

A Study on Profitability of the Infrastructure Companies in India

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Abstract

The profitability of the Indian infrastructure sector is examined in this study. The infrastructure industry plays a significant role in India's economic growth. Recent large government investments in infrastructure development have increased demand for infrastructure services. Infrastructure companies have benefited from these prospects, but competition has increased as well. As a result, it is now harder for the infrastructure industry to turn a profit. This study examines the profitability of Indian infrastructure companies using a panel data analysis methodology. The study's secondary data came from financial reports published on the money control website for the years 2019 through 2023. A sample of infrastructure companies that were listed on the National Stock Exchange will be used in the study.

Keywords: Infrastructure company, profitability, liquidity, financial factors

I. INTRODUCTION

Infrastructure companies play a crucial role in promoting economic growth and societal advancement in the dynamic Indian economy by providing the necessary social and physical infrastructure to support the success of individuals and enterprises. However, despite the importance placed on these infrastructure firms, little is known about their profitability and financial performance. The purpose of this study is to investigate the profitability of Indian infrastructure firms and pinpoint the elements that influence their financial results. A crucial component of evaluating a business's financial performance is profitability. The business needs to finance with the least expensive sources of capital in order to maximize profitability. Additionally,

all ineffective assets should be disposed away. When carrying out routine operations, profitability and liquidity are crucial. For a business to be profitable, it must have sufficient liquidity to cover its immediate obligations and ensure ongoing cash flow. The guarantee that a business will survive in the business world is known as profitability. The capacity of a company to turn a profit is known as profitability. Profit is calculated by comparing revenue to comparable costs. In absolute terms, an organization's profit indicates how well its operations went. Profitability is a typical measure of financial performance. Profitability can be measured in terms of profit stated as a % of sales, or profit margin, but from an accounting standpoint, profit is determined by subtracting from an organization's total revenue all amounts spent to earn that income.

Profitability ratios are calculated using two different approaches: profitability in proportion to investment and profitability in relation to sales. Return on total assets (ROTA), return on equity (ROE), net operating margins (NOM), gross profit margins (GPM), and return on investment (ROI). Therefore, although profitability is an absolute figure, profit is a relative indicator of an organization's operational effectiveness. Understanding the profitability of infrastructure corporations is essential given their crucial role in improving the country's economic performance. By analyzing their financial performance, we may gain additional insight into how well they operate and how the private sector contributes to the growing need for infrastructure investment. This study aims to provide light on the financial dynamics present in India's.

Literature Review

Daniel A. Moses Joshunar (2013) Using financial data from the previous five years, the study was undertaken to determine Tata Motors Ltd.'s financial strengths and weaknesses. Trend analysis and ratio analysis are used to comment on a company's financial situation. It is recommended that the company's borrowing levels be increased in order to improve its financial performance.

Mathur, Shivam, and Aggarwal, Krati (2016) The main objective of this study is to evaluate the company's operational situation utilizing a variety of financial instruments, such as graphs, comparison statements, profitability ratios, and solvency ratios. According to this evaluation, the business has enough resources to pay its obligations and debts.

According to Vishnani and Shah's (2007) research, there isn't much of a correlation between liquidity and profitability in the Indian consumer electronics industry overall, but there was a significant positive correlation for a number of particular companies.

Victor Chukwunweike (2014) The study aims to determine the following: Objectives of the study: return on assets (ROA), a profitability ratio and the relationship between current ratio and profitability. The relationship between profitability, measured by return on assets (ROA), and the critical test ratio. The relationship between profitability, measured by return on assets (ROA), and return on capital employed. The overall results of this study show that: (1) the current ratio and profitability have a significant positive correlation; (2) Liquidity ratio and profitability have no significant correlation. Profitability and return on capital employed do not have a significant positive correlation. The researcher advises companies to create a balance between the two performance measures and refrain from adopting extreme liquidity policies to the detriment of their profitability.

Jyoti K. and Gitalakshmi A. (2017) This study assesses the profitability and financial position of a large number of infrastructure companies in India. According to the report, there are wide differences in profitability levels among companies, with some companies achieving very high profitability and others struggling to turn a profit. According to this study, there is a positive correlation between profitability and company size, with larger companies often having higher profits than smaller companies. Ravichandran, M. & Subramaniam (2018) In this study, Larsen & Toubro (L&T), a leading infrastructure company in India, is evaluated for its viability, stability, and profitability. According to the report, L&T is in good financial standing with high profitability and solvency. The analysis also reveals that L&T's profitability has been dropping recently as a result of escalating costs and competition.

Objectives of the Study

Basic objectives:

To evaluate the profitability of 30 of India's largest infrastructure companies.

Main objectives:

- To analyze the descriptive statistics of selected variables of infrastructure companies in India.
- To assess the correlation between certain variables of infrastructure companies in India.
- To determine the impact of various financial factors on the profitability of Indian infrastructure companies.

Hypothesis of the Study

Correlation:

H0: There is no significant correlation between selected variables

H1: There is a significant correlation between selected variables

Regression:

H0: There is no significant impact on profitability by the selected variables

H1: There is a significant impact on profitability by the selected variables

Regression Model

ROCE Regression Model

$ROCE = \beta_0 + \beta_1 * CR + \beta_2 * DE \text{ Ratio} + \beta_3 * TATR + \beta_4 * \text{Net Sales}$

ROA Regression Model

$ROA = \beta_0 + \beta_1 * CR + \beta_2 * DE \text{ Ratio} + \beta_3 * TATR + \beta_4 * \text{Net Sales}$

ROE Regression Model

$ROE = \beta_0 + \beta_1 * CR + \beta_2 * DE \text{ Ratio} + \beta_3 * TATR + \beta_4 * \text{Net Sales}$

In recent years, India's infrastructure sector has emerged as a major driver of economic development, attracting significant investment and attention. However, despite its central role, there is a significant lack of knowledge about the factors that influence the profitability and relative efficiency of India's top 30 infrastructure companies. Although there has been extensive research on infrastructure development in the country, there is a lack of systematic empirical research examining specific revenue dynamics in this area. Therefore, this study aims to fill this gap by conducting a comprehensive study on the profitability of India's leading infrastructure companies.

The study focuses on 30 of India's largest infrastructure companies listed on the NSE. This study covers a five-year period from 2019 to 2023. Secondary data were collected from financial management websites, income statements, and audited balance sheets of the selected companies. Various profitability indicators such as return on capital employed, return on equity, return on assets, current ratio, equity ratio, and total asset turnover were applied to the collected data. Net sales are also included in the analysis. The objective is to evaluate the profitability performance of these infrastructure companies based on the aforementioned financial ratios.

Dependent Variables	Variable	Formula
	ROCE	EBIT/Total Capital Employed
	ROE (Return on Equity)	Net Income / Shareholders' Equity
	ROA (Return on Assets)	Net Income / Total Assets
	Variable	Formula
Independent Variables	Current Ratio (CR)	Current Assets / Current Liabilities
	Debt Equity Ratio (DE Ratio)	Total Debt / Shareholders' Equity
	Total Assets Turnover Ratio	Net Sales / Average Total Assets
	Net Sales	Total Revenue - Sales Returns, Allowances, Discounts

The calculation of ratios and other financial indicators will be carried out using the complete set of necessary financial data. Subsequent to the computations, various tables and diagrams will be generated using Gretel basic visual functions. This approach aims to present the growth and performance of organizations in a more compelling and visually appealing manner. The survey frame is made up of all companies listed on the Nifty Infrastructure index. For the purpose of this study, a sample of 30 companies was selected from the Nifty Infrastructure Index. A purposive sampling technique was used to select the top 30 companies from the Nifty Infrastructure Index. This study uses panel data regression analysis to examine the variables that influence profitability. Specifically, a pooled regression method is used, which combines cross-sectional and time series data into a single column and assumes constant intercepts and slopes. Significant cross-sectional or temporal effects are eliminated by this method. Regression analysis is used to determine the major factors affecting the dependent variable. Using cross-sectional and time-series data of firms, relationships can be estimated using panel data regression. Two advantages of this methodology are understanding adjustment processes and identifying effects that may escape purely cross-sectional or time-series analyses.

Furthermore, using panel data minimizes the bias introduced by aggregation and allows for more accurate estimates of micro-level variables. Our study uses both pooled least squares and cross-sectional weighted general least squares to examine

the factors that influence profitability. We conducted 150 observations over 5 years in 30 companies to investigate the factors that influence profitability. To understand the impact of certain independent factors on profitability, we estimate various regression coefficients for these variables.

Data Analysis

Table No: 1

Descriptive Statistics of the selected variables for the period of five years.

This table summarizes the mean, median

Statistic s	ROC E	ROE	ROA	CR	DER	TAT	NETSALE S
Mean	12.75	10.38	5.18	1.35	0.74	38.87	10.07
Standard Error	0.74	0.85	0.43	0.05	0.25	4.71	0.13
Median	11.96	10.41	4.82	1.22	0.25	12.54	9.87
Mode	9.00	11.79	0.00	1.10	0.00	0.62	NA
SD	9.10	10.44	5.28	0.67	3.16	57.7	1.6
Sample Variance	82.83	109.11	27.94	0.45	9.99	33331.0 8	2.6
Kurtosis	4.92	5.73	2.30	2.35	139.6 3	4.45	-0.5
Skewnes s	0.90	-1.01	-0.43	1.29	11.62	2.09	0.15
Range	67.58	76.28	33.32	3.76	39.18	265.20	7.34
Minimu m	-16.24	-35.70	- 13.56	0.32	-0.65	0.06	6.29
Maximu m	51.34	40.58	19.76	4.08	38.53	265.26	13.64
Sum	1913.5 2	1557.3 0	777.3 8	202.7 3	111.2 1	5830.08	1510.94
Count	150	150	150	15 0	150	150	150

Interpretation:

The presented descriptive statistics (Table 1) show the financial position of the top 30 infrastructure companies in the Nifty index. These companies have an average return on capital employed (ROCE) of 12.75%, return on equity (ROE) of 10.38% and return on assets (ROA) of 5.18 %. The general liquidity ratio (CR) is

1.35, indicating the ability to meet short-term obligations. In particular, the debt-to-equity ratio (DER) averages 0.74, indicating balanced leverage. However, variations are evident, especially when it comes to DER and total asset turnover ratio (TATR). These statistics highlight industry trends and potential influencing factors.

Table No: 2

Pearson's Correlation Analysis of the selected variables for the period of five years.

VARIABLES	ROCE	ROE	ROA	CR	DE Ratio	TATR	Net Sales
ROCE	1						
ROE	0.80	1					
ROA	0.82	0.83	1				
CR	0.28	0.23	0.39	1			
DEBT RATIO	-0.28	-0.18	-0.34	-0.12	1		
TATR	0.187	0.21	0.16	-0.04	-0.00	1	
NET SALES	-0.10	0.00	-0.06	-0.40	0.017	0.26	1

Correlation Coefficients, using the observations 1 – 150;

5% critical value (two-tailed) = 0.1603 for n = 150.

Interpretation:

The correlation matrix (Table 2) examines the association between key financial indicators of the 30 largest infrastructure companies. A strong positive correlation is found between ROCE and ROE (0.800) and between ROE and ROA (0.839), highlighting the interdependence of profitability. The moderate positive correlation (0.218) between asset return and asset turnover ratio (TATR) suggests that improving asset turnover may contribute to improving asset return. Furthermore, the low positive correlation between TATR and net sales (0.269) suggests that an increase in asset turnover may correspond to an increase in sales. Conversely, the negative correlation between general liquidity (CR) ratio and net sales (-0.408) and DE ratio and CR ratio (-0.121) suggests a possible impact on sales and debt.

Table No:3
Fixed-effects Panel Regression

	Co efficient	Std. Error	t-ratio	p-value	R Square d	F Stat	F Sign	DW Test
Constant	-33.7	9.40	-3.5	0.000*	0.76	11.67	0.00	1.81
Current Ratio	3.73	0.84	4.44	0.000*				
DE Ratio	-0.15	0.08	-1.8	0.068				
TA Turnover	0.01	0.00	3.27	0.001				
Net Sales	3.30	0.89	3.68	0.000				

(* Significance @ 5 percent level) Dependent variable: ROA, Time-series length is 5. (n = 150)

Interpretation:

Table 3 for the fixed effects panel regression analysis includes 150 observations and 30 cross-sectional units, with a particular focus on return on assets (ROA). The average ROI is 5.182533 and the standard deviation is 5.286119. The R-squared value of 0.768525 indicates that the model explains a significant portion of the variation in ROA. The F-statistic ($F(33,116) = 11.67071$) is highly significant as its p-value ($7.99e-24$) is well below the threshold. The Durban-Watson statistic 1.815484 suggests moderate positive auto correlation. In conclusion, this analysis highlights the influential role of various factors in determining asset returns.

Table No: 4

Fixed-effects Panel Regression

	Coefficient	Std. Error	t-ratio	p-value	R Squared	F Stat	F Sign	DW Test
Constant	-92.31	17.14	-5.37	0.000*	0.74	10.04	0.00	1.86
CR	4.72	1.53	3.08	0.00				
DE Ratio	-0.13	0.15	-0.8	0.39				
TA Turnover	0.04	0.01	4.91	0.00				
Net Sales	9.60	1.63	5.86	0.00				

Dependent variable: ROCE; (n = 150)

Interpretation:

Fixed effects panel regression analysis Table 4 contains 150 observations and 30 cross-sectional units, focusing on return on capital employed (ROCE). The average ROCE is 12.75680, indicating average performance. The standard deviation is 9.101076, reflecting the dispersion of ROCE. The R-squared value of 0.740725 suggests that 74% of the variation in ROCE is explained by the model. The F-statistic (10.04247) with a p-value of 3.29e-21 indicates that this model is highly significant in explaining the variance in ROCE. The Durbin-Watson coefficient of 1.867864 suggests a moderate positive autocorrelation, indicating a temporal effect. In this way, current ratio, total asset turnover, and sales significantly contribute to ROCE.

Table No: 5
Fixed-effects Panel Regression

	Co-efficient	Std. Error	t-ratio	p-value	R Squared	F Stat	F Sign	DW
Consent	-52.66	23.80	-2.2	0.02	0.61	5.73	0.000*	1.799
Current Ratio	3.89	2.12	1.82	0.06				
DE Ratio	-0.07	0.21	-0.34	0.73				

TA Turnover	0.04	0.01	3.02	0.00				
Net Sales	5.58	2.27	2.45	0.01				

Significance @ 5 percent level) Dependent variable: ROE, (n = 150)

Interpretation:

Table 5 of the fixed-effects panel regression analysis contains 150 observations and 30 cross-sections with a specific focus on return on equity (ROE). Return on equity analysis shows that asset turnover and net sales have a significant impact on return on equity (ROE). The R-squared value of 0.61 indicates that 62% of the variation in ROE can be explained by the model variables. The F-statistic 5.730698 and Durban-Watson statistic 1.799 suggest moderate positive auto correlation, suggesting a time effect. In this context, the current ratio has moderate importance, while the capital adequacy ratio appears to be unimportant.

II.CONCLUSION

The present study is an attempt to study the profitability of Indian infrastructure companies, a sector which is of utmost importance for the economic progress of the country. The research highlights the critical importance of profitability as a key measure of a company's financial wellness. Analyzing profitability is very important to know operational efficiency and to allow sustainable development. Driven by economic growth, urbanization, government initiatives, and private sector participation, India's infrastructure sector is experiencing rapid growth. But with this growth come challenges such as limited funding, difficult land acquisition processes, bureaucratic delays and corruption.

This study analyses financial statements and annual reports of top 30 infrastructure companies listed on Nifty Index and evaluates their profitability by using various financial ratios. The study utilizes tools like SPSS for data analysis, offering valuable insights into the co-movement of different financial indicators. In particular, the strong positive correlations between return on capital employed (ROCE) and return on equity (ROE) demonstrate their inter-dependency in assessing profitability. In addition, the positive relationship of asset turnover ratios and return on assets (ROA) indicates that efficient use of assets leads to higher returns.

The implications and recommendations of this study are crucial for companies and investors. Optimization of asset usage, increase of net sales through strategic growth initiatives and well-balanced liquidity ratios are the areas that companies aiming to increase profitability should focus on. In this regard, the effect of debt-equity ratios on profitability is insignificant but the sound management of

debt is vital for financial stability. Businesses should continuously track and adjust strategically to sustain or enhance profitability in the long run.

Investors could benefit from the valuable insights this study provides. Companies that have consistent and stable ROCE may indicate the potential for long-term profitability. In essence, this research helps in understanding the financial dynamics of the infrastructure sector in India better. The findings offer invaluable insights to decision-makers, investors and stakeholders within the industry. The increasing infrastructure landscape of India makes the quest for understanding and improving the profitability of infrastructure enterprises an integral part of the continued growth of the economy.

III. REFEREBCE

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