Profit, Investment And Financing Behavior of Indian Power Sector (A Comparative Analysis of Public And Private Sector Companies)

Dr. Geeta Chauhan

Abstract

The Indian Power Industry is one of the largest and most important industries in India as it fulfils the energy requirements of various other industries. It is one of the most critical components of infrastructure that affects economic growth and the well-being of our nation.

India has the world's 5th largest electricity generation capacity and it is the 6th largest energy consumer accounting for 3.4% of global energy consumption. Due to the fast-paced growth of the Indian economy, the country's energy demand has grown at an average of 3.6% p.a. over the past 30 years. In India, power is generated by state utilities, central utilities and private players. Looking at the companies with a diversified portfolio of power, NTPC is the largest company (on Net Sales) and performing well in every aspect followed by NHPC. Among the private players, reliance power's performance has not been considered very well because of the high portion of non-operating income and its reliability on the restricted financing and investment policies.

Since the power sector is a heavy capital intensive industry full of potential of yielding profit, it attracts both types of investors whether related to private sector or public sector. But the present study has proved that the performance of public sector is greater than the private sector in all respects viz. profitability, efficiency in making an optimum use of resources and keeping the investors' interest protected. In this study, it has been suggested that the Government should encourage the public sector for a better future of power sector and also should take the initiative through making various policies which attracts the private players to take interest in the core business of power sector.

Keywords: Power Sector Companies, Profitability, Investment, Finance, Ratio Analysis, t-test, F-test

I. Introduction

Profitability is the profit earning capacity which is very important factor for the survival of the firms, it implies that the existence of the firms depends on the profit earning capacity of the firm, which is also considered to be the main factor which influence the goodwill of the firm in the market. Profitability consists of two words, profit and ability and it is necessary to differentiate between profit and profitability. Therefore, profitability may be defined as "the ability of a given investment to earn a return from its use", (Bion 2009). Profitability analysis enables evaluation of different market segments such as products, customers, orders etc. or strategic business units like sales organization or business areas. Ho and Zhu (2004) have reported that the evaluation of a company's performance has been focusing the operational effectiveness and efficiency, which might influence the company's survival directly.

Raghunathan and Das (1999) have observed that poor corporate performance (i.e., profitability, liquidity, leverage and solvency) has led to an economic slowdown and not the other way round. Sharma (1985) and Sandhya (1990) have mentioned various techniques for analyzing the financial statements but ratio analysis is the most popular technique of analyzing the performance of a company. Also ratios when

analyzed in multi-variate context, they are likely to yield valuable results.

Business revolves around the investment of funds available with the firm efficiently for profit to be earned in future. It implies that investment is the purchase of an asset or item which will generate income or appreciate in the future and be sold at the higher price. The most famous and successful investor of all time is Warren Buffett. In March 2013, Forbes magazine had ranked Warren Buffett as number 2 in their list of 400 Forbes. Buffett (2008) has advised in numerous articles and interviews that a good investment strategy is long term and choosing the right assets to invest in requires due diligence. Thorp (April,2010) was a very successful 'Hedge Funds' manager in the 1970s and 1980s that spoke of a similar approach. Another thing they both have in common is a similar approach to managing investment money. No matter how successful the fundamental pick is, without a proper money management strategy, full potential of the asset cannot be reached. Both investors have been shown to use principles from the Kelly criterion for money management (Thorp 2010). Further Gopinathan (2009) has presented that the financial ratios analysis can spot better investment options for investors as the ratio analysis measures various aspects of the performance and analyzes fundamentals of a company or an institution.

Finance deals with the sources of fund and capital structure of a firm and the time value of money is the very important aspect in finance. Financial analysis deals with the allocation of assets and liabilities over a period of time and the actions that managers take to increase the value of the firm and to the shareholders. Vishnani &Shah (2006) and Eramus (2010) have long been argued that efficient working capital management should contribute to the profit generating process and creation of shareholder value. It involves the examination of the financial data of the firm to get the idea about the current and future financial position of the firm. It helps the managers with the information they require to take the critical decisions. Nelgadde (2010) has argued that learning about credit management and debt recovery canprove vital for entrepreneurs.

Apart from above discussed work, number of studies have been done for Indian power sector, viz., Krishnan(2010); Shahi; Remme, Trudeau, Graczyk & Taylor (2011); Dasaraju & Murthy (2011); Singh (2007); and Sareen (2000). But all the researchers have only covered the government initiatives, private participation, long run economic growth, technical challenges, reasons for constant widening of the gap between power generation and demand for power and measures for improving efficiency of power companies. But the aspect of profitability, financial structure, investing aspects, operational working has not been touched in that detail, in particular to Indian Power Sector.

II. Statement of The Problem

Power sector in India is run by Central and State Governments. The share of private sector in power generation has risen substantially over the past few years, but State Electricity Boards (SEB) continues to own nearly 95% of the distribution network. Thus, the power sector in India is dominated by the State Owned Companies. Over the period of time, SEBs has become unprofitable due to heavy accumulated losses and liabilities. Also, Inefficient planning, lack of investments, inadequate maintenance, low plant load factor, high transmission and distribution losses, and erratic supply to consumers resulted in poor services and lower output level which results in financial losses. Further, one more issue with the power distribution companies is the mismatch between tariffs and cost of generating power.

Due to high losses the financial health of State Electricity Boards is in a distressed state. The high losses affect revenue, insufficient or no revision in tariff is another major factor that has affected the

performance of the power companies and because of that power companies are not able to pay their debts. So, alarm bells cautioned the banking sector and most lenders became very cautious in extending loans to the power sector as a whole.

III. Objective Of The Study

The main objective of the study is to examine the growth of Power Sector companies from the view point of investment activities, financing activities, risk and profitability.

IV. Sources Of Data And Tools Used For Analysis

The study is based on secondary data. To examine the above said objectives annual reports and accounts have been used. Official Directory of Stock Exchange has also been the other source of data for this work.

Various facets of Power Sector of India form the core of the present study. The study is an empirical one and it covers a period of five year, viz 2010-11 and 2014-15. The following Power Sector Companies (public and private sector) have been included in the present study:

Public Sector Companies

NTPC Ltd

NHPC Ltd

Private Sector Companies

Reliance Power Limited

Tata Power Co. Limited

The present study is based on various tools and techniques listed below:

·Financial Tools: Comparative Analysis, Ratio Analysis.

·Statistical Tools: Average, Standard Deviation, Coefficient of Variation, t-test and F-test.

After making detailed interpretation and inter-firm comparison, conclusions have been drawn and accordingly, suggestions have been given to the management of the companies to improve their overall performance.

V. Analysis And Interpretations

This part deals with the analysis of selected financial variables performance during the study period. Firstly the collected data was classified and tabulated under various heads and the financial statements of the companies under study were recasted in condensed form and this was followed by applying the various financial and statistical tools to analyze the performance of the power companies under study.

Table 1: Profitability Analysis

	Average Values (2010-11 to 2014-15)	**NTPC**	**NHPC**	**Public Sector (Combined)**	**Tata Power**	**Reliance Power**	**Private Sector (Combined)**
Operational Efficiency							
ROI	**Average (%)**	7.96	5.23	6.60	6.30	1.75	4.03
	Standard Deviation	0.93	0.83	0.60	0.30	0.76	0.46

	Coefficient of Variation (%)	11.68	15.87	9.09	4.76	43.43	11.41
ROE	**Average (%)**	13.41	7.80	10.61	7.38	1.43	4.41
	Standard Deviation	1.18	2.25	1.34	1.07	1.08	0.99
	Coefficient of Variation (%)	8.80	28.82	12.63	14.49	75.52	22.45
EPS	**Average (Rs.)**	12.66	1.75	7.21	41.92	0.84	6.09
	Standard Deviation	1.56	0.46	0.75	4.13	0.64	7.13
	Coefficient of Variation (%)	12.32	26.28	10.40	9.85	76.19	117.08
Net Profit	**Average (%)**	15.97	38.89	27.43	12.15	1116.80	564.47
	Standard Deviation	1.80	12.59	6.69	1.28	1533.38	801.90
	Coefficient of Variation (%)	11.27	32.35	24.38	10.53	137.30	142.06
Market Test							
Price Earnings Ratio (PER)	**Average (Times)**	13.10	13.95	13.52	10.15	297.77	153.96
	Standard Deviation	2.98	4.19	2.54	11.49	285.88	141.58
	Coefficient of Variation (%)	22.74	30.03	18.78	113.20	96.00	91.96
Dividend yield Ratio (DYR)	**Average (Times)**	0.027	0.024	0.025	0.09	0	0.045
	Standard Deviation	0.009	0.005	0.004	0.06	-	0.030
	Coefficient of Variation (%)	33.33	20.83	16.00	66.67	-	66.67

Source: Annual Reports and Accounts of the Power Sector Companies under study from 2010-11 to 2014-15.

It is clear from the analysis that among the four companies NTPC shows the highest return on investment throughout the study. However within the private sector Tata Power gives the better result and overall result of public sector is better as compared to private sector with 6.60% average return on investment.

Analysis shows that except NTPC the return on equity was not satisfactory for all the remaining companies especially the Reliance Power. Overall result of the public sector companies was satisfactory than that of

the private sector companies.

Results of earnings per share among all the power sector companies reveal that Tata Power and NTPC were performing well during the study period and they should maintain the present trend of EPS in future.

In case of net profit margin ratio, Reliance Power shows the highest average ratio but it is not relevant because the net income of reliance power includes the huge amount of non-operating income. Among the other three power sector companies NHPC has a very good ratio but for others the ratio was satisfactory. Because of the inclusion of very huge amount of non-operating income in the private sector, sector wise comparison is not feasible.

Findings of price earnings ratio shows that the private sector is working efficiently than the public sector. But both the highest and the lowest ratio belong to the private sector. However in case of dividend yield ratio, the result showed that all the power companies were following the policy of retaining profits for the future reemployment in the business. Non-declaration of dividend or lower dividend payment for a long period is a clear indication of the unsound health of a company from investor's point of view.

Financial Behavior Analysis:
Table 2: Financial Behavior Analysis

	Average Values (2010-11 to 2014-15)	NTPC	NHPC	Public Sector (Combined)	Tata Power	Reliance Power	Private Sector (Combined)
Liquidity Analysis							
Current Ratio (CR)	**Average (Times)**	1.89	1.61	1.75	0.82	13.77	7.30
	Standard Deviation	0.48	0.45	0.16	0.29	21.08	10.68
	Coefficient of Variation (%)	25.40	27.95	9.14	36.59	153.09	146.30
Quick Ratio (QR)	**Average (Times)**	1.63	1.33	1.47	0.45	3.90	2.18
	Standard Deviation	0.24	0.31	0.27	0.13	4.52	2.32
	Coefficient of Variation (%)	14.72	23.31	18.37	28.89	115.89	106.42
Solvency Analysis							
Debt Equity Ratio (DER)	**Average (Times)**	0.78	0.74	0.76	0.61	0.03	0.32
	Standard Deviation	0.14	0.06	0.09	0.05	0.04	0.03
	Coefficient of Variation (%)	17.95	8.11	11.84	8.20	133.33	9.38
[illegible]	**Average (Times)**	0.57	0.57	0.57	0.62	0.97	0.80

Total Equity (OE/TE)	**Standard Deviation**	0.04	0.02	0.03	0.02	0.03	0.02
	Coefficient of Variation (%)	7.02	3.51	5.28	3.23	3.09	2.50
Dividend and Internal Funds							
Dividend Payout Ratio (DPR)	**Average (%)**	34.19	32.34	33.27	30.77	0	15.39
	Standard Deviation	7.68	1.35	4.21	4.12	-	2.06
	Coefficient of Variation (%)	22.46	4.17	12.65	13.38	-	13.38
Earnings Retention Ratio (ERR)	**Average (%)**	65.81	67.65	66.73	69.22	100	84.61
	Standard Deviation	7.69	1.35	4.21	4.12	-	2.06
	Coefficient of	11.68	2.00	6.31	5.95	-	2.43

Source: Annual Reports and Accounts of the Power Sector Companies under study from 2010-11 to 2014-15.

It is clear from the table that on an average, both NTPC and NHPC had a current ratio of less than the norm of 2:1. It shows that the public sector companies enjoyed a comfortable liquidity position. However the position of the current ratio of the private sector power companies cannot be considered as satisfactory. For Tata Power the current ratio was less than one and for the Reliance Power the ratio was very high which cannot be considered as normal.

The acid-test ratio or quick ratio has also given a better rating to the NTPC and NHPC i.e., overall public sector. Both the private sector companies have yielded poor quick ratio suggesting their relatively lower ability to meet their current obligations.

It was observed on the basis of debt-equity ratio that all companies understudy have made use of debt financing though not aggressively except Reliance Power, who have remained dependent on the owner's funds, which cannot be considered as a favorable policy in long run. Even ratios of owner's equity to total equity bear out the same and are testimony to the same result.

On the basis of dividend payout ratio, it was observed that all the companies except Reliance Power following the policy of paying dividend out of profits, which is considered as a good policy from the investors' view point. On the other hand Reliance power was following no dividend policy.

Investment Portfolio Analysis

Table 3: Investment Portfolio Analysis

	Average Values (2010-11 to 2014-15)	**NTPC**	**NHPC**	**Public Sector (Combined**	**Tata Power**	**Reliance Power**	**Private Sector (Combined)**
Inventory turnover	**Average (Times)**	14.28	101.24	57.76	6.60	0	3.30

Ratio(ITR)	**Standard Deviation**	2.46	21.87	11.78	0.68	-	0.34
	Coefficient of Variation (%)	17.22	21.60	20.39	10.30	-	10.30
Av.Days Supply of Inventory (Av. DSI)	**Average (No. of Days)**	26.49	3.77	15.13	55.92	0	27.96
	Standard Deviation	5.47	0.78	2.84	6.01	-	3.01
	Coefficient of Variation (%)	20.64	20.68	18.78	10.75	-	10.75
Receivable Turnover Ratio(RTR)	**Average (Times)**	13.49	3.83	8.66	7.00	8.11	7.56
	Standard Deviation	2.01	1.26	1.46	1.55	9.80	4.84
	Coefficient of Variation (%)	14.89	32.89	16.85	22.14	120.83	64.10
Av. Age of Receivables (Av. AR)	**Average (No. of Days)**	27.61	105.06	66.34	54.84	124.17	89.51
	Standard Deviation	3.77	30.53	16.55	12.39	104.14	50.55
	Coefficient of Variation (%)	13.65	29.05	24.95	22.59	83.14	56.48
Assets Turnover Ratio (ATR)	**Average (Times)**	0.43	0.10	0.27	0.32	0	0.16
	Standard Deviation	0.03	0.01	0.01	0.03	-	0.02
	Coefficient of Variation (%)	6.89	10.00	3.70	9.38	-	12.50

Source: Annual Reports and Accounts of the Power Sector Companies under study from 2010-11 to 2014-15.

In table 3, I have examined the speed of inflows and outflows of funds in the selected power sector companies through computation of inventory turnover, average days' supply of inventory, debtor turnover, average age of debtors and asset turnover reflecting on the state of activity in the power sector in

India. It has been observed that compared with NTPC and NHPC which were showing inefficient inventory management, inventory turnover for Tata Power was quite reasonable. Position of Reliance Power was worst as the company did not keep any stock of inventory.

With respect to the inventory holding period only NTPC was doing good and Reliance was doing worst because of nil inventory. NHPC and Tata Power were also not doing well because both stands at the extreme ends, while NHPC with low ratio and Tata Power with high ratio cannot be considered as following efficient inventory management.

Analysis of debtor turnover reveals that only NTPC was following good credit policy and prompt collection from the debtors. For all the other power companies' policy followed by the management was not considered effective.

With respect to the asset turnover the analysis concludes that the management of NTPC was effectively utilizing the total assets towards the sales followed by the Tata Power. But management of NHPC was not efficiently utilizing the assets and the condition of the Reliance Power was the worst. The management of these companies should be cautious enough towards the use of the total assets.

Test of Significance (t-test)

The t-test is applied in the case of small variables to test the difference of the average of two samples. For these purpose groups of 2 companies have been made and t-test has been applied to test the following hypothesis:

Null Hypothesis (H_0): There is no significant difference in the respective ratios of the Power Sector Companies under study.

The critical value of 't' at 5% level of significance with 8 degree of freedom is 2.306.

The result of the computed value of t-test and the acceptance (A) and rejection (R) of hypothesis has been presented in the following table:

Table 4: t-test Analysis

Groups of Companies	NTPC & NHPC	H_0	NTPC & Tata Power	H_0	NTPC & Reliance Power	H_0	NHPC & Tata Power	H_0	NHPC & Reliance Power	H_0	Tata Power & Reliance Power	H_0	Public Sector & Private Sector	H_0
Profitability Analysis														
ROI	5.51	R	4.29	R	13.01	R	3.03	R	7.73	R	13.92	R	8.50	R
ROE	5.52	R	9.46	R	18.72	R	0.42	A	6.38	R	9.78	R	9.30	R
EPS	16.76	R	16.57	R	17.52	R	24.17	A	2.89	R	24.57	R	0.39	A
Net Profit	4.50	R	4.32	R	1.79	A	5.28	R	1.76	A	1.80	A	1.67	A

PER	0.41	A	0.62	A	2.49	R	0.78	A	2.48	R	2.49	R	2.47	R
DYR	0.73	A	2.47	R	7.50	R	2.88	R	11.99	R	3.75	R	1.25	A
Financial Behavior Analysis														
CR	1.06	A	4.73	R	1.41	A	3.65	R	1.44	A	1.54	A	1.30	A
QR	11.80	R	10.99	R	1.25	A	14.44	R	1.37	A	1.91	A	0.70	A
DER	0.66	A	2.86	R	12.88	R	4.16	R	24.61	R	22.65	R	11.60	R
OE/TE	0.00	A	2.80	R	20.00	R	4.42	R	27.74	R	24.27	R	15.95	R
DPR	0.59	A	0.98	A	11.12	R	0.91	A	59.86	R	18.66	R	9.53	R
ERR	0.59	A	0.98	A	11.12	R	0.91	A	59.91	R	18.63	R	9.54	R
Investment Portfolio Analysis														
ITR	9.87	R	7.52	R	14.51	R	10.81	R	11.57	R	24.26	R	11.54	R
Av. DSI	10.28	R	9.05	R	12.10	R	21.51	R	12.08	R	23.26	R	7.55	R
DTR	10.18	R	6.39	R	1.34	A	3.97	R	1.08	A	0.28	A	0.55	A
Av. AR	6.29	R	5.25	R	2.32	R	3.81	R	0.44	A	1.65	A	1.09	A
ATR	26.09	R	6.48	R	35.83	R	17.39	R	25.00	R	26.67	R	21.50	R

Source: Computed

The table 4 shows that in more than 70% of the various combinations of groups of companies and ratios, the calculated value of t is more than the critical value. Therefore, the null hypothesis is rejected at the mentioned levels and it is concluded that the difference between the companies at these mentioned levels is significant.

Test of Significance (F-test)

Inter and intra firm comparison test has been carried out by applying the F-test and following hypothesis have been set to test:

Null Hypothesis (H_0): There is no significance difference in the respected ratios of the companies under study (Inter Firm).

Null Hypothesis (H_0): There is no significance difference in the year wise respected ratios of the power sector companies under study (Intra Firm).

Table 5: F-test Analysis

Groups of Companies→ **Ratios↓**	**Between Companies (V_1 =3 & V_2 = 12) F Value at 5% Level of Significance = 3.49**	**H_0**	**Within Companies (V_1 =4 & V_2 = 12) F Value at 5% Level of Significance = 3.26**	**H_0**
Profitability Analysis				
ROI	71.83	R	2.73	A
ROE`	75.77	R	3.93	R

EPS	75.77	R	1.56	A
Net Profit	1.87	A	1.01	A
PER	3.85	R	1.05	A
DYR	12.50	R	3.13	A
Financial Behavior Analysis				
CR	1.40	A	1.07	A
QR	1.71	A	1.14	A
DER	75.37	R	1.14	A
OE/TE	145.54	R	2.17	A
DPR	54.60	R	1.02	A
ERR	54.60	R	1.02	A
Investment Portfolio Analysis				
ITR	79.70	R	1.28	A
Av. DSI	227.04	R	2.73	A
DTR	2.43	A	1.08	A
Av. AR	2.76	A	1.17	A
ATR	320.50	R	1.50	A

Source: Computed

Inference (Inter Companies): Since the computed value of F is more than the critical value of F (3.49) at 5% level of significance, hence the null hypothesis is rejected in case of most of the ratios and it is concluded that the difference in the ratios of the companies under study is significant.

Decision (Intra Companies): The null hypothesis is accepted because the computed value of F in case of most of the ratios is less than the table value (3.26) at 5% level of significance. Therefore, the null hypothesis is accepted and it can be inferred that the intra firm difference in the various ratios of the companies under study is not significant.

VI.Conclusion

Although, the Indian power sector is one of the fastest growing sectors in the world and energy availability has increased by around 40% in the past 5 years, the demand for power outstrips its supply. Nearly 60 crore Indians do not have access to electricity. The energy and peaking deficits have been hovering around double digits for the past 3 years and condition might worsen in the coming years considering the huge demand of power from India's rising population and rapid industrialization and urbanization. Hence there is no slowing down of demand for power, thus offering ample scope for rapid capacity expansion. The government is investing in this industry through various development schemes like Rajeev Gandhi Rural Electrification Program, 'Power for all by 2012' and ARDRP, Ultra Mega Power Projects etc. It has also been is encouraging participation of private players in the sector. Renewable energy sources are also being encouraged considering the growing environmental concerns.

From this background the present study deals with selected power companies in India. From the analysis there was found a large difference between operational growths of different power companies. Some

companies showing consistency but they not have satisfactory operational growth and others showed fluctuating trend of operational growth. The study further depicts that profitability, financial efficiency and investment behavior of inter power companies differs significantly, hence it is recommended to the management of the power companies to concentrate on the effective utilization of the firm's resources so that performance of the power sector improves.

It has also been suggested that the Government should encourage the public sector for a better future of power sector and also should take the initiative through making various policies which attracts the private players to take interest in the core business of power sector in India.

Kirori Mal College
University of Delhi

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