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Working Capital Management and Profitability of Listed Cement Companies in India

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Abstract: Theory and research have examined how working capital management affects corporate performance in many circumstances for years. Financial managers required a way to understand working capital in today's fast-paced offices. Business profitability and working capital management have been examined in numerous countries. This report also examines the impact of working capital management on the profitability of Indian corporations from 2006 to 2014. The 20 cement companies listed on India's national security exchange use balanced panel data. Pearson correlations were used to examine the relationship between working capital management and company profitability. To determine how working capital management affects the earnings of such firms, regression analysis was performed using both a fixed-effects model and the traditional least-squares model. The fixed-effects model demonstrates that the average duration of collection and cash exchange has a significant impact on profitability. Stock conversion and average payments improve business profits. The normal lesser square technique boosted profitability except for the cash transaction time. This study suggests management can increase shareholder value by reducing daily account claims. A fair inventory increase can boost shareholder value for the administration. Companies can delay paying creditors unless their relationship is strained. Paying attention to cash transfer time gives companies a long-term benefit, and these measures should boost profits.

Keywords: Working Capital; Empirical Research; Cement Companies; Corporate Performance; Fixed-Effect Model; Stock Conversion; Average Payments; Business Profitability; Regression Analysis.

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1. Introduction

Working capital management is one of the most crucial aspects of a company's financial management. Managers spend a considerable amount of time on everyday issues that require resource allocation decisions. Management of working capital typically involves monitoring current assets and liabilities [9]. This is particularly important for manufacturing companies, as their current assets account for nearly half of their total assets [1]. Effective management of working capital requires the preparation and management of current assets and liabilities, which reduces the risk of failing to satisfy short-term obligations and prevents excessive investment in these assets. The control of working capital management components is critical for the

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financial health of companies across all industries. Implementing collection strategies for a company can be challenging, and lowering accounts receivable may result in a loss of sales and a reduction in profit. Maximising the version payable with extended loans to suppliers also means obtaining lower-quality supplier goods, which could hurt profitability. Stock-outs will result in a loss of revenue. Working capital management should strive for a balanced and optimal allocation of working capital components to achieve the best results. The cash conversion cycle is a general measure used for managing working capital. The cash exchange time occurs between the payment for raw material purchases and the receipt of finished product sales.

The lifeblood of the company is referred to as working capital. Any profitable opportunity is often achieved if a company has sufficient working capital. Working capital may be used to cover employee salaries and other small costs. Each successful business owner maintains the right amount of working capital to deal with unexpected situations. Working capital management is crucial because it represents a company's viability and financial strength and is typically used to generate additional returns for stakeholders. If a company has insufficient working capital, profitable opportunities and a short-term liquidity crisis can be missed [7]. A variety of factors, including size, technology, the volume of operations, the nature of the finished product, the type of raw materials, competition, and credit policies, determine the amount of operating capital. An important aspect of financial management is managing a company's working capital. This includes monetary decisions, combined with the financing of existing assets. Working capital management involves decisions on various forms of cash purchases, inventory holdings, and the administration of accounts receivable and payable [8].

The primary objective of working capital management is to maintain an optimal balance between each component of working capital [10]. The ability of financial managers to handle receivables, inventory, and payables effectively is crucial to a company's success [2]. Companies can reduce their operating costs and allocate funds for expansion papers by limiting the investment in existing assets. Financial managers allocate the most time and effort to restoring current assets and liabilities to their optimal levels [10]. Excess current asset levels can impair a company's profitability, while low current asset levels may result in insufficient cash and inventory, making it difficult to maintain smooth transactions [6]. The traditional working capital concept differs between assets and current liabilities. Because the work capital elements have varying liquidity levels, this description is not valid for company liquidity. Some characteristics have a financial essence, such as high liquidity in cash deposits and marketable securities.

For example, receivables, payable accounts, and stocks are not low-liquidity financial components. Financial and non-financial properties, such as the net balance of liquidity (NLB) and non-financial products, including operating capital requirements and financial dividend items, as described by Gitman [11], can be categorised into working capital elements (WCR). The liquidity of the NLB, however, is different from WCR liquidity. If cash increases, for instance, WCR and NLB can be reduced by reducing the length of the receivables. If a company has high working capital, short-term guarantees may be provided, making this issue redundant. Increasing its lending capacity and lowering the risk of non-payment can ensure successful active capital management. Alternatively, successful working capital management is essential for companies in today's booming economic era, as it encompasses all aspects of current asset and liability management. Working capital management is designed to protect businesses from financial instability and to enhance efficiency and profitability [11].

Enough working capital is essential to the smooth operation of an organisation. Efficiency in this area would enable effective use of fixed assets, promote long-term business viability, and ultimately achieve the objective of maximising shareholder value. Because the due date obligation is not paid, the lack of both leads to a loss and a lack of reputation. Insufficient inventories are the root cause of production issues, forcing the company to purchase raw materials at exorbitant expenses. Similarly, the facility of credit sales is truly important for sales promotions." A lack of working capital has often been cited as a contributing factor to a business's failure. Working capital provides a buffer for difficult days that allows a company to experience a period of depression without too much suffering. In addition, Hussey and Hussey [9] have shown the importance of working capital management in a business's financial management. Many financial managers struggle to understand the key drivers of working capital management that can increase their companies' profitability.

Most researchers found a clear negative relationship of cause and effect between the number of stock days, the number of days received, cash conversion, and corporate profitability, as well as a positive relationship between the number of days payable and corporate profitability [4]. On the other hand, few researchers obtain unique results. The time for conversion of cash, the number of days to be received from the account, and the number of days of inventory all have a positive connection to the company's operating income-to-sales ratio, according to Nobanee [3]. The number of days the fund pays out, on the other hand, has a significant negative impact on its performance. The question arises whether good working capital management in Indian public entities can increase corporate profitability. What are also the most popular criteria for evaluating the efficiency of working capital management? In other words, what factors do companies consider when increasing their investments in working capital? Working capital is a challenge since, without affecting operations, it cannot be reduced to zero. This involves companies optimising their working capital and managing it in a way that does not endanger future sales and profits. For

example, companies that cut payment terms too short can struggle to sell their products. Many customers welcome a longer payment cycle to raise their working capital.

By reducing stock levels, a company can miss a sudden increase in demand and lose sales. By postponing payments, the company may incur high borrowing costs on its loan or forfeit the discount for making prompt payments [4]. The main objectives of the research are as follows: This study aims to investigate how the profitability of companies in the coted manufacturing sector in India is affected by various working capital management components. This study aims to determine the relationship between the liquidity and profitability of listed manufacturing companies in India. The purpose of this study is to examine empirical evidence on the effects of managing working capital on the profitability of top Indian manufacturing firms. The purpose of this paper is to examine various aspects of working capital management in publicly traded Indian manufacturers. To identify which aspects of the working capital of manufacturing companies have the greatest impact on profitability. To make possible suggestions on the management of working capital.

2. Review of Literature

2.1. Theory of Working Capital Management

The central topic of working capital management theory is the relationship between current assets and liabilities. Working capital management is a challenge that involves balancing current assets, liabilities, and their interrelationship. The objective of working capital management is to effectively manage an enterprise's existing assets and liabilities, thereby maintaining a satisfactory level of working capital.

2.2. Impact of Working Capital Policies

The business profit is Rs. 25 lakhs, and the EBIT is Rs. 3 lakhs. It has a fixed property worth Rs. 8 lakhs. The company plans to offer sizes of Rs. 5, Rs. 6, and other options. Rs. Eight lakhs. Eight lakhs. If there is no difference between revenue and fixed assets, the result of these policies of working capital is a hypothetical example that is explained in Table 1:

Table 1: Comparison of working capital policies and return on assets

	Aggressive	**Moderate**	**Conservatory**
Sales	25	25	25
EBTI	3	3	3
Current assets	5	6	8
Fixed assets	8	8	8
Total assets	13	14	16
Return on Assets% (EBTI/Total assets)	23.07	21.42	18.75

Source: *(ICWAI 2012)*

Lower the level of current assets (aggressive), increase returns (23.07 per cent), increase the level of existing assets (conservative), and decrease returns (18.75 per cent).

2.3. Conservative or Aggressive Working Capital Policy

The effective use of short-term finance is a key metric for evaluating a company's working capital management strategy. It is estimated how much a company uses its current liabilities or short-term financing to finance its total assets. Short-term finance is relatively inexpensive, but it is not necessary to make substantial investments and achieve superior operational profitability. Long-term financing, such as long-term bank loans or stock issues, can, however, significantly reduce a company's profitability, especially during a crisis. Consequently, companies tend to rely more on long-term financing to increase profitability. Afza and Nazir [15] examined the relationship between strong policy levels on working capital in the finance sector and profitability in Karachi from 1998 to 2005, using data from 263 public limited companies. The strong support for financial policies favouring high current liabilities over long-term liabilities is negative, as it undermines the aggressiveness of financing policies and the profitability of companies, according to Afza and Nazir [15]. Conservative financing mechanisms, on the other hand, result in a low current liability level if additional funding is obtained from long-term debt or long-term resources. The hostile strategy can be presented with the following formulation:

Financing policy = current liabilities. Total liabilities.

2.4. Management of Working Capital Components

Prepare, schedule, and monitor inventory movement activities within and outside an entity, as defined by inventory management. Supplies, raw materials, work progress, and finished products may be included in the inventory. University of Houston and University of Texas at Austin. The level of stock, including receivables, depends heavily on revenue. Before buying, the inventory must be purchased, while receivables accumulate after the sale. Inventory management is difficult because it requires forecasting sales before target inventory levels are established. In addition, inventory management is as important as it is difficult because an error in determining the inventory levels can easily lead to low sales or high carriage costs. They also indicated that proper inventory management requires close cooperation among distribution, procurement, development, and finance departments.

The financial manager, therefore, needs to organise any necessary funding to promote inventory build-up, as failure to coordinate departments will result in inaccurate sales estimates, leading to a catastrophe. In addition, Van Horne and Wachowicz [6] indicated that the twin inventory management objectives are "to ensure that inventory required to maintain operations is available and to maintain order costs and to bring inventory up to the lowest levels possible." They also noted that the stock is expensive to store, so there is always pressure to minimise it as part of a company's cost-control strategy. Keeping too little inventory has a negative effect because it increases purchasing costs. The company would lose successful profits, resulting in a loss of reputation that could lead to a decrease in future sales. To meet customer requirements, it is also essential to maintain sufficient inventory, reduce product costs, and increase net profit margins. The Inventory Policy has been identified as a key component of working capital.

A significant portion of the company's assets is represented by accounts receivable, accounting for 25.97% of traditional corporate finance. Due to their size, any changes in their levels can impact profitability. An increase in accounts receivable due to additional trade credits leads to higher profits; however, more funds are also needed to cover the increased expenditure on accounts receivable. Credit inquiry and collection costs are increasing, as are the risks of bad debts. The authors have determined that every company sells goods or provides services. Such sales could largely take the form of cash or credit transactions. If a credit sale is made, the accounts receivable of the company increase because the control of the credit receivers depends on the extent to which the company extends credit. Unless the account is collected, the cash flow from sales cannot be spent. The management of accounts receivable is becoming increasingly important, as successful collection significantly impacts profitability and liquidity.

The financial manager has limited influence on the amount of debt account expenditure, but other factors also determine it. The amount of accounts receivable held initially is calculated by the percentage of credit sales to total sales. Consequently, the company's presence helps to establish a suitable balance of credit and cash sales. Sales are primarily on credit for a large grocery store, but for most construction lumber supply companies, sales are mainly in cash. The sum of revenue also determines the amount of expenditure on accounts receivable, which is based on the number of sales receivables in the account. If the company's revenues are steadily and seasonally increasing, the number of accounts receivable will also increase. In particular, the credit and collection policies are closely tied to sales, service quality, and collection efforts. The transaction is specified in terms of when and how the customer charges it. Specifically, is there a discount for early payment, and if so, what is the amount? The type of consumer and credit policies has a significant impact on the amount of money invested in receivables. Our goal in dealing with claims is to maximise income, not to reduce losses.

The term "cash administration" refers to the process of reducing the probability of insolvency. They also stated that companies could not meet their maturing obligations promptly. This significant cash management is why these companies lack the necessary liquidity to pay their current bonds on time. When the costs for raw materials purchased are regularly delayed or absent, cash will halt production, resulting in low output and a narrow profit margin. Working capital is organised to keep the period between material cash investments and the accumulation of cash sales as short as possible. Cash Convention Duration: The collection period for the receivables is the average time required to process the company's loans. The model focuses on the duration of payment and cash inflows for the company. It also concerns the period between the company's actual cash expenditures and its cash revenues.

In general, companies receive credit from other companies and report debts as accounts payable. Small enterprises are the largest single class of short-term debt and rely on commercial credits because companies sell credit that requires a credit policy with credit terms [14]. Since small companies often do not qualify for other sources of finance, trade loans are the largest single category of short-term debt on which they rely heavily. Accounts payable can also be seen as a combination of payable swap accounts and other creditable accounts. Other payable accounts include non-merchandise goods and services, whereas commercial accounts payable represent short-term obligations related to commodity transactions with suppliers.

2.5. Concept of Profitability

Profitability refers to an entity, company, or organisation's ability to generate a profit from its business activities. This illustrates how easily management can leverage all the available resources on the market. According to some researchers, profitability is described as “the ability of a certain investment to generate a return on its use.” The terms “profitability” and “performance” cannot be changed. Profitability is a performance index used as a measure of productivity and a guideline for improved administration. Although profitability is a significant predictor of success, it cannot be used as the sole criterion for determining efficiency. Profitable operations are often associated with inefficiency, and high efficiency can be linked to a lack of profit. The net profit figure is a fair balance between the value acquired and the meaning assigned. The change in operational efficiency is one of the many factors that affect a company's profitability. In addition to efficiency, several other factors also impact profitability.

Profit' and 'profitability' are both interchangeable expressions. There is, however, a distinction between the two in the true sense of the word. Return is a subjective concept; profit is an absolute definition. However, they are intricately connected and interdependent despite their various roles in the industry. Profitability refers to a company's financial performance, whereas profit refers to the total earnings generated over a specific period. It presents an opportunity for the company to increase sales. The company generates a sufficient return on its capital and employees.” Weston and Brigham rightly say that “The advantages of financial management include the efficiency test and control measurement, measurement of shareholder value of their investment, a creditor's safety margin, measurement of government taxability and the basis for legislative action, and a country's economic pro-profit index are index measuring the value of their investments to shareholders, a safety margin f This means that a lack of advantages drives profitability.

2.6. Liquidity vs. Profitability

Either liquidity or profitability will impact any effort to control work capital. Working capital management is a delicate balancing act for a company's financial manager. The financial manager has several routine and non-routine decisions to make, such as maintaining a sufficient cash flow, establishing interest rates, and managing long-term or short-term loan collections. In both of these ways, the financial officer must make prudent decisions to ensure that the company's twin objectives of profitability and solvency are not jeopardised. The tradeoff between liquidity and Profitability. While liquidity is protected, the profitability of a company is damaged if it holds large numbers of current assets. If a company retains its current assets, its liquidity is impaired; however, its profitability remains crucial. The liquidity-illiquidity trade is shown in the Table below.

2.7. Theoretical Base

The management of working capital is crucial to a company's financial health, regardless of its size. Working capital meets the short-term financial requirements of an enterprise. It is a form of trading capital that the company has not held for more than one year. In the normal course of business activities, capital invested in it changed form and substance. It is difficult to overestimate the value of maintaining sufficient working capital. Just as blood circulation is essential to preserve the human body's life, money is needed to keep a business floating. If the company is small, it will be hard to survive and prosper. Small business failure is largely due to a lack of working capital, or, in some cases, a lack of realistic solutions, in both developed and developing countries. Ultimately, a company's success depends on its ability to generate cash receipts rather than make payments. In view of these characteristics, working capital management and, more recently, sound credit management practices are essential for the health and productivity of the small business sector.

According to the report, 60% of companies have problems with cash flow. Most companies need to improve their ROCE by focusing on certain key areas, such as cost management, reducing working capital expenditure, and increasing the productivity of working capital. Based on the information in the above findings used for managing working capital efficiency, there is a negative relationship between profitability and the duration of conversion, inventory days, accounts payable days, and accounts receivable. This leads to a significant degree of organisational profitability, determining the willingness of managers or owners to manage the company's working resources. The negative link between accounts receivable and company profitability means that less lucrative firms will seek to reduce their accounts receivable to minimise cash gaps during the cash transaction period.

Similarly, the negative relationship between the number of days of inventory and corporate profitability suggests that excess capital is locked up at the expense of productive activities, potentially leading to inventory mismanagement if sales suddenly decline. Managers can also generate income for their companies by effectively controlling the cash conversion cycle and holding parts in top form (accounts receivable, accounts payable, and inventory). When the CCC is shortened, cash will be available for other purposes such as investing in machinery and facilities, developing new production and distribution systems, or reducing total investments in existing assets. In consequence, the industry is reintroduced with increased operating profitability. Cash is close to its financial limits, leaving little room for other cash flow assets, as measured by the cash

conversion cycle (CCC). As a result, the market's performance suffers. In this situation, the time for cash conversion (TCC) is said to have a negative link to the company's profitability.

On the other hand, the CCC can positively impact the company's profitability by creating a chain of effects on inventory length and accounts receivable period, while having adverse impacts on the business period. The longer the inventory lasts, the lower the cost of delaying the delivery of goods and services. Meanwhile, the higher the credit sales earned, the longer the accounts receivable. The better the reputation for borrowing opportunities, the shorter the projected time for financing is. Due to the long cash conversion cycle, which covers three effects in one place, we understand a rise in business profitability. The reduction in the time it takes to convert money into cash, however, can damage the company's profitability. This business faces inventory shortages because it reduces inventory conversion, loses credit customers due to a reduction in accounts receivable, and damages its credit reputation by lengthening the payable period of accounts. In these cases, the money conversion cycle has an advantageous relationship with the company's profitability.

2.8. Empirical Evidence

For many years and in various contexts, the effect of working capital management on organisational performance has been the focus of considerable theoretical and empirical research. According to the traditional perspective, the relationship between cash conversion and profitability tends to reduce the profitability of relatively long periods [13]. Lowering expenditure on working capital will increase the company's profitability by reducing the share of current assets in total assets. As the relationship between these two variables is strongly negative, most research in this area shows that companies can improve their profitability by reducing cash conversion time. There have been varying results regarding the connection between the components of the cash conversion cycle and corporate profitability. An example of such research is that of Shin and Soenen [4]. They found a strong negative relationship between the duration of the net trading cycle, which measures the efficiency and profitability of working capital management, and a COMPUSTAT sample of 58,985 US years covering the period from 1975 to 1994. In addition, higher risk-adjusted stock revenues were associated with shorter net trading cycles. One way to increase shareholder value, according to them, is to reduce the net trade cycle for the company based on its results. Deloof [12] examined the role of money in most companies.

As a result, it is reasonable to believe that the management of their working capital by businesses has a direct impact on their profitability. A sample of 1,009 large Belgian non-financial firms, from 1992 to 1996, used correlation and regression testing to establish a significant negative association between gross operating revenues and the number of days of debt accounts, inventory, and accounts payable. He proposed that managers produce value for their shareholders by minimising the number of days of claims and inventory accounts, based on their findings. The negative relationship between payable and profitable accounts supports the presumption that companies paying their debts later tend to be less profitable. The analysis of the working capital relations of listed Athens Stock Exchange companies, conducted between 2001 and 2004, used a survey of 131 publicly traded companies. The results of the regression test indicate a statistically significant relationship between profitability and the duration of cash conversion, as measured by Gross Operating Profit.

These authors conclude that managers can achieve value for shareholders by effectively controlling the cash conversion cycle and maintaining each variable at an optimum level. In the case of Pakistan, Raheman and Nasr [1] studied the impact of six years on the Karachi Stock Exchange of 94 Pakistani companies, examining the average collection period, inventory turnover in days, average payment period, net profitability, and cash conversion cycle. The results of this study showed a strong negative relationship between the aforementioned variables in working capital management and corporate profitability. They have also established a link between profitability and company size, as calculated by the natural logarithm of sales. In a similar survey of 50 Nigerian non-financial companies between 1996 and 2005, Gitman [11] found similar results. Additionally, there was no significant variation in the effects of working capital management between large and small enterprises.

3. Methodology

The target population of the study will be determined in this report. The study aims to evaluate Indian cement companies listed on the NSE. The study focuses on cement companies, however, and analyses their financial statements from 2006 to 2014. The study, therefore, focuses only on the selected sample size. After filtering out companies with financial results for fewer than nine years of research and those with insufficient revenues or operating costs for analysis, 20 firms are selected using a simple random technique as the sample size in this area. Finally, the study contains detailed information from 20 different firms. Table 2 shows the sample size for analysis.

Table 2: Sample size

S. No.	Companies
1	Andhra Cements Ltd.
2	Udaipur Cement Works Ltd.
3	Somani Cement Company Ltd.
4	Tata Chemicals Ltd.
5	Shree Cement Ltd.
6	Sagar Cement Ltd.
7	Panyam Cement & Mineral
8	Mangalam Cement Ltd.
9	Kesoram Cement
10	JK Cement Ltd.
11	JK Lakshmi Cement Ltd.
12	Saurahtra Cement Ltd.
13	Deccan Cement Ltd.
14	Chettinad Cement
15	Century Textile & Ind. Ltd.
16	Ambuja Cement Ltd.
17	Vinay Cements Ltd.
18	Prism Cement Ltd.
19	ACC Ltd.
20	Madras Cements Limited

Source: *NSE 2013*

3.1. Methods of Data Analysis

In this section, the methods and procedures used by the study to classify the sample and to interpret the results are explained. Three critical data studies will be included. Initially, descriptive statistics illustrate the model developed for all businesses. This approach is crucial for providing a comprehensive overview of the sample's characteristics before research commences. Second, a correlation analysis using Pearson's method explains the relationship between the management of working capital and the profitability of enterprises. The study will again analyse the impact of work capital management components on profitability using multivariate models, the Fixed Effects approach, and the pooling of common lowest squares for a Panel Data Set of 20 companies over a five-year analysis period. These models are a form of regression analysis used to explain the problem. This is because the regression analysis needs to establish a cause-and-effect relationship to determine whether managing working capital influences the company's profitability. Readers must explain why certain forms of data analysis can be selected after reading this section to deal with the problem statement and obtain additional information about the methods.

- **Model 1:** $ROA_{it} = \beta_0 + \beta_1 (IVit) + \beta_2 (LNit) + \beta_3 (SGit) + \beta_4 (AG_{it}) + \eta_i + \lambda_i + \varepsilon_{it}$
- **Model 2:** $ROA_{it} = \beta_0 + \beta_1 (AR_{it}) + \beta_2 (LN_{it}) + \beta_3 (SG_{it}) + \beta_4 (AG_{it}) + \eta_i + \lambda_i + \varepsilon_{it}$
- **Model 3:** $ROA_{it} = \beta_0 + \beta_1 (AP_{it}) + \beta_2 (LN_{it}) + \beta_3 (SG_{it}) + \beta_4 (AG_{it}) + \eta_i + \lambda_i + \varepsilon_{it}$
- **Model 4:** $ROA_{it} = \beta_0 + \beta_1 (CCC_{it}) + \beta_2 (LN_{it}) + \beta_3 (SG_{it}) + \beta_4 (AG_{it}) + \eta_i + \lambda_i + \varepsilon_{it}$

Note:

- **ROA_{it}:** Return on Assets of firm i in year t
- **β_0:** intercept of coefficient of firm
- **β_1:** Slope coefficient of independent variables (IV, AR, AP, CCC)
- **IV_{it}:** Inventory period of firm i in year t
- **AR_{it}:** Receivables period of firm i in year t
- **AP_{it}:** Payable period of firm i in year t
- **Split:** cash conversion cycle of firm i in year t
- **β_2:** Slope coefficient of the natural logarithm of sales (LN)
- **LN_{it}:** Natural logarithm of sales of firm i in year t
- **β_3:** Slope coefficient of natural sales growth (SG)
- **SG_{it}:** Growth of sales of firm i in year t
- **β_4:** Slope of the coefficient of current liabilities to total assets, measuring aggressiveness of financing policy (AG)

- **AG_{it}:** Current liabilities to total assets of firm i in year t
- **η_i:** Unobservable heterogeneity, measuring the particular characteristics of each firm
- **λ_i:** Time dummy
- **ε_{it}:** Residual errors of firm i in year t

3.1.1. Correlation Analysis

Correlation analysis was used to determine the strength and direction of the linear relationship between the variables under consideration. This is shown in the correlation matrix in the Table.

Table 3: Pearson correlation matrix of 20 selected cement companies listed on the Nigerian stock exchange (2006–2014): evidence from 180 firm-year observations

VAR.	ROA	ICP	ACP	APP	CCC	GROWTH	DR	CR	SIZE
ROA	1.000								
ICP	-0.097	1.000							
ACP	-0.148	0.370	1.000						
APP	-0.197	0.841	0.535	1.000					
CCC	0.284	0.889	0.451	0.665	1.000				
GROWTH	0.088	0.120	-0.247	0.081	0.004	1.000			
DR	-0.334	0.221	0.281	0.386	0.063	0.175	1.000		
CR	-0.163	-0.022	0.599	0.161	0.040	-0.193	0.219	1.000	
SIZE	-0.301	0.083	0.364	0.363	0.054	-0.125	0.240	0.322	1.000

Source: *(STATA 2013) Significant level at 5%*

Table 3 presents the results of the Pearson correlation analysis for all companies reviewed. The result was a negative link with a correlation coefficient of –0,148 and -0,197 at a 5 percent level between the average collecting period (ACP) and the average payment period (APP). The result clearly demonstrates that it would be detrimental to a customer's performance to delay payments to suppliers. That means the company's profit would be reduced. The correlation study reveals a positive relationship between ROA and CCC, with a coefficient of 0.284 and a statistically significant p-value of 0.05. The expansion of the cash conversion cycle will therefore lead to improved company profitability, and vice versa, in most cases. The results also show a negative correlation between DR and ROA. The correlation coefficient is -0.334, and the p-value is 0.001. At 5%, it reaches a fundamental level. Given the result, the stricter the company's funding strategy, the lower the company's profitability, and vice versa. The results, however, also show a negative link between CR, SIZE, and ROA. This indicates that the larger the company, the greater its profitability, and vice versa.

3.1.2. Regression Analysis

The results achieved by both the Fixed Effect Model (FEM) and the combined Ordinary Least Squares (OLS) in this section will be presented and evaluated for all companies chosen for the analysis. The FEM coefficient regressors (ICP, ACP, APP, CCC) indicate the extent to which the REA changes in response to the independent variables. The variation is due to panel-wide variations of 74.8%. The connection between classes is known as rho. On the other hand, the t-value checks the assumption that every coefficient is 0. The t-value must exceed 1.966 to reject this (for a 95% confidence). If so, it may be assumed that the independent variable substantially influences our dependent variables, as indicated by the greater importance of the t-value. The hypothesis for the p-value test, however, is that every coefficient differs from 0. The p-value must be below 0.055 to reject (at the 95 percent confidence level, and you could choose an alpha of 0.10). If so, we can assume that our independent variable has a considerable impact on our dependent variable. The model is acceptable when the F-value is less than 0.05. We are pleased that the F-value in our output is 0.0000, which is less than 0.05 ($F < 0.05$). Thus, our model is all right. All coefficients vary from 0 here (coef. x 0). This is because the FEM result shows our t-values are less than 1966. (for 95 per cent). We can conclude that our independent factors have a significant impact on the dependent variable (Table 4).

Table 4: Impact of working capital management on the profitability of 20 selected cement companies listed on the Nigerian Stock Exchange (2006–2014): evidence from 180 firm-year observations using a fixed effect model

Variable	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
GROWTH	-0.0461126	8.656472	-0.01	0.996	-17.30247, 17.21025
DR	-2.939898	5.457367	-0.54	0.592	-13.81896, 7.939165

CR	-4.177366	4.285827	-0.97	0.333	-12.72101, 4.366274
SIZE	0.0000443	0.000073	0.61	0.546	-0.0001012, 0.0001898
ICP	0.0977988	0.0638648	1.53	0.130	-0.0295134, 0.225111
ACP	-0.1220438	0.2404138	-0.51	0.613	-0.6013, 0.3572125
APP	0.0058744	0.475448	0.12	0.902	-0.0889044, 0.1006531
CCC	-0.022001	0.0543204	-0.41	0.687	-0.1302869, 0.0862848
Cons	19.35875	8.148484	2.38	0.020	3.115043, 35.60245

Source: *Computed output (STATA 13)*

The results indicate that the average collection period has a significantly negative impact on a company's return on assets (ROA). Companies will have more free cash in their accounts, reducing the time money is tied up with customers. This makes the company very inventive in the production and sale of its products. Here, the company can achieve a higher operating profit due to increased profits and lower costs. However, the non-financial assets of the company would decrease due to a reduction in its average collection period (ACP). This would increase the organisation's operating profit on non-financial assets. The results are consistent with previous significant research [12]; [5]; [8]; [13]; [11]. Due to the growth in business size that is driven by the total asset logarithm, the ROA of these companies is increasing. And the punitive amount of corporate support policies has declined. These results also correspond with most research studies, including Deloof [12], Nobanee [3], Raheman and Nasr [1], Filbeck and Krueger [2], and Lazaridis and Tryfonidis [5]. All these studies have shown that the company has the potential to increase its profitability by expanding its size. In this scenario, the larger the company, the greater the economies of scale, resulting in more benefits for the company than for relatively small firms. Scale economies would enable the company to increase its production scale and reduce costs per unit.

As a result of economies of scale, we aim to increase the quality of production without increasing the overall production costs. Afza and Nazir's [15] analysis revealed that the robust funding strategy was adverse. The study suggested that the firm should not rely too heavily on inexpensive but insignificant short-term funds to invest heavily in higher operating profits. In contrast to longer-term financing policies, such as long-term loans or bonds, which can dramatically enhance the business's profitability, particularly during economic crises, other strategies may also be beneficial. For example, long-term financing can lead to substantial investments in constructing innovative plants or procuring high-tech facilities, significantly improving the company's operational profitability by enhancing its manufacturing process. The size of the company is the only control variable that has shown a significant impact on the company's profitability. More giant companies are profitable than small companies. The same result was found by Nobanee [3]. Nevertheless, the results contradict the conclusions of Ali and Hassan, who established a negative relationship, and Teruel and Solano [14], who found no link between the size and profitability of firms. The period of inventory conversion (PIC) and the average payment period (APP) have a positive impact on the company's profitability. This allows a company to increase profitability by decreasing ICP, which shortens the retention of its inventory and generates more revenues, thereby boosting profits.

However, the increase in the number of days of accounts payable hurts its profitability. The high implied costs for the borrower financing business can explain this finding, as companies often overlook the immediate payment reductions. However, this statement does not make any sense if we consider that the dependent variable (ROA) used does not include financial costs. Deloof [12] supports this result by arguing that less profitable businesses tend to avoid paying bills. A comprehensive survey was conducted using the cash conversion cycle to analyse the number of accounts receivable days, inventory days, and accounts payable days. In comparison with Deloof [12] results for large Belgian companies, we found that reducing cash conversion time leads to increased company profitability. However, the results are in line with the findings of Lazaridis and Tryfonidis [5]. The number of days that such companies take to pay their creditors should be reduced. This could potentially benefit them with cash discounts for timely bill payments. In this analysis, a negative and essential correlation was found between the current ratio (CR) and profitability. This result is consistent with the theoretical predictions and empirical results of Raheman and Nasr [1] and Nobanee [3].

Table 5: Impact of working capital management on the profitability of 20 selected cement companies listed on the Nigerian Stock Exchange (2006–2014): evidence from 180 firm-year observations using a pooled OLS model

Variable	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
ICP	-0.0063537	0.042371	-0.15	0.881	-0.0905985, 0.0778911
ACP	-0.1084506	0.0746714	-1.45	0.150	-0.2569174 , 0.0400162
APP	-0.1180203	0.0411132	-2.87	0.005	-0.1997644, -0.0362762
CCC	0.1904038	0.0545802	3.49	0.001	0.0818837 , 0.2989239
Cons	21.17923	2.138075	9.91	0.000	16.92816, 25.43029

Source: *Computed output (STATA 13)*

Different FEM results are presented in Table 4. Pooled OLS results indicate a significant negative impact on the company's profitability over the average payment period. The repayment of sellers during the trial period will help companies obtain a special discount for prompt payment, or even a higher discount for advance payments. These discounts have a positive impact on the company's performance. The results from FEM in Table 5, along with the pooled OLS, consistently demonstrate that ROA for companies increases significantly with their corporate size and decreases with their financing policies. Additionally, a company's profitability can be enhanced by increasing its total assets. A positive relationship between growth and profitability can be clarified by companies with advantages such as a monopoly or negotiating power, which enables them to achieve scale growth.

The ICP's effect on ROA is negative. This means that a reduction in inventory conversion time will help buffer the company's profitability. This could clarify the negative relationship that its profit will increase in the short term. For those cement companies that accelerate their sales process, their list will start decreasing. As a result, there is an increase in the non-financial benefits of assets. This finding is consistent with the results of Jordanian production companies. The paper also shows that the results of the ACP and APP are strongly negative. As discussed in section 5.3, the rationale for this sign of effect can also be considered. When companies have more free cash to spend in another business field, they benefit from increased opportunities. As we saw in the FEM regression, the same holds for the OLS regression. All of them showed a positive impact on ROA in the cash conversion cycle.

4. Conclusion

In India, the majority of cement companies have substantial investments in working capital. The way working capital is managed can thus have a direct impact on the profitability of such companies. The study revealed a negative correlation between asset returns and both the average company collection period and the duration of cash conversion. However, the study's results show a positive link between the return period of inventory holdings, the payment period, and the accounts. These findings indicate that managers can create value for their shareholders by reducing the number of accounts due and extending the payment period of their accounts and inventories to a fair limit. Based on the main findings of this report, a company's management can generate value for its shareholders by reducing the number of days of receivable accounts. The order can also generate value for its shareholders by maintaining a reasonable level of inventory. Companies may also take time to pay their lenders, provided their relationships with these lenders are not strained. By efficiently leveraging capital, companies can achieve a sustainable competitive advantage by minimising the conversion period. In doing so, the profitability of companies is expected to improve.

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