes, 2008) (Mathuva, 2010) (Raheman & Nasr, 2007).

6. Conclusion

This study examines factors of working capital that affect the corporate performance (profitability) of non-financial firms listed on Karachi stock exchange of Pakistan for the period of 2007-2011. Data from financial statements of non-financial firms listed on KSE is used for analysis. Pooled Ordinary least square technique is used to estimate the relationship between profitability (Return on Equity defined as profit before taxation to shareholder equity) and key explanatory variables such as average collection period, average age of inventory, average payment period, operating cycle and cash conversion cycle. However leverage and size are control variables. this study found a positive and insignificant relationship of average collection period and profitability indicating that greater the average collection period, greater will be the profitability while a negative and insignificant relationship is found between profitability and average age of inventory showing that greater the average age of inventory, lower will be the profits of the firm. Also relationship between the average payment period and profitability is negative and significant showing that more profitable firms pay their bills earlier as compared to less profitable firms. Moreover operating cycle is having positively insignificant while cash conversion cycle is having positively significant relationship with profitability. This relationship is consistent with view that firms earning high profits are less motivated to manage their cash conversion cycle. Also in the process of supply chain, the operating cycle is lengthened due to the reason that the resources got stuck at different level and the cost of blocked capital is less as compared to holding stock and advancing credits The results of this study are not consistent with most of the previous studies due to the positive relationship of cash conversion cycle, operating cycle and average collection period and the negative relationship of average payment period with profitability which makes it different form previous studies in the context of Pakistan as well. The study suggests that managers of these firms should spend more time to manage cash conversion cycle of their firms and make strategies of efficient management of working capital. They should also take help from external sources i.e. financial consultants and experts to plan the efficient and optimum management of cash conversion cycle and improve performance and profitability of these firms. Also it is suggested that Also further components of working capital like cash, marketable securities, receivables and inventory management should be explored and their relationship with more proxies of profitability should be studied.

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