A Study on Impact of Capital Expenditure and Leverage Ratio on Firm Performance

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ABSTRACT: This study is conducted to understand the relationship between the capital expenditure, leverage ratio, and size of the firm on the firm performance of the 26 infrastructure companies listed in the national stock exchange India. The data was collected from financial statements between the period 2012 and 2021. This study used firm financial performance as dependent variable capital expenditure, leverage ratio, and firm size as independent variable. The data were analyzed using a linear regression model and found out that these variables have a significant effect on the firm performance. The statistical analysis showed that the capital expenditure is positively correlated whereas the leverage ratio and size of the firm have a negative correlation to the firm performance.

KEYWORDS: Capital expenditure, firm performance, leverage ratio, infrastructure companies

I.   INTRODUCTION
Corporate finance is an important subfield of finance that deals with how the company meets its funding, structures its capital, taking dividend and investment decisions. The ultimate objective of corporate finance is to maximize the investor's wealth by an optimum mix of equity and debt for capital and to invest the profits in new projects or to distribute it to the investors.

The economic conditions have rapidly changed over the last decades. The firms have to adapt to these changes in order to meet the challenges, for these, the firms have to spend a large amount as capital expenditure. The capital investment decision is an important decision for a company because it affects the investor's wealth, long-term perspective of the firm's survival brings competitive advantage over its competitors, and increases future revenue. The company invests in

projects which will have a positive NPV value and generate a return greater than a market risk-free return. But the market is always imperfect and the uncertainty will sometimes backfire on these projects. The company may use its profits, cash reserves, debts, or equity capital to fund these projects. Most companies use debt as a source of funds because it provides tax allowance and does not affect the ownership of the company.

This study is conducted to provide empirical evidence on the relationship between the capital expenditure and the firm performance of the companies which are part of the Nifty Infra Index. There are 30 companies in the index which are listed in the national stock exchange in India. Due to constraints in data availability, only 26 companies are used for this study between the time period 2012 and 2021. The index consists of companies belonging to telecom, power, port, air, roads, railways, shipping, and other utility service providers. The infrastructure companies are selected because they have large capital expenditures.

II.   LITERATURE REVIEW
Ester Taipi and Valbona Ballkoci (2017), conducts a study on Albanian construction structure to find out the link between capital expenditure and firm performance. They had taken data from 30 companies over eight years. They have taken the variables capital expenditure, leverage ratio, and firm size as variables and to analyze the data linear regression model has been used. The findings of the study concluded that capital expenditure and leverage ratio are positively correlated and statistically significant. The firm's size isn't a statistically significant variable and it is also inversely related to its performance.

Subhan Ullah, Ja Ryong Kim, and Farid Ullah (2021), the study investigates the reduction of market dependency as well as the over-investment hypothesis, which leads to a decrease in the firm value. By looking at the oil and gas firms based in the United Kingdom, they discovered that capital expenditure combined with hedging lowers company value, despite capital expenditure increasing firm value. This effect is stronger when capital expenditure is done by companies with international operations, implying that hedging diminishes the market's monitoring role and as a result capital expenditure with hedging is regarded as over-investment. This is one of the first empirical studies to look at how hedging can help reduce market dependency and over-investment.

Changyun Wang and Jin Xie (2009), using a sample of listed firms in the Chinese stock market where big shareholding and concentrated ownership are the norms. The value effect of major investors is investigated in this study through their impact on corporate investment policy. Researchers found out that the influence of capital expenditure on the firm value of a company is closely linked to the number of major shareholdings. The study also finds that if the company is controlled by a big group of owners, capital expenditures are negatively related to its firm value. They have conducted the study using the data of the Shanghai Stock Exchange and Shenzhen stock exchange over a period of four years from 1999 to 2004. In the study, they are using Tobin's Q as the main proxy for Firm value. Firm size, leverage, sales to asset ratio, firm age, B or H share listing, and industry as variables.

Muhamad Bangkit Hutama and Noval Adib (2018), conduct research to find the relation between capital expenditure on the profitability of the company. Capital expenditures play a significant part in financial statements for substantial firm investment initiatives. The research was conducted on the data from public companies from telecommunication, manufacturing, and Oil companies listed in Indonesia Stock Exchange for a period over 2012-2016. Purposive sampling is the method that was utilized to choose the samples. Twenty-seven companies and 135 data have been selected for conducting the study. The findings of the study show that capital expenditure has a considerable impact on profitability. Data used in the study is secondary data and it is a combination of cross-sectional data and time-series data.

The study conducted by Sung-Hee Lew (2015) on the firm value with respect to the investment expenditure shows that the influence of these expenditures varies across industries. For this study data of 1408 firms from 22 industries from both the KOSPI and KOSDAQ market between 2001 and 2013 were collected. The variables for investment expenditure are the capital expenditure, R&D expense, advertising expense over total assets are selected. The investment expenditure generally increases the firm value but the study proved that for high tech industries it was a negative association and for low tech industries it was a positive relationship with firm value.

M. F DjeniIndrajati W, Elizabeth SugiartoDermawan (2021) conducted a study to find the relation of intangible expenditure to firm value. The investors have different expectations for these expenses. Some believe it is a capitalized asset and others believe it has an impact on future benefit. So, this study is from the perspective of the investors. The independent variables are intangible assets, R&D expenses, employee training, advertising expenses and the dependent variable is the firm value. The data of 45 companies listed in IDX in 2013-2017 were collected. The study showed that there is a negative and non-significant relationship between firm value and intangible asset, a positive and significant relationship of R&D expenses, the negative and insignificant relationship of employee training expenses, the positive and insignificant relationship of advertising to firm value.

The study by Feng-Li Lin and Tsangyao Chang (2009) finds the relationship between the debt structure and firm value. They collected the leverage ratio and calculated firm value using Tobin's Q ratio of 196 Taiwanese listed companies between the period 1993 and 2005. They conducted an advanced panel threshold regression model to test whether there is a threshold debt ratio. The result shows that there are two threshold debt ratios. The firm value increases at 0.0546% for each 1% increase in debt when the threshold debt ratio is below 9.86%. The firm value increases at 0.0057% for each 1% increase in debt when the threshold debt ratio is between 9.86% and 33.33%. The firm value does not increase when the debt is above 33.33%.

III. METHODOLOGY AND SAMPLE SELECTION

The study follows a descriptive study plan. This study is conducted to identify the relationship between the firm's financial performance and the firm's capital expenditure, leverage ratio and size. The linear regression model is used to investigate the relationship between the variables. The analysis will analyze the year's

financial performance after capital expenditures to ensure that the assets obtain a return on investment.

A.   Sample selection

The companies which constitute the nifty infra index, which tracks the performance of 30 listed companies from different sectors, is selected as the sample. The study is shortened to 26 companies due to a lack of sufficient data. The time period of the study is 10 years between 2012 and 2021. Financial data is collected from financial statements which are obtained from secondary sources like annual reports. The study does not focus on a particular sector instead it is a general study.

B.   Dependent Variables

Firm performance- The firm's financial performance is tracked using the return on assets. This ratio indicates the capacity of the firm to generate profit with respect to its assets. The higher the ratio means the higher the efficiency of the assets.

C.   Independent Variables

Capital expenditure- The capital expenditure is tracked using the cash flow from investing activities. This will be used for the purchase of plant, equipment machinery,etc. which will have an impact on the firm's financial performance.

Leverage ratio- it is calculated using the debt-to-equity ratio which is the ratio of the total liability to total shareholders' equity. It is a financial measurement showing how much capital comes from debt. It can be used to assess the ability of a company to meet its financial obligations. It can signal whether the firm can meet its financial obligations. Higher debt means the firm will have a higher interest rate and it will affect the firm's financial performance but it will provide a tax benefit. Low debt also means inability to borrow which may be a sign of tight operating margins.

Firm size- The firm size is taken as the natural log of the total asset of the firm. The firm size indicates whether the company is experiencing growth or not. When the firm size increases it can increase the sales and revenue which provides more economy of scale. But the increase in firm size can increase the difficulty in managing the operations and the company will have more fixed costs in operations. So, the size of a firm can have a positive and negative impact on firm performance.

D.   Hypothesis

The following hypothesis is also formulated in order to provide empirical evidence on the relationship between the variables taken for the study.

H0: There is no significant relationship between capital expenditure and firm performance
H1: There is a significant relationship between capital expenditures and firm performance

E.   Regression equation

Equation (1) is the regression equation used for finding the relationship of independent variables with the dependent variable using regression analysis.

$$\text{Financial performance} = \beta_0 + \beta_1 * CAPEX + \beta_2 * X2 + \beta_3 * X3 + e$$

Financial Performance is measured by ROA, (Net Income / Average Total Assets)
β_0 = constant or intercept
$\beta_1 - \beta_3$ = the regression coefficients
CAPEX = Capital Expenditure
X2 -Leverage ratio (total liability to total shareholders' equity)
X3-Firm size (measured by the logarithm of total assets).
e = the model error term

IV.   RESULT AND FINDINGS

The study was completed using linear regression. The test results are shown in Tables 1 & 2. Table 1 shows the regression statistics. The adjusted R square value is 0.3231 which means that the 32.31% change in firm financial performance can be explained by the variable's capital expenditure, leverage ratio, and firm size.

From the ANOVA table, the significance F value is less than 0.05, which means that the H0 is rejected and H1 is accepted. This means that there is a significant relationship between firm financial performance and capital expenditure.

TABLE 1 Regression statistics

Regression Statistics	
Multiple R	0.575339
R Square	0.331015
Adjusted R Square	0.323175
Standard Error	0.035465
Observations	260

Table 2 significance table

	Coefficients	P-value
Intercept	0.22572616	0.00000015
CAPX	0.00005665	0.04535854
LEVERAGE	-0.0212	0.00022949
Firm Size	-0.0326	0.0000122

The results of Table 2 show that the capital expenditure is statistically significant and has a positive correlation. The firm's financial performance increases when the capital expenditure increases. The variables leverage and firm size are also statistically significant but they are negatively correlated with firm financial performance. When the leverage and firm size increase the firm performance will decrease.

V. CONCLUSION

The study was conducted to find the relationship between the capital expenditure, leverage ratio, and size of the firm on the financial performance of the nifty infra companies based on the data collected from the financial statements of the companies between the time period 2012 and 2021.

According to the study capital expenditure has a significant impact on the firm performance. They are positively correlated which means an increase or decrease in capital expenditure will increase or decrease the firm financial performance. The coefficient is 0.0056% which means that the impact is very low. This could be due to the amount of income earned, which does not meet the expectations. The amount of income earned is crucial in establishing the organization's financial performance.

The second variable is the leverage ratio of the firm. It has a significant and negative correlation. When there is one unit increase or decrease in the leverage ratio it will decrease or increase the firm performance by 2.12%. The increase in debt ratio indicates the firm uses more debts to fund its capital. This will produce an interest burden on the firm which will have a fixed claim on firm revenue. This will reduce the profit margins and result in low financial performance.

The third variable is the size of the firm which is the log value of the total asset of the firm. It has a significant and negative relationship with the firm performance. In general, the net profit margin of infrastructure companies is low. These companies declare small profits compared to their investments so this could be the reason for the negative relation.

It is important to understand the relationship between firm performance and capital expenditures. This will help the investors to make a better investment decision. The Indian government has implemented PLI schemes to boost the economy and create employment. This will allow the companies to increase their investments thus resulting in high capital expenditures. This study will help the investors to have a deep understanding of the firm performance and enable them to make a good investment decision.

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