

PROFITABILITY ANALYSIS OF ELECTRICITY DISCOMS OF RAJASTHAN

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ABSTRACT

This article is about performance of the Electricity Distribution Companies of Rajasthan i.e. Jaipur Vidhyut Vitran Nigam Limited, Ajmer Vidhyut Vitran Nigam Limited and Jodhpur Vidhyut Vitran Nigam Limited on the basis of profits generated by them. In this Profitability analysis did via help of various profitability ratios, which are mainly based on two factors. Firstly, Profitability ratios based on Margin and secondly, Profitability Ratios based on Investments or return basis. Profitability is a word which made up from combination of two words i.e. "Profit" and "Ability", that how much the potential to earn profit over a period of time. The scope of the study in sense of area restricted to above mentioned electricity distribution companies of Rajasthan viz., JVVNL, AVVNL and JDVVNL and on the basis of time it is restricted to five financial years i.e. from year 2013-14 to 2017-18.

KEYWORDS: Profit, Profitability, Ratio Analysis, Margin Ratios, Return Ratios.

Introduction

The term "Profitability" is a combination of two words i.e. "Profit" and "Ability" that means the capacity to earn a profit. Now the question arises what is profit? The meaning of Profit varies from different to different users. In economics, Profit is defined as surplus which remains after implicit interest, implicit wages and implicit rent are deducted from the total income derived by the firm. In accounting, the profit is calculated by deducting total revenue of an enterprise from all amounts spent in earning that income. Profit is the acid test of the individual firm's performance. In understanding of a layman, Profit is the extra income or part he leftover with after payment or deduction of every cost included. The word "Ability" means the potential which is also referred to as "earning power" or "operating performance" of the concerned investment.

As mentioned by Bion B. Howard & Miller Upton in his book Introduction to Business Finance, "Profitability is an ability to earn a return from use of its investments."¹

Financial and Operational efficiency of any business determined by the profits earned by the company. Profit is the important factor or measure to decide the performance of an enterprise. It is the Profit earning ability of an enterprises and the Capacity of the management to generate surplus in the process of business operations it is the overall measure of efficiency.

Profitability is an indicator of the efficiency and effectiveness of a business Concern in achieving its target of earnings. A very high Profit does not always indicate Sound organizational efficiency and Low Profitability is not always a sign of organizational sickness. In many situations it so happens that When a Concern is Complementing expansion Plans, it may run into short-Term Losses. Therefore it can be said that Profit is not the prime variable on which the operational efficiency and financial efficiency of an organization can be evaluated.

There are many different ways for you to analyze Profitability. This article will focus on Profitability ratios, and Common size Profit and Loss statement which are a measure of the business ability to generate revenue Compared to the amount of Expenses it incurs.

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There are two measurable Concepts of Profit:

- Accounting Profit
- Economic Profit

Accounting Profit

“The accounting concept of profit measures what have been accumulated, the analytical concept of profitability is concerned with future accumulation of wealth.”²

In the report of a Special Committee of the American Institute of Accountants, Profit is modified in thirty different ways. According to this report, by profit the accountant usually means the excess of the selling Price over the cost of Product.”³

Thus, Accounting Profit lies in the difference between the current value of sales and the historic total Cost.

Accounting Profit=Total Revenue-explicit Costs

Economic Profit

Economic Profit is the difference between total monetary revenue and total Cost. But total Costs. Include both explicit and implicit Costs. Economic Profit includes the opportunity costs associated with Production and is therefore lower than accounting Profit. Economic Profit also accounts for a longer span of time than accounting profit. Economists often consider Long-term economic profit to decide if a firm should enter or exit a market.

In short, Economic Profit can be defined as the excess of total revenues over the total Cost including the opportunity Cost of Capital revenues and of the owner’s time.

Economic Profit= total revenue – [Explicit Costs+implicit Costs]

Comparison between Accounting Profit & Economic Profit

Accounting profit consists of revenue minus explicit costs. Whereas Economic Profit consists of revenue minus implicit (opportunity) and explicit (monetary) Costs.

Accounting Profit	Economic Profit
É	É
Determined by GAAP	Determined by economic Principles
É	É
Includes explicit Costs only	Includes explicit and opportunity Costs
É	É
Single entity- Accounting Period view	Marco market/Whole of Project timeline view
É	É
Used for income tax and financial Performance	Used to determine market entry, stay or exit

The following factors affect the profitability of a business Concern:

- Size of the Capital invested
- Capital turnover
- Profit margin
- Revenue and Cost
- Productivity of the Concern
- Capacity Utilization
- Technology adopted etc.

Besides the above, social and Political factors also affect the profitability of a Concern.

In order to study the Profitability of the Electricity DISCOMS (Distribution Companies) of Rajasthan selected for the study, the ratio analysis techniques have been applied.

Electricity Sector in Rajasthan

On 19th July 2000, Government of Rajasthan issued a gazette notification unbundling (RSEB) Rajasthan State Electricity Board into five different companies with the purpose to run the Board efficiently and effectively. Following are the names of those unbundled Companies:

- Rajasthan Rajya Vidyut Utpadan Nigam Ltd. (RVUN), the generation Company;
- Rajasthan Rajya Vidyut Prasaran Nigam Ltd., (RVPN), the transmission Company.
- Jaipur Vidyut Vitran Nigam Ltd.,(JVVNL), one of the regional distribution company.
- Ajmer Vidyut Vitran Nigam Ltd. (AVVNL), regional electricity distribution company
- Jodhpur Vidyut Vitran Nigam Ltd. (JDVVNL), regional electricity distribution company of Rajasthan
- Rajasthan UrjaVikas Nigam Limited, a new company incorporated on 4 December, 2015 under the Companies Act, 2015 with the aim to carry out the power trading business of the Distribution companies of the Rajasthan State.

The Government of Rajasthan initiates various reforms to promote the development of an efficient, commercially viable and competitive power supply industry, which provides reliable and quality power at competitive prices to all consumers in the State. Rajasthan would undertake Energy Audit at all levels in order to reduce system losses. This would be done in a time bound manner.

Electricity DISCOMS (Distribution Companies) of Rajasthan

The three distribution Companies i.e. Jaipur VidhyutVitran Nigam Limited (JVVNL), Ajmer VidhyutVitran Nigam limited (AVVNL), and Jodhpur VidhyutVitran Nigam Limited (JDVVNL) operate and maintain the electricity system below 132kV in the State in their respective areas.

Background of Ajmer VidyutVitran Nigam Limited (AVVNL)

Ajmer VidyutVitran Nigam Limited (AVVNL) is an unbundled state power distribution company of erstwhile Rajasthan State Electricity Board (RSEB). As per the Rajasthan Power Sector Reforms Act, 1999 of Government of Rajasthan (GoR), the erstwhile RSEB was unbundled into a Generation Company, a Transmission Company and three Distribution Companies (Discoms) w.e.f. July 19, 2000. AVVNL covers 11 districts of Rajasthan namely:- Ajmer, Bhilwara, Nagaur, Sikar, Jhunjhunu, Udaipur, Banswara, Chittorgarh, Rajsamand, Doongarpur and Pratapgargh.

Background of Jaipur Vidyut Vitran Nigam Limited

Jaipur VidyutVitran Nigam Limited (JVVNL) is an unbundled state power distribution company of erstwhile Rajasthan State Electricity Board (RSEB). As per the Rajasthan Power Sector Reforms Act, 1999 of Government of Rajasthan (GoR), the erstwhile RSEB was unbundled into a Generation Company, a Transmission Company and three Distribution Companies (Discoms) with effect from July 19, 2000. JVVNL covers the 12 districts of Rajasthan namely Jaipur, Dausa, Alwar, Bharatpur, Dholpur, Kota, Bundi, Baran, Jhalawar, Sawaimadhopur, Tonk and Karauli.

Background of Jodhpur VidhyutVitran Nigam Limited

Jodhpur VidyutVitran Nigam Limited (JdVVNL) is an unbundled state power distribution company of erstwhile Rajasthan State Electricity Board (RSEB). As per the Rajasthan Power Sector Reforms Act, 1999 of Government of Rajasthan (GoR), the erstwhile RSEB was unbundled into a Generation Company, a Transmission Company and three Distribution Companies (Discoms) with effect from July 19, 2000. JdVVNL covers 10 districts viz. Jodhpur, Jaisalmer, Bikaner, Sirohi, Jalore, Barmer, Pali, Churu, Hanumanganarh and Shriganganagar.

Ratio Analysis

There are two key areas of Concern for judging Profitability performance of Companies:

(1) Operating performance Based on Sales and (2) Profitability Performance Based on Investment

- **Profitability Ratios Based on Sales**

Profitability Performance ratios based on Relationship on the income Statement which indicates a Company's ability to recover Costs and expenses. The main objective of determining Profitability ratios on net sales is to know the operating efficiency of a business entity in the competitive market environment which requires economy in the use of raw material and Cost of its Conversion into Finished Product and also to measure the Competitive Cost efficiency and quality of its Products and services made available to the Customers' and the marketing Competence of its sales department. The ratios Covered Under this group of Profitability ratios are:

- **Operating Profit/margin Ratio**

This ratio shows the relationship between the operating Profit earned from normal business operating activities and net sales. The formulae for Calculation of this ratio are:

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

[Where operating Profit is Net Sales Less operating Cost of goods sold]

Higher the operating profit ratio indicates the higher operational efficiency of the company. The operating Profit/margin Ratios of the Electricity Distribution Companies of Rajasthan Companies selected for the Present study have been shown in Table 1:

**Table 1: Operating Profit/margin Ratio of Power sector Companies
During the study Period 2010-11 to 2017-18**

(in Percentage)

Company	AVVNL	JVVNL	JDVVNL	Mean
2010-11	-41.18	-56.25	-54.44	-48.72
2011-12	-46.53	-44.80	-45.31	-45.55
2012-13	-20.32	-26.59	-30.50	-25.80
2013-14	-25.33	-32.26	-22.34	-26.64
2014-15	-7.98	-19.06	-9.54	-12.19
2015-16	1.17	-8.70	3.41	-1.37
2016-17	5.80	-0.58	2.38	2.53
2017-18	13.33	6.44	5.31	8.36
Mean	-15.13	-22.73	-13.80	-17.22

Source: Annual Reports of Electricity Distribution Companies of Rajasthan from 2010-11 to 2017-18.

It is evident from the above Table 1.1 that the Operating Profit/margin ratio of JVNNL shown the worst to best situation. JVNNL marked an improving up-down trend from negative to positive ratio. In the year 2010-2011 it was (-) 56.25 percent and in the year 2017-18 it achieved positive operating profit ratio 6.44 percent, which tell us that company's having better operational efficiency during the study period.

The Operating Profit/margin Ratio of AVNNL marked fluctuating trend in the beginning years, in year 2010-2011 it was (-)41.18 in the recent years it showed an upward positive movement in from 1.17 to 13.33 percent in the years 2015-16 to 2017-18. Overall operational efficiency of AVVNL was better than that of other companies.

The position of JDVVNL was same like other companies of the study in the beginning but it was improved positively and faster than other companies. In 2010-2011 it was recorded with (-) 54.44 percent and reached to 5.31 percent in the year 2017-18. Overall it showed constantly a satisfactory and improving operational profit ratio.

- **Net Profit/margin Ratio**

Net Profit refers to the excess of incomes/revenues over Expenses (i.e. revenue Less Cost of earn revenue) in the respective accounting Period. The amount of net Profit and net sales are available in Profit and Loss account prepared for corresponding accounting Period. This ratio can be calculated either on the basis of before tax Profit to sales or an after Tax Profit to net sales.

$$\text{Net Profit Ratio} = \frac{\text{Net Profit (after Tax)}}{\text{Net Sales}} \times 100$$

Net Profit Ratio is determined to know the overall efficiency of the concerned business entity. The Net Profit/margin Ratio of Power sector Companies selected for this study have been presented in Table 2.

Table 2: Net Profit/margin Ratio of Power sector Companies During the study Period 2010-11 to 2017-18**(in Percentage)**

Company	AVVNL	JVVNL	JdVVNL	Mean
2010-11	-186.23	-169.48	-176.42	-177.38
2011-12	-170.65	-108.50	-145.83	-141.66
2012-13	-78.23	-60.25	-72.19	-70.22
2013-14	-77.35	-68.15	-71.37	-72.29
2014-15	-48.46	-47.02	-49.11	-48.20
2015-16	-42.06	-38.80	-32.79	-37.88
2016-17	-3.51	-4.50	-9.24	-5.75
2017-18	10.62	5.80	0.25	5.56
Mean	-74.48	-61.36	-69.59	-68.48

Source: Annual Reports of Electricity Distribution Companies of Rajasthan from 2010-11 to 2017-18.

The Performance of JVVNL was constantly good during the whole study period and the Position of the Company was better Looking to the other Companies. The Net Profit margin ratio was (-)169.48 Percent in 2010-11 in the last year of study 2017-18 it stood at 5.80 percent in positive it showed that company started generating profits.

The table indicates that in the case of AVVNL there was a highly negative trend stood with (-) 186.23 Percent in 2010-11 but it was start improving and finally it was recorded at 6.4 percent in the end of study period i.e. 2017-18 and company now become in the position to generate net profits. Overall it showed good management efficiency and good news to state government as it is the main stakeholder of the company.

The position of JDVVNL was better than AVVNL in initial years it was (-) 176.42 percent in the year 2010-11, in the year 2017-18 it reached to 0.25, revealed that it would be turned out to be profitable soon in the upcoming years.

Gross Profit Ratio

This Ratio shows a relationship between net sales and gross Profit. It is computed as a Percentage of gross Profit to Net sales. It is also Known as gross margin ratio. The formula used for Computation of this ratio is:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

Higher ratio of gross Profit is a better sign of the business entity's Profitability and efficiency as well as better quality of its Products and services made available to Customers better Production facilities, effective Credit Policy and effective overall management.

Table 3: Gross Profit/margin Ratio of Power sector Companies During the study Period 2010-11 to 2017-18**(in Percentage)**

Company	AVVNL	JVVNL	JDVVNL	Mean
2010-11	-18.60	-37.71	-19.02	-25.11
2011-12	-18.40	-32.92	-18.09	-23.14
2012-13	-21.00	-16.29	-11.95	-16.41
2013-14	-16.79	-18.76	-7.99	-14.51
2014-15	-2.60	-6.82	-6.87	-5.43
2015-16	-5.56	2.37	5.22	0.68
2016-17	15.42	13.55	7.22	12.06
2017-18	18.87	18.55	11.99	16.47
Mean	-6.08	-9.75	-4.93	-6.92

Source: Annual Reports of Electricity Distribution Companies of Rajasthan from 2010-11 to 2017-18.

The gross Profit/margin Ratio of JVVNL showed very low gross profit or high gross loss situation in comparison to other companies but it had constantly improving behavior from negative to positive trend except one fluctuation in the year 2013-14 it marked by (-) 18.76 percent. In the year 2010-11 it

stood at (-) 37.71 percent and in year 2017-18 it stood at 18.55 percent. The overall performance of company is good but not satisfactory as it still under 30 percent that showed it unable to meet out its payment obligations and expenses timely.

The gross Profit ratio of AVVNL marked Negative Trend during the study Period. It was (-) 18.60 Percent in 2010-11 as against 18.87 Percent in 2017-18 end of the study Period. During the whole study Period it was showing negative to positive trend.

As the table depicts JDVVNL is the only company which showing constantly improving behavior at a higher rate compared to other companies without having any fluctuation during the study period. In year 2010-11 it was (-) 19.02 percent and by reducing continuously it reached to 11.99 percent in the year 2017-18 which was lowest out all the rest companies of the study which shown an unsatisfactory performance of the company to meet out its expenses and payment obligations requirements.

Profitability Ratio Based on Investment or Capital Employed

If the available business assets/funds are judiciously and efficiently deployed/used by the management on the business activities than profit can easily be maximized. Therefore, it is necessary to know the return on Capital employed/investment in business activities than Profit can easily be maximized. Therefore, it is necessary to know the return on Capital employed/ investment in business.

- **Return on Net Capital Employed**

Profit is the indicator of the Success or failure of a business Concern. Although Profit indicates the "Commercial ability" of a Concern, it does not indicate the State of its efficiency to measure the efficiency of a business, Profit should be studied in relation to the amount of Capital employed. The return on Capital employed is a Simple method of measuring the Profitability of a concern. Nevertheless, it is widely used in measuring the overall Performance of a concern its basic formula is:

$$\text{Return on Capital Employed} = \frac{\text{EBIT}}{\text{Capital Employed}} \times 100$$

Table 4: Return on Capital employed Ratio of Power sector Companies During the study Period 2010-11 to 2017-18

(in Percentage)

Company	AVVNL	JVVNL	JDVVNL	Mean
2010-11	-51.92	-168.15	-183.39	-134.49
2011-12	-88.61	-101.08	-93.61	-94.43
2012-13	-76.00	-94.19	-46.09	-72.09
2013-14	-62.26	-70.19	-41.67	-58.04
2014-15	-79.16	-64.59	-32.33	-58.69
2015-16	-16.27	24.93	-19.35	-3.56
2016-17	4.04	-1.82	11.34	4.52
2017-18	92.57	29.89	110.89	77.78
Mean	-34.70	-55.65	-36.78	-42.38

Source: Annual Reports of Electricity Distribution Companies of Rajasthan from 2010-11 to 2017-18.

The return on Capital employed in Jaipur Vidhyut Vitran Nigam Limited (JVVNL) was very Low Compared to the rest of the Companies Under review during the Period under study i.e. 2010-11 to 2017-18. It ranged between -168.15 Percent in 2010-11 and 29.89 Percent in 2017-18 during the whole study period. It continuously showed an improving trend during the study period.

The table manifests that the return on Capital employed in Ajmer Vidhyut Vitran Nigam Limited (AVVNL) ranged between -51.92 Percent and 92.57 Percent during the Whole study Period i.e. 2010-11 to 2017-18. However, the Ratio improved very drastically, by 88.53 Percent, in the final year of the review Period. The improving feature of the ratio indicates a sizeable improvisation in the Profits of the Company.

The Jodhpur Vidhyut Vitran Nigam Limited (JDVVNL) started with the heavy losses in the beginning but recovered over the study period. In case of return on capital employed it showed highest negative return on capital employed with -183.39 percent and highest positive return too with 110.89

among all of the given electricity distribution companies of Rajasthan during the study period 2010-11 to 2017-18. This is the only company which constantly improvising its profits year over year.

- **Return on Net Worth or Shareholder's Fund**

It is another aspect to be considered in the analysis of overall Profitability in the rate of return on shareholder's Capital which relates the net Profit available to shareholder's to the amount of Capital invested by them. For the purpose of the Return on Net worth Ratio, net Profits are arrived at after deducting Interest and taxes.

$$\text{Return on shareholder's Fund} = \frac{\text{Net Profit after Interest Tax}}{\text{Shareholder's fund}} \times 100$$

**Table 5: Return on Net worth Ratio of Power sector Companies
During the study Period 2010-11 to 2017-18**

(In Percentage)

Company	AVVNL	JVVNL	JDVVNL	Mean
2010-11	116.69	117.82	87.70	107.40
2011-12	58.37	49.37	53.95	53.90
2012-13	23.32	26.62	27.32	25.75
2013-14	24.32	28.21	27.53	26.69
2014-15	15.42	20.40	17.94	17.92
2015-16	13.78	17.12	13.06	14.65
2016-17	1.47	2.52	4.43	2.81
2017-18	-5.56	-4.21	-0.14	3.30
Mean	30.98	32.23	28.97	30.73

Source: Annual Reports of Electricity Distribution Companies of Rajasthan from 2010-11 to 2017-18.

The return on shareholder's fund ratio in the case of Jaipur Vidhyut Vitran Nigam Limited (JVNL) showed decreasing trends in the whole study period. It started decreasing from 117.82 Percent in 2010-11 and in the last year of the study period 2017-18 it becomes negative with -4.21 percent. As mentioned earlier, negative ROE ratio can be possible due to negative shareholders' equity and positive profits but not so dangerous then vice-versa.

The return on shareholder's fund in the case of Ajmer Vidhyut Vitran Nigam Limited was ranged between 116.69 Percent in 2010-11 and -5.56 Percent in 2017-18 during the whole study period, even though it showed negative figure due to company earned positive profits and have negative shareholder equity which resulted into a negative ROE but it is reflector of a potential future rebound for the company than having loses and positive net worth of the company.

The Return on Equity (ROE) of (JDVVNL) Jodhpur Vidhyut Vitran Nigam Limited also showing a declining trend over the whole study period from 2010-11 to 2017-18. The ratio of return on equity is varied between from 87.70 percent to -0.14 percent. As, downfall of ROE not showing any good news for the company as the shareholders would get nothing in return for the investments made by them in the company.

- **Return on Total Assets**

The Return on total assets (ROTA) is a ratio that measures a company's net income i.e. net profit which is left over after payment of administrative expenses, selling & distribution expenses, taxes, and etc. against its total net assets the ratio is considered to be an indicator of how effectively a Company is using its assets to generate earnings after Contractual Obligations must be paid.

To calculate Return on total assets (ROTA) the formula will be as follows:

$$\text{Return on Total Assets} = \frac{\text{Net Profit After Tax}}{\text{Total Net Assets}}$$

**Table 6: Return on Total Assets of Power sector Companies
During the study Period 2010-11 to 2017-18**

(in Percentage)

Company	AVVNL	JVVNL	JDVVNL	Mean
2010-11	-67.47	-89.54	-128.93	-95.31
2011-12	-95.59	-59.91	-87.41	-80.97
2012-13	-42.14	-37.01	-48.71	-42.62
2013-14	-51.99	-44.88	-63.39	-53.42
2014-15	-34.91	-33.84	-41.37	-36.71
2015-16	-33.00	-29.50	-27.87	-30.12
2016-17	-3.01	-3.60	-7.88	-4.83
2017-18	9.45	4.87	21.33	11.88
Mean	-39.83	-37.68	-48.03	-41.51

Source: Annual Reports of Electricity Distribution Companies of Rajasthan from 2010-11 to 2017-18.

The (ROTA) Return on Total Assets ratio in the case of Ajmer VidhyutVitrannigam Limited (AVVNL) was very fluctuating and the average of Return on Total Assets was -39.83 percent during the whole study period from 2010-11 to 2017-18. In the beginning of the study period i.e. 2010-11 it recorded with least negative ROTA -67.47 percent and start giving positive returns on total assets 9.45 percent in the year 2017-18.

The return on total assets in the case of Jaipur VidhyutVitrannigam Limited (JVVNL) was better among the all other companies under study. It ranged between from -89.54 percent to 4.87 percent which shows an improving increasing trend during the whole study period from 2010-11 to 2017-18. It had the negative trend till 2016-17 recorded with -3.60 percent in 2017-18 it record positive ratio on return on total assets with 4.87 percent from which it can be interpreted easily that company comes in the position to utilized its money in purchasing of useful assets which leads to give it better returns.

In case of Return on Total Assets (ROTA) of Jodhpur VidhyutVitrannigam Limited (JDVVNL) started with the worst situation and ended very well among all the given electricity distribution companies of Rajasthan during the study period. It ranged between from -128.93 Percent to 21.33 Percent during the whole study period 2010-11 to 2017-18.

Conclusion

This article is about the profitability analysis of the electricity Distribution Companies (DISCOMS) of Rajasthan which done via help of profitability ratios on the basis of sales and on the basis of investments. As in crux all the electricity Discoms of Rajasthan was very weak in sense of profit generation in the beginning years of the study period during from 2010-11 to 2017-18. But by the time elapsed all companies showed an improving trend in their profitability performance. If talking about individual company basis then JDVVNL is the best performer company on the basis of sources available to it and application of its resources which helped it in increasing its financial profitability.

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