European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.5, No.1, 2013

Working Capital Management and Performance of SME Sector

Sajid Gul

Faculty of Business Administration Air University Islamabad

Mardan 23200 KPK Pakistan

Tel: +92-332-8102955 *E-mail: sajidali10@hotmail.com

Muhammad Bilal Khan

Faculty of Administrative Sciences Air University Islamabad

Shafiq Ur Rehman

Lecturer Department of Management Studies University of Malakand

Muhammad Tauseef Khan

MS Scholar Air University Islamabad

Madiha khan

Lecturer Department of Management Studies University of Malakand

Wajid Khan

Lecturer Department of Management Studies University of Malakand

Abstract

The study investigates the influence of working capital management (WCM) on performance of small medium enterprises (SME's) in Pakistan. The duration of the study is seven years from 2006 to 2012. The data used in this study was taken from different sources i.e. SMEDA, Karachi Stock Exchange, tax offices, company itself and Bloom burgee business week. Data of SME's acquired from these sources forms the foundation of our calculation and then interpretation. As the data was gathered for a period of seven years i.e. 2006-2012, the reason for choosing this period was because of the availability of the latest data. The dependent variable of the study is Return on assets which is used as a proxy for profitability. Independent variables were number of days account receivable, number of day's inventory, cash conversion cycle (CCC) and number of days account payable. In addition to these variables some other variables were used which includes firm size, leverage and growth. Panal data technique is used to study the influence of WCM on profitability of SME's. Results suggest that number of day's accounts payable has positive association with profitability whereas average collection period, inventory turnover and CCC have inverse relation with performance. On the other hand the variable size and growth in sales has positive influence on profitability. In contrast debt ratio has negative impact on profitability.

Keywords: Cash Conversion Cycle, Working Capital Management, SME's

1. Introduction

A managerial accounting strategy focusing on maintaining efficient levels of both components of working capital, current assets and current liabilities, in respect to each other is called working capital management. Working capital management ensures a company has sufficient cash flow in order to meet its short-term debt obligations and

operating expenses. In economic and industrial development of an economy the prominence of SME sector cannot be understated, as it play vital role in elevating unemployment. In Pakistan the SME sector provides employment up to 78% of the non-agricultural work force, besides this SME sector play significant role in boosting many of the macro economic variables in Pakistan's gloomy economy. SME sector adds on 30% to the gross domestic product (GDP). This sector also have significance impact on the current account of the balance of payment (BOP) of Pakistan by contributing Rs 140 billion in the shape of exports of various products. The definition of SME varies across countries, in Pakistan firm's having work force up to 250 heads, and their paid up capital range up to PKR 25 million with annual sales of near about PKR 250 million are acknowledged as small and medium size enterprises. So far researchers have rendered narrow attention to this sector while it needs considerable respect looking at its future potentials.

Previous literature of corporate finance has mainly studied long term financial decision related to fixed assets while talking about the firm's profitability. Such studies revolve around the essay of investment, capital structure, or company valuation among other. While current assets are equally significant as compare to fixed assets, so efficient management of such assets enhance the firm's profitability. In corporate financial decision making process working capital management is considered vital devices as it is directly related with firm's profitability. WCM contains preparing and introducing working capital policy and then incorporate the set policy in the routine business operations. WCM consists of four main components: cash, marketable securities, inventories and accounts receivables (Brigham E F and Ehrhardt M C, 2004).

The management of working capital requires consideration for the tradeoff between return and risk. The decisions that enhance return may increases risk at the same time while decision taken with a view to reduce risk may decrease return. Different researchers have different viewpoint about WCM, some have emphasized the importance of effective management of account receivables, while others are proponents of effective and efficient inventory management in formulating sound WCM policy that results in profit maximization. According to (Rehman and Nasr, 2007), WCM directly affects the profitability and liquidity of firms. The main instrument of measuring WCM is CCC that refers to the length of time from the payment for raw materials and labor to the collection of account receivable generated by the sale of the final product (Brigham E F and Ehrhardt M C, 2004). Generally the shorter the CCC, the more profitable the company and vice versa.

As impact of WCM on SMEs profitability has not undergone through any research previously in Pakistan according to our knowledge so due to lack of evidence on SME's profitability and working capital relation, motivate us to evaluate this relationship in detail. In this paper, an attempt has been made to find the link between WCM and profitability by studying SME's of Pakistan from 2006 – 2012. Here our focus areas will be;

(1) Investigating the impact of WCM on profitability of SME's
(2) To examine the debt and profitability relationship
(3) Finding relationship between liquidity and profitability

2. Literature Review

WCM in small and medium size enterprises is of extreme significance as it plays vital role in the profitability of the firm. Different aspects of working capital have been discussed by different researchers in their respective papers.

According to Smith et. al., (1997), WCM has strong impact on the profitability and risk factor of the firms which in turn enhance the value of the firms. Research has confirmed empirically by studying the relationship or association of WCM and profitability that aggressive working capital management policies maximize the profitability ratio. Particularly, the work of (Jose et al., 1996), in this regard provides substantial manifestation regarding the financial advantages of aggressive working capital management from USA companies. According to (Mark Deloof, 2003), plenty of firms invest a huge amount of cash in working capital which shows that it maximizes firm's value. He took a sample of 1009 Belgium firms for the period 1992-1996, and taking no. of days account receivable, inventory, account payable, CCC as independent variables and Gross operating income was used as dependent variable. Applying correlation and coefficient regression tests (Deloof, 2003), manifested convincing negative relationship between gross operating profit and days in payable, days in inventory, and days in receivables. Based on his findings it is suggested that firm's profitability can be maximized if day's payable and day's receivable is shortened.

(Hasan Agan Karaduman et al., 2011), used CCC as a measure of WCM. The finding of this study was that ROA is affected positively if CCC is decreased. (Tryfonidis and Lazaridis, 2006), worked to find out the relationship between corporate profitability and WCM. They took 131 companies data from 2001-2004. They used CCC for the measurement of WCM; their results indicate that there is a significance relationship between the two. An effective management can increase profits by maintaining their CCC efficiently and also keeping different ingredients (receivables, inventory etc.) to a certain level. (Kesseven Padachi, 2006), researched to find out the relationship between WCM and firms profitability. In this research he used return on assets as the dependent variable and the measure of profitability. He took data of 58 companies and concluded that more the investment in inventories and receivables turn out into less profits.

According to (Sathyamoorthi and Wally-Dima, 2008:12), it is possible to say that CCC is the most popular measure of WCM. Cash Conversion cycle (CCC) means the days in numbers in which a firm get or convert back its economic recourses into cash. Taking the case of Malaysian firms (Zariyawati et al., 2009), found significant association between profitability and CCC during the period 1996 to 2006. The past studies also affirm their manifestations. (Afza and Nasr, 2007), studied the impact of working capital on firm performance in Pakistan by selecting 263 KSE listed firms. They found that WC negatively influences performance. (Rehman and Nasr, 2007), found that firm performance and working capital is negatively correlated. They select a sample of 94 KSE listed firms. (Hasan Agan Karaduman et al., 2011), in their research find out the relationship between efficient WCM and the profitability of companies; the data was taken from 2005 to 2009. CCC was used as a measure of WCM. They suggested that ROA is affected positively if CCC is decreased.

(Ikram Ul Haq et al., 2011), studied the relationship between the profitability and WCM. They took a specific industry which is cement industry and a sample of fourteen companies. Their findings were specifically related to the industry showing that the relationship is moderate between the WCM and profitability. (Hong Yuh Ching et al., 2011), tried to find out the relationship between the WCM and corporate profitability, for this they divided the sample companies into two groups working capital intensive and fixed capital intensive. After using different tests and applying ratios like ROA, ROE, inventory days etc. They concluded that regardless the two companies managing working capital are important equally. Managing inventory and cash conversion turned out to be more productive in working capital intensive type of company.

3. Data and Measurement of Variables

The study attempts to investigate the relationship between profitability and working capital of SME's in different sectors during a period of 2006-2012. The data used in this study was taken from different sources i.e. SMEDA, Karachi Stock Exchange, tax offices, company itself and Bloom burgee business week. Data of SME's acquired from these sources forms the foundation of our calculation and interpretation. As the data was gathered for a period of seven years i.e. 2006-2012, the reason for choosing this period was because of the availability of the latest data. The data of SME's financial statements were acquired from different sectors of the economy. The dependent variable of the study is firm's profitability which is measured by taking the ratio of return on assets. However the explanatory variables included in the study are number of days account receivable, number of day's inventory, cash conversion cycle (CCC), number of days account payable, firm size, leverage and growth.

3.1 Variables

The objective of this study was studying an association between WCM and SME's profitability in Pakistan. Selection of the variables is made on the basis of past studies on WCM. Here in our case in order to check the profitability of the SME's the authors have used Return on Asset (ROA) as dependent variable while the explanatory variables includes number of days in account payables, number of days in account receivables, and number of days in inventory. These explanatory variables are calculated as follows;

No. of days account receivable/ACP = 365*[accounts receivable/sales]

No. Of days account payable/avg payment period = 365*[accounts payable/purchases]

No. of days of inventory = 365*[inventories/purchases]

Days account receivable means the average number of days a company takes to collect payments on goods sold. Number of days in inventory is a ratio measuring the average number of days an item is held in the inventory. Discussing the number of days in Inventory a high value will mean that there is weaker demand for the products offered by the firm, high level of competition or inept inventory management etc. On the other side a lower inventory holding period will indicate that the firm investment in inventory might be too low, high demand for the products of the firm or efficient inventory management. Likewise number of days in payables depicts firm's average days that the firm takes to meet its out standings that predict the financial position of the firm, and how much they rely on trade credit. Higher value of days in receivables are desired by finance management of a firm because this helps them to settle commitments with vendors for longer period and the fund can be used in other alternative courses of business. We have also used another concept called CCC which calculates how long will it take for the firm to convert back its initial investment in inventory after sales have been made. That is why it is considered as a measure of liquidity risk encompasses with growth. CCC was estimated from the above three periods jointly and can be calculated as:

$$CCC = DIO + DSO - DPO$$

Where:

DIO represents day's inventory outstanding

DSO represents day's sales outstanding

DPO represents day's payable outstanding

In addition to these variables some other variables were used which includes size of the firm (Natural logarithm of Sales (LOS)), the growth in its sales (Sales1 - Sales0)/Sales0, and leverage (Total Debt by Total Assets). Fixed financial assets although have less importance to SME's, are also considered as control variable in order to see whether it is altering the result or not.

4. Regression Equations

We have used panal data technique following (Pedro Juan García-Teruel, Pedro Martínez-Solano, 2007), to study the impact of WCM on SME's profitability. For the following regression equations we have obtained the estimates.

ROA it =β0+ β1 ACP it + β2 SIZE it + β3 GROWTH it + β4 DR it + e it (1)

ROA it =β0+ β1 INV it + β2 SIZE it + β3 GROWTH it + β4 DR it + e it (2)

ROA it =β0+ β1 APP it + β2 SIZE it + β3 GROWTH it + β4 DR it + e it (3)

ROA it =β0+ β1 CCC it + β2 SIZE it + β3 GROWTH it + β4 DR it + e it (4)

Where:

ROA it = return on assets of firm i at time t,

β = intercept of the model

i = it represent total number of companies i.e. i = 1, 2, 3….N

t = the period of the study i.e. t = 1, 2, 3…T

DR *it* = firm debt ratio at time t

SIZE *it* = size of the company at time t,

ACP *it* = Represent average collection period/ number of days accounts receivable,

APP *it*= average payment period/number of days accounts payable,

CCC *it* = Cash Conversion Cycle of company I at period t,

INV *it* = number of days inventory receivable,

GROWTH *it* = Annual percentage increase in sales,

e *it* = the disturbance term

5. Results and Analysis

5.1. Descriptive Statistics

Table 1 presents the descriptive statics that includes mean, median, standard deviation, minimum and maximum values. The time period of the study consist of seven years from 2006-2012. The sample consists of 55 firms.

Profitability is measured by using return on assets. We have found that profitability has a mean value of 0.10 with a standard deviation of 0.12. The speed of payment or average collection period consist of 35 days with a standard deviation of 45 days, the median value is 22. The minimum value of ACP is 0; whereas the maximum value is 541. The firm pays their purchases in 54 days with a standard deviation of 74 days and median value is 26 days. The minimum time taken by firm is 0 days while maximum value consists of 754 days. The number of days in which a firm convert inventory into sale is 64 days with standard deviation of 81 days. CCC of our sample firms is about 63 days. The mean value for size variable is 19. Growth in sales is 16% whereas debt used to finance assets is 59%.

(Insert Table 1 Here)

5.2 Regression Analysis

Regression results are shown in table 2. As discussed above the objective of this study is identifying key variables relating to WCM that influence performance of SME's in Pakistan. Return on assets was used as the dependent variable in order to check the impact of WCM on firm's profitability. Independent variables were number of days account receivable, number of day's inventory, CCC and number of days account payable. In addition to these variables some other variables were used which includes size of the firm, the growth in its sales, and leverage.

The R-square shows that total 33%, 35%, 32% and 30% variation in the dependent variable is explained by all independent variables in model 1, 2, 3 and 4 respectively. The variable average collection period has negative relationship with profitability indicating that the sooner the firm collects its receivables the greater will be its profitability. Thus performance will improve when firms giving less time to their customers for making payment which is also called restrictive working capital policy. Similar result was also found by (Pedro Juan García-Teruel, Pedro Martínez-Solano, 2007), (Mark Deloof, 2003), and (Raheman et al., 2010). Similarly, inventory turnover, and CCC has also inverse relation with profitability. Performance will improve when firms keep inventory for small number of days, thus the smaller the number of days of inventory the higher will be the firm performance, the result is consistent with the findings of (Pedro Juan García-Teruel, Pedro Martínez-Solano, 2007), and (Raheman et al., 2010). The study also found that performance improves by reducing CCC. Generally the shorter the CCC, the more profitable is the company. Thus we can also say that by maintaining a minimum CCC companies can create value for their shareholders. The result is consistent with the findings of (Pedro Juan García-Teruel, Pedro Martínez-Solano, 2007), and (Hasan Agan Karaduman et al., 2011). The late the firm pays their bills the higher will be their profitability. So the larger the number of days accounts payable the greater will be firm performance. Here the result is similar to the findings of (Mark Deloof, 2003). However (Pedro Juan García-Teruel, Pedro Martínez-Solano, 2007), found negative association between APP and profitability. So firm performance will improves when firms retain a higher level of working capital by delaying payments to suppliers of credit. The relationship between profitability and debt ratio is negative in all four models, suggesting that the higher the use of debt in total assets the lower will be firms profitability. (Raheman et al., 2010), and (Pedro Juan García-Teruel, Pedro Martínez-Solano, 2007), also found similar result. On the other hand the variables size and sales growth has positive association with firm performance.

(Insert Table 2 Here)

6. Conclusion

The study investigates the impact of WCM on performance of SME's in Pakistan. The duration of the study is from 2006-2012. The data used in this study was taken from different sources i.e. SMEDA, Karachi Stock Exchange, tax offices, company itself and Bloom burgee business week. Return on assets was used as the dependent variable in order to check the impact of WCM on firm's profitability. Independent variables were number of days account receivable, number of day's inventory, CCC and number of days account payable. In addition to these variables some other variables were used which includes size of the firm, the growth in sales, and leverage. Panal data technique is used to study the impact of WCM on SME's profitability. Results suggest that number of day's accounts payable has positive association with profitability whereas average collection period, inventory turnover and CCC have inverse relation with performance. On the other hand the variable size and growth in sales has positive influence on profitability. In contrast debt ratio has negative impact on profitability.

References

Abdul Raheman, Talat Afza, Abdul Qayyum and Mahmood Ahmed Bodla (2010). "WCM and Corporate Performance of Manufacturing Sector in Pakistan", International Research Journal of Finance and Economics, 2010, Issue 47,

Afza, T. and M. S. Nazir, (2007). "WCM Policies of Firms: Empirical Evidence from Pakistan". Conference Proceedings of 9th South Asian Management Forum (SAMF) on February 24-25, North South University, Dhaka, Bangladesh.

Brigham, E F and Ehrhardt, M C (2004). "Financial Management: Theory and Practice, 11th Edition", South-Western College Publishers, New York.

Deloof, M (2003). "Does WCM Affect Profitability of Belgian Firms?" Journal of Business, Finance and Accounting, Vol. 30, Nos. 3-4, pp. 573-587.

Filbeck, G and Krueger, T (2005). "Industry Related Differences in WCM", Mid-American Journal of Business, Vol. 20, No. 2, 11-18.

Haq Ikram ul, Muhammad Sohail, Khalid Zaman & Zaheer Ala (2011). "The Relationship between WCM and Profitability: A Case Study of Cement Industry in Pakistan". Mediterranean Journal of Social Sciences, Vol.2, No.2.

Hong Yuh Ching, Ayrton Novazzi, Fábio Gerab (2011). "Relationship between WCM and profitability in Brazilian listed companies", journal of global business and economics, vol. 3, No. 1

Jose, M.L., Lancaster, C. and Stevens, J.L. (1996). "Corporate return and CCC", Journal of Economics and Finance, Vol. 20, 33-46.

Lazaridis, Ionannis and Dimitrios Tryfonidis, (2006). "Relationship between WCM and Profitability of Listed Companies in the Athens Stock Exchange", Journal of Financial Management and Analysis, Vol. 19, No. 1, 26-35.

Padachi, K., (2006). "Trends in WCM and its impact on firms 'performance: An analysis of Mauritian small manufacturing firms", International Review of Business Research Papers, Vo.2 No. 2, p.p. 45 -58.

Raheman, A. and M. Nasr, (2007). "WCM and Profitability – Case of Pakistani Firms", International Review of Business Research Papers, 3 (2), 275 - 296.

Sathyamoorthi, C. R. and L. B. Wally-Dima, (2008). "WCM: The Case of Listed Retail Domestic Companies in Botswana", Journal of Management Research, Vol. 7, Issue 5, 7-24.

Zariyawati, M. A., M. N. Annuar, H. Taufiq and A. S. Abdul Rahim, (2009). "WCM and Corporate Performance: Case of Malaysia", Journal of Modern Accounting and Auditing, Vol. 5, Issue 11, 47-54.

Karaduman Hasan Agan, Halil Emre Akbas, Arzu Ozsozgun Caliskan and Salih Durer (2011). "The Relationship between Working Capital Management and Profitability: Evidence from an Emerging Market". International Research Journal of Finance and Economics, ISSN 1450-2887, Issue 62.

Garcia-Teruel, P.J. and Martinez-Solano, P. (2007). "Effects of Working Capital Management on SME Profitability", International Journal of Managerial Finance. 3(2), 164-177.

Smith, M. Beaumont, E. Begemann, (1997)..Measuring Association between Working Capital and return on Investment. South African Journal of Business Management. 28 (1).

Table: 1 Descriptive statistics

Min	Mean	Max	Std. dev		Median
ACP (days)	35	45	22	0	541
APP (days)	54	74	26	0	754
INV (days)	64	81	54	1.21	952
CCC (days)	63	91	61		-254 852
DR	0.59	0.43	0.42	0.08	2.25
SIZE	19	1.58	18	12	25
GROWTH	0.16	0.25	0.09	-0.85	13.52
ROA	0.10	0.12	0.11	-0.18	1.23

Note: ACP is average collection period/ number of day's accounts receivables, APP stands for average payment period/ number of day's accounts payable, INV stands for number of day's inventory receivable, CCC stands for cash conversion cycle, DR is debt ratio, ROA is return on assets.

Table: 2 Regression results

	1	**2**	**3**	**4**
ACP	-0.0004 (-3.24)***			
INV		-0.00025 (-4.52)***		
APP			0.0005 (2.54)**	
CCC				-0.0006 (-3.21)***
DR	-0.04524 (-3.25)***	-0.05241 (-2.54)**	-0.048521 (-4.25)***	-0.03654 (-3.62)***
GROWTH	0.0198 (2.81)***	0.0185 (2.72)** *	0.0191 (3.24)***	0.0195 (4.75)***
SIZE	0.0145 (5.21) ***	0.0151 (4.31)***	0.0147 (3.24)***	0.0143 (4.11)***
C	-0.0245 (-2.56)**	-0.0321 (-1.23)	-0.0324 (-2.10)**	-0.0422 (-1.52)
R-Square Adj R-Square Fstatistics Prob (F-statistic)	0.3352 0.3210 51.26 (0.0000)	0.3548 0.3421 54.54 (0.0000)	0.3296 0.3120 58.65 (0.0000)	0.3085 0.2956 57.58 (0.0000)

*Note: t-values are in parenthesis *** significant at the 1% level, ** significant at 5% level, * significant at 10% level*