

Summary

Financial Performance Analysis of Power Generating Companies in India

The main area of study is power generating companies in India. The power generation sector is a part of power sector in India. The power sector is segregated into three parts, power generation, power transmission and power distribution. Power acts as a catalyst for the development of any nation, be it developed, developing or under developed. Per capita consumption of electricity distinguishes between the developed, developing and underdeveloped nations. The importance of electricity can be seen and felt with the time moving ahead. Considering this points the following objectives are framed.

- 1) To conduct financial performance analysis for the power generating companies in India listed in the Bombay Stock Exchange (BSE).
- 2) To segregate the financial performance on the basis of ownership.
- 3) To check the presence of seasonality on the data points of few important financial metrics for the selected power generating companies in India.
- 4) To find the impact of financial metrics as reported in the annual report by the power generating companies on its share price volatility of the selected power generating companies listed in Bombay Stock Exchange (BSE).

Out of ten power generating companies listed in the Bombay Stock Exchange (BSE) in the head S&P BSE Utilities¹, six power generating companies are selected for the purpose of study.

¹ Total 33 companies relating to utilities are listed in Bombay Stock Exchange under the head S&P BSE Utilities. Out of 33 companies, 10 companies are related to power generation.

Basis of selecting the power generating companies in a sample are as follows: -

- 1) The company should be the part of power sector in India.
- 2) The company should be listed in the Bombay stock exchange.
- 3) The company's primary focus should be in the power generation.
- 4) The company should be controlled by the central government, state government and private promoters.
- 5) The minimum market capitalization should be more than 100 crores.
- 6) Power generating companies based on their total installed power generation capacity will be selected both from government and privately-owned corporations.
- 7) The power generating company should not be producing electricity in a captive basis.

To explore the objectives one and two, accounting ratios have been calculated. The financial information has been extracted from the annual reports of the company. Different important ratios are calculated, some of the ratios are modified according to the nature of the power generating sector. Inference has been drawn from the different analytical methods and approaches. The performance of the selected power generating companies are allocated a rank score on the basis of the various accounting ratios.

The research analysis is segregated into:

- 1) Financial performance analysis of the power generating companies and comparison among the power generating companies in India.
- 2) Comparative financial performance analysis of the power generating companies in India on the basis of ownership.

The objective three is related in checking the presence of seasonality on the data points of few important financial metrics for the selected power generating companies in India. namely; income from operation, total expenditure, earnings before interest and tax, net profit and EPS for the selected power generating companies in India. The seasonality is the continuity of the data points over a particular period of time. The presence of seasonality in the data is tested with the help of time series analysis. The other factors are not being considered apart from time factor. The quarterly data is plotted in order to find the continuity of the data points over a period of time from 2009–10 to 2017–18. Cycle plots which were propounded by Cleveland and his fellow mates in the year 1978 is being used to study the nature of data and to check the presence of seasonality in the data. Cycle plots have an advantage over other simple charts in showing the presence of seasonality and trend in the data. Cycle plots have been selected because it helps in studying the behaviour of the seasonal time series, it also easily helps in detecting the cyclical patterns over time and each series is separated into its own section. The advantage of using cycle plots is that the individual series does not need different colours in differentiating from one series to another series. The simple multiple line charts and standard time series plot will not be able to show both the cycle and trend of the data series at the same time and space. The cycle plot also known as subseries plot has the advantage of both and weakness of none of the other two plots. The cycle plots or the subseries plot is best when the period of seasonality is known, as in this case the period of seasonality is known, and the period of seasonality is four. The quarterly data series are used, in a year there are four quarters. The period of study ranges from 2009–10 to 2017–18. Cycle plot is being selected over auto correlation function or spectral plot because these two methods give best results only when the period of seasonality is unknown. The cycle plots also help in spotting the patterns both

between and within the groups. The last objective is devoted in going-over the impact of financial metrics as reported in the annual report by the power generating companies on its share price volatility of the selected power generating companies listed in Bombay Stock Exchange (BSE). The statistical and econometric, both type of tools are used in progressing the study. GARCH (1, 1) model is used to calculate the share price return volatility of the selected power generating companies. The 30 days, calendar year time period will be considered. The 30 days' time period will include both the 15 days pre-annual report announcement date and the 15 days post annual report announcement date. The main point in considering the annual report presentation month is that all the participants in the market usually wait for the company to present its annual financial report. There will be too much noise in the market during the presentations of the annual reports by the companies, as all the market experts normally place their own opinions and the traders and investors at the same time will be trading and investing using their own insights. There will be high conjecture before and after the presentation of the annual report by the company. GARCH (1, 1) model which is one of the highly used models in calculating the share price volatility is used in foreseeing the share price volatility. The GARCH (1, 1) model uses three parameters and there are multiple approaches which help in parametrising the model. One of the popular approaches which determine the parameters in fitting the model is the maximum likelihood estimation approach. This estimation approach helps in determining the parameters that will best explain the data that have been observed. The normality of the observation has been tested by using the Z score and Q-Q plot. There is no clear indication of the normal distribution and the data has many outliers too. The impact of outliers can give a wrong or manipulative results but it depends on the area of study. There are many break through findings in many of the researches just because of the presence of the outliers.

This study focuses on the impact of the financial metrics to the share price volatility and share price return. Since the presence of the outliers are not so negligible, it is assumed that the selected statistical test may give biased results. The data selected for the purpose of study is not sufficing all the assumptions for the paired sample t test. Hence, a non parametric Wilcoxon signed rank test will be used to prove or disprove the hypothesis. Shier, (2004) , the wilcoxon signed rank test is efficient in testing the null hypothesis when the data is distribution free or non parametric in nature. This test is an alternate to paired sample t -test and one sample t -test.

According to the score, SJVN is the power generating company having the best financial performance, followed by GIPCL, NHPC and NTPC etc. SJVN has a score of 27 which is quite small as compared to the other selected power generating companies. This is the supporting evidence that SJVN is the best performer. GIPCL, NHPC and NTPC has the score which is quite equal to each other i.e., 49, 53 and 59. The differences in the score among this three-power generating are not much. According to the score RPOWER has the highest score of 84, this means RPOWER is the weak performer among the selected power generating companies. RPOWER has the worst financial performance as compared to all the other selected power generating companies in India. RTNPOWER also has the high score of 78 which is quite near to RPOWER.

The inference that is developed after a thorough discussion and analysis supported by the data is that SJVN is the best performer followed by GIPCL, NHPC and NTPC.

RPOWER and RTNPOWER has the worst financial performance among all the other selected power generating companies for the purpose of study.

SJVN is the best performer in terms of liquidity ratio (rank 1), profitability ratio (rank 1), performance ratio (rank 1), leverage ratio (rank 1), coverage ratio (rank 1), expense insight ratio (rank 1) among the selected power generating companies. SJVN does have a rank 1 only in the following two ratios, change in debt ratio (rank 2) and debtors velocity ratio (rank 3.)

RPOWER in the other hand has the worst financial performance and has a very low-quality financial ratios, the ranks in each ratio are as follows, liquidity ratio (rank 5), profitability ratio (rank 5), performance ratio (rank 5), leverage ratio (rank 5), coverage ratio (rank 5), expense insight ratio (rank 4), change in debt ratio (rank 6) and debtors velocity ratio (rank 6).

RTNPOWER is the worst performer after RPOWER and this power generating company too has a very low-quality ratios except few, i.e., liquidity ratio (rank 2), profitability ratio (rank 6), performance ratio (rank 6), leverage ratio (rank 2), coverage ratio (rank 6), expense insight ratio (rank 3), change in debt ratio (rank 5) and debtors velocity ratio (rank 5).

Among all the ratio selected to determine the financial performance, the privately-owned power generation companies are quite better only in one ratio i.e., liquidity ratio. The government owned (central & state) power generating companies have an edge over the privately-owned power generating in all the other ratios except the liquidity ratio.

The three power generating companies namely, NHPC, NTPC and SJVN have the presence of seasonality in their data series relating to income from operation, EBIT, net profit and EPS. Among these three powers generating companies NHPC's and SJVN's, financial metric namely, total expenditure does not have the presence of seasonality and

is not affected by any seasons. After close observation, these three powers generating companies also is not following the similar pattern, as it is observed that NHPC's selected financial metrics except total expenditure is affected in the same pattern within a repetition of six months i.e., NHPC has higher income from operation, EBIT, net profit and EPS during the months from April to September and it has lower EBIT, net profit and EPS during the months from October to March. In the other hand, NTPC has higher income from operation, total expenditure, EBIT, net profit and EPS during the months from January to March. It is also noted that there is no presence of seasonality for the selected financial metrics of NTPC on the lower side. SJVN has higher income from operation, EBIT, net profit, and EPS during the months from July to September and is lower during the periods from January to March. The most important observation from the above table is that NHPC and SJVN which focuses in hydro energy to produce electricity, both have higher income from operation, EBIT, net profit and EPS during the periods from July to September and is lower during the periods from January to March. Both the power generating companies (SJVN and NHPC) does not have the presence of seasonality in their total expenditure. In the other hand NTPC which uses thermal energy to produce electricity has the higher income from operation, total expenditure, EBIT, net profit and EPS during the periods from January to March. This means that the power generating companies using the hydro are earning high incomes during quarter 2 and the power generating companies using thermal power are generating higher incomes during quarter 4. But this cannot be generalized because the next most important observation from the table above is that the three power generating companies which does not have the presence of seasonality in their selected financial metrics are RTNPOWER, RPOWER and GIPCL. It is also noted that these three companies are not owned by the central government. The three power generating

companies which have seasonality in their selected financial metrics namely, NHPC, NTPC and SJVN are central government owned power generating companies. Hence, the inference which can be developed from the above observation and discussion is that there is a presence of seasonality for the selected financial metrics in the power generating companies under the central government ownership and there is no presence of seasonality for the selected financial metrics in the power generating companies under private ownership and state government ownership.

Financially weak performing power generating companies are RTNPOWER and RPOWER. Within the span of 15 days pre and post period from the date of publication of the annual report it was found that the financial metrics as reported in the annual reports have no impact on the share price volatility and share price return on the selected power generating companies in India. But there is a different finding when the data series of the share price of power generating companies are plotted within a time frame of one year from the annual report publication date.

The findings of the study relating to chapter 3 can be summed up as the performance of SJVN is in a better position as compared to the other power generating companies. GIPCL, NHPC and NTPC have the same level of financial performance which is much better as compared to RTNPOWER and RPOWER. After analysing the financial data, it is found that the financial performance of the power generating companies owned by government is much better as compared to that with the private power generating companies. Out of six power generating companies, NTPC, NHPC and SJVN are under the central government, GIPCL is under the state government of Gujarat and RTNPOWER and RPOWER is under the private ownership. According to ranking SJVN has the best financial performance among the power generating companies which is under the central government ownership, in the second position is GIPCL which is

under the state government of Gujarat, NHPC and NTPC both under the central government are in the third and fourth position. RTNPOWER and RPOWER have the worst financial performance among the selected power generating companies and both the power generating companies are private power generating companies. The inference from the above point is that the financial performance of government owned power generating companies is much better as compared to that with the privately-owned power generating companies listed in Bombay Stock Exchange in India.

The chapter four's main objective is to determine the presence of seasonality in the data set of power generating companies relating to important financial metrics. The quarterly data has been used to determine the presence and impact of seasonality in the financial metrics of the selected power generating companies listed in the Bombay Stock Exchange of India. The findings of the study are that there is a presence of seasonality in the data set relating to financial metrics for the power generating companies owned by the central government and there is no presence of seasonality in the power generating companies owned by the private and state government of Gujarat. It is also found that out of the selected financial metrics namely income from operation, total expenditure, earnings before interest and tax (EBIT), net profit and earnings per share (EPS), only NTPC has the presence of seasonality relating to the total expenditure while no other power generating companies have the presence of seasonality relating to the total expenditure. The most important observation is that NTPC is generating higher income from operation in quarter four, whereas NHPC and SJVN is generating lower income from operation in quarter four. The pattern is similar in other financial metrics too, like in earnings before interest and tax (EBIT), net profit and earnings per share (EPS) too. The reason for this may be due to NHPC and SJVN's main source of energy which is hydro while the main source of energy for NTPC is thermal.

The findings of the chapter four portrays that there are no significant differences in the share price volatility and return before and after the publication of the annual reports containing the important financial metrics within a time frame of 15 days before and after the publication of the annual reports. This means that there is no impact of the financial metrics on the share price volatility and return of the power generating companies listed in the Bombay Stock Exchange, India. There is no significant impact in the share price volatility and share price return irrespective of whether the financial performance of a particular power generating company is good or bad. Even though the power generating companies like SJVN, GIPCL, NHPC and NTPC have a very good financial performance there is no significant difference in the share price volatility before and after the publication of the quarterly reports within the time span of 15 days. But it is observed that within a time frame of one year, there is a continuous increase in the share price of power generating companies having a better financial performance and the share price of power generating companies having a bad financial performance, the share price is decreasing continuously within the period of one year. The inference of this is that the share price gets affected over a longer period of time frame as compared to shorter time frame.

According to the findings of the study, it is proved that the financial performance of the government owned power generating companies is better as compared to the privately-owned power generating companies. There has been a lot of restructuring and amendments in the electricity acts of India. Electricity Act 2003 is important as it clearly encourages the participation from the private players. It is evident from the present study that private players have made a considerable contribution in the power generation in India. But it should also be remembered that the other most important agenda of this act was to make the power sector commercially viable. According to the

findings of the study, the performance of the privately-owned power generating companies are in a very pathetic condition. The chances of insolvency are very high for the privately-owned power generating companies. The risk is higher as the government of India is converting government owned entities into the private entities. The data is very clear in supporting that the performance of government owned power generating companies are much better than the privately-owned power generating companies. It is very important to think from an angle that how can the private power generating companies be made commercially viable rather than just attracting private power generating companies in the play as this will only attract more non-performing assets in the books of Indian banks. Power generating companies are already the highest contributors of non-performing assets in the books of various lending banks.

It is very much important to create new regulations that specifically focuses in improving the financial conditions of the private power generating companies, without adding extra burden to the end users.