Working Capital Management and Firms Profitability: Evidence from Spinning Sector of Textile Industry of Pakistan

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Abstract
The prime aim of this study was to find out the effect working capital management on profitability of the spinning sector of Textile industry of Pakistan. For this purpose, a sample of 16 Pakistani Spinning companies listed on Karachi Stock Exchange was taken for period of 13 years from 1998-2011. Return on assets (ROA) has been used as a proxy for measuring firm profitability. Working capital management has been measured by current ratio, average collection period, average payment period, cash conversion cycle and inventory turnover in days. Data has been analyzed using Descriptive statistics, Pearson correlation and Regression analyses. The analyses confirm significant negative impact of inventory turnover and payables turnover in days on profitability. The results also reveal significant positive impact of current ratio on return on assets of firms. Based on the results important policies should be adopted regarding working capital in order to enhance the profitability of the firms.
Keywords: Working Capital Management, Profitability, Spinning Industry.

1. Introduction

In the business world, the performance level have usually been based on some of the important managerial functions such as operations, manufacturing, working capital management, and marketing. Working capital management is associated to the management of liquid assets of a particular business. The term working capital can also be referred as trading capital which will not hold in any business in a specific form for more than a particular year. The working capital is used by any firm to meets its short term financial requirements. Working capital management varies from business to business. A business requiring more liquid assets may have more liquid assets than the other form of business which require less liquid assets. The investment in working capital, changes due to business operations. The need to maintain a considerable working capital can usually be justifiable for effective business.

Profitability and liquidity are two very important factors for any business in world. The term liquidity represents the strength of a firm's to mature its obligations quite sufficiently if the firm's entirely have the better liquidity position. A firm cannot survive without significant liquidity position. The term Profitability indicates the return on firm's investment carried out in fixed assets. An unnecessary investment in current assets which relates the liquidity would reduce the profitability or return on investment because the investment in fixed assets leads towards profitability. In order to maintain a good smooth business operation, working capital is one of the key measures for any business and due to this it should be maintained at an adequate level. Excessive liquidity position represents gathering of idle funds which fail's to earn any profit for firm. The inadequate liquidity position not only badly affects the credit worthiness of any firm but also disrupts the process of production and ultimately reduces the earning capacity to an extensive level.

The common predictors of liquidity are working capital, current ratio, quick ratio receivable turnover ratio etc, while the profitability predictor's are net profit margin, return on assets etc. High value of current ratio indicates the larger amount of investment in current assets and low in fixed which shows better liquidity position, the excess investment in the current assets will not leads towards profitability. Low value of current ratio shows a lesser level of investment in current assets which results a high rate of return on investment of fixed assets for any business. Though, a low value of current ratio interrupt production and sales, because of firm's incapability to pay to its liabilities in time due to severe polices. Therefore, it can be said that there is an inverse association between liquidity and profitability up to a certain level, but also up to certain level decline in liquidity may cause profitability to decrease.. Working capital management is associated with the decision of how investment is made in liquid assets. The excess amount of investment in working capital beyond its optimal level leads the

tradeoff between the costs associated to have current assets.

The working capital management is a major aspect to consider, which specifies the strength of any business. Usually the investment in working capital is more as compared to the fixed asset which leads towards profitability, so that's why it is more important that the amount which is invested in working capital is used in more effective and efficient. Another fact is that, most of the firms not effectively manage their working capital, which results in non credit worthiness circumstances for any organization, which is a major hurdle in survival of business. Working capital is very essential for the survival of any organization just as the blood circulation is essential for a human body. If the working capital level is inadequate then the survival and growth is impossible for any business. Generally working capital referred as most important source if not the main source of small business collapse in most of the developed and developing nations. The success of any business is based on how effectively and at the larger extent it generates cash more than its payments. The flow of cash could be a serious problem for any business is usually due to poor financial management and also lack of scheduling cash requirement.

1.1 Spinning Sector of Textile Industry

Textile industry is the major manufacturing and 2nd largest employment provider of Pakistan. Spinning is considered to be a major part of textile industry. It is associated with textile manufacturing process of converting fibers into yarn, then fabrics and finally to finishing process of bleaching to become textile. Then these textiles are used for making clothes and other products.

In this paper we will explore the impact of working capital policy on profitability of the spinning sector of Textile industry of Pakistan. For this purpose 14 listed spinning sector companies are selected and 14 year data is taken for this purpose from 1998 to 2011.

1.2 Significance of the Study

As the Textile industry of Pakistan is considered worthy for its known products in the world. This study will provide new evidence for working capital management on the profitability of a particular spinning sector of Textile industry which will help the particular sector of industry to manage their working capital efficiently and effectively. Also they can make new policies to enhance their profitability by managing working capital efficiently.

2. Literature Review

Deloof, M (2003) while empirically investigating Belgian firms found a significant negative association of collection of receivables in days, accounts payables and inventories with gross operating profit. He suggested to enhance the return of the firms managers have to reduce the collection of receivables and also to reduce their inventories up to a certain level. He also argued that negative association of return with accounts payables is because small firms usually wait longer to pay their liabilities.

(Eljelly, 2004) empirically investigated the association of profit of firms with liquidity. The study is taken out on Saudi Arabian join stock companies using regression and correlation analyses. He concluded negative association of profitability and liquidity as using current ratio and cash conversion cycle.

(Raheman and Nasr, 2007) carried out a study on working capital management and its association with profitability. By using a sample of 94 firms listed on Islamabad Stock Exchange (ISE) of Pakistan they concluded that average collection period, inventory turnover, average accounts payables and CCC are negatively associated with profitability of the firms. On basis of the results they suggested that managers have to reduce the cash conversion cycle of the firm up to a certain level in order to enhance the value of shareholders.

Afza and Nazir (2007) by using Regression and Tobin's q carried out a study on working capital policies and profitability of the firms. Their results reveal negative association of aggressive working capital on the return of the firms. They concluded that firms following aggressive working capital policy reports negative return on assets. They suggested that managers if follow an optimum level regarding investing in working capital may create value for the firms.

Ramachandran and Janakiraman (2009) by investigating paper industry in India empirically found that accounts payable has negative association with EBIT while accounts receivables in days revealed significant positive association with EBIT. They finally concluded that CCC has a significant negative associationship with EBIT.

Gill et al, (2010) empirically concluded that the gross operating profit is negatively associated with the accounts receivables. Their study reveals that slow collection of accounts receivables is correlated with low Profitability of firm. They found statistically significant association between profitability and CCC while they concluded no significant relationship between profitability and accounts payables.

Karaduman et al. (2010) investigated the Effects of WCM on profitability for selected companies in the Istanbul stock exchange with a sample of 140 firms and concluded that there is a significant negative relation

between return on assets and inventories, accounts payable and number of days accounts receivable.

Mathuva D, M. (2010) examined the influence of WCM Components on corporate profitability on Nairobi stock exchange (NSE) with a sample of 30 listed firms and Found a positively significant relationship with the profitability and inventory conversion period, average payment period, while it shows a negatively significant relationship with profitability and average collection period. On the basis of their results they suggested that management of a firm can create value for their shareholders by reducing the number of days account receivable and by increasing inventory into a significant level.

Mohammad and Saad (2010) found a significant relation between firm's performance and working capital management, the performance and working capital components in Malaysia reveals both negative and positive associations. The study also identifies that current asset to total asset ratio (CATAR) shows a positive significant relationship with ROA. Whereas, current liability to total asset ratio (CLTAR), CCC and current assets to current liability ration (CACLR) implies negative significant relation with ROA.

Alipour M. (2011) conducted a study on 1063 listed companies on Tehran stock exchange for the data taken from 2001-2006. By using Regression analyses he found negative and significant relation between number of day accounts receivable and profitability and also negative significant relation between Inventory conversion in days and profitability.

Karadagli E, C (2012) while analyzing Turkish listed firms for working capital management and profitability concluded that any rise in CCC and net trade cycle of the company would lead to the better performance of the company.

Shubita F, M. (2013) empirically investigated Jordan companies listed on Amman stock exchange for working capital management. Her study revealed a negative association between profitability and working capital management. She finally concluded that firms should efficiently manage their working capital in order to enhance profitability.

2.1 Hypothesis
The following hypotheses have been drawn from the literature reviewed above:
H1: There is a negative relationship between profitability and liquidity.
H2: There is negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment.
H3: There is a negative significant relation between number of day accounts receivable, Inventory turnover in days, number of day's accounts payables, cash conversion cycle and profitability.

3. Data and Methodology
3.1 Sample Size
This study comprises of Data taken from the Spinning Sector of Textile industry of Pakistan. There are total twenty four (24) spinning sector companies listed on Pakistan stock exchange. For all 24 companies due to insufficient data this particular study includes sixteen (16) companies for analyses. A Data of thirteen years was collected for all of companies for the time period 1998-2007. Most of the outliars have been removed in order to get desire results.

3.2 Data collection
All the data for this study was collected from the State Bank of Pakistan official website. The data for the missing years was calculated from the Karachi Stock Exchange website and also from websites of different companies that we have selected for this study.

3.3 Variables
Literature reveals many variables that can be used to investigate the profitability and liquidity tradeoff. These variables will be used to test the hypothesis of our study. But it is very difficult to identify the key variables for the particular sector. The lists of variables identified from our study by evaluating literature for the spinning sector are following:
3.3.1 Profitability:
Profitability is measured in terms of returns on assets. It is calculated as

$$ROA = \frac{Sales - Cost\ of\ Goods\ sold}{Total\ assets - Financial\ Assets}$$

3.3.2 Average collection period:
The average collection period refers to the average receivable turnover in days which is calculated as

$$ACP = \frac{Accounts\ Receivables}{Sales} \times 365$$

3.3.3 Inventory Turnover in Days:

It refers to the average inventory sold in number of days. It is calculated as

$$ITD = \frac{Inventory}{Cost\ of\ Goods\ sold} \times 365$$

3.3.4 Average payment period:

It refers to the average accounts payables in a year. It is calculated as

$$APP = \frac{Accounts\ Payables}{Cost\ of\ Goods\ Sold} \times 365$$

3.3.5 Cash conversion cycle:

It can be calculated as

$$CCC = (No.\ of\ Days\ A/R + No.\ of\ Days\ Inventory) – No.\ of\ Days\ A/P$$

3.3.6 Current Ratio:

It refers to the portion of current assets to current liabilities. It can be calculated as

$$CR = \frac{Current\ Assets}{Current\ Liabilities}$$

3.3.7 Debt Ratio:

It refers to the portion of total debt to total assets. It can be calculated as

$$DR = \frac{Total\ Debt}{Total\ Assets}$$

3.3.8 Firm Size:

For Firm size we will use Natural logarithm of Firm's Sales for the particular years of study.

3.4 Econometric model:

$$ROA_{it} = \beta o + \beta_1(ACP_{it}) + \beta2\ (ITID_{it}) + \beta_2(APP_{it}) + \beta_4(CCC_{it}) + \beta_5(CR_{it}) + \beta_6(DR_{it}) + \beta_7(LOS_{it}) + \varepsilon$$

Where

βo : constant

ROA: Return on Asset

ACP : Average Collection Period

ITID : Inventory Turnover in Days'

APP : Average Payment Period

CCC : Cash Conversion Cycle

CR : Current Ratio

DR : Debt Ratio

LOS : Natural logarithm of Sales

ε : The error term..

4. Data Analysis

For empirical investigation Data was analyzed using a trial version of SPSS (Statistical Package for Social Science). Statistical tools like Descriptive statistics and Regression were used.

4.1 Descriptive Statistics

Descriptive statistics is used to analyze the behavior of returns of different series. Table 1 provides descriptive statistics for all variables. All the variables values are based on the balance sheet and are calculated from it. Results show that the average collection period of this particular industry sector is 100 days while the average credit payment period is 75 days. The cash conversion average value is 209 days. The return on asset for these companies shows maximum value of 12.90 % for these industries. The average current ratio is .8456 while maximum is 1.55 in these firms.

Table (1) Descriptive statistics

variables	Mean	Maximum	Minimum	St. dev
ROA	1.196	12.9	-17.5	5.005
LOS	2.887	3.36	2.33	0.239
ITID	83.650	185.96	10.75	46.003
DR	0.745	1.29	0.45	0.180
CCC	209.429	413.95	-244	70.656
CR	0.845	0.15	0.136	29.631
APP	75.220	260.74	12.04	64.760
ACP	100.618	239.1	17.54	63.291

4.2. Correlation Matrix

Table (2) shows results of Pearson correlation coefficient. Analyses confirm significant negative relationship between ROA and ITID which reveals that ITID has negative impact on ROA. The results also found negative and significant relationship between ROA and APP. It implies that firms wait longer to pay their debts and in that case it effect the profitability of the firms. Also the negative association between profitability and debt ratio reveals that maintaining high level of debt decreases the profitability of the firms. The results also found significant positive association between current ratio and profitability of the firms.

Table 2. Correlation results

	ROA	ACP	ITID	APP	CCC	DR	LOS	CR
ROA	1							
ACP	.034	1						
ITID	-.247[**]	.198[*]	1					
APP	-.215[*]	.380[**]	-.204[*]	1				
CCC	.301[**]	.224[*]	.192[*]	-.558[**]	1			
DR	-.313[**]	-.222[*]	.000	.359[**]	-.656[**]	1		
LOS	.180	-.045	-.269[**]	.085	.094	-.052	1	
CR	.442[**]	.429[**]	.025	-.206[*]	.747[**]	-.578[**]	.182	1

**. significant at 0.01 level.

*. significant at 0.05 level.

4.3 Regression Analysis

Regression analysis was carried to find out the effects of working capital on profitability and how much variation has been caused by the independent variable to dependent variable. The results of regression reveals a significant negative impact of inventory conversion in days on the profitability which implies that any changes in inventory turnover in days will adversely affect the profitability of the firm. The results also confirm that average payment period has significant negative impact on returns of the firms which implies that these firms delay their payments which adversely affects their profitability. The regressions analyses revealed significant positive impact of liquidity i.e. current ratio on profitability of the firms which revealed that company should have high level of current assets to liabilities to enhance their profitability. This confirms that the current ratio is a good measure to increase the profitability of the business.

Table (3) Regression analyses

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-6.584	6.156	1.06	-1.070	.287
ACP	.001	.010	.014	.114	.910
ITID	-.001	.001	-.256	-2.723	.008
APP	-.016	.007	-.287	-2.109	.037
CCC	-.018	.012	-.254	-1.483	.141
CR	.094	.026	.522	3.657	.000
DR	-2.023	3.317	-.069	-.610	.543
LOS	1.305	1.899	.061	.687	.493

a. Dependent Variable: ROA

5. Discussion and Policy Implication

This study explores the relation of profitability with working capital management. The empirical results reveal significant negative impact of inventory turnover in days on profitability. This result is consistent with the previous study of Deloof (2003). This means that maintaining high level of inventory turnover will lead to negatively affect the return on assets of the firms. The regression analyses confirm significant negative impact of payables in days on profitability. These results are also consistent with Deloof (2003). These results imply that as firms delay their payments so this would negatively affect the profitability of the firms. The empirical analyses reveal significant positive effect of current ratio on profitability of the firms which implies that the firms should maintain high level of liquid assets to enhance their return on assets.

Based on results the following policies are suggested to be adopted:

1. The spinning sector is a major industry of Pakistan so we recommend that firms should set an optimal level of liquid assets so neither their profitability neither their liquidity would suffer.

2. The firms would have to manage their working capital effectively in order to enhance profitability.

3. Based on results it is suggested that the firms should reduce their payment period in order to increase their return on assets.

4. The firms should also prevent themselves from high inventory turnover in days as it would adversely affect the profitability of the firms.

5. And lastly the firms should maintain a high level of current ratio in order to maintain their profitability.

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