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Financial Performance Analysis of Selected Listed (BSE 100 Companies) Companies in India: an Empirical analysis

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Introduction:

Information provided in the financial statements is not an end in itself, though the information is provided is of immense use. Ratio analysis is a widely used traditional technique to analysis and interpret the information provided by the financial statements. Since attacks on the significance of ratio analysis come from many respected members of the scholarly world, does this mean that ratio analysis is not enough to the world? The relevance of such an approach has been unpleasantly attired and there-fore unfairly hampered.

The tenacity of this paper is to attempt a review of the quality of ratio analysis as an analytical technique. An accounting ratio shows the mathematical relationship between two figures which have meaningful relation with each other. In financial analysis, a ratio is used as a yardstick for evaluating the financial performance of firm. This yardstick which permits a qualitative judgement to be formed about the firm's ability to meets its obligation and that yardstick can spoil the interpretation because it varies on industry to industry and company to company. A single ratio in itself does not indicate favorable or unfavorable condition. It should be compared with some with past ratios, competitors' ratios, industry ratio and projected ratios. In accounting and finance text books organize financial ratios into categories like *liquidity ratios* – investigate the firm's ability to meet current obligation, *leverage ratios* – measures the proportions of debt and equity in

financing the firm's assets and examine how risky an investment in the firm could be for creditors, *activity ratios* – shows the firm's efficiency in utilizing its assets and *profitability ratios* – measures overall performance, effectiveness of the firm and profit-generating ability of a firm based on sales, equity, and assets. These ratios allows various interested parties, like management, shareholders, potential investors, creditors, government and other analyst to make an evaluation of the various aspects of company's performance from their own point of view and interest.

In this paper I tried to examine the relation existent between different indicators resulted from the firm's financial statement and its performance. In order to measure this performance. In order to carry out such an analysis we have used the multiple linear regression method. Briefly speaking, the goal of the multiple linear regression is to point out the relation between a dependent variable and a great deal of independent variables. With the help of multiple linear regression we can determine to what extent a part of the total variation of the dependent variable is influenced by the variation of the independent variables.

1.1 Background of studies:

The essence of financial soundness of a company lies in balancing its goals, commercial strategy and resultant financial needs. Ratio analysis is a very useful analytical technique to raise pertinent questions on a number of managerial issues. It provides bases or clues to investigate such issues in detail. While assessing the financial health of the company with the help of ratio analysis, answers to the following questions relating to the company's profitability, assets utilization, Liquidity, financing and strategies capabilities may be sought[1].

1.2 Review of literature:

Horrigan(1965)[2] Claimed that the development of financial ratios ought to be a unique product of the evolution of accounting procedures and practices in the U.S.; further stating that the origin of financial ratios and their initial use goes back to the late 19th century.

William Beaver (1966)[3] Revealed five ratios, which helps to discriminate between failed and non-failed firms. These ratios are: (a) Cash flows to Total debt, (b) Net income to Total assets, (c) Current ratios, (d) Working capital to Total assets, (e) Total debt to Total assets. He found failed firm had more debt and lower return on assets. They had more cash receivables and less cash as well as low current ratios. They had also less inventory.

Altman(1966)[4] He was the first to apply multiple discriminant statistical methodology for studying Bankruptcy. In which a set of financial and economic ratios are investigated for bankruptcy prediction. He established a guideline Z score which can be used to classify firms are either financially sound or headed towards bankruptcy with a score below the guideline. He derived the following discriminant function: $Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.010X_5$

Robert Kaplan (1990)[5] claimed Balanced Scorecard complements financial measures of past performance with measures of the drivers of future performance. The objectives and measures of the scorecard are derived from an organization's vision and strategy. The objectives and measures view organizational performance from four perspectives: financial, customer, internal business process, and learning and growth.

Matsumoto (1995)[6] conducted a survey of security analysts to ascertain their perceptions regarding financial ratios. They discovered that growth rates were considered to be the most important, followed by valuation, and then profitability ratios. The analysts ranked earnings per share and leverage ratio slightly lower than the above three. They also found that the ranking orders of ratio groups were quite different for retailers and manufacturers.

O`Byrne (1996)[7] Developed a theory in which he wanted to test if EVA, unlike NOPAT or other earnings measures like net income or earnings per share, is systematically linked to market value. He said that EVA should provide a better predictor of market value than other measures of operating performance. EVA improvement provides a powerful tool for understanding the investor expectations that are built into a company's current stock price. Expected EVA improvement—that is, the increase in future EVA that is necessary to provide investors with a normal return on the company's shares—is important not only for securities analysts in evaluating stocks, but also for corporate compensation committees in setting performance standards for management incentive compensation plans.

Gupta (1999)[8] This study is based on taking a sample of sick and non-sick companies and organizing them by the magnitude of each ratios, by selecting a break point which helps to segregate the series into two classes with minimum number of misclassification, then computing the percentage of classification error. The ratio which has lowest percentage of misclassification error is the most efficient ratio. The following ratio has high degree of predictive power (a) EBDIT

to Sales, (b) Operating cash flow (OCF) to Sales, (c) EBDIT / Total assets, (d) OCF /Total assets, (e) EBDIT/ (Interest+0.25 Debt).

Behn and Riley (1999)[9] Conducted a research in financial management and operational accounting and said that non-financial indicators of business performance are an important part. They found a direct link between the level of customer satisfaction and future performance of the hotel and transport companies.

Nagar and Rajan (2011)[10] examined the relationship between future sales and financial and non-financial indicators of companies from the industry of Jordan, and concluded that the two types of indicators are complementary in assessing future sales volume.

Ross, Westerfield & Jordan, (2013)[11] financial ratios, which are calculated by using variables commonly found on financial statements, can provide the following benefits[11]:

- Determining the performance of managers for the purpose of rewards;
- Evaluating the performance of departments within multi-level companies;
- Projecting the future by supplying historical information to existing or potential investors;
- Providing information to creditors and suppliers;
- Estimating competitive positions of rivals;
- Estimating the financial performance of acquisitions.

Medhat Tarawneh (20016)[12] the main objective of there study to compare the financial performance between five commercial banks in the Sultanate of Oman, during period from 1999 to 2003, the researcher used method of simple regressions in order to determine the impact of independent variables on dependent variables in the research sample, the researcher used the return on assets and the interest income as proxies (dependent variables), while used the bank size, asset management, and operational efficiency as independent variables. The study found there is positive strong effect of the operational efficiency, asset management and bank size on financial performance (ROA).The study concluded that the bank with higher assets, deposits, credits and shareholder equity, does not always mean that has better profitability.

Almajali, et al,(2021)[13] examined and identify the factors affecting the financial performance of Jordanian insurance companies listed at Amman stock exchange during the period from 2002 to 2007, the researcher used the return on assets (ROA) as proxies (dependent variable), while used

the factors of leverage, liquidity, age, size and management competence index as independent variables. The study findings showed that leverage, liquidity, size and index management competence index, significantly affect on financial performance of Jordanian insurance companies listed at Amman stock exchange.

1.3 Research Gap:

From the literature review it is certain that a significant amount of work has already been done in the area of financial ratios as a tool for performance analysis. Various studies has been conducted with different statistical methodology like decision tree analysis, non-parametric analysis and multiple discriminant analysis. But there is a scope to do a performance analysis by considering liquidity ratios, leverage ratios, activity ratios and profitability ratios in a parametric analysis on Indian companies. The present study is an effort in the direction to have econometric analysis of performance analysis of Indian companies.

1.4 Statement of the research problem:

The problem to be addressed by this study is to evaluate the relationship between Debt to Total Assets Ratio with Return on Total Assets, Current Ratio with Return on Total Assets, Earnings per Share with Return on Total Assets, Debtor Turnover Ratio with Return on Total Assets, Net profit margin Ratio with Return on Total Assets, Return on Capital Employed with Return on Total Assets.

1.5 Objectives of the study:

This paper is an attempt to examine the relation between different ratios. It also examine the prediction capability of multiple ratios, for a performance measuring ratio. It also aims to determine the followings:

- To determine relationship between Debt to Total Assets Ratio with Return on Total Assets, Current Ratio with Return on Total Assets, Earnings per Share with Return on Total Assets, Debtor Turnover Ratio with Return on Total Assets, Net profit margin Ratio with Return on Total Assets, Return on Capital Employed with Return on Total Assets.

- To find the ratio that indicates the efficiency of utilization of assets in generating revenues for an industry and within industries by calculating average return on total assets.
- To determine the ratio that indicates the return on shareholder's net worth for an industries and within industries by calculating average return on equity.
- To find the ratio that indicates the total interest bearing funds over total assets, also finding the average for an industry and comparing with other industries.
- To determine the average proportion of working capital over total assets for an industry and within industries by calculating the working capital to total assets ratio.
- To examine the average short term solvency position for an industry and within industries by calculating the ratio that indicates short term solvency position of a firm.
- To determine the average earning per share for an industry and comparing with other industries under BSE 100.

1.6 Hypothesis of study :

The following hypothesis have been set and tested during the study.

Hypothesis-1

H_{01} - There is no significant relationship between Debt to Total Assets Ratio (DTA) and Return on Total Assets (ROTA).

H_1 - There is a significant relationship between Debt to Total Assets Ratio (DTA) and Return on Total Assets (ROTA).

Hypothesis-2

H_{02} - There is no significant relationship between current ratio (CR) and Return on Total Assets (ROTA).

H_2 - There is a significant relationship between current ratio (CR) and Return on Total Assets (ROTA).

Hypothesis-3

H_{03} - There is no significant relationship between Earnings per Share (EPS) and Return on Total Assets (ROTA).

H_3 - There is a significant relationship between Earnings per Share (EPS) and Return on Total Assets (ROTA).

Hypothesis-4

H_{04} - There is no significant relationship between Debtor Turnover Ratio (DTR) and Return on Total Assets (ROTA).

H_4 - There is a significant relationship between Debtor Turnover Ratio (DTR) and Return on Total Assets (ROTA).

Hypothesis-5

H_{05} - There is no significant relationship between Net profit margin Ratio (NPMR) and Return on Total Assets (ROTA).

H_5 - There is a significant relationship between Net profit margin Ratio (NPMR) and Return on Total Assets (ROTA).

Hypothesis-6

H_{06} - There is no significant relationship between Return on Capital Employed (ROCE) and Return on Total Assets (ROTA).

H_6 - There is a significant relationship between Return on Capital Employed (ROCE) and Return on Total Assets (ROTA).

2.1 **Variables:**

Return on Total Assets. (ROTA)

The profitability of the firm is measured by establishing relation of operating profit with the total assets of the organization. This ratio indicates the efficiency of utilization of assets in generating revenue.

$$\text{Return on Total Assets} = \frac{EBIT}{Total\ asset} * 100$$

EBIT (Earnings before Interest and Taxes) is equivalents to operating profits. Total assets includes all current and non-current assets.

Debt to Total Assets (DTA).

Debt to Assets ratios are used to know the long term solvency position of a firm. It is also helpful in knowing the proportion of the interest bearing debt in the capital structure.

$$\text{Total Debt to Total Assets} = \frac{Total\ debt}{Total\ asset} * 100$$

Total debt will include short and long term borrowings from financial institutions, debentures/bonds and other interest bearing fund. Total assets includes all current and non-current assets.

Current Ratio (CR).

The current ratio is a measure of the firm's short term solvency. It indicates the availability of current assets in rupees for every one rupee of current liability. A ratio of greater than one means that the firm has more current assets than current claims against them.

$$\text{Current Ratio} = \frac{Current\ asset}{Current\ liabilities}$$

Current Assets include cash and those assets that can be converted into cash and those assets that can be converted into cash within a year. Current Liabilities are those obligations maturing within a year.

Earnings per Share (EPS).

The profitability of the shareholders' investment can also be determined in many other ways. One such measure to calculate earnings per share.

$$\text{Earnings per Share} = \frac{Profit\ after\ tax}{Number\ of\ share\ outstanding}$$

The EPS of the company required to be compare with the industry average and the EPS of other firms. Higher earnings per share is always better than a lower ratio because this means the company is more profitable and the company has more profits to distribute to its shareholders.

Return on Capital Employed (ROCE).

Return on capital employed (ROCE) is a profitability ratio that measures how efficiently a company can generate profits from its capital employed. This is a long-term profitability ratio

because it shows how effectively assets are performing while taking into consideration long-term financing.

$$\text{Return on Capital Employed} = \frac{EBIT}{\text{Capital Employed}} * 100$$

Capital employed is equal to net assets/long term debt + Net worth, EBIT is the net operating profit. A higher ratio would be more favorable because it means that more rupees of profits are generated by each rupees of capital employed. Return on Capital Employed should be higher than the rate at which they are borrowing to fund the assets.

Net Profit Margin Ratio (NPMR).

This ratio is use to measure how effectively a company can convert sales into net income. In other words, the Net profit margin ratio shows what percentage of sales are left over after all expenses are paid by the business.

$$\text{Net profit margin Ratio} = \frac{Profit\ after\ taxes}{sales} * 100$$

A firm with a high net margin ratio would be in an advantageous position to survive in the face of falling selling prices, rising costs of production or declined demand for the product.

Debtor Turnover Ratio (DTR).

It measures the amount of resources tied up in debtors is reasonable whether the company has been efficient in converting debtors into cash. The liquidity position of the firm depends on the quality of debtors to a large extent.

$$\text{Debtor Turnover Ratio} = \frac{Credit\ sales}{Average\ debtors}$$

Debtors turnover indicates the number of times debtors turnover each year. The higher the value of debtors turnover, the more efficient is the management of credit.

2.2 Data Collection:

This paper is urge to identify and use a feature reach index, so after exhaustive search it found those companies that are listed in BSE 100 index. There is a reason for choosing this index because these companies are the major player of their industries. It was found that some factors

are missing in the database for banking and financial service industry out of 100 companies, So it is require to eliminate the banking and financial service industry. This study has a sample size of 77 companies with 539 observations for the accounting year starting from 1st January 2024 to 31st December 2024.

The data set consists of detailed trading and financial information and indicators about the 77 most actively traded BSE 100 listed companies on the Bombay Stock Exchange of India. The seventy seven companies cover a broad spectrum of sectors or industries totaling 12, which are: Automobiles, Information Technology, Pharmaceuticals, Power Sector, Consumer Goods, Manufacturing, Telecommunication, Oil & Gas, Infrastructure, Metal, Cement & Cement Products, Entertainment, battery and paint industry. The details and proportion of these sectors in BSE 100 is given in table 1.

The financial indicators are obtained from CMIE PROWESS database as well as items reported in financial statements of sample companies. The main financial indicators are: Current Assets, Current Liabilities, Net Fixed Assets, Net Assets, Operating Profit (ebit), Total Assets, Capital Employed, Profit After Tax, Net Sales, Total Debt, Net Worth, Working Capital, Average Debtor, Credit Sales, Gross Profit (PBDITA), Profit Before Tax and Earning Per Share.

The following ratios are calculated for this empirical study Return on Total Assets, Debt to Total Assets, Current Ratio, Earnings per Share, Return on Capital Employed, Net profit margin Ratio and Debtor Turnover Ratio.

The methodologies used in earlier similar research works have been adopted. The framework of the study is based on financial ratios were used in the analysis of data collected from the CMIE PROWESS database. Analysis of data is done through Descriptive statistics, correlation and multiple regression. The appropriate statistical tools used include SPSS.

2.3 Model Specifications

The multiple linear regression model is best suitable for this research problem because it find out the relationship among the variables. Data will be analyzed with one dependent variable (financial performance) will be used to measure by Return on Total Assets and six independent variables Debt to Total Assets Ratio, Current Ratio, Earnings per Share, Debtor Turnover Ratio, Net profit margin Ratio and Return on Capital Employed. The following is the Regression equation

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$

Y = Return on Total Assets.

β_0 = a constant, the value of Y when all X values are zero.

β_i = the slope of regression surface (The β represents the regression coefficient associated with each Xi.)

X_1 = Debt to Total Assets Ratio (DTA).

X_2 = Current Ratio (CR).

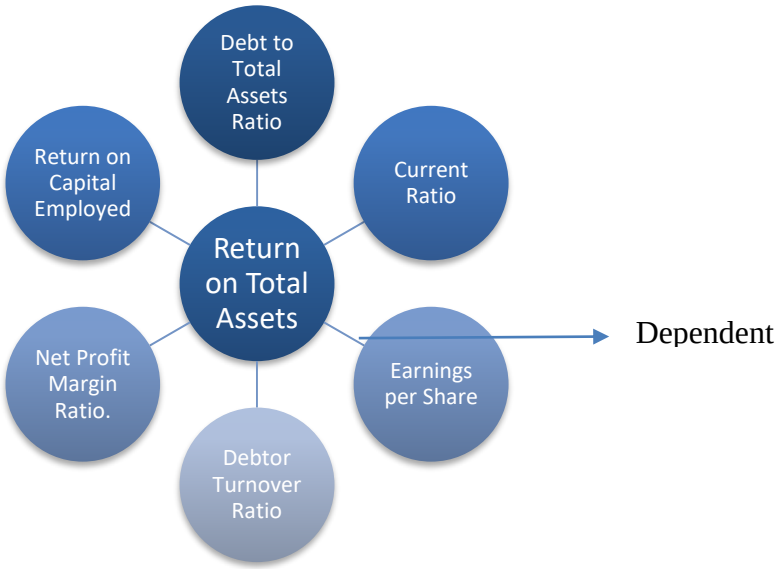
X_3 = Earnings per Share (EPS).

X_4 = Debtor Turnover Ratio (DTR).

X_5 = Net profit margin Ratio (NPMR).

X_6 = Return on Capital Employed(ROCE).

ε = an error term, normally distributed about a mean of 0 (For the purpose of computation, the ε is assumed to be 0.)



4.1 Descriptive Statistics:

Descriptive analysis is the first step of this analysis, it will help researchers to describe relevant aspects of financial management (both mobilization of funds and deployment of funds) and provide detailed information about each relevant variable. Researchers have already been conducted in our area of study and a lot of information is already on hand and SPSS Software 20.0 has been used for analysis of the different variables in this study. Descriptive statistics is derived from statistical analysis before another test performed using multiple regression analysis. Descriptive studies produced the mean, minimum, maximum and standard deviation for al 13 industry of BSE 100.

The mean value of Return on Total Assets (ROTA) for all thirteen industry is 13.942, while Information Technology industry has the highest mean of 26.57 with a std. deviation of 8.1 and the value of standard deviation for all industries is 11.9386. It means the Information Technology industry is more efficient in utilization of assets in generating revenue than other industries. The mean value of Debt to Total Assets Ratio for all thirteen industry is 18.383, while Power industry has the highest mean of 37.082 with a std. deviation of 22.8654 and the value of standard deviation for all industries is 15.6367. The proportion of the interest bearing debt in the capital structure is high in Power industry. The mean value of Current Ratio for all thirteen industry is 1.669, while Metal Industry has the highest mean of 2.830 with a std. deviation of 3.5771 and the value of standard deviation for all industries is 1.3608. Thus Metal Industry has more current assets over current claims against them. The mean value of Earnings per Share for all thirteen industry is 36.216, while Automobile Industry has the highest mean of 113.479 with a std. deviation of 135.5832 and the value of standard deviation for all industries is 61.6438. The Automobile Industry has more profits to distribute to its shareholders than any other Industry.

The mean value of Debtor Turnover Ratio for all thirteen industry is 21.665, while Automobile Industry has the highest mean of 46.292 with a std. deviation of 75.5832 and the value of standard deviation for all industries is 61.6438. Automobile Industry is more efficient in the management of credit than others. The mean value of Net profit margin Ratio for all thirteen industry is 49.615, while Metal industry has the highest mean of 150.815 with a std. deviation of 332.534 and the value of standard deviation for all industries is 102.050. Metal Industry has high percentage of sales are left over after all expenses are paid by the business. The mean value of Return on Capital

Employed for all thirteen industry is 21.071, while Consumer Goods Industry has the highest mean of 43.133 with a std. deviation of 36.4759 and the value of standard deviation for all industries is 22.5801.

Table- 1

Statistics

		Return on Total Assets	Debt to Total Assets Ratio	Current Ratio	Earnings per Share	Debtor Turnover Ratio	Net profit margin Ratio	Return on Capital Employed
N	Valid	77	77	77	77	77	77	77
	Missing	0	0	0	0	0	0	0
Mean		13.942	18.383	1.669	36.216	21.665	49.615	21.071
Std. Deviation		11.9386	15.6367	1.3608	61.6438	33.8608	302.0491	22.5801
Minimum		-9.8	-26.3	.2	-134.6	.9	-98.0	-40.4
Maximum		54.4	61.5	11.1	426.0	250.3	2658.1	120.2

Source: Authors' SPSS output.

4.2 Correlation:

The second step in the statistical analysis is correlation test, comes before the start of regression analysis. Before the start of regression analysis it is important to check the correlation test between dependent variable and independent variables. The Pearson's correlation coefficient matrix will be generated through the SPSS software version 20.0, which will show the cross-relationship between all of the variables. Pearson correlation coefficient is the most commonly used to measure the association between two quantitative variables. Pearson's correlation coefficients are test in order to determine the strength of the relationship between independent and dependent variables.

Table-2 Different Sign of correlation coefficient and it stands for

	Strong relation	Moderate relation	Weak relation	Very weak or no relation
+1 to 0 values	0.5 to 1.0	0.3 to 0.49	0.1 to 0.29	0 to 0.9
-1 to 0 values	- 1.0 to – 0.5	- 0.49 to -0.3	- 0.29 to - 0.1	- 0.9 to 0

The Pearson correlation scale ranges from -1 to +1, Any value greater than zero indicates a positive direct relationship between the two variables, which implies that every increase in the independent variable will led to the increase in dependent variable. While any value less than zero

indicates a negative indirect relationship between the two variables , which means that every increase in the independent variable will led to the decrease in dependent variable. Correlation test shows that Return on Total Assets (ROTA) is significant with Debt to Total Assets Ratio, Current Ratio, Debtor Turnover Ratio, Net profit margin Ratio and Return on Capital Employed at the level of 0.01 level (2-tailed), while Earnings per Share significant at 0.05 level (2-tailed). There is a significant strong negative correlation between Debt to Total Assets Ratio and Return on Total assets (ROTA) with a significant value 0.000, while there is strong positive relationship between Current Ratio and Return on Total assets (ROTA) with a 2 tailed significant value 0.003. Result shows that there is significant moderate positive correlation between Earnings per Share and Return on Total assets (ROTA) with a significant value 0.018. Relationship between Debtor Turnover Ratio and Return on Total assets (ROTA) also highly correlated with a significant value 0.002. There is a strong positive correlation between Net profit margin Ratio and Return on Total assets (ROTA) of a significant value 0.000. Correlation between Return on Capital Employed and Return on Total assets (ROTA) has highly strong positive Pearson correlation of 0.906 at significant value 0.000.The Pearson correlation analysis indicates that the correlations between the continuous independent variables in this study are low, that means; there is no multicollinearity problem.

Table- 3 *Pearson's correlation coefficient*

Variables	Pearson Correlation	Significant (2 tailed)
Debt to Total Assets Ratio	-.409''	.000
Current Ratio	.339''	.003
Earnings per Share	.268'	.018
Debtor Turnover Ratio	.346''	.002
Net profit margin Ratio	.411''	.000
Return on Capital Employed	.906''	.000

Correlation is significant at the 0.01 level (2-tailed).**

Correlation is significant at the 0.05 level (2-tailed).*

Source: Authors' SPSS output.

4.3 Regression Analysis:

Normality Test:

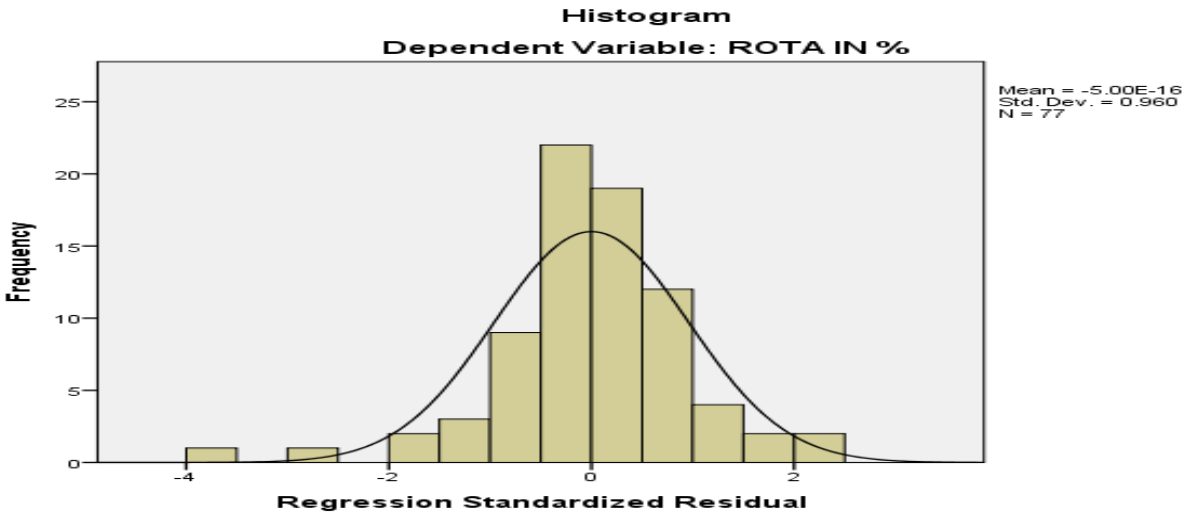
The examination of the normal distribution of the data of the study is one of the fundamental requirements for linear regression analysis between the study variables. Normality tests are used to determine whether a data set is well-modeled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed. In SPSS software, the distribution of normality can assess by skewness and kurtosis statistics , that values of Skewness and Kurtosis should be within the range from -1 to +1 also can assess the distribution of normality by looking at the spread of the data in the graph that are expressed by dots. If when the point spread around the diagonal line and follow the direction of the diagonal line in the Normal Probability Plot graph. The result of the normality test can be seen from the Table 3.3, this Table shows that the Skewness values for all variables in this study, it's ranging from 0.022 to 0.910, while values of Kurtosis for all the variables, it's ranging from -0.017 to 0.954, based on these results we can say the skewness and kurtosis scores of the current data in this study indicate an approximately normal distribution. The result of the normality test can be seen from the figures 3.4 respectively, are shows that the data are scattered around the diagonal line of the Normal Probability Plot; it seems that the normality assumption might be satisfied for these data.

Table- 4 Skewness and Kurtosis test result of normality

		Return on Total Assets	Debt to Total Assets Ratio	Current Ratio	Earnings per Share	Debtor Turnover Ratio	Net profit margin Ratio	Return on Capital Employed
N	Valid	77	77	77	77	77	77	77
	Missing	0	0	0	0	0	0	0
Skewness		.910	.238	.022	.258	.876	.754	.345
Std. Error of Skewness		.274	.274	.274	.274	.274	.274	.274
Kurtosis		.954	-.017	-.480	.276	.799	.215	.621
Std. Error of Kurtosis		.541	.541	.541	.541	.541	.541	.541

Source: Authors' SPSS output.

Figure- 5



Source: Authors' SPSS output.

Multicollinearity Test:

According to (Gujarati, 2003, p. 374) one of the assumptions of linear regression model is that there is no multicollinearity among the explanatory variables. Multicollinearity can be controlled by tolerance values and values of variance inflation factor (VIF), high value of multicollinearity can result in both regression coefficients being inaccurately estimated, and difficulties in separating the influence of the individual variables on the dependent variables. Any variables with a tolerance value below 0.10 or with a value above 10.0 of variance inflation factor (VIF) would have a correlation of more than 0.90 with other variables, indicative of the multicollinearity problem . Table 3.5 shows that multicollinearity does not exist among all independent variables because the tolerance values for all independent variables in this study is more than 0.10 it's ranging from .687 to .891, while values of Variance Inflation Factor- VIF for all the independent variables is less than the limited valued 10.0 it's ranging from 1.123 to 1.455.

Table- 6

Results of multicollinearity test for dependent variables

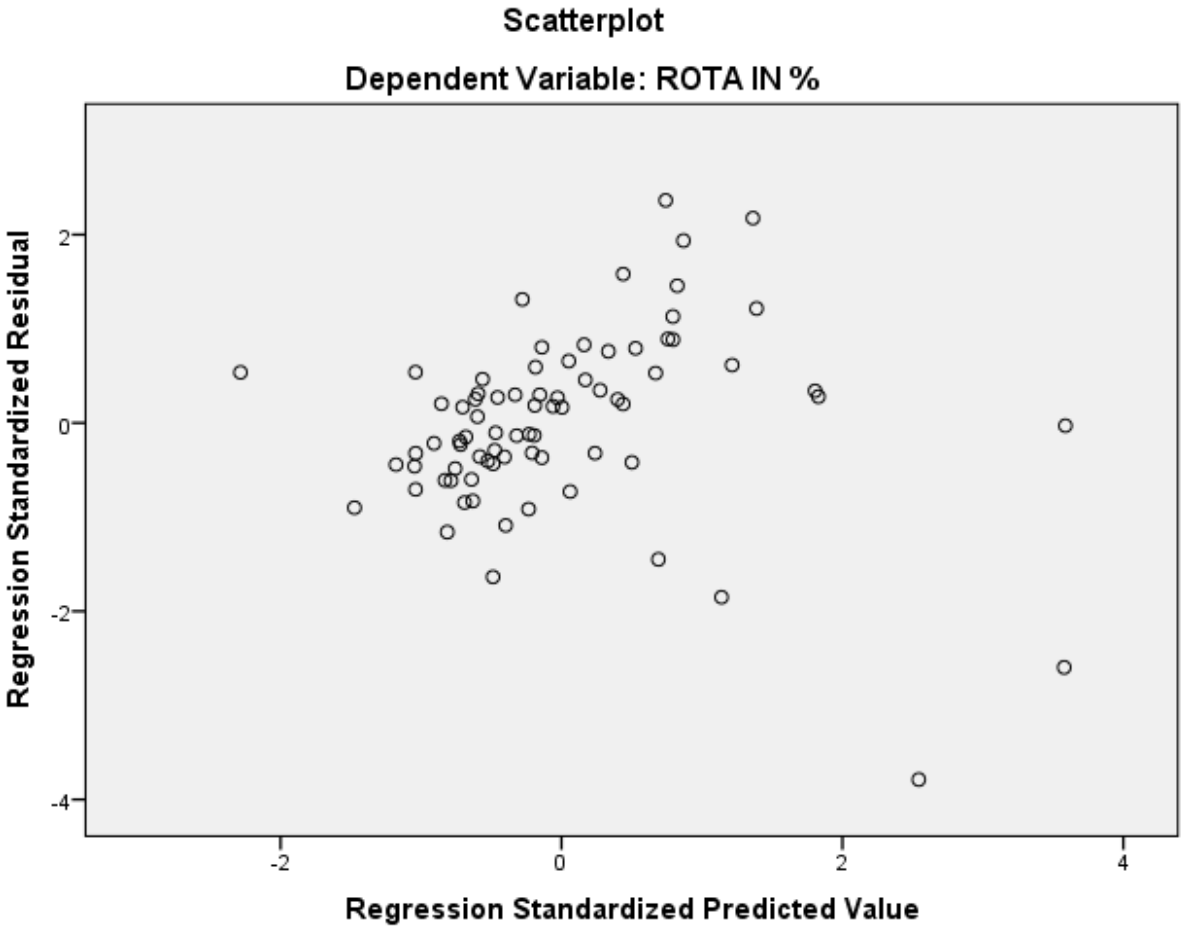
Variables	Collinearity Statistics	
	Tolerance	VIF
Debt to Total Assets Ratio	.829	1.206
Current Ratio	.891	1.123
Earnings per Share	.855	1.170
Debtor Turnover Ratio	.756	1.323
Net profit margin Ratio	.687	1.455
Return on Capital Employed	.883	1.132

Source: Authors' SPSS output.

Heteroscedasticity Test:

According to (Gujarati, 2003, p. 387) Heteroscedasticity test an important assumption of linear regression model is that the disturbances appearing in the population regression function are homoscedasticity; that is, they all have the same variance. Heteroscedasticity test aims to test whether the regression has difference variance from the residue between observations. If this assumption is not satisfied, there is heteroscedasticity. If the variance of the residuals of the observations to other observations fixed, then called Homoskedastisitas, If the variance of the residuals of the observations to other observations different or changing, then called Heteroskedastisity, a good regression model, is a model of free Heteroskedastisity, to detect and presence or absence Heteroskedastisity through looking at the scatter plot graph. The result can show from the below figure 3.6 there is no heteroscedasticity, because there is no clear pattern of the spread in the below graph.

Figure- 7



Source: Authors' SPSS output.

Autocorrelation Test:

Durbin-Watson test is use to test the independent variables of errors (autocorrelation), for a level of significance of 0.05. For result accuracy, the Durbin-Watson d value greater than 2 or less than 1 is definitely reason for concern. Table 3.7 shows that the Durbin-Watson statistic is well in between the d value, the d value for this is 1.832. It means that there was no autocorrelation between independent variables and Return on Total Assets (ROTA), this results indicating lack of autocorrelation error in model of this study.

Table- 8 Autocorrelation test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.948[a]	.899	.890	3.9559	1.832

a. Predictors: (Constant), Return on Capital Employed, Current Ratio, Earnings per Share, Net profit margin Ratio, Debt to Total Assets Ratio, Debtor Turnover Ratio

b. Dependent Variable: Return on Total Assets

Multiple Regression Analysis and Interpretation:

After assess the study data, through several important tests namely as normality test, multicollinearity test, autocorrelation test and heteroscedasticity test, we can say that the data was ready and could be used to run a multiple regression analysis. Table no 3.8 shows the result of multiple regression analysis. Results show that the variables of Debt to Total Assets Ratio is negatively related with Return on Total Assets (ROTA).

While the variables of Current Ratio, Earnings per Share, Debtor Turnover Ratio, Net profit margin Ratio and Return on Capital Employed are positively related with Return on Total Assets (ROTA). R-square shows that only 89.9% of variations in dependent variable return on total assets (ROTA) are explained by the variations in the six independent variables. The adjusted R square is slightly below the R-square with the value of 89%. F-statistics shows the validity of model as its value 103.697 is well above its sig value of 0.000. On the other hand, the regression coefficients of these variables are as follows:

Regression coefficient of Debt to Total Assets Ratio at -0.068 indicates that with the assumption that other variables remain constant then Return on Total Assets (ROTA) is expected to decrease by 6.8 percent for every 1 percent increase in Debt to Total Assets Ratio. However, it's significance level of 0.007 shows that it is statistically significant. Thus, the weight of the evidence suggests that we reject null hypothesis (H_{01}) and accept the alternate hypothesis that Debt to Total Assets Ratio has a significant relationship with Return on Total Assets (ROTA) of all thirteen industries under BSE 100. Regression coefficient of Current Ratio at 1.035, indicates that when Current Ratio increases by 1 percent with the assumption that other variables remain constant then Return on Total Assets (ROTA) is expected to increase by 103.5 percent. However, it's significance level of

0.036 shows that it is statistically significant. Thus, the evidence suggests that we can reject null hypothesis (H_{02}) and accept the alternate hypothesis that Current Ratio has a significant relationship with Return on Total Assets ROTA of all thirteen industries under BSE 100. Regression coefficient of Earning per Share at .014, indicates that when Earning per Share increases by 1 percent with the assumption that other variables remain constant then Return on Total Assets (ROTA) is expected to increase by 1.4 percent. However, it's significance level of 0.000 shows that it is statistically significant. Thus, the evidence suggests that we can reject null hypothesis (H_{03}) and accept the alternate hypothesis that Earning per Share has a significant relationship with Return on Total Assets ROTA of all thirteen industries under BSE 100.

Regression coefficient of Debtor Turnover Ratio at 0.002, indicates that when Debtor Turnover Ratio increases by 1 time with the assumption that other variables remain constant then Return on Total Assets (ROTA) is expected to increase by .2 percent. However, it's significance level of 0.088 shows that it is statistically insignificant. Thus, the evidence suggests that we can accept null hypothesis (H_{04}) that Debtor Turnover Ratio has insignificant relationship with Return on Total Assets ROTA of all thirteen industries under BSE 100.

Regression coefficient of Net profit margin Ratio at 0.008, indicates that when Net profit margin Ratio increases by 1 percent with the assumption that other variables remain constant then Return on Total Assets (ROTA) is expected to increase by .8 percent. However, it's significance level of 0.083 shows that it is statistically insignificant. Thus, the evidence suggests that we can accept null hypothesis (H_{05}) that Net profit margin Ratio has no significant relationship with Return on Total Assets ROTA of all thirteen industries under BSE 100.

Regression coefficient of Return on Capital Employed at 0.415 indicates that with the assumption that other variables remain constant then Return on Total Assets (ROTA) is expected to increase by 41.5 percent for every 1 percent increase in Debt to Total Assets Ratio. However, it's significance level of 0.000 shows that it is statistically significant. Thus, the evidence suggests that we can reject null hypothesis (H_{06}) and accept the alternate hypothesis that Return on Capital Employed has a significant relationship with Return on Total Assets ROTA of all thirteen industries under BSE 100.

Based on calculated coefficients, which are described in the Table 3.8 the linear multiple regression model identified for the variables studied is as follows:

ROTA = 3.335 - 0.068 DTA + 1.305 CR + 0.014 EPS+ 0.002 DTR + 0.008 NPMR + 0.415 ROCE

Table- 9

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9736.837	6	1622.806	103.697	.000[b]
	Residual	1095.462	70	15.649		
	Total	10832.299	76			

a. Dependent Variable: Return on Total Assets

b. Predictors: (Constant), Return on Capital Employed, Current Ratio, Earnings per Share, Net profit margin Ratio, Debt to Total Assets Ratio, Debtor Turnover Ratio

Table- 10

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	3.335	1.194		2.794	.007	.954	5.717		
	Debt to Total Assets Ratio	-.068	.032	-.089	-2.134	.036	-.132	-.004	.829	1.206
	Current Ratio	1.305	.353	.149	3.693	.000	.600	2.009	.891	1.123
	Earnings per Share	.014	.008	.071	1.729	.088	-.002	.030	.855	1.170
	Debtor Turnover Ratio	.002	.015	.006	.147	.083	-.028	.033	.756	1.323
	Net profit margin Ratio	.008	.002	.193	4.765	.000	.004	.011	.883	1.132
	Return on Capital Employed	.415	.024	.786	17.136	.000	.367	.464	.687	1.455

a. Dependent Variable: Return on Total Assets

5.1 Summary of Findings:

The purpose of the study is to investigate the relationship between the dependent and independent variables. After the analysis and interpretation of different variables industry wise. The main findings are mentioned as follows:

- It is observed that Debt to Total Assets Ratio has a significant relationship with Return on Total Assets and one percent change in Debt to Total Assets Ratio can influence Return on Total Assets by 6.8 percent.
- It is observed that we can reject null hypothesis (H_{02}) and accept the alternate hypothesis that Current Ratio has a significant relationship with Return on Total Assets.

- It is witnessed Earnings per Share increases by 1 percent with the assumption that other variables remain constant then Return on Total Assets is expected to increase by 1.4 percent. Thus, the evidence suggests that we can reject null hypothesis (H_{03}) and accept the alternate hypothesis that Earning per Share has a significant relationship with Return on Total Assets.
- The evidence suggests that we can accept null hypothesis (H_{04}) that Debtor Turnover Ratio has insignificant relationship with Return on Total Assets.
- It is observed that Net profit margin Ratio has no significant relationship with Return on Total Assets.
- The evidence suggests that we can reject null hypothesis (H_{06}) and accept the alternate hypothesis that Return on Capital Employed has a significant relationship with Return on Total Assets.
- It is observed that there is a significant negative relation between Debt to Total Assets Ratio and Return on Total assets.
- It is witnessed that there is positive relationships between Current Ratio and Return on Total assets, Earnings per Share and Return on Total assets, Debtor Turnover Ratio and Return on Total assets, Net profit margin Ratio and Return on Total assets, Return on Capital Employed and Return on Total assets.
- The Information Technology industry is more efficient in utilization of assets in generating revenue than other industries. However coal India Ltd. has the highest ROTA belongs to mining & metal industry.
- The proportion of the interest bearing debt in the capital structure is high in Power industry. The percentage of debt is high in the power industry so it is more vulnerable to invest. Power Grid Corpn. Of India Ltd. has the highest proportion of debt among all companies in the power industry.
- Metal Industry has high current ratio among all industry and Hindustan Zinc Ltd. Has the highest among all industry. Current ratio is an indicator of companies' short term liquid position.
- The Automobile Industry has more profits to distribute to its shareholders than any other Industry. This is due to the percentage of debt used in capital structure is high and worthy operational efficiency.

- Automobile Industry is more efficient in the management of credit than others and Industrial Manufacturing Industry is least efficient among all industries.
- Metal Industry has high percentage of sales are left over after all expenses are paid by the business. Where as Pharmaceuticals industry has the lowest profit margin among all Industries.
- The return on capital employed is highest in Consumer Goods Industry. It depicts the effective utilization of finance in consumer goods industry.

5.2 Recommendations for Action:

After the analysis and interpretation, the recommendation for managerial implication as follows:

- The percentage of debt over total asset have negative effect on return on total assets so capital structure decision should dealt with caution. It is necessary for the power industry to decrease there debt portion in capital structure by increasing equity because the lenders have financed more than the owners of the business.
- Current Ratio have positive relationship with profitability, so it is recommended to power industry to increase their current assets to earn more profit.
- It is necessary for Telecommunication industry to increase external financing for good return to its shareholders.
- Infrastructure industry needs to increase their operational profit.

5.3 Limitation of the studies:

Research being never ending process makes ground for further researchers. Obviously, all studies and researches have their own limitations and this study is no exception as such. Despite its theoretical and practical relevance the study does suffer from limitations are as:

- The time framework available to carry out the project is considerably short and the availability of more time may lead to more significant output.
- The study is confined to for single calendar year while inclusion five to ten years may influence the result.
- Though utmost care has been taken while selecting the variables having, but still the inclusion of some other variables may influence the result.

- The study is entirely based on the use of secondary data having its own limitation, which may be incorporated into the present study.

5.4 Scope of Further Research:

- Identifying a large sample (i.e., BSE 500)
- The study can be extended by taking data over five to ten years of time.
- The study can be conducted by using different statistical techniques for data analysis which may give better result.
- The study can be taking different dependent variables and different profitability variable.

5.5 Conclusion:

This paper seeks to assess the analytical quality of ratio analysis. It has been suggested that traditional ratio analysis is no longer an important analytical technique in the academic environment due to the relatively unsophisticated manner in which it has been presented. In order to assess its potential rigorously, a set of financial ratios was combined in a multiple regression analysis approach to the problem of corporate financial performance analysis. Based on the findings of this study, the following conclusions are derived regarding the financial performance of companies listed on Bombay Stock Exchange (BSE 100 index). The main objective of this study, to assess the financial performance level, and to identify the factors affecting this performance of all thirteen industries on BSE 100 index. The findings of this study will contribute towards a better understanding of financial performance of companies with financial ratios. On the basis of findings of the study , regarding financial ratio analysis approach , the study concluded that earning per share and debtor turnover ratio has not significant power to predict the financial performance of companies. While regarding the statistical analysis it can be conclude that there are significant relations between Debt to Total Assets Ratio with Return on Total Assets, Current Ratio with Return on Total Assets, Earnings per Share with Return on Total Assets and Return on Capital Employed and Return on Total Assets. One variables (DTA) has negative significant relations with Return on Total Assets, while four variables has positive significant relations with Return on Total Assets.

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