



FINANCIAL RATIOS & TREND PROJECTION ANALYSIS - A CASE STUDY OF NTPC

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Abstract

To well understand and analytically study of financial performance of a company, the ratio analysis aids the financial data interpreter. The various financial ratios like profitability, liquidity, solvency, management efficiency ratio etc facilitate the users of the financial data to make analytical financial study of a company. The aim of the present study is to help the readers to understand the various financial ratios and trend projections with the help of case study of NTPC. In the present study the NTPC financial ratios are compared from the period of 2007-08 to 2016-17 and with the help of graphical presentation trend projections are discussed in detail.

Keywords: ratio analysis, trend projection, NTPC, profitability, liquidity



1. Learning Outcomes

This case study will allow the readers to understand the various types of major financial ratios used in the financial analysis and their impact on the financial performance of a company. It also provides insight into the interpretation of tabular and graphical financial ratio analysis. Readers will gain broader viewpoint how to interpret the financial ratios and will use critical thinking to analyze the role of financial ratios in the performance evaluation of the company.

2. Discussion Question

- 2.1 On the basis of available ratio analysis of NTPC now compare the data with the power industry and comment the ratios are as per the industry benchmark or not? If not what measures company should take to improve its financial performance.
- 2.2 What measures NTPC should take to improve its weak liquidity position.

3. Teaching Notes

3.1 Case Summary: The present case gives practical hands on financial performance analysis in light of NTPC Limited. The financial ratios from 2007-08 to 2016-17 are studied in detail and interpreted to explore the financial health of NTPC.

3.2 Teaching Objectives: These may be instructor/pedagogy focused. The objective of this case is to help the reader to analysis and interpret the financial ratios.

3.3 Target Audience: This case study focused on students, researchers and faculty who want to learn the critical interpretation of financial ratios.

4. About NTPC

Incorporated in the year 1975, the NTPC Ltd. growing with a vision to become the world's leading Power Company, to energizing India's growth. The company enjoys Government of India Navratana status, which provides it strategic and operational autonomy to make independent investment decision without the Govt. approval. To realize its vision the company continuously working towards its mission that states to provides reliable power and related solutions in an economical, efficient and environment friendly manner, driven by innovation and agility. The core values of company consists of integrity, focus over customer, organizational pride, mutual respect and trust, innovational and leadership, total quality and safety. To maintain



and improve the financial soundness of NTPC the company makes prudent management of the financial resources. The company makes the cautious management of deployed funds and leveraging opportunities in domestic and international financial markets. It helps the company to continuously strive to reduce the cost of capital. The company promotes innovative funding models to support entry into new businesses and sustain long term growth. The NTPC also develop appropriate commercial policies and processes which would ensure remunerative tariffs, balance capital work-in-progress and minimize receivables.

Despite the claims of the company of making judicious use of its financial resources, the financial position of the company is reflecting downward trends under the study period 2007-08 to 2016-17. The various internal and external key stakeholders associated with the company have focus on financial soundness of the company. For them financial health of an enterprise is utmost important. Ratio analysis helps to judge the financial position of the company. To carry on its operation smoothly and attract the potential investors, the company should possess adequate financial position. Thus financial analysis is termed as a crucial and wide aspect of evaluating the financial performance of a corporate entity.

5. Literature Review

Ratio analysis is one of the techniques of financial analysis to evaluate the financial condition and performance of a business concern. Simply, ratio means the comparison of one figure to other relevant figure or figures. To well understand and analytically study of financial performance of a company, the ratio analysis aids the financial data interpreter. The various financial ratios like profitability, liquidity, solvency, management efficiency ratio etc help the users of the financial data to make analytical financial study. In the present study we have segregated the financial ratios in four broad categories namely EPS, profitability, liquidity and valuation. The financial data sometimes mislead the analyst, and to aid the investors or reader of financial results, the various financial ratios are presented along with key financial statements.



Ratio analysis refers to the analysis and interpretation of the figures appearing in the financial statements (i.e., Profit and Loss Account, Balance Sheet and Fund Flow statement etc.). It is a process of comparison of one figure against another. It enables the users like shareholders, investors, creditors, Government, and analysts etc. to get better understanding of financial statements. Thus we can say ratio analysis is a very powerful analytical tool useful for measuring performance of a company.

Metcalf and Tigard have defined financial statement analysis and interpretations as a process of evaluating the relationship between component parts of a financial statement to obtain a better understanding of a firm's position and performance. Amir Jafar and Debasish Sur (2006) concluded the study on the efficiency of the working capital management in the National Thermal Power Corporation (NTPC), the only 'Navaratna' Public Enterprise in the Indian power sector, during the period 1983-84 to 2002-03. This study reveals that the company achieved a higher level of efficiency in managing its working capital during the post-liberalization era by adapting itself to the new environment emanated from liberalization, globalization and competitiveness. Vishal Patidar and Nilesh P. Movalia (2016) in their paper "An Empirical Study on Financial Health of NTPC and NHPC" studied the financial performance of NTPC and NHPC for the period from 2010-11 to 2014-15. It is found out that NTPC is successful in its financial performance and not to fall bankrupt, while NHPC is in not healthy zone where its financial, if failure is certain and extremely likely and would occur properly with in a period of 2 years, viability is considered not healthy. Anas Khan (2017) in his paper "Financial Performance Evaluation of National Thermal Power Corporation Limited (NTPC)". Studied the financial performance of NTPC for a period of ten years from 2006-07 to 2015-16. The outcome of the study reveals that the standard current ratio is 2:1 but NTPC has a lower current ratio in the study period except from 2008-2011. To further validate the liquidity position of NTPC the present study is undertaken covering the period 2007-08 to 2016-17. The present study examines the overall financial health of NTPC Company with the help of ratio analysis.

6. Research Methodology

The present study is concerned with the analysis of overall financial soundness of NTPC Ltd. The study is based on secondary data collected from official website and annual reports of the company. The study period is from 2007-08 to 2016-17.

7. Discussion

Table 1

Composition and Trend of Earning Per Share Ratios (In ₹,crore)

Period	08-Mar	09-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar
Basic EPS	8.99	9.95	10.59	11.04	11.19	15.3	13.31	12.48	12.42	11.38
Diluted EPS	8.99	9.95	10.59	11.04	11.19	15.3	13.31	12.48	12.42	11.38
Cash EPS	11.59	12.82	13.8	14.05	14.57	19.42	18.33	18.44	19	18.56
Book Value [ExclRevalReserve]/Share	65.81	71.55	77.28	82.34	88.89	97.49	104.08	99.03	107.67	116.71
Book Value [InclRevalReserve]/Share	65.81	71.55	77.28	82.34	88.89	97.49	104.08	99.03	107.67	116.71
Dividend / Share	3.5	3.6	3.8	3.8	4	5.75	5.75	2.5	3.35	4.78
Revenue from Operations/Share	44.98	50.91	56.25	66.78	75.26	79.65	87.34	88.83	85.51	94.93
PBDIT/Share	16.81	15.5	17.57	17.36	20.03	24.48	24.82	21.67	22.44	27.11
PBIT/Share	14.22	12.63	14.35	14.35	16.64	20.36	19.8	15.71	15.86	19.93
PBT/Share	12.76	11.46	13.09	12.63	14.57	20.07	16.88	12.39	11.96	15.02
Net Profit/Share	8.99	9.95	10.59	11.04	11.19	15.3	13.31	12.48	12.42	11.38

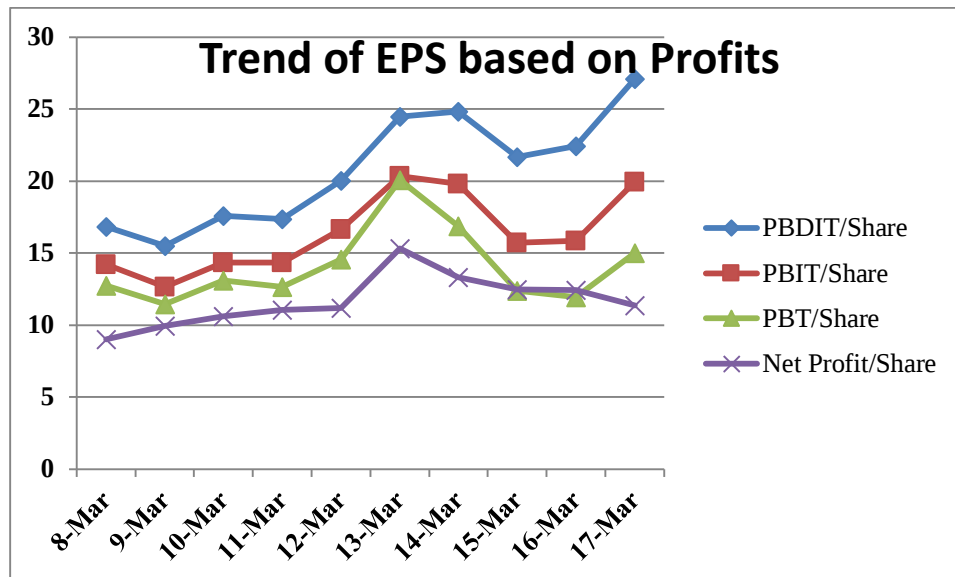


Figure 1: Graphical presentation of trends of EPS based on various levels of profits at NTPC

7.1 Earnings per Share (EPS) Earnings per share indicate prosperity of a company and that makes the EPS most commonly quoted and reliable figure by the investors of a company. EPS is the fraction of a company's profit allocated to each outstanding share of common stock. There are ten variants in which earnings per share can be computed like Basic EPS; Dilute EPS; Cash EPS; Book value EPS; EPS based on dividend and revenue from operations and EPS based on profits earned at different stages. A higher EPS is the indication of strong position of the company in the market and a fall in ratio should be investigated. The shares are generally purchased to earn dividend or sell them at a higher price in future. EPS figure is very important for actual and potential common stockholders as the payment of dividend and increase in the value of stock in future largely depends on the earnings of the company. In the given study the EPS is consistently improving year after year is the indication of continuous improvement in the earning power of the NTPC. However the EPS based on cash is somewhat fluctuating after 2012-13. For the year ending March 2017, NTPC has declared an equity dividend of 47.80% amounting to Rs 4.78 per share (see table1). At the current share price of Rs 171.05 these results in a dividend yield of 2.79%. The company has a good dividend track report and has consistently declared dividends from past 24 years. However after 2013-14 the dividend per share reflecting a



drastic downward trend as well the EPS based on different levels of profits showing upward trend after year 2014-15 (see fig.1).

Table 2

Composition and Trend of Profitability Ratios (In ₹,crore)

Profitability Ratios	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	Mar 17
PBDIT Margin	37.37	30.44	31.22	26	26.61	30.73	28.41	24.39	26.24	28.55
PBIT Margin	31.6	24.81	25.51	21.48	22.11	25.56	22.66	17.68	18.55	20.99
PBT Margin	28.37	22.51	23.27	18.9	19.35	25.19	19.32	13.94	13.98	15.82
Net Profit Margin	19.99	19.53	18.81	16.53	14.86	19.21	15.23	14.04	14.52	11.99
Return on Net worth / Equity	13.66	13.9	13.69	13.4	12.58	15.69	12.78	12.6	11.53	9.75
Return on Capital Employed	9.1	8.76	8.57	8.14	7.46	9.11	7.11	6.17	5.66	4.74
Return on Assets	7.85	7.86	7.75	7.23	6.54	7.83	6.11	5.22	4.77	3.96
Total Debt/Equity	0.5	0.59	0.59	0.59	0.63	0.66	0.73	0.96	0.97	1.04
Asset Turnover Ratio	39.3	40.26	41.22	43.79	44.06	40.76	40.1	37.16	32.85	33.08

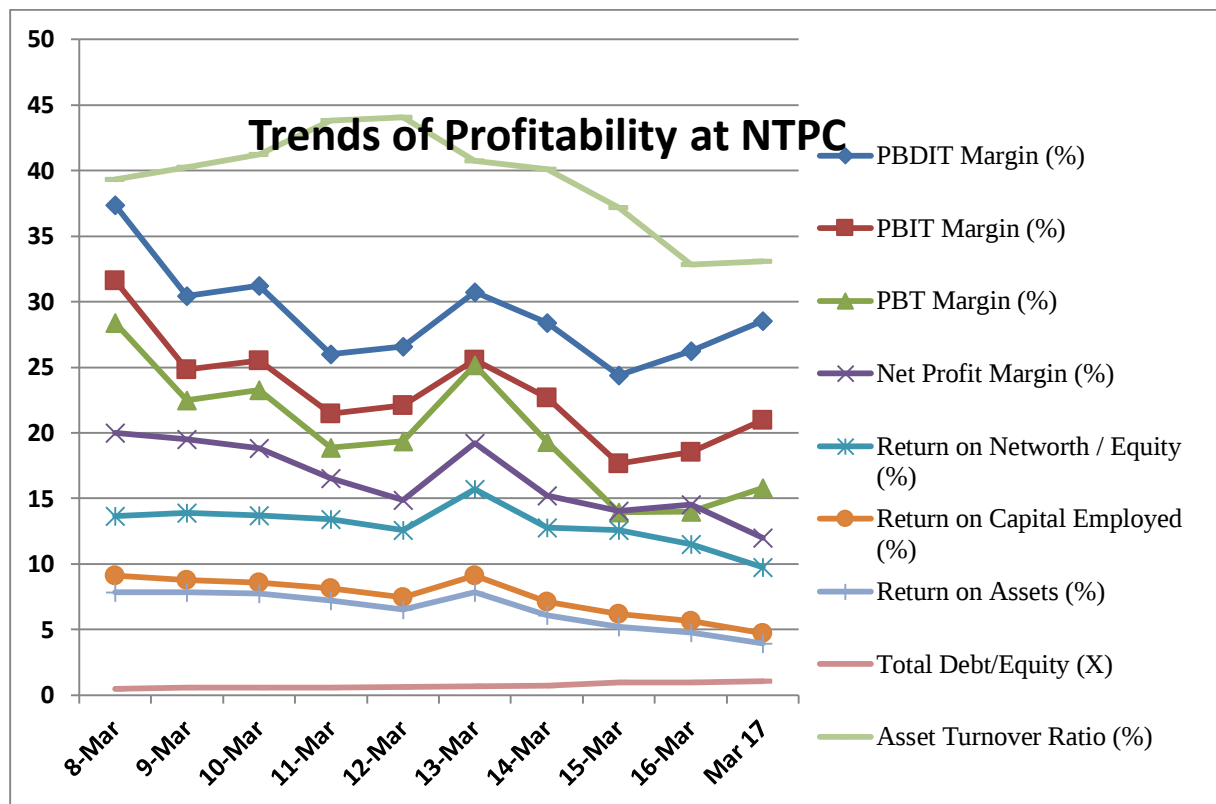


Figure 2: Graphical presentation of trends of Profitability at NTPC

7.2 Profitability Ratios Every business requires consistent improvement in profit to survive and prosper. A business that recurrently suffers losses cannot stay alive for a long period. Profitability ratios measure the efficiency of management team and reflect how well the business resources are employed to earn profits. The profitability trends help to determine success or failure of a business enterprise for a particular period of time. Profitability ratio's helps to make critical analysis of profits claimed by a company. Management needs higher profits to pay dividends and reinvest a portion in the business to increase the production capacity and strengthen the overall financial position of the company. A strong profitability position ensures common stockholders a higher dividend income and appreciation in the value of the common stock in future. Creditors, financial institutions and preferred stockholders expect a prompt payment of interest and fixed dividend income if the business has good profitability position. Return on Assets (ROA) and Asset Turnover Ratio are also commonly used to measure the

profitability of a company. ROA is calculated as net income divided by total assets. It is a measure of how efficiently a company utilizes its assets. A high ratio means that the company is able to efficiently generate earnings using its assets. Profits at different levels at NTPC are reflecting fluctuating trends in the study period (see table2). The Table No. 2 indicating downward trend while in year 2012-13 showing little improvement but then again reduced and further in year 2015-16 begins increasing. The debt equity ratio is increasing during study period indicating the company has sufficient equity against its debts. Return on Assets are fluctuating and showing downward trend since 2013-14. Similar trends are visible in asset turnover ratio (see table 2). Low ROA indicates that the company has not utilized the assets efficiently during the study period. Moreover, ROCE has been in decreasing trend and reaches to its lowest to 4.74 percent in year 2016-17.

Table 3

Composition and Trend of Liquidity Ratios (In ₹,crore)

Liquidity Ratios	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	Mar 17
Current Ratio (X)	2.36	2.89	2.86	2.57	2.17	1.82	1.58	1.22	0.88	0.75
Quick Ratio (X)	2.16	2.59	2.55	2.31	1.96	1.64	1.36	0.98	0.67	0.58
Inventory Turnover Ratio (X)	13.86	12.94	13.85	15.13	16.76	16.19	13.4	9.83	9.8	12.03
Dividend Payout Ratio (NP) (%)	38.92	36.19	35.89	34.42	35.75	37.57	43.2	20.03	26.96	22.93
Dividend Payout Ratio (CP) (%)	30.19	28.08	27.52	27.03	27.44	29.6	31.36	13.55	17.62	14.06
Earnings Retention Ratio (%)	61.08	63.81	64.11	65.58	64.25	62.43	56.8	79.97	73.04	77.07
Cash Earnings Retention Ratio (%)	69.81	71.92	72.48	72.97	72.56	70.4	68.64	86.45	82.38	85.94

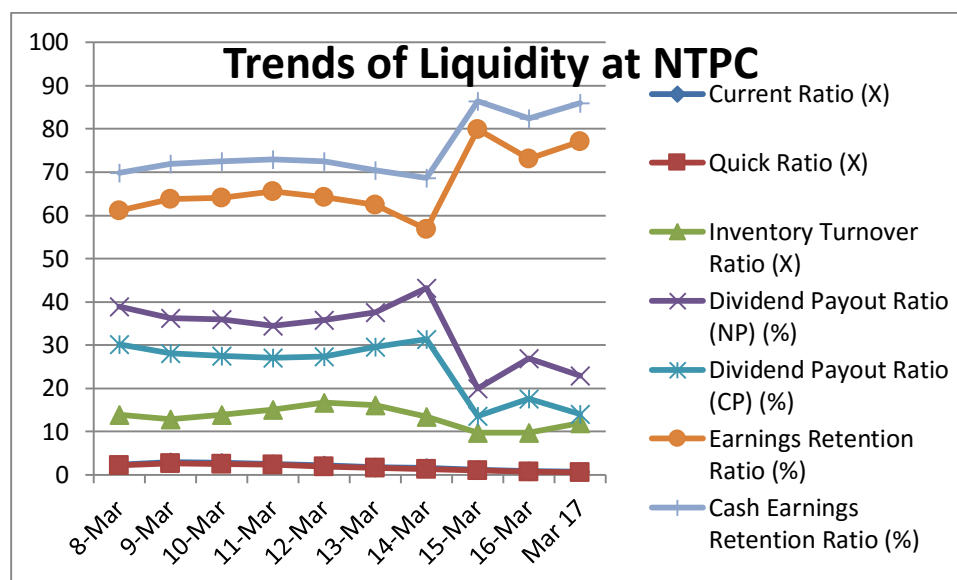


Figure 3: Graphical presentation at Trends of Liquidity Ratios at NTPC

7.3 Liquidity Ratios The liquidity ratios considered in the study are Current Ratio (CR), Quick Ratio (QR), Inventory Turnover Ratio (ITR), Dividend Payout Ratio (DPR), Earnings Retention Ratio and Cash Earnings Ratio. The study indicates downward trend of liquidity ratios. The current ratio reflects measure of margin of safety to the creditors. The present study reflects decline in the current ratio that further represents deterioration in the liquidity position of NTPC. Conventionally 2:1 is deemed as ideal current ratio, but under certain studies it is said for PSUs, the ratio of 1:1 is considered enough. Table 3 reveals a declining trend of this ratio, which varies from 0.75 to 2.89 during the period under study. The current ratio is lowest in the year 2016-17, which is beyond the alarming value 1:1. Thus, we observe from the current ratio that on an average NTPC has sufficient current assets to pay off its current liabilities. However the trend also signifies that in the past two years the short-term solvency of NTPC is under serious strain as its liquidity position is highly vulnerable. The creditors stand at considerable risk as the company is not in a position to meet its current obligations without infusion of working capital from the government or some other external sources. In the past two years NTPC couldn't achieve even the minimum standard applicable to a PSU i.e. 1:1. The downward trend of the current ratio in year 2015-16 and 2016-17 is a matter of concern. The current ratio was positive and far above the conventional standards but gradually moving downward. For greater clarity

and visibility we take the help of the (see Fig. 3). In the fig. 3 we observe that the curve depicting the current ratio shows a downward trend. We observe that mostly affected year is 2015-16 and 2016-17 and this has happened due to increase in other current liabilities. The reason for further increase in other current financial liabilities in the year 2016-17 has increased mainly due to increase in payables for capital expenditure and also due to payables to employees which has increased from 31.03.2016 to 31.03.2017.

The Quick Ratio depicts the relationship between quick assets and current liabilities. This ratio is computed based on the following formula: Quick Ratio = Quick Assets/ Current Liabilities. This ratio is widely accepted as the best available test of the liquidity position of a firm. As a rule of thumb a quick ratio of 1:1 is considered satisfactory because of its immediate ability to meet the short-term obligations. However, many well-managed companies in this industry are operating successfully even with quick ratio below 1:1. For PSUs, the ratio can even be less than 1:1. The Fig. 3 shows that the quick ratio of the NTPC moving downward gradually and reach to its lowest in 2016-17. The downfall in the quick ratio is visible since the year 2014-15 and steeped down afterwards. The mean value of Quick Ratio over a study period has been found to be 1.68 which is far above the standard norm of 1. This means the company well off to pay off its current obligations, if such a need arises at once. We observe from the quick ratio that NTPC has sufficient of quick assets to pay off every rupee of its current liabilities. However, the quick ratio is moving below the required industry standards 1:1. The major reason is the increase in short terms other current liabilities and reduction in short term loans and cash and its equivalent balance. The company needs to take corrective steps to improve its liquidity position.

Inventory turnover is a measure of how efficiently a company can control its merchandise, so it is imperative to have a high turn. ITR reflects the company does not overspend by buying too much inventory and wastes resources by storing non-salable inventory. It also shows that the company can effectively sell the inventory it buys. Thus ITR inform the investors the liquidity of company's inventory. Creditors are particularly interested in ITR as inventory is often put up as collateral for loans. Inventory turns vary with industry. During the study period the inventory turnover ratio reflecting fluctuating trends. After the year 2011-12 the inventory turnover is



falling drastically while it again started moving upward in year 2016-17. The fall in movement of inventory turnover ratio is indicating an inefficient control of the company over its stock.

Dividend payout ratio is the percentage of a company's earnings that it pays out to investors in the form of dividends. It is calculated by dividing dividends paid during a period by net earnings for that period. Dividend payout ratio is an important indicator of a company's performance from an investor's point of view. Investors invest in a company expecting a return on their investment which comes from two sources: capital gains and dividends. The return from these two sources is inter-related. A high dividend payout ratio means that the company is reinvesting less earnings in future projects, which in turn means fewer capital gains in future periods. Similarly, low payout ratio today may result in higher capital gains in future. Some investors prefer companies that provide high potential for capital gains while others prefer companies that pay high dividends. Dividend payout ratio helps each class of investors identify which companies to invest in. Thus Dividend payout ratio also provides an indication of a company's future growth potential. For investors that are interested in high growth companies, a high dividend payout ratio may not be a good sign. Although company is paying regular dividends but the study of dividend payout ratio reflecting fluctuating trends. Since 2008-09 the dividend payout ratio is reducing while reach to highest in year 2013-14 and again fallen severely and fluctuating (see table 3).

Retention ratio is also termed as plowback ratio. It is the percentage of a company's earnings retained and reinvested by the company. Retention ratio is the reverse of payout ratio. Equity shareholders invest in a company expecting payback in the form of dividends and capital gains. A company's board of directors takes its dividend policy decisions i.e. decisions about the extent and timings of dividend payments. If the company has surplus cash, the board may decide to pay a higher dividend resulting in lower retention rate. But if they believe more profitable investment opportunities are available and that the company may generate higher future earnings by availing those opportunities, the board may elect to pay less dividends or do not pay dividends at all, and instead invest the money in future projects, in which case the company will have higher retention ratio (and lower payout ratio). Higher retention ratio of a company suggests that it may generate higher growth in future periods resulting in higher share price and potential capital gain. A lower retention ratio means that the company's management is not so confident about future

profitability and has elected to pay back cash to the investors. Retention ratio and future growth potential are so much linked that future sustainable growth rate is calculated as a product of retention ratio and return on equity of the company. During the study period at NTPC reflecting fluctuating trends at earnings retention ratio reach to highest 79.97% in 2014-15 and again fluctuate and reached to 77.07 in the year 2016-17. Cash earnings ratio is somewhat shown increasing trend till year 2012-13 and afterwards fluctuated and lowest in 2013-14 with 68.64% while again begin to rise and reaches 85.94% in the year 2016-17 (see table 3)

Table 4

Composition and Trend of Valuation Ratios (In ₹,crore)

Valuation Ratios	Enterprise Value (Cr.)	EV/Net Operating Revenue (X)	EV/EBIT DA (X)	MarketCap/ Net Operating Revenue (X)	Retention Ratios (%)	Price/B V (X)	Price/Net Operating Revenue	Earnings Yield
8-Mar	174,693.75	4.71	12.6	4.38	61.07	2.99	4.38	0.05
9-Mar	166,880.11	3.98	13.06	3.54	63.8	2.52	3.54	0.06
10-Mar	194,019.35	4.18	13.4	3.68	64.1	2.68	3.68	0.05
11-Mar	182,687.80	3.32	12.76	2.89	65.57	2.34	2.89	0.06
12-Mar	163,920.07	2.64	9.92	2.16	64.24	1.83	2.16	0.07
13-Mar	153,471.49	2.34	7.6	1.78	62.42	1.46	1.78	0.11
14-Mar	145,998.67	2.03	7.13	1.37	56.79	1.15	1.37	0.11
15-Mar	187,150.37	2.56	10.47	1.66	79.96	1.49	1.66	0.08
16-Mar	188,177.92	2.67	10.17	1.51	73.03	1.2	1.51	0.1
Mar 17	234,242.76	2.99	10.48	1.75	77.06	1.42	1.75	0.07

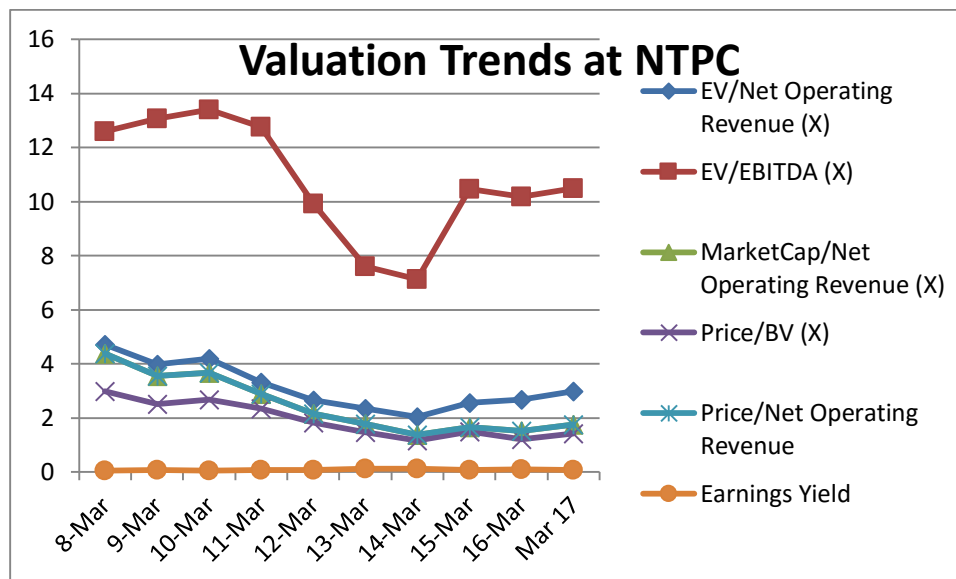


Figure 4: Graphical presentation at Valuation Trends at NTPC

The valuation ratio helps an investor to determine the cost of an investment with respect to the value or benefits of owning that investment. Valuation ratios are usually used because they are simple to calculate. Also, it gives a clear idea of the relationship between cost of an investment and the benefit of owning it. There are many valuation ratios used to determine the worth of investments, where the price earnings (PE) ratio is the most accepted for public companies. The PE ratio compares the cost of a share to the profits earned by shareholders per share. The comparison between cost and return is direct, so it gives the investor an idea of the worth of its investment. There are many variations to the PE ratio where the adjusted earnings, or the diluted earnings, of a company are used to calculate whether the cost and return are commensurate. It can be calculated for a single year or for a period of several years. Another commonly used valuation ratio is EBITDA, which compares the price of the share with respect to its profits. This EBITDA is adjusted for non-cash items such as interest, tax, depreciation and amortization to arrive at the actual profits earned by the company. The next important type of valuation ratio is the price/book value. This ratio compares the share price to the assets of the company. However, this ratio is applicable only to certain sectors, such as investment trusts, because the assets are calculated based on the accrual principle rather than its real economic worth. The idea behind



this price/book ratio is to give investors a sense of the cash flow that their investment is likely to generate. The results of the valuation ratio under study period are indicating that the overall valuation of the company is falling but it started improvement since the year 2014-15 (see table 4).

8. Conclusion

Ratio analysis is a form of fundamental analysis that links together the three financial statements commonly produced by corporations. Ratios provide useful figures that are comparable across industries and sectors. Using financial ratios, investors can develop a feel for a company's attractiveness based on its competitive position, financial strength and profitability. Financial ratios are an important tool of financial statements analysis. A ratio is a mathematical number calculated as a reference to relationship of two or more numbers and can be expressed as a fraction, proportion, percentage and a number of times. When the number is calculated by referring to two accounting numbers derived from the financial statements, it is termed as financial ratio. Overall Inference on financial performance at NTPC during 2007-08 to 2016-17 is reflecting fluctuating financial position of the company. The study indicates NTPC is paying dividends regularly but over a period of time the proportion of dividend has reduced. Profitability of the company is fluctuating during the study period. Its debt equity ratio is increasing during study period indicating the company has sufficient equity against its debts. Return on Assets are fluctuating and showing downward trend since 2013-14. Low ROA indicates that the company has not utilized the assets efficiently during the study period. Moreover, ROCE has been in decreasing trend and reaches to its lowest to 4.74 percent in year 2016-17. The liquidity position is weak at NTPC. The current and quick ratios are reflecting falling trends. On the whole, the liquidity analysis of NTPC exposes the serious weakness of the company in managing its working capital. Current ratio and Quick ratio are all less than the standard norms i.e. less than 2:1 and 1:1 respectively in the year 2015-16 and 2-016-17. The ITR further reflecting fluctuating trends. After the year 2011-12 the inventory turnover is falling drastically while it again started moving upward in year 2016-17. The fall in movement of inventory turnover ratio is indicating an inefficient control of the company over its stock. We can call them illiquidity ratios as they testify to illiquidity of the company. Since NTPC is a public



sector company, low liquidity may not have a significant impact on its borrowing power, but this situation may not continue forever. The company is paying regular dividends but the study of dividend payout ratio reflecting fluctuating trends. Since 2008-09 the dividend payout ratio is reducing while reach to highest in year 2013-14 and again fallen severely and fluctuating. It is evident from the study that NTPC results is reflecting fluctuating trends at earnings retention ratio reach to highest 79.97% in 2014-15 and again fluctuated and reached to 77.07 in the year 2016-17. Cash earnings ratio is somewhat showing increasing trend till year 2012-13 and afterwards fluctuated and lowest in 2013-14 with 68.64%, while again begin to rise and reaches 85.94% in the year 2016-17. The overall valuation of the company is falling but it started improvement since 2014-15.

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