EFFECTIVENESS OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY OF SELECTED PAKISTAN CEMENT INDUSTRY

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Abstract

The main purpose of this study is to find out the effect of working capital management on firms profitability and the nature of relationship between them. The study is limited to the Pakistan Cement Sector. Ten listed companies in KSE were selected randomly to give every company an equal chance of selection. While making analysis Returns on Assets are taken as dependent variable and ICP, RCP and PDP as independent variables. Since returns are also affected by numbers of other factors so other variables are also introduced as control variables, like size of firm (log of sales) and growth in sales to measure the growth of the company. The results reveal that there is both a positive and negative effect of the independent variables on the dependent variable as all the other variables except PDP has a positive impact on the profitability. In addition to this it is also noted that the relation is not quite strong.

Keywords: Management, Working Capital, Profitability, RCP, PDP

INTRODUCTION

Generally new business undertakings miss the mark because of poor financial management. Availability and management of resources are necessary to ensure smooth running of businesses. Therefore ensuring smoothness requires managers to apply the working capital management concept. Smaller life cycle of current assets makes their management crucial for organizational financial success and such management of currents assets is the scope of working capital management. Working capital management means cash management, receivables management, inventory management and the payables management of the firm.

H. Van and JR. Wachowicz in fundamentals financial management wrote "In a typical manufacturing firm, current assets exceed one-half of total assets" showing its significance in the business. Therefore it is required that current assets should be properly managed because better management of working capital will increase the performance of the firm and in contra may have a great negative blow.

Gitman LA. (2005) proposed that keeping large inventory helps in smooth production process, credit sales also adds to the advantage but at the same time heavy amount of receivables can have a negative impact on the cash management. Gitman also emphasized on the importance of one another component of working capital, payables. Payables help the manufacturer to get the raw material when they are unable to pay on the spot. Delaying the payables gives an advantage to the firm but at the same time it affects the trust of the supplier and relations with supplier can be effected.

Soenen, L. A. (1993) used cash conversion cycle as working capital management measurement and is the time period in which the raw material is converted into finished goods and finally into cash. Faster the cash conversion cycle shows high efficiency, because the firm will have more capital to invest in raw material and convert into cash.

LITERATURE REVIEW

Keeping high inventory ensures smooth and hurdle less production, because inventory in hand at any time means that the production process won't stop and there will be minimum loss. It also saves the firm from price fluctuations in the market (Blinder and Manccini, 1991). On the hand higher inventory means that we have locked a great amount of capital, and at the same time inventory has threat of theft, the inventory may become obsolete if kept for longer period of time and warehousing cost is another problem.

Sanchez (1992) conducted a survey of 8,000 firms and concluded that the firm should not take receivables as enforcement of payment rather it should be considered as a part of sale process. This approach will considerably increase the profitability of the firm.

Credit sales help the firm to increase its sales. Trade credit can effectively reduce the price (Petersen and Rajan, 1997), Incentives should be given to customers to acquire merchandise when the demand is low. (Emery, 1987) This also helps the firm to strengthen its relationships with the customers (Ng, Smith and Smith, 1999). However the firms that heavily use credit sales can suffer a lot if the receivables are not properly handled. And another point that has to be kept in mind is that the process of collecting receivables should be effective otherwise it will increase our administrative cost (Byl, 1994).

According to Nike CEO Philip Knight inventory management extremely important because a damaged or defected unit can destroy the brand's image and the profit margins (Fredeen, 2000).

Deloof (2003) carried out an analysis and found that profitability can be increased if the number of days of the receivables is decreased and increasing the payables period and maintaining an optimal level of inventory. Wang (2002) suggested that performance can be increased if cash conversion cycle is reduced

Bardia (2004) came up with the result that liquidity and profitability do have a relationship. Amit Mallik, Debashish Sur and Debdas Rakshit (2005) carried out a study on working capital and profitability on the pharmaceutical industry of India and found no definite relationship between the two variables. Lazaridis and Tryfonidis (2006) through their study came to know that statistically there is no significant relationship between profitability and cash conversion cycle.

Rehman (2006) carried out a research on effects working capital management on profitability. His data consisted of 94 companies listed in ISE and was analyzed for 5 years. He concluded that the return on equity can be increased by bringing the cash conversion cycle to a perfect level.

The most recent study on the above mentioned topic was by Afza and Nazir (2007). They also tested the above mentioned issue. There sample consisted of 263 companies from many industry to see its effect as whole. (Four years data) After analyzing the data statistically their findings were that the relation between the two variables varies from industry to industry. Their overall finding was a negative relationship between working capital policies and profitability.

Abdul Raheman and Mohamed Nasr (2007) and their conclusion showed a negative relationship between the variables under study. His findings were that too quick cash conversion had an opposite effect on the profitability but at the same time size of the firm and growth in sales were positively related to the profitability of the firm.

Objectives of the Study

1. To examine the factors affecting working capital.
2. To study the effectiveness of working capital on profitability.
3. To analyze the relationship or impact of profitability on working capital management.

RESEARCH METHODOLOGY

The present study is based on secondary data collected from annual report of the companies, journal covering a period of 5 years from April, 2010 to March, 2015. The Period in this paper is selected to study the impact of the recession period in the world economy and its recovery afterwards in cement industry in Pakistan to analyze the absolute effectiveness of working capital management in overall profitability of Pakistan cements industry. Half of the listed companies of KSE are selected on randomly.

Hypotheses

To measure effectiveness of working capital on profitability, the following hypothesis is used:

H_0: Working capital management has a positive effect on profitability.

H_1: Working capital management has a negative effect on profitability.

Statistical Tool Used

The variables used in this research are Inventory receivables collection period (RCP) Conversion Period (ICP) Payable Deferred Period (PDP) Return on Asset (ROA). ICP RCP and PDP are independent variables while ROA is dependent variable, while size of the firm and growth of sales are controlled variables.

Estimation of Regression Model

The model use in finding the relationship between the above mentioned dependent and independent variables is as follows.

ROA = f (ICP, RCP, PDP, GOF, SG)

Where,

ROA   stands for Return on Assets

ICP   stands for inventory conversion period

RCP   stands for Receivables collection period.

PDP   stands for Payables deferred period

GOF   stands for growth of firm

SG   stands for sales growth

Regression analyses will be carried out with help of the equation given below. In this equation the variable Y is the dependent variable representing profitability. "α" is the constant which shows that if all the independent variables have zero effect on dependent variable then there will be "α%" change in the dependent variable due to the constant.

"β" denotes the percentage change in the dependent variable due to one unit change in the independent variable. Size of firm is taken as log of sale to make the data much smoother." *Ut*" is the error which is the unknown factors. Sign with each independent variable its positive or negative impact on the dependent variable.

$$Y = α + β1 (ICP) + β2 (RCP) + β3 (PDP) + β4 (Log of Sales) + β5 (Growth in Sales)$$

ANALYSIS AND FINDINGS

This part contains the quantitative analysis of the data collected for this research. The data collected from different resources was subjected to statistical procedures by applying the methodology mentioned in the previous chapter. The quantitative analyses help in finding the authenticity of our estimation. The statistical tests applied on data are: Regression, F- test, T-test, Correlation

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735[a]	.568	.548	.735299

a. Predictors: (Constant), Firm Size, RCP, ICP, Sales Growth, PDP

Table 2: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.275	5	1.055	16.428	.035[a]
	Residual	4.126	18	0.229		
	Total	9.401	23			

a. Predictors: (Constant), Firm Size, RCP, ICP, Sales Growth, PDP

b. Dependent Variable: ROA

Table 3: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	11.111	3.498		15.223	.015
ICP	7.426	1.069	3.221	5.220	.023
RCP	.005	.001	.185	.963	.348
PDP	-8.442E-6	.000	-.645	-1.017	.323
Sales Growth	.001	.009	.016	2.085	.453
Firm Size	1.823	.992	.850	2.968	.045

a. Dependent Variable: ROA

Regression Coefficients

The regression equation obtained after the analyses of the data is as follows:

$Y = α + β_1 (ICP) + β_2 (RCP) + β_3 (PDP) + β_4 (Log of Sales) + β_5 (Growth in Sales)$

$Y = 11.111 + 7.426 ICP + 0.005 RCP – 8.442E-6 PDP + 0.001 SOF + 1.823 GOS$

The coefficients show the nature of relationship and the amount of change brought in the dependent variable by the independent. In the coefficients table the β shows the amount of percentage change and the sign with each variable shows its negative or positive relationship with the dependent variable. The table shows that if all the independent variables are equal to zero there will still be increase in the profitability of 11.111% due to α. This table further shows that there is a positive relation between ICP, RCP, size of firm and growth in sales and profitability as one unit change in these variables increases the profitability by 7.426%, 0.005%, 0.001% and 1.823% respectively. It also shows that PDP negatively affects the profitability as each unit change in PDP decreases profitability by 8.442E-6%.

F- test

F test is a part of ANOVA table which shows the significance of the whole model. The model is considered to be significant if the F calculated value is greater than the F tabulated value (The F tabulated value is 4) i.e. *Fcal>Ftab.* As the ANOVA table shows that Value of F test is 16.428 which is greater than 4 therefore it is concluded that the model as whole is significant. The sig value also approves this fact as its value is less than 0.05 i.e. *Fcal<0.05.*

T-test

The values of T test are mentioned in the "Coefficients" table. This test is used to find the significance of the variables used in the model. A variable is considered to be significant if the value of T calculated is greater than T tabulated (The T tabulated value is 2) i.e. *Tcal>Ttab*. The coefficient table shows that ICP, RCP, Size of firm and Growth in sales are significant variables as their values are greater than 2 while PDP is an insignificant variable because it value is less than 2.

R (Correlation)

R or correlation is the part of model summary table. It shows the relation between the independent and dependent variable. If the value of R is close to 1 it shows better correlation and vice versa. As in this case the value of R is 0.735 it shows that there is a good relationship between the variables.

R^2 (Coefficient of Determination)

R^2 is also known as coefficient of determination. It shows us the goodness of fit. Or in simple words it shows us that how much change in the dependent variable is brought by independent variables as a whole. If the value of R^2 is near to 1 it is considered to be a good fit. As we can see in the model summary table that our value of R^2 is 0.568 which means that it's not a good fit. The value of R^2 tells that 56 percent changes in the profitability are brought by the independent variables discussed in this research.

CONCLUSION AND RECOMMENDATIONS

The data analyses carried out for this research was to test the hypothesis that whether there is a positive or negative relationship between the variables. The results reveal that there is both a positive and negative effect of the independent variables on the dependent variable as all the other variables except PDP has a positive impact on the profitability. In addition to that we also found out that the relation is not quite strong.

Every company spends a lot of time and money to plan for increasing the profitability. Most of the mangers try to increase the profitability by lowering wages and reducing benefits, sales person focus on increasing sales and gross margin. Managers need to divert their attention towards the factors that have more direct impact on the profitability of the firm. The variables used in this research can be considered as better factors. Though the research shows that the relation between the variables is not very but they are still far more appropriate factors as compared to the ones used by the conventional managers.

Inventory Management

As we know that inventory is actually the goods a firm sells and is of great importance. We also know that it makes up almost half of the total assets in a manufacturing firm. That's why it needs to be dealt with care. The measures that can be taken for better inventory management are as follows.

- Cement is a specialized kind of material which spoils very easily, that's why it needs proper care. It should be kept in a place where it is away from the waste material and the moisture which are the main case of damage.

- It is very important to estimate the most appropriate amount of inventory. Inventories are in constant rotation and therefore needs to be managed with care.

- The most important thing regarding the inventory that should be kept in mind is maintain a level of inventory that ensures hurdle less production process and also reduces the cost.

- The international firms dealing in inventory are working on the principal of "just in time delivery". While in Pakistan inventory management is still considered as a clerical function. This approach needs to be changed and the managers need to adopt the modern techniques of inventory management.

Receivable Management

We have come to know form data analysis of the cement sector of Pakistan that almost all of the firm's sales are not credit based therefore they are not facing problems related to receivables, But it still effects sales of the company and profitability also. So we recommend cement sector of Pakistan to starts credit sales with optimal policy because there is great demand of the cement locally within the country due to approval of dams and other projects by government, construction of high rise building that are for commercial and residential purpose and increase in new housing schemes etc. which will increase their sales and automatically increases profitability.

Payable Deferred Period

The deferred period has a significant effect on the Profitability. Longer deferred periods result in higher Profits, shorter deferred period result on lower profit. Cement industry in Pakistan is working on the base of backward integration which means that they do not have to buy raw material from suppliers. So there is no existence of trade credit in order to buy raw material as they are self sufficient in having them, therefore they do not face any problems related to payables and they are capable of paying their debt.

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