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PROFITABILITY ANALYSIS OF SELECTED COMPANIES IN INDIAN POWER SECTOR

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RESEARCH ARTICLE

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Abstract
This study assesses the profitability of five selected public sector undertakings (NTPC, Powergrid, NHPC, SJVN, NLC) in the Indian power sector from 2003-04 to 2017-18. Utilizing financial ratios like Operating Profit Ratio (OPR), Net Profit Ratio (NPR), and Return on Net Worth (RONW), the research analyzed their financial health. Data was sourced from Capitaline. Findings indicate SJVN Ltd. consistently demonstrated superior average profitability, while Powergrid exhibited high consistency. NTPC showed declining trends in some ratios. Overall, SJVN emerged as the most profitable, followed by Powergrid and NTPC (tied), NLC, and NHPC, guiding company performance insights for stakeholders.

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Introduction

The Indian power sector is one of the most important parts of the country's economy, as it provides the energy needed for industries, businesses, and households. With fast urban growth and industrial development, the demand for electricity has been rising steadily. This sector includes both public and private companies working in generation, transmission, and distribution of power. In recent years, several reforms have been introduced to make the sector more efficient, reduce dependence on non-renewable sources, and improve financial stability. In this situation, it becomes necessary to study the financial health of the companies, especially the public sector undertakings (PSUs), which often get government support but also face many challenges. Profitability analysis is a useful method to check how well these companies are performing and whether they are financially strong. This study makes an effort to measure the profitability of some selected PSUs in the Indian power sector by using important financial ratios, so that useful guidance can be given to policymakers, investors, and managers.

In this study the following ratios were used to analyse the profitability of the selected companies: (i) Operating Profit Ratio (OPR), (ii) Net Profit Ratio (NPR) and (iii) Return on Net Worth (RONW)

Objective of the study: The objective of the study is to assess the profitability of the selected central public enterprises in Indian power sector.

Research Methodology of the Study: In this study purposive sampling procedure was followed to select the central public enterprises. The selected five central public enterprises are (i) NTPCLtd., (ii) Powergrid Corporation of India Ltd., (iii) NHPC Ltd., (iv) SJVN Ltd. and (v) NLC Ltd. The data of the selected five central public enterprises were collected from secondary sources i.e. Capitaline Corporate Database of Capital Market Publishers

(I) Ltd., Mumbai. Other secondary sources used in this were books, magazines, journals, newspapers, published annual reports of the selected enterprises, research reports, survey reports and websites.

Hypothesis of the Study: The study is based on the following assumptions:

- **H1:** There are differences in the profitability of the selected public sector companies in the Indian power sector.
- **H2:** Some companies are able to maintain more steady and consistent profitability than others.

- **H3:** The trends in profitability reflect how well the companies are managed and how they adjust to changes in rules and the economy.

Literature Review

Panigrahi (2012) conducted a study focusing on the impact of working capital management on the profitability of ACC Ltd., a prominent player in the Indian cement industry, during the years 2000-01 to 2009-10. The data were sourced from moneycontrol.com. Employing multiple regression analysis, the research treated operating profit margin as the dependent variable and various working capital-related ratios as independent variables. The findings indicated that there was no statistically significant link between liquidity and profitability for the company during the observed period.

Sheela and Kartikeyan (2012) evaluated the financial performance of three major pharmaceutical companies in India—Cipla, Dr. Reddy's Laboratories, and Ranbaxy—from 2002-03 to 2011-12. They used DuPont analysis to assess return on equity and return on assets. Their study concluded that Cipla showed the strongest financial performance among the selected firms throughout the study period.

Sreedevi (2013) aimed to explore the relationship between liquidity and profitability for Sun Paper Mills Ltd. over the five-year span from 2005-06 to 2009-10. The study incorporated various liquidity ratios, such as current ratio, quick ratio, inventory turnover, and others, alongside profitability measures like return on assets and return on capital employed. Utilizing Mortaal's comprehensive test and other statistical techniques, the study concluded that there was no meaningful relationship between liquidity and profitability for the firm during the study period.

Tayyaba (2013) investigated how leverage affects profitability for 25 fuel companies in Pakistan between 2006-07 and 2011-12. Using multiple regression analysis and a set of financial leverage and profitability ratios, the study revealed that financial leverage positively impacted profitability, whereas operating leverage had a negative effect.

Innocent et al. (2014) explored the influence of financial leverage on the performance of three pharmaceutical firms listed on the Nigerian Stock Exchange from 2000-01 to 2011-12. The analysis involved debt-equity and interest coverage ratios as leverage indicators and return on assets as a performance metric. Applying the ordinary least squares method, the study found no significant impact of leverage on financial performance for the companies involved.

Dey (2014) assessed the overall financial performance of two companies in the Indian paper industry between 2000-01 and 2012-13. Relying on annual report data, the study evaluated various accounting ratios related to liquidity, solvency, and efficiency. Using ANOVA, the study failed to determine a clear best performer between the two companies during the period.

Vijayalakshmi and Srividya (2014) analyzed the profitability and influencing factors of ten Indian pharmaceutical firms from 2009-10 to 2013-14. Data from CMIE were used, and both multiple regression and ANOVA techniques were applied. While the study concluded that all firms demonstrated satisfactory profitability, it could not pinpoint specific determinants affecting profitability.

Kumar and Bhatia (2014) compared the financial performance of Tata Motors and Maruti Suzuki over the two decades from 1992-93 to 2012-13. Drawing from various reports by the Society of Indian Automobile Manufacturers, they assessed numerous financial ratios. Their analysis found that both companies performed similarly across most parameters, except in capital gearing, where differences emerged.

Gulia (2014) examined the association between working capital and profitability among six Indian pharmaceutical companies from 2008-09 to 2012-13 using CMIE data. The study found that while the companies maintained good liquidity, a statistically significant negative correlation existed between net working capital and profitability.

Arab et al. (2015) evaluated the financial performance of five steel-producing companies in India over the period 2003-04 to 2012-13. Selected through convenience sampling from 206 listed firms, the study utilized 16 financial ratios covering liquidity, solvency, and profitability. One-way ANOVA and other statistical methods were used, and the findings indicated significant variation in all 16 ratios across the selected firms.

Devi and Sabarinathan (2015) analyzed the financial health of five Indian cement companies from 2004-05 to 2013-14. Several accounting ratios were employed, and the study concluded that all firms showed satisfactory financial performance during the examined period.

Sharma and Kaur (2016) assessed Bharti Airtel's working capital efficiency and liquidity from 2007-08 to 2015-16. The study also explored the relationship between liquidity and profitability. Various accounting ratios were used, and Mortaal's comprehensive rank test was applied. The results showed that while credit management and profitability were satisfactory, the company's liquidity position was weak during the study period.

Chavda (2017) carried out a financial performance analysis of five top companies in India's FMCG sector between 2012-13 and 2016-17. Using annual report data and considering both liquidity and profitability ratios, the study employed one-way ANOVA and concluded that there were statistically significant differences in both profitability and liquidity across the selected companies during the given time frame.

Results and Discussion

- **Operating Profit Ratio (OPR):**

This is the ratio of operating profit to net sales. It measures the operating profitability of a firm. The higher the OPR, the higher is the operating profitability of the firm. In Table 1 the values of OPR of the selected companies were analysed. This table shows that the OPR of SJVN Ltd. varied between 91.68 in the year 2010-11 and 115.41 in the year 2006-07. A fluctuating trend was found in the OPR of SJVN. On an average, it was 99.79 and the CC of OPR of the company was 16.51. The OPR of POWERGRID fluctuated in a narrow band over the years under study.It varied between 86.28 in the year 2010-11 and 102.15 in the year 2004-05. The mean value of OPR of the company was 91.15 and the CC of OPR of the company was 22.78. The OPR of NTPC Ltd. showed a fluctuating trend during the period under study. It varied between 24.99 in the year 2015-16 and 59.80 in the year 2004-05. Its mean value and CC were 34.54 and 3.88 respectively. In NLC the OPRvaried between 27.04 in the year 2016-17 and 78.07 in the year 2005-06. A wide fluctuation in the OPR of NLC was observed during the study period. Its mean value was 54.36 and CC was 3.89. The OPR of NHPC Ltd. also had a fluctuating trend during the period under the study. It ranged between 59.33 in the year 2014-15 and 98.51 in the year 2011-12. Its mean value and CC were 84.66 and 9.38 respectively.

The OPR values all the selected companies except NTPC were encouraging. It indicates that the operating profitability of the most of the companies were highly satisfactory. The industry average of OPR of the selected companies shows a fluctuating trend during the period under study. In 2003-04 the average OPR was 71.31 which increased to 84.60 in 2004-05. In 2005-06 it started to decrease gradually and reached 70.00 in 2010-11. During the period 2011-12 to 2017-18, the OPR followed a zigzag trend and reached 66.66 in the ultimate year of the study period.

In respect of average OPR, SJVN captured the top most position and it was followed by POWERGRID, NHPC, NLC and NTPC respectively. The average valuesof OPR of SJVN, POWERGRID and NHPC were above the industry average during the period under study. In respect of CC of OPR, POWERGRID bagged the highest rank and it was followed by SJVN, NHPC, NLC and NTPC respectively.

- **Net Profit Ratio (NPR)**

This is the ratio of net profit to net sales. It measures the net profit earning capability of the company. The higher the NPR, the higher is the company's abilityto earn net profit and vice versa.

In Table 2 the net profit ratios of the selected companies were analysed. This table shows a fluctuating trend in the NPR of SJVN during the study period. It ranged from (-) 42.92 in 2004-05 to 62.56 in 2017-18. The average value of NPR of SJVN was 48.27 and its CC was 1.80 only. A negligible degree of fluctuations was found in the NPR of POWERGRID. In 2010-11 it had its minimum value of 28.63 and in 2007-08 it was the highest at 34.25. On an average it was 30.99 during the period under study. Its consistency coefficient was 17.29. In NTPC the NPR ranged between 11.99 in 2017-18 and 27.88 in 2003-05. The NPR of NTPC showeda declining trend during the study period. It decreased continuously from 2004-05to 2012-13. The mean value and CC of NPR of NTPC were 18.72 and 4.33 respectively. The NPR of NLC varied between 3.46 in 2016-17 and 41.75 in 2003.04. It had an overall decreasing trend during the study period. The mean value of NPR of the company is 29.29 and the CC of NPR was 3.16 during the study period. The NPR of NHPC fluctuated in a wide range. It varied between 17.68 in 2014-15 and 51.28 in 2011-12. Its mean value and CC were 40.60 and 4.03 respectively.

The industry average of NPR of the selected companies showed a fluctuating trend during the study period. In the first year the industry average of NPR was 33.45 which decreased in the very next year to 21.32. In 2005-06 it increased again to 37.99 and decreased in the next two years to reach 35.48 in 2007-08. In 2008-09 it increased slightly to 37.02 and decreased in 2009-10 to 34.18. In 2010-11 the average NPR increased to 36.32 which decreased gradually to 35.53 in 2012-13. During the years 2013-14 to 2017-18 it had a zigzag trend which reached 32.00 in the ultimate year of the study period.

In respect of average NOR SJVN got the highest rank which was followed by NHPC, POWERGRID, NLC and NTPC respectively. While the average values of NPR of SJVN and NHPC were above the industry average, those of the other companiesunder study were below the industry average. POWERGRID secured the top most position in terms of CC of NPR which was followed by NTPC, NHPC, NLC and SJVN respectively.

- **Return on Net Worth (RONW)**

This is the ratio of earnings available to shareholders to the owners' equity. It measures the profitability of the company from the view point of its owners.The higher the RONW, the higher is the profitability and vice versa.

Table 4.3 indicates that the RONW of SJVN ranged between 0.1251 in 2006-07 and 0.1742 in 2015-16. The RONW of this company had a fluctuating trend during the period under the study. Its average value and CC were 0.1402 and 8.4397 respectively. In POWERGRID the minimum value of RONW was 0.0868 in 2003-04 and it was maximised at 0.1703 in 2013-14. It had an overall increasing trend during the first eleven years under the study while it followed a decreasing trend in the remaining years under study. The mean value and CC of RONW of POWERGRID was 0.1282 and 4.9779 respectively. The RONW of NTPC ranged between 0.1001 in 2017-18 and 0.1642 in 2013-14. An overall declining trend was found in the RONW of NTPC. Its mean value and CC were 0.1367 and 8.5774 respectively. The RONW of NLC varied between 0.0694 in 2007-08 and 0.2702 in 2017-18. The RONW of NLC had a fluctuating trend during the study period. On anaverage, it was 0.1341 and its CC was 2.5016. In NHPC the minimum and maximum values of RONW were 0.0484 in 2014-15 and 0.1088 in 2012-13 respectively. It also had a fluctuating trend during the period under the study. Themean value and CC of RONW of NHPC were 0.0702 and 3.7369 respectively.

The industry average values of RONW fluctuated in a narrow trend during the period under study. In 2003-04 it was 0.1178 which decreased in the next yearto 0.1150. In 2005-06 it increased to 0.1202 and again decreased to 0.1020 in 2006-07. During the period 2007-08 to 2010-11 it increased gradually and reached0.1316. During the period 2011-12 to 2017-18 it followed a zigzag trend and reached 0.1480 in the ultimate year of the study period.

In terms of average value of RONW SJVN bagged the first position which was followed by NTPC, NLC, POWERGRID and NHPC respectively. The average values of RONW of SJVN, NTPC, NLC and POWERGRID were above the industry average whereas that of NHPC was below the industry average. In respect of the CC of RONW of the selected companies NTPC secured the first position which was followed by SJVN, POWERGRID, NHPC and NLC respectively.

Relevance and Implications of the Study

The results of this study are useful in many ways. For policymakers, knowing which companies are financially stronger will help them in planning reforms and giving proper support to the weaker ones. For investors, the study provides a clear idea about the financial strength and stability of these companies, which can help in making safe investment choices. Managers of public sector enterprises can also use the findings to compare their performance with others and to improve their own strategies. On a larger scale, this study highlights the importance of financial strength in the power sector, which is necessary for future growth, modernisation, and the shift towards renewable sources of energy.

Conclusion

The ultimate profitability ranks based on the average values of profitability ratios of the selected companies were ascertained in Table 4.7. This table discloses that the sums of ranks of the selected profitability ratios of SJVN, POWERGRID, NTPC, NLC and NHPC were 12, 20, 18, 15, 25 respectively. According to the sums of ranks based on the average values of the individual profitability ratios of the selected companies, SJVN captured the top most position and was followed by NLC, NTPC POWERGRID and NHPC respectively.

The ultimate profitability ranks based on the CC of the profitability ratios of the selected companies were ascertained. This table reveals that the sums of ranks of the selected profitability ratios of SJVN, POWERGRID, NTPC, NLC and NHPC were 18, 12, 15, 24 and 21 respectively. According to the sums of ranks based on the CC of the profitability ratios of the selected companies, POWERGRID captured the top most position and it was followed by NTPC, SJVN, NHPC and NLC respectively.

The final profitability ranks based on the combined ranks ascertained on the basis of both average and its consistency were determined in Table 4.8. This table shows that the sums of ranks based on consistency and average of the profitability ratios of SJVN, POWERGRID, NTPC, NLC and NHPC were 4, 5, 5, 7 and 9 respectively. It indicates that in terms of profitability SJVN captured the top most position and it was followed by POWERGRID and NTPC, NLC and NHPC respectively in that order. It is important to note that POWERGRID and NTPCstood on the same point in respect of profitability performance during the period under study.

Table 1: Descriptive Analysis of Operating Profit Ratio of the SelectedCompanies

	SJVN	POWERGRID	NTPC	NLC	NHPC	IndustryAvg.
2003-04	97.56	91.19	32.94	71.33	89.79	57.05
2004-05	97.54	102.15	59.80	70.48	93.02	84.60
2005-06	97.06	94.16	43.38	78.07	94.16	81.37
2006-07	115.40	90.95	39.91	63.06	84.92	78.85
2007-08	94.92	96.28	39.73	64.81	87.78	76.70
2008-09	96.73	87.44	38.60	63.25	91.33	75.47
2009-10	105.20	87.26	32.69	45.26	81.06	70.30
2010-11	91.68	86.28	33.09	47.52	91.44	70.00
2011-12	95.07	91.19	28.99	50.96	98.51	72.94
2012-13	97.30	89.66	27.13	51.88	80.23	69.24
2013-14	100.20	90.39	33.33	49.23	86.09	71.85
2014-15	98.29	88.16	28.48	48.73	69.33	66.60

2015-16	97.70	89.39	24.99	48.71	79.85	68.13
2016-17	104.20	91.24	26.98	27.04	69.39	63.78
2017-18	105.70	91.52	28.12	35.03	72.95	66.66
Mean	99.79	91.15	34.54	54.36	84.66	71.57
Minimum	91.68	86.28	24.99	27.04	69.33	57.05
Maximum	115.40	102.15	59.80	78.07	98.51	84.60
ConsistencyCoefficient(CC)	16.51	22.78	3.88	3.89	9.38	10.09

Source: Compiled and computed from Capitaline Corporate Database,Capital Market Publishers (India) Ltd., Mumbai

Table 2: Descriptive Analysis of Net Profit Ratio of the Selected Companies

	SJVN	**POWERGRID**	**NTPC**	**NLC**	**NHPC**	**IndustryAvg.**
2003-04	46.52	30.56	18.94	41.75	42.56	33.45
2004-05	-42.92	33.06	27.88	40.39	48.20	21.32
2005-06	46.18	31.26	25.73	40.32	46.48	37.99
2006-07	55.11	32.08	21.77	31.90	44.67	37.11
2007-08	46.12	34.25	21.04	26.89	49.11	35.48
2008-09	52.84	31.39	19.99	36.88	43.98	37.02
2009-10	57.70	29.71	19.54	24.44	39.52	34.18
2010-11	54.97	28.63	18.82	30.20	49.00	36.32
2011-12	49.85	32.15	16.53	29.89	51.28	35.94
2012-13	55.44	32.02	14.86	28.52	46.82	35.53
2013-14	62.56	33.19	19.20	26.10	44.22	37.05
2014-15	59.49	29.53	15.24	25.17	17.68	29.42
2015-16	59.51	28.99	14.05	25.88	31.23	31.93
2016-17	56.43	28.78	15.20	3.46	25.55	25.88
2017-18	62.55	29.24	11.99	27.60	28.63	32.00
Mean	48.27	30.99	18.72	29.29	40.60	33.38
Minimum	-42.92	28.63	11.99	3.46	17.68	21.32
Maximum	62.56	34.25	27.88	41.75	51.28	37.99
ConsistencyCoefficient (CC)	1.80	17.29	4.33	3.16	4.03	7.12

Source: Compiled and computed from Capitaline Corporate Database,Capital Market Publishers (India) Ltd., Mumbai

Table 3: Descriptive Analysis of Return on Net Worth of the SelectedCompanies

	SJVN	POWERGRID	NTPC	NLC	NHPC	IndustryAvg.
2003-04	0.1401	0.0868	0.1199	0.2078	0.0565	0.1178
2004-05	0.1406	0.0923	0.1303	0.1785	0.0588	0.1150
2005-06	0.1403	0.0899	0.1485	0.1673	0.0548	0.1202
2006-07	0.1251	0.1065	0.1493	0.0770	0.0521	0.1020
2007-08	0.1282	0.1177	0.1468	0.0694	0.0587	0.1042
2008-09	0.1309	0.1299	0.1465	0.1268	0.0593	0.1187
2009-10	0.1730	0.1182	0.1491	0.1421	0.0610	0.1287
2010-11	0.1532	0.1317	0.1457	0.1260	0.1013	0.1316
2011-12	0.1316	0.1438	0.1397	0.1208	0.0906	0.1253
2012-13	0.1422	0.1451	0.1307	0.1216	0.1088	0.1297
2013-14	0.1297	0.1703	0.1642	0.1168	0.0867	0.1335
2014-15	0.1277	0.1482	0.1321	0.1119	0.0484	0.1137
2015-16	0.1742	0.1371	0.1229	0.0937	0.0782	0.1212
2016-17	0.1309	0.1451	0.1245	0.0812	0.0647	0.1093
2017-18	0.1356	0.1607	0.1001	0.2702	0.0734	0.1480
Mean	0.1402	0.1282	0.1367	0.1341	0.0702	0.1212
Minimum	0.1251	0.0868	0.1001	0.0694	0.0484	0.1020
Maximum	0.1742	0.1703	0.1642	0.2702	0.1088	0.1480
ConsistencyCoefficient (CC)	8.4397	4.9779	8.5774	2.5016	3.7369	10.0467
Source: Compiled and computed from Capitaline Corporate Database,Capital Market Publishers (India) Ltd., Mumbai						

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