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Impacts of Working Capital Management on Profitability: A Case Study on Pakistan Cement Sector



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Abstract: *This study examined ten cement businesses that are listed on the Pakistan Stock Exchange (PSX) to determine the impact that working capital management has on a company's profitability. A systematic selection technique was used to choose every tenth of Pakistan's cement industry for the study. The websites of these cement businesses' annual reports were used to gather primary data. Financial ratios were used in the study and quantitative data analysis was used to determine whether the link between the variables was positive or negative. Since a variety of factors also affect return, we added the control variables of firm size (sales log) and sales growth. According to study findings, the Payable Deferred Period (PDP) has a favourable influence on profitability, the Return on Assets has a negative impact on the inventory collection period, and the Receivable Collection Period and PDP are independent variables, but their relationship is not very strong.*

Key Words: Returns on Assets (ROA), Inventory Collection Period (ICP), Receivable Collection Period (RCP), Payable Deferred Period (PDP), and Pakistan Stock Exchange (PSX).

Introduction

To maintain the proper operation of the firm, it is essential to manage the financial resources effectively. When making decisions on financial management, the business capital structure, working capital management and capital budgeting are the three main considerations. Working capital management is the organization of the firm's current liabilities and assets. Working capital essentially refers to the management of the company's cash, receivables, inventories, and payables. Working capital is important to the business because it accounts for roughly half of the assets in manufacturing companies.

Therefore, it is essential that working capital be handled effectively because improved working capital management will boost the firm's performance otherwise it will have a bad impact on it.

According to Wachowicz (2004), a company has to have an ideal level of working capital in hand to support the smooth operation of its operations. However, having a large quantity of working capital offers both advantages and disadvantages. A smooth production process is aided by maintaining a large inventory, and credit sales are also advantageous (Gitman 2005).

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However, a large volume of receivables might negatively affect cash management.

Gitman (2005) discovered that working capital is essential in receivables because it enables manufacturers to obtain raw materials even when they are unable to make immediate payments. Although delaying payables benefits the company, it also undermines the supplier's confidence and may negatively impact the supplier's relationships. Senen (1993) discovered that a cash conversion cycle can be used to monitor working capital as well. It is the span of time while which raw materials are transformed into finished products, and ultimately into money. As it'll have more money that invests in raw resources and turn them into cash, a faster cash conversion cycle demonstrates efficiency. Working capital management refers to the choices made regarding short-term assets. The basic goal of this is to achieve a balance between assets and liabilities. The individuals responsible for managing working capital must ensure they have sufficient funds to maintain business operations and are in a position to cover any short-term responsibilities.

According to Soenen (1993), we may control the organization's cash flow by using the conversion of the cash cycle as a scale. It's the span of time during which raw materials are transformed into finished products, and ultimately into money. The managers use this component to determine the appropriate level of inventory, receivables, cash and payables. This is because the cash conversion cycle informs us of how long cash will be in reserve and unavailable for other operations.

Return on capital (ROC) can be used to determine profitability. Net sales are divided by total assets to calculate ROC. Return on equity, sometimes known as ROE, is a measurement of an organization's shareholders' profitability. If the return on investment exceeds the cost of the capital spent, the business is considered to be profitable. The outcome of effective capital management is this. We can relate short-term policy to long-term perspectives with the aid of ROC (Investopedia, 2010).

The management uses a variety of techniques to manage the working capital. All of these processes and methods are intended to manage current assets, such as cash and receivables as

well as inventories, or short-term financing problems.

- **Cash management.** It is a process that arranged cash for meeting firms' financial needs.
- **Inventory management.** Management inventory effectively and efficiently to meet forms operational needs.
- **Receivable management.** To manage the firm's receivables effectively and efficiently.

Short-term financing. To manage short-term finances to meet the firm's operational needs.

Background of the Study

Very few scholars have attempted to link working capital with business profitability when it comes to the management of working capital, particularly in the Pakistani cement industry. The majority of businesses declare themselves to be profitable, but in reality, they are now unable to pay their bank loans and dividends to shareholders. Therefore, effective working capital management is required to run a viable firm. The study's purpose was to determine how various types of transactions affect working capital as well as how challenging it is to determine the optimal level of working capital to have on hand. This study will cover that gap and aid us in determining the best working capital management practices.

Objectives

Objectives for this paper are as follows:

- To evaluate; the relationship between working capital management (WCM) and profitability.
- To discover; profitability's impact on working capital management of Pakistan's Cement Sector ten companies.

Scope of Study

Only 10 cement businesses that are listed on the Pakistan Stock Exchange (PSX) were chosen for the study based on a systematic sample methodology because it was restricted to the country of Pakistan's cement industry. The study took just under three months to complete. The websites of these ten companies' time series data from 2016 to 2020 were examined at PSX.

Research Technique

In the current study, the researcher used a quantitative data analysis technique using secondary data obtained from the websites of ten cement businesses listed on the Pakistan Stock Exchange (PSX), including annual reports and earnings records. In order to choose the ten cement businesses of PSX, a systematic sampling technique was adopted. By using a quantitative data analysis technique, the null and alternative hypotheses were examined and verified. Data was gathered, statistically analysed, and weights (probability) were assigned to each component influencing the dependent variable.

Sources of Data

Ten cement businesses were chosen using a systematic selection technique out of the 200 cement companies listed on the PSX, and the data was then analysed to confirm our theory. Data was gathered from the resources listed below.

1. Annual reports of the companies
2. PSX official website
3. SECP official website

Selected Ten Cement Companies

The following are the firms which were part of the sample:

- Kohat Cement Company.
- Lucky Cement Company.
- Pioneer Cement Company.
- Bestway Cement Company.
- Attock Cement Company.
- Gharibwal Cement Company.
- Cherat Cement Company.
- D.G.K. Cement Company.
- Dandot Cement Company.
- Fauji Cement Company.

variables Used

Conversion period (ICP), Inventory receivables collection period (RCP), return on asset (ROA) and payable deferred period (PDP) were the variables that were used in the current study. Sales growth and Size of the firm were controlled variables, whereas: RCP, ICP and PDP were used as independent variables.

Receivable collection period:

$$\text{ReceivableCollectionPeriod} = \frac{\text{Account Receivable}}{\text{SalesPerDay}}$$

Inventory Conversion Period:

$$\text{InventoryConversionPeriod} = \frac{\text{Inventory}}{\text{SalesPerDay}}$$

Payable Deferred Period:

$$\text{PayableDeferredPeriod} = \frac{\text{Accountpayable}}{\text{PurchasesPerDay}}$$

Return on Asset:

$$\text{ReturnOnAsset} = \frac{\text{NetIncome}}{\text{TotalAsset}}$$

Regression Model

The following model and equation are used in this study:

$$\text{ROA} = f(\text{ICP, RCP, PDP, GOF, SG})$$

$$Y = \alpha + \beta_1 (\text{ICP}) + \beta_2 (\text{RCP}) + \beta_3 (\text{PDP}) + \beta_4 (\text{Log of Sales}) + \beta_5 (\text{Growth in Sales})$$

Hypotheses

The hypothesis for this research study is as follows.

Null Hypothesis (Ho): Working capital has NO effect on the profitability of the Pakistan Cement Sector

Alternative Hypothesis (H₁): Working capital management has a positive effect on profitability.

Alternative Hypothesis (H₂): Working capital management has a negative effect on profitability.

Quantitative Data Analysis

Quantitative analysis of the study's data collection Statistics were used to the data which was gathered from various sources. This analysis was useful in determining the accuracy of the estimation. Applied statistical tests are the following:

- F-test.
- T-test.
- Regression.
- Coefficients.
- R or correlation.
- R² or coefficient of determination.

These statistical tests were applied in SPSS software whose results are as follows:

SPSS Results

Table 1

Model Summary

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

Table 2

ANOVA^b

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5.275	5	1.055	16.428	.035 ^a
Residual	4.126	18	0.229		
Total	9.401	23			

Regression

Following is the equation of regression:

$$Y = \alpha + \beta_1 (\text{ICP}) + \beta_2 (\text{RCP}) + \beta_3 (\text{PDP}) + \beta_4 (\text{Log of Sales}) + \beta_5 (\text{Growth in Sales})$$

$$Y = \{11.111 + 7.426 \text{ ICP} + 0.005 \text{ RCP} - 8.442\text{E-}6 \text{ PDP} + 0.001 \text{ SOF} + 1.823 \text{ GOS}\}$$

Co-efficient

The coefficients reflect the type of relationship and the degree of change the independent variable caused in the dependent variable. In the

coefficients table, the sign next to each variable indicates whether it has a positive or negative relationship—or changes—with the dependent variable. The sign also indicates the amount of percentage change. According to the table, there has been an increase in profitability of 11.111%. This table also demonstrates the positive correlation between ICP, RCP, sales growth, firm size, and profitability, with each of these variables increasing profitability by 7.426%, 0.005%, 0.001%, and 1.823%, respectively, for every unit change in the corresponding variable. Additionally, research demonstrates that PDP has a detrimental impact on profitability, reducing it by 8.442E-6%.

Table 3

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Cinstant	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	-		
Sales Growth	.001	.009	.016	2.085	.453
Firm Size	1.823	.992	.850	2.968	.045

F- test

According to the statement, "Value of F test is 16.428 which is greater than 4, therefore, it is concluded that the model as a whole is significant as its value is less than 0.05"

$F_{cal} < 0.05$.

T-test

"Coefficient table shows that PDP is an insignificant variable because its value is less than 2 while ICP, RCP, Size of Firm, and Growth in Sales are significant variables as their values are greater than 2."

R (Correlation)

“In the model summary table, R, or correlation, The fact that R in this instance is 0.735 indicates that the variables are well related.

R² (Coefficient of determination)

“R² is another name for the coefficient of determination. It demonstrates the fit's quality. Or, to put it another way, it demonstrates the impact of independent factors on the dependent variable's change. It is a good fit if the R² value is close to 1. As a model summary table, our R² value is 0.568, which indicates that the model is not well-fitted. The value of R² indicates that the independent factors covered in this study are responsible for 56 per cent of variations in profitability.

Overall Results

In order to determine, even if there is a negative or a positive association among variables, data analysis was performed for this study. The findings show that the independent variables have both a positive and a negative effect on the dependent variable, with PDP being the sole exception.

Conclusion

Every business invests a lot of time and resources into planning how to boost profitability. Most managers want to boost profitability by reducing perks and compensation, while salespeople concentrate on growing revenue and gross margin.

The elements directly impact on firm's profitability that should be the focus of managers' attention. The variables of this particular research can be viewed as more effective factors. Even though the research indicates that there isn't much of a relationship between the variables, they are nonetheless far more appropriate components than those employed by conventional managers. Since inventory is truly the products a company sells, it is crucial. We also know that it accounts for roughly half of a manufacturing company's total assets. Because of this, it must be handled carefully. The following actions can be taken to improve inventory management.

- Cement is a material that is damageable if proper care is not given so companies

should adopt ISO Certification 3001 techniques to avoid losses.

- Proper inventory management techniques should be used to avoid extra purchases or stockpiling of useless inventory.
- Pakistan inventory management should adopt “just-in-time delivery” like International cement firms are doing.

In this conducted research, the collection time of variables average of the working capital management, days of turnover of the average inventory, time of the average payment, and an average cycle of cash conversion were compared to the net profitability. The findings of this particular research study declare and show that there is a negative association between the average collection period and profitability. Here, the profitability increases and the average collection time period is going to decrease. Profitability and the average payment terms are correlated positively, with a 0.127 correlation showing that the time period of the payment goes long and lengthens, and the profitability also going to raise. The researcher found that as the cycle of cash conversion is short, the profitability raises too. The positive value can be produced by the company managers for all the shareholders as evidence that they have maintained the cycle.

The research findings clearly disclose that there is a significant correlation between working capital and the profitability of a corporation. It claims that profitability can be seen when financial managers control liquidity. So, therefore, it is suggested that the business should maintain a good policy of collection. It is also recommended and suggested that the number of days that the payment is being due by the managers should be increased and the managers save investors to a reasonable minimum in order to give benefits to all shareholders.

Generally, it has been agreed that working capital management has an eventful bump over profitability and working capital management and profitability have a relationship between them which is significant. This particular study has looked at the consequence of inventory turnover days, times of payment as well as average collection, and the cycle of cash conversion on profitability.

Additionally, if the working capital management has been managed by the business

effectively, based on the aforementioned research, the results can be even more strengthened. Managing the current assets and current liabilities has referred to the working capital management. If they better handle the cash, accounts receivables, accounts payable as well as inventory, then the profitability will rise.

From a data study of Pakistan's cement business, we discovered that the majority of firms are not credit-based and hence have problems with accounts receivable. However, this also affects the business's sales and profitability. Since there is a high level of cement demand locally as a result of the government's focus on the construction and real estate sectors, among other

things, it is advised that the Pakistani cement industry start credit sales with the best possible strategy and proposed action. This will boost their sales and automatically increase profitability.

The postponed period has a considerable impact on profitability. Longer postponed periods result in higher profits, while shorter postponed times result in lower profits. On the basis of backward integration, suppliers are not required to provide raw materials for Pakistan's cement industry. They don't need trade credit to buy raw materials because they are self-sufficient in them; as a result, they don't have any problems with payables and can pay their debt.

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