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Evaluation of Financial Performance of Select Indian Maharatna and Navaratna Public Sector Undertakings

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Abstract

Financial performance is a subjective measure of how well a firm can use its assets from its primary mode of business and generate revenues. Financial performance is also used to measure the overall financial health of the firm during a given period of time and can be used to compare the similar firm across the same industry or to compare the industries or sectors in aggregation. In India some foreign multinational companies and some public sector undertaking are engaged in manufacturing of capital goods. Out of which one Navaratna and one Maharatna company is select for the study. The objectives of the study is to analyze profitability and management efficiency of the two select Public Sector "Maharatna" and "Navaratna" companies manufacturing capital goods and to analyze correlation between profitability and management efficiency of the two select public Sector "Maharatna" and "Navaratna" companies manufacturing capital goods. In case of Bharat Heavy Electricals Limited (BHEL) while considering the correlation between the profitability ratios and management efficiency ratios, with exception in some cases there is a positive correlation exist between all the profitability ratios and management ratios of BHEL which have taken into the consideration for the study. In case of Bharat Electronics Limited (BEL) there is both positive and negative correlation between profitability and management efficiency ratios. But the value of the co-efficient of correlation between profitability and management efficiency ratio of BHEL is higher than that of BEL.

Keywords: Correlation, Maharatna, Management efficiency, Navaratna, Profitability

Introduction

Finance is management of money and other valuables which can be easily convertible into cash. Finance is the simple task of providing necessary funds required by the business entities like companies, firms, individuals and others on the terms that are most favorable to achieve their economic objectives. Financial performance is a subjective measure of how well a firm can use its assets from its primary mode of business and generate revenues. Financial performance is also used to measure the

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overall financial health of the firm during a given period of time and can be used to compare the similar firm across the same industry or to compare the industries or sectors in aggregation. Financial performance analysis includes analysis and interpretation of financial statements in such a way that it undertakes full diagnosis of the profitability and financial soundness of the business.

Capital goods are tangible assets that an organization uses to produce goods and services such as office buildings, equipments and machineries. Capital goods are any material that adds to the assets of an enterprise. Examples are machinery and equipment, utilities like power generators, effluent treatment plants, service equipment, office equipment like computers and furniture. These can be used for their useable life for producing product and services for the enterprise and increases value. Highly expensive capital goods items restrict the entrance new competitors in the profitable market of the existing players. Capital goods are called complex products and systems play an important role in the economy.

In year 2016, the first ever national policy was passed by the union cabinet minister to reduce dependency on the import by incentivizing domestic production. This policy seeks to increase the production of capital goods from Rs.2.3 lakh crore in financial year 2014-15 to Rs.7.5 lakh crore in financial years 2024-25. The aim of the capital goods policy is to convert India from net importer of capital goods at the present moment to the net exporter in the future. There are so many capital goods companies in India, some of them are Asea Brow Boveri (ABB), Bharat Heavy Electricals Limited (BHEL), Bharat Earth Movers Limited (BEML), Bharat Electronics Limited(BEL), Crompton Greaves, Cummins, Elecon Engineering, Greaves Cotton, KEC International, Larsen & Tubro, Siemens, Thermax etc. Most of the companies producing capital goods in India are foreign multinational companies and some companies are public sector undertaking in India.

Brief profile of the some above mentioned companies producing capital goods

Asea Brow Boveri (ABB): ABB is Swedish-Swiss multinational corporation headquarter in Zurich, Switzerland. ABB India Limited is a branch of ABB. ABB India Limited is an Indian based company which is engaged in power and automation business. The company segment includes power system which offers turnkey systems and services for transmission and distribution for power grid and power plant. Power product which manufactures, engineers, supplies key components to transmit and distribute electricity. Process automation provides customer with integrated solutions for control, plant optimization and industry specific application knowledge. ABB has operations in about 100 countries in the world. Its global revenue is $35.5 billion for 2015.

Bharat Electronics Limited (BEL): BEL was established at Bangalore, India, by the Government of India under the Ministry of Defence in 1954 to meet the specialized electronic needs of the Indian Defence services. Over the years, it has grown into a multi-product, multi-technology, multi-unit company servicing the needs of customers in diverse fields in India and abroad. During 2014-15, BEL recorded a turnover of Rs.6, 695 crores. BEL is among an elite group of public sector undertakings which have been conferred the Navaratna status by the Government of India.

Bharat Heavy Electricals Limited (BHEL): BHEL is owned by Government of India. It is power plant equipment manufacturer, operates as an engineering and manufacturing company. It has been granted high prestigious Maharatna Status by Govt. of India in 2013 for its outstanding performance. The Company is an integrated power plant equipment manufacturer, engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a range of products and services for the sectors, such as power, transmission, industry, transportation, renewable energy, oil and gas, and defense. It operates in two segments: Power and Industry. In its power segment, BHEL offers end-to-end systems, products and engineering, erection and commissioning services for thermal power plants encompassing steam turbines, generators, boilers and matching auxiliaries up to 1,000 megawatt ratings. In the Industry segment, its products and systems include captive power plants, solar photovoltaic (PV) plants, centrifugal compressors, oil rigs, drive turbines, industrial boilers and auxiliaries, waste heat recovery boilers and gas turbines.

Larsen & Tubro Limited: Larsen & Tubro Limited is also known as L&T is an Indian multinational conglomerate. It was founded by Danish Engineers taking refuge in India as well as Indian financing partner. The company has business interests in engineering, construction, manufacturing goods, information technology and financial services. Though it had demerged its businesses of financial services which is known as L&T Financial services. The Company operates through the segments: infrastructure, including roads, railways, metro rail, urban infrastructure, smart cities and communication infrastructure, and water infrastructure; thermal power generation; power transmission and distribution; hydrocarbon, defense sector; heavy engineering; metallurgical and material handling; electrical and automation; realty; information technology and technology services; financial services, and developmental projects.

Siemens Limited: Siemens Limited is a holding company. The Company is engaged in the manufacture of electric motors, generators, transformers and electricity distribution and control apparatus; general purpose machinery; electrical signaling, safety or traffic-control equipment; irradiation, electro medical and electrotherapeutic equipment,

and other electronic components. It operates in eight segments: Power and Gas, Energy Management, Building Technologies, Mobility, Digital Factory, Process Industries and Drives, Healthcare, Metals Technologies and Others. Its geographical segments are within India and outside India. Power and Gas provides products and solutions for generation of electricity from fossil and renewable fuels for utilities, independent power producers and engineering, procurement and construction (EPC) companies and the transport of oil and natural gas. Energy Management is engaged in transmission and distribution of electrical energy for power utilities and industrial companies.

The government-owned corporations are termed as Public Sector Undertakings (PSUs) in India. In a PSU majority (51% or more) of the paid up share capital is held by central government or by any state government or partly by the central governments and partly by one or more state governments. Public sector undertaking (PSU) companies are divided into three categories, they are: Maharatna, Navartana, Miniratna category I and category II. Maharatna PSU companies are those companies whose three years annual net profits are more than Rs. 2500 crores, net worth is Rs. 10000 crores and turnover is Rs. 25000 crores. Navaratna are those PSUs which scores 60 (out of 100) based on six parameters which include net worth, net profit, total man power cost, total cost of production, cost of services , PBDIT (profit before depreciation interest and taxes), capital employed etc. Miniratna category I are those companies who have made profit continuously for last three years or earned a net profit of Rs. 30 crores or more in one of the three years. Miniratna category II are those companies who have made profits for the last three years continuously and should have a positive net worth. ONGC, BHEL, COAL INDIA, IOC, GAIL, NTPC are the example of Maharatna. BEL, BPCL, HAL, HPCL, MTNL, NALCO, NMDC are some example of Navaratnas. Miniratna category I are Airport Authority of India, Antrix Corporation Limited, Balmer Lawrie & Company Limited, Bharat Coking Coal Limited, Satluj Jal Vidyut Nigam Limited . And the examples of Miniratna category II are Bharat Pumps and Compressures Limited, Broadcast Engineering Consultants (I) Limited, Central Mine Planning & Design Institute Limited, Central Railside Warhouse Company Limited.

Literature Review

Ganesan (2007) analyzed the working capital management efficiency of firms from telecommunication equipment industry. The relationship between working capital management efficiency and profitability is examined using correlation and regression analyses. ANOVA analysis is done to study the impact of working capital management on profitability. Using a sample of 443 annual financial statements of 349 telecommunication equipment companies covering the period 2001-2007, this study found evidence that even though “days

working capital" is negatively related to the profitability, it is not significantly impacting the profitability of firms in telecommunication equipment industry.

Van Horne (2007) proposed a method by which management is able to analyze the risk-return tradeoff for various levels of liquid assets for the firm and for different maturity compositions of its debt. Together, these factors determine its working-capital position. Certain probability concepts are employed; and information is provided about the risk of cash insolvency for alternative strategies. In addition, the opportunity costs of these strategies are determined. With the framework proposed, more rational working-capital decisions are possible. The firm is able to achieve a working-capital position that provides the appropriate margin of safety in relation to the cost involved in attaining that position.

Vishnani and Shah (2007) studied the role of working capital management policies on profitability of a company. Conventionally, it has been seen that if a company desires to take a greater risk for bigger profits and losses, it reduces the size of its working capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its working capital. However, this policy is likely to result in a reduction of the sales volume, therefore of profitability. Hence, a company should strike a balance between liquidity and profitability. In this paper an effort has been made to make an empirical study of Indian Consumer Electronics Industry for assessing the impact of working capital policies & practices on profitability during the period 1994–95 to 2004–05. The impact of working capital policies on profitability has been examined by computing coefficient of correlation and regression analysis between profitability ratio and some key working capital policy indicator ratios.

Singh and Pandey (2008) had an attempt to study the working capital components and its impact on profitability of Hindalco Industries Limited for a period 1990 to 2007. Results of the study showed that receivable turnover ratios had statistical significant impact on the profitability of Hindalco Industries Limited Jack and Matthew (1994) state in their article management of accounts receivable that the simplest means of recovering your accounts receivable is to take active steps to avoid the process entirely.

Ranchandran, A and Janakiraman, M, (2009), Analyzed the relationship between working efficiency and earnings before interest and tax of the paper Industry in Indian capital management. The study revealed that cash conversion cycle and inventory days had negative correlative with earnings before interest and tax, while accounts payable days and accounts receivable days related positively with earnings before interest and tax. Grzeg (2008) in his study a portfolio management approach in accounts receivable management, used portfolio

management theory to determine the level of accounts receivable in a firm he paid out that there was an increase in level of accounts receivable in a firm increase both net working capital and cost of holding and managing account receivables.

Uyar (2009) made an attempt (1) to set industry benchmarks for cash conversion cycle (CCC) of merchandising and manufacturing companies, and to examine the relationship between (2) the length of the CCC and the size of the firms, and (3) the length of the CCC and profitability. The author collected data of this study from the financial statements of the corporations listed on the Istanbul Stock Exchange (ISE) for the year 2007. The author utilized ANOVA and Pearson correlation analyses for empirical investigation. The major findings of the study are as follows. The lowest mean value of the CCC is found in the retail/ wholesale industry, with an average of 34.58 days, and the highest mean value of the CCC is found in the textile industry, with an average of 164.89 days. There is a significant negative correlation between the CCC and the variables; the firm size and the profitability. The findings of this paper are based on a study conducted on the ISE. Hence, the results are not generaliseable to non-listed companies. Secondly, the sample comprises merchandising and manufacturing companies. Therefore, the results are valid for those industries. The paper is one of the rare studies about the subject conducted in developing countries, and also in Turkey. Secondly, the paper presents industry benchmarks to the firms to evaluate their CCC performance.

Mohammad and Saad (2010) made with an attempt to bridge the gap in the literature by offering empirical evidence about working capital management and its effect to the performance of Malaysian listed companies from the perspective of market valuation and profitability. The secondary data for analysis is retrieved from Bloomberg's Database of 172 listed companies randomly select from Bursa Malaysia main board for five year period from 2003 to 2007. The study aims to explore the effects of working capital component i.e. cash conversion cycles (CCC), current ratio (CR), current asset to total asset ratio (CATAR), current liabilities to total asset ratio (CLTAR), and debt to asset ratio (DTAR) to the firm's performance by looking at firm's value i.e. Tobin Q (TQ) and profitability i.e. return on asset (ROA) and return on invested capital (ROIC). Applying correlations and multiple regression analysis, the result shows that there are significant negative associations between working capital variables with firm's performance. Thus it highlights the importance of managing working capital requirements to ensure an improvement in firm's market value and profitability and this aspect must form part of the company's strategic and operational thinking in order to operate effectively and efficiently.

Sharma and Kumar (2011) examined the effect of working capital on profitability of Indian firms. We collected

data about a sample of 263 non-financial BSE 500 firms listed at the Bombay Stock (BSE) from 2000 to 2008 and evaluated the data using OLS multiple regression. The findings of our study significantly depart from the various international studies conducted in different markets. The results reveal that working capital management and profitability is positively correlated in Indian companies. The study further reveals that inventory of number of days and number of days of accounts payable are negatively correlated with a firm's profitability, whereas number of days accounts receivables and cash conversion period exhibit a positive relationship with corporate profitability. The present study contributes to the existing literature by examining the effect of working capital management on profitability in the context of an emerging capital market such as India.

Duru and Ubesie (2016) examined the effect of the management of accounts receivable ratio on the profitability of industrial/Domestic products manufacturing firms in Nigeria. The variables of this study include accounts receivable ratio, debt ratio and sales growth rate. Only secondary sources of data were used for the period 2000-2011. The hypotheses were tested using the multiple regression technique. The results show that accounts receivable ratio, debt ratio and sales growth rate had positive and significant relationship with the profitability of the firms under study.

Objectives of the study:

To analyze the profitability of the two select Public sector "Maharatna" and "Navaratna" companies manufacturing capital goods.

To analyze the efficiency of management of the two select Public sector "Maharatna" and "Navaratna" companies manufacturing capital goods.

To analyze correlation between profitability and management efficiency of the two select Public Sector "Maharatna" and "Navaratna"companies manufacturing capital goods.

To study Whether there is any difference between the profitability ratios and management efficiency ratios of the two select Public Sector "Maharatna" and "Navaratna"companies manufacturing capital goods.

Hypotheses of the study:

H1: There is a statistically significant difference in profitability ratios of the two select Public Sector "Maharatna" and "Navaratna"companies manufacturing capital goods.

H2: There is a statistically significant difference in management efficiency ratios of the two select Public Sector "Maharatna" and "Navaratna"companies manufacturing capital goods.

Research Methodology

Data Collection: This study is based on secondary data. The relevant sources of secondary data are books, journals, magazines, newspapers, brochures and

websites of select capital goods companies. All the relevant data is being collected from moneycontrol.com for year 2011 to year 2015. The present study measures the profitability ratios, management efficiency ratios of the two companies BHEL and BEL select from the capital goods companies in India.

Statistical Tools : In this study statistical tools like arithmatic mean and correlation have been used to calculate the average of profitability ratios and management efficiency ratios. Also correlations between profitability ratios and management efficiency ratios of these companies have been found out. Statistical technique like ANOVA test has been used. The operational meaning of the select ratios is given as follows:

Operating profit margin: It is a ratio of operating profit and sales. Operating profit margin= (Gross profit- operating expenses)/ sales.

Gross profit margin: It is a ratio of gross profit and sales. Gross profit margin= Gross profit/Sales. Gross profit= sales-cost of goods sold.

Net profit margin: It is a ratio of net profit and sales. Net profit margin= Net profit/ sales.

Return on capital employed: This is a financial ratio that measures company's profitability and the efficiency with which its capital is employed. Return on capital employed =Earnings before interest and taxes / capital employed.

Return on net worth: Return on net worth is the ratio of net income returned as a percentage of shareholders equity. Return on net worth =Net income/ shareholders equity.

Return on long term fund: Return on long term fund is ratio of net income and long term capital. Return on long term fund=net income/ long term capital.

Inventory turnover ratio (ITR): ITR is a ratio showing how many times a co's inventory is sold and replaced over a period of time. ITR= cost of goods sold / average inventory.

Debtors' turnover ratio (DTR): The DTR is an accounting measure used to quantify a firm's effectiveness in extending credit and in collecting debts on that credit.

DTR= net credit sales/ average accounts receivable.

Investment turnover ratio (INVTR): The term Investment turnover ratio describes a calculation analysts can use to determine how efficiently a company's debt and equity produces revenues. INVTR= revenues/ (stockholders' equity+ debt).

Fixed assets turnover ratio (FATR): This ratio specially measures operating performance. It measures how able a company is to generate net sales from investment in fixed assets less depreciation. FATR= Net sales/ net investment in fixed assets.

Total assets turnover ratio (TATR): This is ratio of value of a company's sales or revenues generated relative to the value of its total assets. TATR= Sales or revenues/ Total assets.

Assets turnover ratio (ATR): This is ratio of value of a company's sales or revenues generated relative to the value of its assets. ATR= Sales or revenues/ assets.

Discussion and Results

Table-1

The profitability ratios (%) of Bharat Electronics Limited (BEL) from FY 2011 to FY 2015

Name of ratios	Average	2015	2014	2013	2012	2011
Operating profit margin	13.95	16.7	14.19	10.52	10.65	17.68
Gross profit margin	11.76	14.45	11.93	8.38	8.56	15.5
Net profit margin	15.25	17.05	14.84	14.57	14.38	15.42
Return on capital employed	19	18.58	16.74	17.74	19.14	22.82
Return on net worth	14.84	14.8	13.27	14.11	14.76	17.27
Return on long term fund	19	18.58	16.74	17.74	19.14	22.82

Source: moneycontrol.com

Table 1 shows the year- wise profitability ratios of BEL from financial year 2011 to financial year 2015. It was observed that all profitability ratios have decreased in 2015 in comparison to what they have been in 2011 but they have managed to increase from their lows for the period of observation, in year 2013(Operating profit margin, Gross profit margin and Net profit margin) and in 2014(Return on capital employed, Return on net worth and Return on long term fund). It is also seen that the profitability ratios of BEL of the financial year 2011 are only more than the five years' simple average value of the ratios.

Table-2

The profitability ratios (%) of Bharat Heavy Electricals Limited (BHEL) from FY 2011 to FY 2015

Name of ratios	Average	2015	2014	2013	2012	2011
Operating profit margin	15.77	6.95	11.55	19.39	20.64	20.32
Gross profit margin	13.57	3.38	9.04	17.42	18.98	19.03
Net profit margin	11.22	4.7	8.84	13.65	14.67	14.22
Return on capital employed	27.28	6.56	14.43	30	40.68	44.73

Name of ratios	Average	2015	2014	2013	2012	2011
Return on net worth	18.78	4.16	10.47	21.72	27.72	29.82
Return on long term fund	27.75	6.56	15.54	31.26	40.68	44.73

Source: moneycontrol.com

Table 2 shows the year-wise profitability ratios of BHEL from financial year 2011 to financial year 2015. It was observed that all profitability ratios have decreased in 2015 in comparison to what they have been in 2011 and in the financial year 2015 the all profitability ratios have touched their lows for the period of observation. So, it can be said that the profitability condition of BHEL is deteriorating year after year. It is also seen that the profitability ratios of BHEL of the financial year 2011, 2012 and 2013 are more than the five years' average value of the ratios. Profitability ratios of BHEL of the financial year 2014 and 2015 are less than the five years' simple average value of the ratios.

Table-3

The management efficiency ratios (times) of Bharat Electronics Limited (BEL) from FY 2011 to FY 2015

Name of ratios	Average	2015	2014	2013	2012	2011
Inventory turnover ratio (ITR)	2.09	2.04	1.9	1.91	2.18	2.4
Debtors turnover ratio (DTR)	1.94	1.73	1.68	2.03	2.07	2.21
Investment turnover ratio (INVTR)	2.09	2.04	1.9	1.91	2.18	2.4
Fixed assets turnover ratio (FATR)	2.96	2.78	2.84	2.97	3.07	3.15
Total assets turnover ratio (TATR)	0.97	0.87	0.89	0.97	1.02	1.12
Assets turnover ratio (ATR)	1.03	0.92	0.94	1.02	1.08	1.19

Source: moneycontrol.com

Table 3 shows the year wise management efficiency ratios (times) of BEL from financial year 2011 to financial year 2015. It was observed that all management efficiency ratios (times) have decreased in 2015 in comparison to what they have been in 2011 but they have managed to increase from their lows for the period of observation, in year 2014. Though the FATR, TATR and ATR has touched the low values for the period of observation in 2015. The management efficiency ratios (times) of BEL of financial year 2011, 2012 are higher than the five years' simple average value of the ratios. The management efficiency ratios (times) of BEL of financial year 2013, 2014 and 2015 are lower than the five years' simple average value of the ratios.

Table-4

The management efficiency ratios (times) of Bharat Heavy Electricals Limited (BHEL) from FY 2011 to FY 2015

Name of ratios	Average	2015	2014	2013	2012	2011
Inventory turnover ratio (ITR)	3.73	3.08	3.99	4.12	3.57	3.89
Debtors turnover ratio (DTR)	1.67	1.11	1.36	1.74	2.07	2.07
Investment turnover ratio (INVTR)	3.73	3.08	3.99	4.12	3.57	3.89
Fixed assets turnover ratio (FATR)	4.2	2.48	3.36	4.64	5.1	5.43
Total assets turnover ratio (TATR)	1.5	0.89	1.1	1.53	1.89	2.1
Assets turnover ratio (ATR)	1.63	0.86	1.16	1.69	2.1	2.33

Source: moneycontrol.com

Table shows the year-wise management efficiency ratios (times) of BHEL from financial year 2011 to financial year 2015. It was observed that all management efficiency ratios (times) have decreased in 2015 in comparison to what they have been in 2011 and in the financial year 2015 the all management efficiency ratios (times) have touched their lows for the period of observation. So, it can be said that the management efficiency ratios (times) of BHEL are deteriorating year after year. The management efficiency ratios (times) of BHEL of financial year 2011, 2013 are higher than the five years' simple average value of the ratios. Most of the management efficiency ratios (times) under consideration of BHEL of financial year 2012, 2014 and 2015 are lower than the five years' simple average value of the ratios.

Table-5

Correlation between profitability and management efficiency ratios of Bharat Electronics Limited (BEL)

Name of ratios	ITR	DTR	INVTR	FATR	TATR	ATR
Operating profit margin	0.47	-0.12	0.47	-0.1	0.07	0.1
Gross profit margin	0.48	-0.1	0.48	-0.09	0.09	0.11
Net profit margin	0.09	-0.4	0.09	-0.52	-0.38	-0.36
Return on capital employed	0.97	0.76	0.97	0.75	0.85	0.86
Return on net worth	0.94	0.73	0.94	0.7	0.81	0.82
Return on long term fund	0.97	0.76	0.97	0.75	0.85	0.86

Source: calculated by author

Table- 5 shows the correlation between profitability and management ratios of BEL for the period of observation from 2011 to 2015. It has been seen that there is no correlation between operating profit margin, Gross profit margin and ITR, INVTR, TATR and ATR but there is negative correlation between operating profit margin, Gross profit margin and DTR , FATR. No correlation exists between Net profit margin and ITR, INVTR but there is negative correlation between Net profit margin and DTR, FATR, TATR and ATR. But there is correlation between Return on capital employed, Return on net worth, Return on long term fund and ITR, INVTR because the value of correlations between them are nearly 1. And there is no correlation between Return on capital employed, Return on net worth, Return on long term fund and other management efficiency ratios.

Table-6

Correlation between profitability and management efficiency ratios of Bharat Heavy Electricals Limited (BHEL)

Name of ratios	ITR	DTR	INVTR	FATR	TATR	ATR
Operating profit margin	0.58	0.97	0.58	0.98	0.93	0.95
Gross profit margin	0.59	0.97	0.59	0.99	0.94	0.95
Net profit margin	0.62	0.96	0.62	0.98	0.93	0.94
Return on capital employed	0.43	1	0.43	0.99	1	1
Return on net worth	0.48	1	0.43	1	0.99	0.99
Return on long term fund	0.46	1	0.46	1	0.99	1

Source: calculated by author

Table 6 shows the correlation between profitability and management ratios of BHEL for the period of observation from 2011 to 2015. It has been seen that there is correlation between profitability ratios and ITR, INVTR. But there is positive correlation between operating profit margin, Gross profit margin, Net profit margin, Return on capital employed, Return on net worth and Return on long term fund and DTR, FATR, TATR and ATR. As the value of correlation between operating profit margin, Gross profit margin, Net profit margin, Return on capital employed, Return on net worth and Return on long term fund and DTR, FATR, TATR and ATR are 1 or nearly 1.

Table -7

ANOVA test of profitability ratios

Variables	Source of variation	Sum of squares	df	Mean square	F	p-value	F-crit
Profitability ratios	Between groups	2271.7	11	206.5182	4.806606	0.000158	2.066608
	Within groups	1546.758	36	42.96549			
	Total	3818.45	47				

Table 7 shows the ANOVA test of there is no statistically significant difference in profitability ratios of the select companies as F> F-crit and the p-value is less than the value .05. So, the H1 is rejected.

Table- 8

ANOVA test of management efficiency ratios

Variables	Source of variation	Sum of squares	df	Mean square	F	p-value	F-crit
management efficiency ratios	Between groups	5.522643	4	1.380661	1.051778	0.389148	2.539689
	Within groups	72.19805	55	1.312692			
	Total	77.72	59				

Table 8 shows the ANOVA test of there is statistically significant difference in profitability ratios of the select companies as F< F-crit and the p-value is less than the value .05. So, H2 is accepted.

Conclusion

It may be concluded from the above discussion that profitability of BEL was decreasing from financial year 2011 to financial year 2013 then it started to increase from financial year 2014 and 2015 but it was observed that all profitability ratios have decreased in 2015 in comparison to what they have been in 2011. All management efficiency ratios (times) of BEL have decreased in 2015 in comparison to what they have been in 2011 but they have managed to increase from their lows for the period of observation, in year 2014. Though the management ratios FATR, TATR and ATR have touched to their low values for the period of observation in the year 2015. Excepting some of the profitability ratios and management efficiency ratios of BEL which have considered for the study there is no correlation exist between the profitability ratios and management efficiency ratios of BEL which have

considered for the study. In case of BHEL all profitability ratios have decreased in 2015 in comparison to what they have been in 2011 and in the financial year 2015 the all profitability ratios have touched their lows for the period of observation. All management efficiency ratios (times) of BHEL have decreased in 2015 in comparison to what they have been in 2011 and in the financial year 2015 the all management efficiency ratios (times) have touched their lows for the period of observation. A different picture has been witnessed in case BHEL while considering the correlation between the profitability ratios and management efficiency ratios, excepting some cases there is a positive correlation exist between all the profitability ratios and management ratios of BHEL which have taken into the consideration for the study. In case of BEL there is both positive and negative correlation between profitability and management efficiency ratios. But the value of the co-efficient of correlation between profitability and management efficiency ratio of BHEL is higher than that of BEL. Also from the ANNOVA TEST of the profitability ratios and management efficiency ratios it is evident that profitability ratios of the two companies are not dependent only on the management efficiency ratios there are other factors which affect the profitability of the companies.

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