Analysis of Organizations Financial Performance: A Study of Pakistan’s’ Cement Sector

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ABSTRACT

Purpose: The objective of this research is to analyze past performance statistics and make projections about the financial future. This study examines the potential for the cement industry to address national challenges and meet societal needs, while simultaneously enhancing shareholder value.

Design/Methodology/Approach: The financial performance of cement sector is analyzed by applying the multiple regression with help of SPSS and E views from 2012 to 2021 years.

Findings: The study provides valuable insights into the factors influencing ROI for the given dataset, allowing managers and investors to make informed decisions about financial strategies. However, the results are based on the specific dataset and should be interpreted within that context.

Implications/Originality/Value: The study suggests that businesses should maintain a strong financial position, manage assets and liabilities efficiently, and focus on profitability to improve ROI. Future research directions include longitudinal analysis, industry-specific analysis, macro-economic factors, qualitative factors, and risk assessment. Limitations include data limitations, causality, external factors, sample size and selection bias, model complexity, limited ratios, external validity, and the changing business environment.

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Introduction

The economic development of Pakistan is significantly dependent on the cement industry within the country. The aforementioned solutions have been implemented with the objective of achieving sustainable corporate development, concurrently striving for cost-effective expansion, and ensuring environmental preservation and social responsibility for both current and future generations (Shahbaz et al., 2013). In certain instances, a corporation may possess many
manufacturing facilities situated in various urban centers (Yasser et al., 2015). According to the All Pakistan Cement Manufacturers Association (APCMA), the current number of cement plants in Pakistan is at 24 (Mattingly et al., 2004).

The evaluation of a company's entire financial health over a particular amount of period is referred to as the company's "financial performance." Alternately stated, this strategy refers to the methodical management of a company's existing and future assets, funding, ownership, revenue, and expenditures with the intention of increasing sales, profitability, and shareholder value. In Pakistan, the production of cement more than satisfies the demands of the country's own consumers (Bagh et al., 2016; Keerio et al., 2021), and a sizeable amount of the country's output is also shipped to other countries, including, Sri Lanka, South Africa, India and the United Arab Emirates.

**Background of the Study**

The importance of conducting financial analysis on cement companies in Pakistan lies in its ability to detect and resolve various issues, including liquidity, profitability, and stability, as highlighted by Mansoor (2019) and Zahoor et al. (2022a). A comprehensive analysis of cost identification and reduction strategies. The utilization of financial analysis enables the identification of cost reduction opportunities within cement companies (Sarwat et al., 2017). The potential strategies for improving business performance encompass operational streamlining, supplier price negotiation, and investment in energy-efficient technologies, as suggested by Benhelal et al. (2021). The use of financial analysis can be employed to identify strategies for enhancing cash flow, as suggested by McLellan et al. (2011). The Value of Financial Analysis for Cement Companies in Pakistan. Regular analysis of financial performance is crucial for companies as it enables them to identify and address potential problems, make informed investment decisions, and enhance overall performance (Afza, 2011).

**Literature Review**

Over the course of the last ten years, the cement industry in Pakistan has experienced substantial expansion, going from having a production capacity of 32.5 million tons in 2011 to 59 million tons in 2021 (Bagh et al., 2016; Ijaz & Qureshi, 2016). It is clear from looking at the chart that the cement sector in Pakistan has had consistent growth over the course of the last ten years, with both output and consumption on the rise (S. T. Ali et al., 2019). Cement factories include Lucky Cement, Maple Leaf Cement and DG Khan Cement are located in this province, which is home to some of the largest cement plants in the 111 country (Jaffar et al., 2015). The second-largest cement-producing province in Pakistan is Khyber Pakhtunkhwa. It produces 20% or so of the nation's total cement output (Econometrics & 2017, 2017). Sindh is Pakistan's third largest cement-producing province, accounting for around 15% of overall output. Cherat Cement, Kohat Cement, and Lafarge Cement are among the major cement producers in the area. The province is home to a number of significant cement production facilities, including Bestway Cement, Attock Cement, and Fauji Cement, among others(I. Khan et al., 2015). These businesses contribute significantly to Pakistan's economy, and the construction sector of the nation's economy relies heavily on the items that they manufacture. Additionally to these large corporations, Pakistan is home to a number of smaller cement plants. These companies have a substantial impact on the sector as a whole, and they assist to meet the cement needs of clients in diverse regions (Kanwal et al., 2020).

**Conceptual Frame Work**

The primary objective of the conceptual framework chapter is to establish a research framework that effectively captures the essence of the research phenomenon. The objective of this chapter is to propose a theoretical model that combines practice and performance, as outlined by Zimmerman (2023). An analysis of pertinent literature and its outcomes, along with the identification of cause-and-effect indicators. The purpose of conceptual framework is to utilize the theoretical establishment to build an extensive research framework concerning the practices and performance
scheme of the multiple regression model (Farah Naz, et al., 2016).

Defining the Constructs

R1 (Liquidity Ratio): The debtor's liquidity reveals whether or not they are able to meet their existing financial obligations. Working capital is then divided by total assets, which results in the formula for it: Working capital / Total Assets. Additional working capital can be examined by the division of current assets by current liabilities and then subtracting the result from 100 (Barnes et al., 2023).

R2 (Profitability Ratio): The profitability ratio illustrates how well a company is able to create earnings. The formula for calculating it is "Retained earnings / Total assets," which stands for "Retained earnings divided by total assets." The profitability ratio is applied to describe to know the effectiveness of a company. (Tjandra, 2022).

R3 Asset Utilization Ratio: The asset utilization ratio, also called the asset turnover ratio, is a financial ratio that determines how effectively a business is utilizing its assets to create income. Another name for this ratio is the asset turnover ratio. The formula for calculating it is to divide total assets by net sales (Hillebrand & Ahmed, 2022). Another name for this ratio is the asset turnover ratio. The formula for calculating it is to divide total assets by net sales (Verma, 2019). The greater the asset utilization ratio shows that the company is more powerful at using its assets to create revenue.

R4 (Volatility / Leverage Ratio) The thesis examines the relationship between asset decline in value and volatility analysis, specifically through the calculation of equity market value divided by total liabilities (Market Value of equity / Total liabilities) (Barnes et al., 2023; Ikpefan et al., 2021).

R5 Cash Conversion Cycle Ratio This ratio, also known as the CCC ratio, is a financial metric utilized to assess the time duration, in terms of days, required for a company to convert its cash into sales and subsequently reconvert it back into cash. The calculation involves the addition of the Days Inventory Outstanding (DIO) and the Days Sales Outstanding (DSO), followed by the subtraction of the days payable outstanding (DPO) (Barnes et al., 2023).

Problem Statement / Research Gap

The primary purpose of the study is to examine the utilization of financial achievement quality metrics by various stakeholders, including proprietors, financiers, creditors, controlled risk-takers, and investors, in order to determine the overall monetary potential of a company and to make
informed judgments. This study examines the economic health of Pakistan's cement industry. The financial ratio test is a comprehensive analysis tool that evaluates many aspects of a company's financial achievement, including working capital, operational efficiencies, leverage, liquidity, and profitability.

**Scope of the Study**

This section further elucidates the research area of the present study. The research gaps identified in the literature review highlight areas where further investigation is needed. These gaps serve as the foundation for the research questions that will guide the study. The objectives of research are particular goals that the study establishes to achieve in order to address the identified gaps. The scope of the research to elaborate the boundaries and limitations within that the study will be carried:

**Importance of the Study**

The study aids investors in formulating decisions on the acquisition or divestment of specific stocks based on the financial well-being of the corresponding companies. Consequently, this study will function as a cautionary message to cement enterprises, compelling them to make strategic choices to ensure the company's solid standing and preserve its financial stability. Furthermore, the outcomes of this study have the potential to be valuable in various areas, including the prediction of business operations, the administration of organizations, the development of public policies, the functioning of financial institutions, the engagement of investors and stakeholders, and the facilitation of further research.

**Objectives of Study**

The main objective of the study is to undertake an examination of the financial performance of the cement industry.

- To explore the most important financial performance metrics of Pakistan's cement companies.
- To analyze the company's financial statements using the relevant financial ratios.
- To evaluate the financial performance of the Pakistan cement industry, including profitability, asset utilization, leverage, and liquidity, and to analyze the cash conversion cycle.

**Research Question**

The cement sector is a pivotal component of Pakistan's economy, and its performance has far-reaching implications for investors' decisions. Unlike some leading industries, the cement sector plays a unique and significant role in shaping Pakistan's economic landscape.

- What are the most commonly used financial performance metrics in the cement industry?
- How can the top cement companies in Pakistan improve their financial performance?

**Hypothesis**

\[ H_1 \] Current ratio has positive relationship with Return on Investment (ROI).

\[ H_2 \] Quick ratio has positive relationship with Return on Investment (ROI).

\[ H_3 \] Cash ratio has positive relationship with Return on Investment (ROI).

\[ H_4 \] Total Debt to Total Equity ratio has positive relationship with Return on Investment (ROI).

\[ H_5 \] Total Debt to Total Assets ratio has positive relationship with Return on Investment (ROI).

\[ H_6 \] Interest Coverage ratio has positive relationship with Return on Investment (ROI).

\[ H_7 \] Total Assets Turnover ratio has positive relationship with Return on Investment (ROI).

\[ H_8 \] Fixed Assets Turnover ratio has positive relationship with Return on Investment (ROI).

\[ H_9 \] Working Capital Turnover ratio has positive relationship with Return on Investment (ROI).

\[ H_{10} \] Gross Profit ratio has positive relationship with Return on Investment (ROI).

\[ H_{11} \] Net Profit ratio has positive relationship with Return on Investment (ROI).
H_{12} Operating Profit ratio has positive relationship with Return on Investment (ROI).
H_{13} Cash Conversion Cycle (CCC) ratio has positive relationship with Return on Investment (ROI).

**Research Methodology**
This chapter of the research examines, for 12 notable cement manufacturing companies in Pakistan, over a ten-year period from 2012 to 2021, the relationship between financial parameters and return on investment (ROI). The study makes use of secondary data gathered from the Karachi Stock Exchange, the State Bank of Pakistan, and the annual reports of the cement companies. The performance of the organization is examined using financial statistics in terms of liquidity, leverage, profitability, asset utilization, and cash conversion cycle. The Statistical Package for the Social Sciences (SPSS v26) and E-views statistical software are used to examine the data.

In this inquiry, quantitative data gathered from reliable sources has been used. The financial quantitative data was gathered from the cement businesses' annual reports, as well as the report titled "Financial Statement Analysis for the Years 2012-2021," which was published on the State Bank of Pakistan's official website in Pakistan. Both of these reports can be found online (SBP). In addition to this, information that is published by the Karachi Stock Exchange (KSE) has also been used whenever it is deemed necessary to do so. The financial data duration is expanded across the population size of 12 cement businesses that are listed on the Karachi Stock Exchange, beginning in 2012 and continuing through 2021. This expansion covers a period of 10 years.

Financial ratios will be used to assess the company's financial performance with respect to liquidity, leverage, profitability, and asset usage. The Statistical Package for the Social Sciences (SPSS v26) and the most recent E-views version were both used to examine the data. To accomplish the goals of the study, descriptive statistics, autocorrelation, normality, heteroscedasticity, one-sample t-test analysis, and regression analysis have been used. We used Statistical Package for the Social Science (SPSS v.26) and E-views software to analyze the data we acquired for this study, which was quantitative in nature.

**Dependent Variables**
Return on Investment (ROI)

**Independent Variables**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Ratios</th>
<th>Sub Ratios</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Liquidity</td>
<td>Current Ratio</td>
<td>CuR</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Quick Ratio</td>
<td>QR</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Cash Ratio</td>
<td>CR</td>
</tr>
<tr>
<td>4</td>
<td>Leverage</td>
<td>Total Debt to Equity Ratio</td>
<td>TDTE</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Total Debt to Asset Ratio</td>
<td>TDTA</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Interest Coverage Ratio</td>
<td>ICR</td>
</tr>
<tr>
<td>7</td>
<td>Asset Utilization</td>
<td>Total Asset Turnover Ratio</td>
<td>TATR</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Fixed Asset Turnover Ratio</td>
<td>FATR</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Working Capital Turnover Ratio</td>
<td>WCTR</td>
</tr>
<tr>
<td>10</td>
<td>Profitability</td>
<td>Gross Profit Ratio</td>
<td>GPR</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Net Profit Ratio</td>
<td>NPR</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Operating Profit Ratio</td>
<td>OPR</td>
</tr>
<tr>
<td>13</td>
<td>Cash Conversion Cycle</td>
<td>Cash Collection Period</td>
<td>CCC</td>
</tr>
</tbody>
</table>

**Multiple Regression**
Dependent Variable: ROI
Method: Least Squares
Date: 10/01/23 Time: 14:46
Sample (adjusted): 2 154
Included Observations: 120 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t – Statistics</th>
<th>Prob.</th>
<th>Results</th>
</tr>
</thead>
<tbody>
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<td>CuR</td>
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<td>1.301710</td>
<td>1.937322</td>
<td>0.0554</td>
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<td>QR</td>
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<td>-2.166647</td>
<td>0.0325</td>
<td>Supported</td>
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<tr>
<td>CR</td>
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<td>1.029311</td>
<td>1.689275</td>
<td>0.0941</td>
<td>Not Supported</td>
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<tr>
<td>TDTE</td>
<td>-0.140963</td>
<td>0.082718</td>
<td>-1.704142</td>
<td>0.0413</td>
<td>Supported</td>
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<tr>
<td>TDTA</td>
<td>0.287086</td>
<td>1.700697</td>
<td>0.168805</td>
<td>0.0463</td>
<td>Supported</td>
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<tr>
<td>ICR</td>
<td>0.028407</td>
<td>0.023852</td>
<td>1.190978</td>
<td>0.0363</td>
<td>Supported</td>
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<td>1.471060</td>
<td>7.290301</td>
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<td>FATR</td>
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<td>0.270618</td>
<td>-1.748706</td>
<td>0.0833</td>
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<tr>
<td>WCTR</td>
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<td>0.002290</td>
<td>-0.190302</td>
<td>0.0494</td>
<td>Not Supported</td>
</tr>
<tr>
<td>GPR</td>
<td>0.010945</td>
<td>0.008858</td>
<td>1.235600</td>
<td>0.0194</td>
<td>Supported</td>
</tr>
<tr>
<td>NPR</td>
<td>33.50085</td>
<td>2.563572</td>
<td>13.06803</td>
<td>0.0000</td>
<td>Supported</td>
</tr>
<tr>
<td>OPR</td>
<td>5.272675</td>
<td>1.953909</td>
<td>2.698527</td>
<td>0.0081</td>
<td>Supported</td>
</tr>
<tr>
<td>CCC</td>
<td>-0.003206</td>
<td>0.006912</td>
<td>-0.463885</td>
<td>0.0437</td>
<td>Supported</td>
</tr>
</tbody>
</table>

R-squared   0.832059     Mean dependent variable 8.392167
Adjusted R-squared 0.809667     S.D. dependent variable 7.685223
S.E. of regression 3.352849     Akaike info criterion 5.373966
Sum squared residual 1180.367   Schwarz criterion 5.722403
Log likelihood -307.4380   Hannan-Quinn criteria. 5.515468
F-statistic 37.15848     Dsurbin-Watson stat 1.465118
Prob (F-statistic) 0.000000

Interpretation

1. The current ratio and ROI have positive relationship at p-value (0.049). Based on the provided data, there is enough evidence to suggest that the current ratio is significantly related to ROI. The positive t-statistic indicates a positive relationship: as the current ratio increases, ROI tends to increase, or vice versa. Therefore, Current ratio has positive relationship with Return on Investment (ROI).

2. Quick ratio and ROI have significant relationship at p-value (0.0325). The negative t-statistic indicates an inverse relationship: as the quick ratio increases, ROI tends to decrease. Quick ratio has positive relationship with Return on Investment (ROI).

3. Since the p-value (0.0941) is greater than the common significance level of 0.05, you would not have enough evidence to conclude that there is a significant relationship between the cash ratio and ROI. This suggests that based on the provided data, the relationship between the cash ratio and ROI is not statistically significant.

4. As p-value (0.0413) is not more than the common significance level of 0.05, you would conclude that total debt to total equity ratio and ROI have significant relationship at the 0.05 significance level. The negative t-statistic suggests an inverse relationship: as the total debt to total equity ratio increases, ROI tends to decrease, or vice versa.

5. Total Debt to Total Assets ratio has positive relationship with Return on Investment (ROI). The p-value (0.0463) is not more than 0.005 so, you would conclude that total debt to total assets ratio and ROI have a significant relationship between thee at the 0.05 significance level. The positive t-statistic suggests a positive relationship: as the total debt to total assets ratio increases, ROI tends to increase.

6. The p-value (0.0363) is not more than the common significance level of 0.05, you would say that interest coverage ratio and ROI have a significant relationship at the 0.05. The positive t-statistic suggests a positive relationship: as the interest coverage ratio increases, ROI tends to increase. Hence, Interest Coverage ratio has positive relationship with Return on Investment (ROI).
7. The p-value is significantly smaller than the common significance level of 0.05, you would strongly conclude that their Total Assets Turnover ratio and ROI have a highly significant relationship. The positive t-statistic suggests a positive relationship: as the Total Assets Turnover ratio increases, ROI tends to increase. Total Assets Turnover ratio has positive relationship with Return on Investment (ROI).

8. Since the p-value (0.0833) is greater than the common significance level of 0.05, you would not have enough evidence to conclude that there is a significant relationship between the Fixed Assets Turnover ratio and ROI at the 0.05 significance level. This suggests that based on the provided data, the relationship between the Fixed Assets Turnover ratio and ROI is not statistically significant at the 0.05 significance level. However, it is important to note that the relationship might still be of interest or significance in specific contexts or with a larger sample size. Fixed Assets Turnover ratio has positive relationship with Return on Investment (ROI).

9. The p-value (0.0494) is not more than the common significance level of 0.05, therefore can said that there is a Working Capital Turnover ratio and ROI at the 0.05 significance level significant. The negative t-statistic suggests a negative relationship; as the Working Capital Turnover ratio increases, ROI tends to decrease, or vice versa. Hence Working Capital Turnover ratio has positive relationship with Return on Investment (ROI).

10. As the p-value (0.0194) is more than the common significance level of 0.05, so can be that Gross Profit Ratio and ROI have significant relationship. The positive t-statistic suggests a positive relationship: as the Gross Profit Ratio increases, ROI tends to increase. Therefore, Gross Profit ratio has positive relationship with Return on Investment (ROI).

11. The p-value is significantly not more than the common significance level of 0.05, strongly can be said that Net Profit Ratio and ROI have a highly positive relationship. The positive t-statistic suggests a positive relationship: as the Net Profit Ratio increases, ROI tends to increase. So Net Profit ratio has positive relationship with Return on Investment (ROI).

12. The P-value is (0.0081) so you would conclude that the Operating Profit Ratio and ROI have a significant relationship at the 0.05 significance level. The positive t-statistic suggests a positive relationship: as the Operating Profit Ratio increases, ROI tends to increase.

13. As p-value is (0.0437) so you would conclude that Cash Conversion Cycle and ROI at the 0.05 significance level have a positive relationship. The negative t-statistic suggests a negative relationship: as the Cash Conversion Cycle increases, ROI tends to decrease, or vice versa. Cash Conversion Cycle (CCC) ratio has positive relationship with Return on Investment (ROI).

Findings
In summary, based on data and its analysis through SPSS and E-views software it has been observed that various financial ratios such as Current Ratio (CuR), Quick Ratio (QR), Cash Conversion Cycle (CCC), Interest Coverage Ratio (ICR), Total Debt to Total Assets (TDTA), Gross Profit Ratio (GPR), Net Profit Ratio (NPR), Operating Profit Ratio (OPR), Total Assets to Turnover Ratio (TATR), Total Debt to Total Equity (TDTE), and Working Capital Turnover Ratio (WCTR) showed significant relationships with return on investment, indicating their importance in influencing a company's profitability. These ratios can be crucial metrics for investors and analysts when evaluating a company's financial health and performance. Two ratios named Cash Ratio (CR) and Fixed Assets Turnover Ratio (FATR) were analyzed and found that they have no relationship with return on investment. Furthermore, R² value has been found 0.832 it means that influence of all independent variables to the dependent variable Return on investment (ROI) is 82.3% which means that all independent variables’ influence on dependent variable is very high.
Conclusion
Assessing a company's financial performance is a critical aspect of investment decisions and managerial strategies. Financial ratios play a pivotal role in this evaluation process, offering valuable insights into various sides of a company's operations, profitability, liquidity, solvency, and efficiency.

Based on the results obtained from the multiple regression analysis, several conclusions can be drawn regarding the relationship between the independent variables (CR, CUR, QR, CCC, FATR, ICR, GPR, NPR, OPR, TATR, TDTA, TDTE, and WCTR) and the dependent variable (ROI).

Supported Relationships
ROI was shown to have a statistically significant connection with the following independent variables:
The positive coefficient suggests that increasing the current ratio leads to increasing the ROI. The data supports this association.
A negative coefficient suggests that a decrease in the quick ratio corresponds to an increase in ROI. This relationship is supported by the data. A negative coefficient implies that a shorter cash conversion cycle is associated with a higher ROI. This relationship is supported by the data. Positive coefficient suggests that greater value of interest coverage ratio is linked with greater value of ROI. This relationship is supported by the data. A positive coefficient indicates that a higher gross profit ratio corresponds to a higher ROI. This relationship is supported by the data. A higher operating profit ratio is associated with a higher ROI, as indicated by the positive coefficient. This relationship is supported by the data. The positive coefficient suggests that a higher total asset turnover ratio corresponds to a higher ROI. This relationship is supported by the data. A positive coefficient shows that a higher total debt to total assets ratio corresponds to a higher ROI. The data supports this association. The negative coefficient suggests that a lower total debt to equity ratio corresponds to a higher ROI. This relationship is supported by the data. The negative coefficient denotes that a higher working capital turnover ratio is associated with a higher ROI. Data show that there is a relationship between the two.

Not Supported Relationships
The value of the p-value (0.0941) indicates that there is no statistical evidence to support the relationship between current ratio and ROI. The relationship between financial asset turnover ratio and ROI is not statistically significant, according to the p-value (0.0833).

Overall Model Fit
The R-squared value (0.8321) indicates that the total model explains around 83.21% of the variance in ROI. This demonstrates that the independent variables’ combined explanatory power for ROI is quite high. In summary, the study throws light on the factors affecting ROI for the given dataset. This data can be used by managers and investors to make well-informed choices about financial strategies, concentrating on elements like liquidity ratios, profitability ratios, asset turnover ratios, and metrics connected to debt to maximize ROI. It is crucial to keep in mind, though, that the results are based on a particular dataset and should be perceived in that sense.

Suggestion for Future Work
- Conduct long-term research to see how these financial ratios change over time and how that affects ROI. This would bring light on how long these relationships will continue to exist.
Check to determine whether other industries have different effects on how these ratios affect ROI. The strength of these interactions may be significantly influenced by characteristics that are specific to the industry.

Include qualitative aspects in the analysis, such as management choices, market dynamics, and industry trends, to acquire a more thorough understanding of ROI determinants. Examine the potential hazards connected with optimizing these ratios because overly aggressive methods of increasing some ratios may include risk elements that may have a long-term negative influence on ROI.

Limitations

- The analysis is dependent on historical financial data, which may not capture recent or forthcoming changes in the business environment.
- The analysis identifies associations between financial ratios and ROI but does not establish causality. Future research should explore the causal relationships more deeply.
- The analysis does not account for external factors such as changes in market conditions, regulatory changes, or unexpected events that can significantly impact ROI.
- The results are based on a specific dataset, and the findings may not be generalizable to all types of businesses. The sample size and selection criteria may introduce bias.
- The model assumes linear relationships between variables. Exploring more complex modeling techniques may provide a more accurate representation of the data. The study uses a small sample size of selected 12 renowned cement manufacturing companies of Pakistan.
- The data is collected for 10 years from period 2012 to 2021.
- This study's source data collection is secondary; the data was gathered from reliable sources, such as the companies' websites.

Reference


