AN ANALYTICAL INVESTIGATION ON FINANCIAL KEY FACTORS AND FORECASTING ANALYSIS OF BHARAT HEAVY ELECTRICAL AND ELECTRONICS LIMITED

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ABSTRACT

In this modern world the current market has been molded with many factors but above all finance is the ever green word in the corporate sector .it is regarded as the nerve system of any business. If there is successful management of finance any concern will ensure the success of the business. The financial performances of the company in certain areas are satisfied but it is not enough. For the example in the area of current ratio, quick ratio, inventory ratio etc… The company shows good performance where as the company debt equity ratio, total capital employed, working capital must be taken care to improve more than now. The company being a public limited company undertaking the overall performance is far better. The long existence of the company and a good brand name of the boilers internationally and a good reputation from Indian defense and with the rich industrial experience of its management, it is not a dream, it is true and going to become true that the industry would reach to Everest peak in a big way by increasing its market share and profitability as a whole.

Keywords: *current ratio, quick ratio, inventory ratio, equity ratio, total capital employed, working capital*

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Introduction

In general, finance may be defined as the provision of money at the time it is wanted. However, as a management function it has a special meaning. Finance function may be defined as the procurement of funds and their effective utilization. Some of the authoritative definitions are as follows:

"Business finance is that business activity which is concerned with the acquisition and conservation of capital funds in meeting financial needs and overall objectives of a business enterprise". "Business finance can broadly be defined as the activity concerned with planning, raising, controlling and administering of the funds used in the business".

- Khan and Jain

Identification of Research Problem

The Financial Statements are mirror which reflects the financial position and strengths or weakness of the concern. The Non- Banking Financial Company has been witnessed intense competition from domestic banks and international banks. Every business needs to view the financial performance analysis. The study on effectiveness of operational and financial performance of Bharat Heavy Electrical And Electronics Limited is conducted to measure the overall performance of company. The financial analysis strengths the firms to make their best use, and to be able to spot out financial weakness of the firm to state suitable corrective actions. This study aims at analyzing the overall financial performance of the company by using various financial, statistical and mathematical tools like Comparative Analysis, Ratio Analysis, moving averages, correlation analysis, regression analysis, ANOVA and scenario analysis.

Corporate Profile

BHEL is the largest engineering and manufacturing enterprise in India in the related/infrastructure sector. BHEL was established in 1964, ushering in the indigenous Heavy Electrical Equipment industry in India, a dream which has been more than realized with a well-recognized track record of performance. It has been earning profits continuously since 1971-72. BHEL caters to core sectors of the India Economy viz., Power Generation and Transmission, Industry, Transportation, Renewable Energy, Defense, etc. The wide network of BHEL's 14 manufacturing divisions, 4 power sector regional centre, 8 service centers, 15 regional office and a large number of project sites spread all over India and abroad enables the Company to promptly serve its customers and provide them with suitable products, systems and services-efficiently and at competitive prices. BHEL has attained ISO 9001 certification for quality management and all the manufacturing units/divisions of BHEL have been upgraded to the latest ISO-9001:2000 version. All the major units/divisions of BHEL have been awarded ISO-14001 certification for Environmental Management Systems and Safety Management Systems. BHEL was the coveted 'PRIZE' for its Haridwar unit under the CII Exim Award for business excellence, as per the globally recognized model of European Foundation for Quality Management. The company received EEPC's Top Export Award for Project Exports for the seventeenth year in succession. It has also won the SCOPE Meritorious Award for R&D and Innovation 2005-2006 for commendable contribution in the area of R&D and Innovation. Among listed PSEs during 2006-07. 12 out of the 13 power stations awarded with the Ministry of Power's meritorious productivity Awards for 2006-07 are equipped with BHEL sets, reaffirming the quality and reliability of BHEL's equipment.

Review of Literature

Kushalappa and Deepa (2013)[1] suggested that Manufacturing sector is the backbone of any economy. It fuels growth, productivity, employment, and strengthens agriculture and service sectors. The manufacturing sector contributes 79 percent of Foreign Direct Investment (FDI) in India, and accounts for 27 percent of the country's GDP. The sector contributed 66 per cent to the nation's exports in FY11.The present study deals with financial performance evaluation of manufacturing industries in India. For this study, the authors have chosen five manufacturing industries. They are Oil and Gas Industry, FMCG Industry, Cement Industry, Pharmaceutical Industry and Automobile Industry. The present study is aimed at comparing the financial performance of the selected industries and comparing the financial performance of the selected companies under each industry by taking various financial parameters and thereby to show the relative financial position and performance of the companies of each industry and thereby to show the overall position of each industry. Even though there are many more manufacturing industries in India, the scope of the study confined to only five manufacturing industries. The entire study is based on the secondary data, procured and extracted from the financial statements of the selected companies covering a period of five years from 2008 to 2012.

Chandrasekaran et al (2013)[2] aimed at analyzing financial performances of companies to assess their financial strengths and enable the decision makers to understand the financial scenario of their firms. The dataset relates to 247 companies from five major industries in the Indian corporate database. The time frame of the data pertaining to the present study is 2001-2010. The salient feature of this study is the application of Factor, K-means clustering, Discriminant Analyses and Perceptual Mapping as data mining tools to explore the hidden structures present in the dataset for each of the study periods (Anderson, 1984). Factor analysis is applied first and the factor scores of extracted factors are used to find initial groups by K-means clustering algorithm. A few outlier industries, which could not be classified to any of the groups, are discarded as some of the ratios possessed unusual values. Finally, attribute based perceptual mapping is applied and the groups are identified as companies belonging to H-Class (High performance), M-Class (Moderate performance) and L-Class (Low performance). The results of the present study indicate that Perceptual maps can be used as a feasible tool for the analysis of large set of financial data.

Rachchh Minaxi A (2011)[3], have suggested that the financial statement analysis involves analyzing the financial statements to extract information that can facilitate decision making. It is the process of evaluating the relationship between component parts of the financial statements to obtain a better understanding of an entity's position and performance.

Seema et al, (2011)[4] objective of this paper is assess the financial performance of disinvested central public sector enterprises (PSEs) in India on the basis of several dimensions on pre and post disinvestment bases over the life span of more than two decades (i.e. 1986-87 to 2009-10); financial performance has been measured on the basis of select profitability, efficiency, liquidity, leverage and productivity ratios. The findings suggest that partial or small amount of disinvestment has not yielded desired results in majority of dimensions; it may be virtually due to variety of problems faced by PSEs even after disinvestment, such as high cost and noncompetitive industrial structure, operational inefficiency due to high governmental interference, environment restrictions (delegation of operational and functional autonomy to the managers through performance contracts) and less proportion of disinvestment.

Objective of the Study

Primary Objective

- To study the financial performance analysis of Bharat Heavy Electrical and Electronics Limited.

Secondary Objectives

- To compare and analyze the financial statements for the past ten financial years (2002 to 2012)
- To know the profitability, liquidity and solvency position of Bharat Heavy Electrical and Electronics Limited.
- To compare and interpret financial statements of the Bharat Heavy Electrical and Electronics limited with comparative balance sheet analysis, correlation analysis, regression analysis, ANOVA and scenario analysis.
- To forecast the annual growth rate of income of the company with the help of moving averages method.
- To provide suggestions for improving the overall finance performance of the company.

Need of the Study

The Financial Statements are mirror which reflects the financial position and strengths or weakness of the concern. The Non- Banking Financial Company has been witnessed intense competition from domestic banks and international banks. Every business needs to view the financial performance analysis. The study on effectiveness of operational and financial performance of Bharat Heavy Electrical And Electronics Limited is conducted to measure the overall performance of company. The financial analysis strengths the firms to make their best use, and to be able to spot out financial weakness of the firm to state suitable corrective actions. This study aims at analyzing the overall financial performance of the company by using various financial tools like Comparative Analysis, common size statement analysis, Ratio Analysis, and Cash Flow Analysis.

Scope of the Study

The study is based on the accounting information of the Bharat Heavy Electrical and Electronics Limited. The study covers the period of 2002-2012 for analyzing the financial statement such as income statements and balance sheet.

The scope of the study involves the various factors that affect the financial efficiency of the company. To increase the profit and sales growth of the company. This study finds out the operational efficiency of the organization and allocation of resources to improve the efficiency of the organization.

The data of the past three years are taken into account for the study. The performance is compared within those periods. This study finds out the areas where Bharat Heavy Electrical and Electronics Limited can improve to increase the efficiency of its assets and funds employed.

Research Design - Analytical Research Design

In this type of research has to use facts or information already available, and analyze these to make a critical evaluation of the material. The researcher depends on existing data for his research work. The analysis revolves round the material collected or available.

Research Hypotheses

1. There is no significant relationship between liquidity and profit or income of the B.H.E.L Limited.
2. There is no significant relationship between liquidity and leverage or capital structure of the B.H.E.L Limited.
3. There is no significant relationship between liquidity and activity or turnover of the B.H.E.L Limited.
4. There is no significant relationship between profit or income and leverage or capital structure of the B.H.E.L Limited.
5. There is no significant relationship between profit or income and activity or turnover of the B.H.E.L Limited.
6. There is no significant relationship between leverage or capital structure and activity or turnover of the B.H.E.L Limited.
7. There is no significant difference between share holders fund and total assets of the B.H.E.L Limited.
8. There is no significant difference between current assets and current liabilities of the B.H.E.L Limited.
9. There is no significant difference between non-current assets and non-current liabilities of the B.H.E.L Limited.

10. There is no significant relationship between total revenue and total expenses of the B.H.E.L Limited.

Data Collection Method

The data related to study titled a study of the key performance indicators with reference to Bharat Heavy Electrical and Electronics Limited have been compiled from the annual report of the company. Secondary Data refers to the information or facts already collected such data are collected with the objectives of understanding the past status of any variable or the data collected and reported by some source is accessed and used for the objective of a study. Normally in research, the scholars collect published data, journals, annual reports and websites.

Period of the Study

The study covers a period of 10 financial years from 2002 to 2012.

Coverage of Study

The aim of the study is to measure the key performance indicators in Bharat Heavy Electrical and Electronics Limited.

Financial & Statistical Tools

1. Ratio Analysis
   I. Liquidity Ratio
   II. Profitability Ratio or Income Ratio
   III. Leverage or Capital Structure Ratio
   IV. Activity Ratio or Turnover Ratio
2. Comparative Balance Sheet
3. Correlation Analysis
4. Regression Analysis
5. Anova
6. Scenario Analysis
7. Moving Average Analysis

Data Analysis and Interpretations

Forecast of Cash, Bank Balances and Cash Equivalents by Using Moving Average

(RS .in crores)

Year	Cash, Bank balances and cash Equivalents	3 Yearly Moving Averages	Forecast of Cash, Bank balances and cash Equivalents
2002	4765.89		
2003	1320.91		
2004	2659.63		
2005	3177.86		
2006	4133.97		
2007	5808.91		
2008	8386.02		
2009	10314.67		
2010	9790.08		
2011	9630.15		
2012	6671.98		
	Forecast on 2013	(9790.08+9630.15+6671.98) / 3	8697.403
	Forecast on 2014	(9630.15+6671.98+8697.403) / 3	8333.178
	Forecast on 2015	(6671.98+8697.403+8333.178) / 3	7900.854
	Forecast on 2016	(8697.403+8333.178+7900.854) / 3	8310.478

Source: Secondary data

When we forecast for the year 2013 by using '3" yearly moving averages from 2010 to 2012 that is 9790.08,9630.15, 6671.98 which consist of 8697.403(or) of cash & bank balances which was highest percent as compared to the other years at the study. If we forecast for the year 2014.by taking in to account cash and bank balance for the period of 2011 to 2013 that is 9360.15, 6671.98, 8697.403 which consist of 8333.17 (or) which is a bit low as compared to the previous years. When we forecast for the year 2015 by taking in to account cash & bank balances for the period of 2012 to 2014 that is 6671.98, 8697.403, 8333.178 which consist of 7900.84 (or) which have decreased very highly as compared to 2013-2014 again if we forecast the cash balance for the year 2016 by using "3"yearly moving average of 8697.403, 8333.178, 7900.854 which consist of 8310.478 (or) which is high as compared to the previous years of the study. It is concluded that cash, bank & cash equilants is very high during 2013 (ie) 8697.403(or) as compared to other three years of the study. Which shoes liquidity position of the company is in good condition during that year.

Scenario Analysis

Year	Best	Normal	Least or Worst
2012	0.79	0.35	0.18
2011	1.26	0.44	0.22
2010	1.59	0.55	0.28
2009	1.96	0.68	0.35
2008	2.36	0.82	0.41
2007	2.89	1.23	0.51
2006	3.48	1.48	0.61
2005	4.21	1.79	0.74
2004	4.79	2.03	0.84
2003	5.28	2.24	0.93
2002	5.68	2.41	1.07

Source: Secondary data

From the above table we able to know that the total shareholders fund of the company from 2002 to 2012 that is for the period of ten years. As we compare the shareholders fund by taking the base year with other years of the study from that we can evaluate which is best normal (or) least during the period. During the year 2012. 0.79 is the best, 0.35 will be normal value and 0.18 is the least value. During 2011, 1.26 will be the best value and 0.44 will be the normal value and 0.22 will be the least value. If we take 2010 result of shareholders 1.59 will be the best that is 0.55 will be normal and 0.28 will be best 0.68 will be the normal and 0.35 will be the least value. In the year 2008 2.36 will be best and 0.82 will be normal and 0.41 will be the least value in 2007, 2.89 will be the best and 1.23 will be the normal and 0.5 is considered least. In the year 2006. 3.48 are the best and 1.48 will be normal and 0.61 will be the least value. In the year 2005.4.21 is the best, 1.79 will be normal and 0.74 will be the least value. If we take 2004 in this year 4.79 will be best, 2.03 will be normal and 0.84 will be the least value. During 2003 we identified 5.28 will be the best value and 2024 will be the normal value and least value will be 0.93 if we take 2002 5.68 will be the best value and 2.41 will be the normal value and 1.07 will be the least value. It is concluded from this Scenario Analysis 2002 will be best value that is

5068, normal value 2.41 and least value 1.07. So increased in shareholders fund is an biggest support for the welfare of an industry.

Regression Analysis - Relationship between Total Revenue and Total Expenses Position of the B.H.E.L Limited

Null Hypothesis (H_1): There is no relationship between total revenue and total expenses

Alternative Hypothesis (H_{1A}): There is a relationship between total revenue and total expenses

MODEL	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.187	.633		3.452	.009
Total Expenses	.540	.196	.246	2.750	.007

Dependent Variable: Total Revenue

Source: Secondary data

$$Y = a + b\,x$$

(Total Revenue**) = (2.187) + 0.055 (**Total Expenses**)**

From the above, that is inferred that the significant values is greater than 0.05. So accept the alternative hypotheses (**H_1**) and reject the null hypotheses (**H_{1A}**) i.e., There is a significant relationship between total revenue and total expenses of the B.H.E.L limited. Total expenses have a higher impact on total revenue of the B.H.E.L limited. If total expenses increases it's directly affect the total revenue of the B.H.E.L limited.

ANOVA - Difference between Current Assets and Current Liabilities of the B.H.E.L Limited

Null Hypothesis (H_2): There is no difference between current assets and current liabilities

Alternative Hypothesis (H_{2A}): There is a difference between current assets and current liabilities

Current Assets Vs Current Liabilities	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.671	8	2.084	.078	.993
Within Groups	26.645	1	26.645		
Total	43.316	9			

Source: Secondary data

From the above, that is inferred that the significant values is greater than 0.05. So accept the null hypotheses (**H_2**) and reject the alternative hypotheses (**H_{2A}**) i.e., There is no significant difference between current assets and current liabilities of the B.H.E.L limited.

Correlation Analysis - Relationship between Liquidity and Profit or Income Position of the B.H.E.L Limited

Null Hypothesis (H_5): There is no relationship between liquidity and profit or income position of the B.H.E.L limited

Alternative Hypothesis (H_{5A}): There is a relationship between liquidity and profit or income position of the B.H.E.L limited

Cross Tabs	Karl Pearson Correlation Coefficient Value	Significant Value
Current Ratio Vs Gross Profit Ratio	-0.392	0.263
Current Ratio Vs Net Profit Ratio	-0.307	0.388
Current Ratio Vs Profit Before Tax Ratio	-0.392	0.263
Current Ratio Vs Profit After Tax Ratio	-0.308	0.387
Current Ratio Vs Operating Ratio	0.319	0.368
Acid Test Ratio Vs Gross Profit Ratio	-0.089	0.807
Acid Test Ratio Vs Net Profit Ratio	0.056	0.878
Acid Test Ratio Vs Profit Before Tax Ratio	-0.089	0.807
Acid Test Ratio Vs Profit After Tax Ratio	0.056	0.878
Acid Test Ratio Vs Operating Ratio	0.557	0.094

Source: Secondary data

From the above, that is inferred that the significant values of Pearson's correlation are greater than 0.05. So accept the null hypotheses (**H_5**) and reject the alternate hypotheses (**H_{5A}**) i.e., There is no significant relationship between liquidity and profit or income position of the B.H.E.L limited.

Findings and Suggestions

Current ratio of the industry is presently 1.696029618 it is not up to satisfactory level of 2: 1.altough ratio of 1:69 does not place the company in the dangerous position it is still not a comfortable ratio. It is therefore suggested that the company initiate steps to bring current ratio to a reasonable comfortable level. The liquid assets of the company are higher than the ideal ratio of 1:1.therefore the industry is showing excess of quick assets over quick liabilities which is showing positive growth of the industry. The gross profit ratio of the company has increased in the last 3 years. This indicates the company is able to maintain better control over manufacturing expenses will increase its sales. The company should make certain that it continuous to maintain close control over manufacturing expense and reduce wastages in order to further increase in gross profit ratio. The net profit ratio of the company is higher in the 2011-2012 which add a greater value to the firm and also net profit ratio is continuously increased which will add more value to the industry in near future.

Profit before tax is good in the year 2011-2012 that is 21.790 as compared to the base year of the study 2002-2003 that is 11.578.so increase in sales resulted in increase in profit before tax which is showing prosperity of the industry. As the operating ratio shows decreasing trend as there was lack of management of resources which must be concentrated to avoid production fund wastages thereafter in the fallowing years. Debt equity ratio is an important one which shows good relationship between outsiders and shareholders fund of the industry.

Debt equity ratio was not showing good result as the outsiders fund was more than the shareholders fund which will spoil the Image of the concern but will change in future as it was not accurately measured that the debt equity was constant. Debtors turnover ratio is in an increasing trend in the middle of the year 2005-2006 which will helps to rotate cash for further production. But in our study debtors turnover ratio was not good it is showing decreasing trend in 2011-2012 which shows lock up of cash due to lethargic decision making. The company should take steps to reduce the debt collection period as it increases it will ensure that the operating cycle is reduced.

The fixed assets turnover ratio is lower in all the years of the study which is not satisfactory due to the increase in fixed assets in line with the expansion being presently undertaken by the company .although the ratio is low now it will soon pick up once the expansion starts yield benefits. As per the findings working capital has been showing minus value of 378008.03 which is very bad as compared to the previous year of the study. It is showing positive value so there should not be any flexibility in working capital; stability (or) constant moving of working capital will increase the profit of the industry. As per the study total capital employed by the industry has been showing increasing trend during the year 2002-2006 that is in 2005-2006 717760.50 after that it has been decreased it shows the allotment capital of the company is reduced.

As per the study by using the tool of moving average in the year 2012 cash &bank balance showing peak position which shows good liquidity position of the company during the year. If we forecast sales for 2014to 2016 it shows increase in sales during the period. If the sales increases automatically profit increases will increases the value of the firm. As per the comparative statement of the study it shows positive result when compared to all the years of the study that is from 2002-2012 which shows good improvement year by year. Scenario analysis shows that as per the findings when we compare from the year 2002-2012it shows best value of 5068.so care must be taken to improve shareholders fund. As per the findings there is no difference between current asset and current liability which will show good financial position of the industry. As per the correlation analysis of the study significant relationship between debtors turnover ratio and assets turnover ratio and significant relationship between operating Ratio and fixed asset turnover ratio of the B.H.E.L limited. The return on total assets may be increased to the satisfactory level.

Regression analysis shows that as per the findings there is a significant relationship between total revenue and total expenses of the B.H.E.L limited. Total expenses have a higher impact on total revenue of the B.H.E.L limited. If total expenses increases it's directly affect the total revenue of the B.H.E.L limited.

Conclusions

In this modern world the current market has been molded with many factors but above all finance is the ever green word in the corporate sector .it is regarded as the nerve system of any business. If there is successful management of finance any concern will ensure the success of the business. The financial performances of the company in certain areas are satisfied but it is not enough. For the example in the area of current ratio, quick ratio, inventory ratio etc… The company shows good performance where as the company debt equity ratio, total capital employed, working capital must be taken care to improve more than now. The company being a public limited company undertaking the overall performance is far better. The long existence of the company and a good brand name of the boilers internationally and a good reputation from Indian defense and with the rich industrial experience of its management, it is not a dream, it is true and going to become true that the industry would reach to Everest peak in a big way by increasing its market share and profitability as a whole.

References

1. Kushalappa and Deepa, (2006),' Financial performnce evaluation of manufacturing industries: A comparative study of the selected manufacturing industries in India', ZENITH International Journal of Business Economics & Management Research,vol 3, no 2, pp 188-201.
2. Chandrasekaran. R, Manimannan. R and Lakshmi Priya.R (2013), Financial Ratios Performance of Major Indian Industries to Evaluate their Performances using Multivariate Analyses and Perceptual Mapping, International Journal of Scientific & Engineering Research Volume 4, no 2,pp 1-6.
3. Rachchh Minaxi A (2011), Introduction to Management Accounting, 3-88.
4. Seema.G , Jain.P, Surendra .S and Gupta .V (2011), 'Financial performance of disinvested central public sector enterprises in India: An empirical study on select dimensions, Journal of Applied Finance & Banking, vol.1, no.4, pp 57-106.
5. Gaur. J (2010),' Financial Performance Measures of Business Group Companies: A Study of Indian Non-Metallic Mineral Products Industries', The IUP Journal of Business Strategy, Vol. 7, No. 4, pp. 45-53.
6. Reddy T S & Hari Prasad Reddy Y, "Management Accounting", 3rd Edition, 2008, 3.9 - 3.25.
7. Susan ward, "Financial Ratio Analysis For Performance Check", p.132.
8. Pandey I M, "A (2007)Management Guide for Managing Company's Funds and Profits", 6th Edition, 1 – 58.
9. Carlos Correia, David Flynn, Enrico Uliana & Michael Wormald, "Financial Management", 6th Edition, 200.7,5.1 -5.34.
10. Chidambaram Rameshkumar, Anbumani N, "An overview on financial statements and ratio analysis",2006, Vol.1, p. 30
11. Khan M Y & Jain P K, "Financial Management", 4th Edition , 2006, 6.1 - 6.81.
12. John J.Wild, K.R.Subramanyam & Robert F.Halsey (2006), Financial Statement Analysis, 9th Edition, 2-90.
13. Peeler J. Patsula, "Successful Business Analysis",2006, 18-19.
14. Jonas Elmerraji, "Analyze Investments Quickly with ratios", 2005, 33-36.

15. Isabel Martinez Conesa, Esther Orthiz Martinez, (2004) "International financial analysis and the handicap of accounting diversity", European Business Review, Vol. 16 Iss: 3, PP.272 -291.
16. Joakim Bjorkdahl, Erik Bohlin, (2002) "Financial analysis of the Swedish 3G licensees: Where are the profits?", info, Vol. 4 Iss:4,pp. 10-16.
17. Nevdeep Aggarwal and S.K. Singla, How to develop a Single Index for Financial Performance, Indian Management, Vol.40. 40 No.3, March 2001, pp.59-62.
18. M.K.Khan and P.K. Jain, " Theory and Problem in Financial Management", 2nd edition, Tata McGraw- Hill publishing company limited, New Delhi,2006, P -2.1
19. Prasanna Chandra, "Financial Statement Analysis", 2000, P-265.
20. Kennedy and Muller, "Analysis of Financial Statements",1999, 1.3 – 1.34.
21. Jae K.Shim, Joel G.Siegel, Schaum's Outline of Theory and Problems of Financial Accounting, 1999, 279-298.
22. S.Arumvalarthan, Estimating Working Capital Requirements, The Management Accountant, Vol.22 No.1, October 1996, pp.768-771.
23. Greninger et al.(1996), Fundamentals of Financial Management, 5th Edition, 4.1-4.18.
24. Salmi, T. and T. Martikainen (1994), "A review of the theoretical and empirical basis of financial ratio analysis", The Finnish Journal of Business Economics 43:4, 426-448.
25. Roa and Prathasarathy, Reports of Andra Pradesh State Financial Corporation" 1993-94.
26. Abhiman Das, 1993, Vol.19 No.4, January – March 2002, PP.37-41.
27. A.A.Gopalakrishnan, " Understanding Financial Statement Interpretation and Analysis" Atlantic Publisher and distributors, 1993.
28. R.P. Rustagi, " Financial Management Theory, Concepts and Problem" Oxford_IBH publishing co". New Delhi.
29. R.K. Saher, " Analysis of Corporate Profitability and Multivariate Approach" The EconomicTimes, 10 July, 1990.
30. Umesh Holani, "Analysis of Financial Statement", Himalaya Publishing House, 1988.
31. Pramod Kumar, " Analysis of Financial Statement", Atlantic Publishers and distributors., 1988.