SOLVENCY ANALYSIS OF SELECTED PRIVATE POWER SECTOR COMPANIES OF INDIA

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Abstract

This paper aims to analyze the solvency performance of selected four Private power sector companies for the period of 05 years commencing from 2016-17 to 2020-21. For this purpose, the solvency ratios like debt-equity ratio, debt to total assets ratio, proprietary ratio, capital gearing ratio, and interest coverage ratio are calculated. ANOVA is used for testing hypothesis. The result reveals that the solvency position of Tata Power is good among all selected Private power sector companies during the study period. The result of ANOVA shows that there is a significant difference in Debt to total assets ratio, Proprietary ratio, and interest coverage ratio of selected private power sector companies. There is no significant difference in Debt-equity ratio and capital gearing ratio of selected private power sector companies.

Key Words: *ANOVA, Power, Solvency*

Introduction

Power is among the most critical component of infrastructure, crucial for the economic growth and welfare of nations. The existence and development of adequate infrastructure are essential for the sustained growth of the Indian economy. India's power sector is one of the most diversified in the world. Sources of power generation range from conventional sources such as coal, lignite, natural gas, oil, hydro and nuclear power to viable non-conventional sources such as wind, solar, and agricultural and domestic waste. Electricity demand in the country has increased rapidly and is expected to rise further in the years to come. To meet the increasing demand for electricity in the country, massive addition to the installed generating capacity is required. In May 2018, India ranked fourth in the Asia Pacific region out of 25 nations on an index that measured their overall power. India was ranked fourth in wind power, fifth in solar power, and fifth in renewable power installed capacity as of 2018. India ranked sixth in the list of countries to make significant investments in clean energy at US$ 90 billion.

Literature Review

(1) M.Krishna Moorthi, Dr.M.Ramesh & N.Bhanupriya (2012)

Long term Liquidity plays a vital role in survival of a business. Some describe it as solvency, but it would be better if the term 'solvency' is reserved for "ability to survive in the long run". From the above analysis its found and conclude that Debt equity ratio of Bhushan and Visa is more than 2:1 ratio, it showed the restriction in borrowing funds, and Bhushan is having highest total debt ratio from others, they need to decrease their total debt position. SAIL has been in sound position in proprietary ratio from other companies. Bhushan, JSW & VISA is below the average of 60%, they need to increase their position. From the ANOVA result it can conclude that companies belong to the same industry follows a different debt equity position during the study period. Long term Liquidity plays a vital role in survival of a business. Some describe it as solvency, but it would be better if the term 'solvency' is reserved for "ability to survive in the long run". From the above analysis its found and conclude that Debt equity ratio of Bhushan and Visa is more than 2:1 ratio, it showed the restriction in borrowing funds, and Bhushan is having highest total debt ratio from others, they need to decrease their total debt position. SAIL has been in sound position in proprietary ratio from other companies. Bhushan, JSW & VISA is below the average of 60%, they need to increase their position. From the ANOVA

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(2) R. Angamuthu & A. Sivanandam (2012)

In this paper we examine long-term and short-term solvency status of Cement companies between 2000-01 and 2009-10. The five cement companies, four private owned and one Government owned are considered for the study. Results of the analysis reveals that there is no risk of solvency either in fulfilling long-term commitment in most of the cement manufacturing companies under study. Regarding short term solvency, the study indicates that all cement companies have sufficient liquid assets to cover their short-term debt but a significant decline in short-term solvency level is found for majority of the companies as well as for all selected companies when pooled together. Overall this study envisages that long term solvency position is good while short-term solvency level is better for cement companies.

Research Methodology

Objective of the study:

The main objective of the study is to measure the solvency position of selected private power sector companies of India.

Hypothesis of the study:

H0: There is no significant difference in solvency position of selected private power sector companies.

H1: There is a significant difference in solvency position of selected private power sector companies.

The scope of the present study:

Four private power sector companies have been taken for the purpose of the study during the period from 2016-17 to 2020-21.

Sample of the study:

The universe of the study is all power sector companies in India. Four private power sector companies have been selected on the base of convenient sampling method. These companies are:

(1) Adani Power
(2) Tata Power
(3) Torrent Power
(4) JSW Energy

Period of the study:

The researcher has undertaken the study is for 05 years from 2016-17 to 2020-21.

Source of data:

This study mainly depends on the secondary data, researcher collected the data from Annual reports of the companies' websites.

Tools and techniques:

For the analysis of data in the form of various solvency ratios, the statistical tools like average, S.D., C.V. and ANOVA has been employed. Following ratios have been used.

(1) Debt-equity ratio
(2) Debt to total assets ratio
(3) Proprietary ratio
(4) Capital gearing ratio
(5) Interest coverage ratio

Data Analysis:

Table No.1: Debt-equity Ratio of the selected private power sector companies
(in times)

Year	Adani Power	Tata Power	Torrent Power	JSW Energy
2016-17	5.41	0.68	1.19	0.35
2017-18	1	0.96	1.11	0.26
2018-19	1.18	1.09	0.93	0.2
2019-20	0.79	1.17	0.79	0.14
2020-21	0.36	1.02	0.59	0.08
Average	1.75	0.98	0.92	0.21
S.D.	2.07	0.19	0.24	0.10
C.V. (%)	118.41	19.02	26.28	50.87

(Source: Computed from Annual Reports)

From the above table no.1 it shows that highest average debt-equity ratio is 1.75 times in Adani power and lowest is 0.21 times in JSW Energy.

In Adani power S.D. and C.V. are 2.07 and 118.41% respectively. The lowest CV shows in

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Tata power among selected private power sector companies during the study period.

Testing of Hypothesis

H0 = There is no significant difference in debt-equity ratio of selected private power sector companies.

H1 = There is a significant difference in debt-equity ratio of selected private power sector companies.

Table No. 1 A: Calculation of One Way ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5.9569	3	1.985633	1.809687	0.185982	3.238872
Within Groups	17.5556	16	1.097225			
Total	23.5125	19				

(Source: Computed)

From above table no.1A it can be analyzed that the table value of F is 3.24 and the calculated value for this ratio is 1.81 so calculated value is lesser than table value therefore null hypotheses is accepted. So, it can be concluded that there is no significant difference in debt-equity ratio of selected private power sector companies.

Table No.2: Debt to total assets Ratio of the selected private power sector companies
(in times)

Year	Adani Power	Tata Power	Torrent Power	JSW Energy
2016-17	0.89	0.56	0.67	0.45
2017-18	0.52	0.60	0.65	0.38
2018-19	0.41	0.59	0.62	0.34
2019-20	0.30	0.59	0.60	0.31
2020-21	0.30	0.57	0.55	0.21
Average	0.48	0.58	0.62	0.34
S.D.	0.24	0.02	0.05	0.09
C.V. (%)	50.54	2.82	7.54	26.25

(Source: Computed from Annual Reports)

From the above table no.2 it shows that highest average debt-equity ratio is 0.62 times in Torrent power and lowest is 0.34 times in JSW Energy. In torrent power S.D. and C.V. are 0.05 and 7.54% respectively. The lowest CV shows in Tata power among selected private power sector companies during the study period.

Testing of Hypothesis

H0 = There is no significant difference in debt to total assets ratio of selected private power sector companies.

H1 = There is a significant difference in debt to total assets ratio of selected private power sector companies.

Table No. 2 A: Calculation of One Way ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.235135	3	0.078378	4.469822	0.018388	3.238872
Within Groups	0.28056	16	0.017535			
Total	0.515695	19				

(Source: Computed)

From above table no.2A it can be analyzed that the table value of F is 3.24 and the calculated value for this ratio is 4.47 so calculated value is higher than table value therefore null hypotheses . is rejected. So, it can be concluded that there is a significant difference in debt to total assets ratio of selected private power sector companies

Table No.3: Proprietary Ratio of the selected private power sector companies
(in times)

Year	Adani Power	Tata Power	Torrent Power	JSW Energy
2016-17	0.11	0.41	0.33	0.55
2017-18	0.48	0.36	0.35	0.62
2018-19	0.32	0.37	0.38	0.66
2019-20	0.32	0.37	0.40	0.69
2020-21	0.33	0.39	0.45	0.79
Average	0.31	0.38	0.38	0.66
S.D.	0.13	0.02	0.05	0.09

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C.V. (%)	42.24	5.26	12.19	13.40

(Source: Computed from Annual Reports)

From the above table no.3 it shows that highest average proprietary ratio is 0.66 times in JSW Energy and lowest is 0.31 times in Adani Power. In JSW Energy S.D. and C.V. are 0.09 and 13.40% respectively. The lowest CV shows in Tata power among selected private power sector companies during the study period.

Testing of Hypothesis

H0 = There is no significant difference in the proprietary ratio of selected private power sector companies.

H1 = There is a significant difference in proprietary ratio of selected private power sector companies.

Table No. 3 A: Calculation of One Way ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.36244	3	0.120813	17.37696	2.75E-05	3.238872
Within Groups	0.11124	16	0.006953			
Total	0.47368	19				

(Source: Computed)

From above table no.3A it can be analyzed that the table value of F is 3.24 and the calculated value for this ratio is 17.38 so calculated value is higher than table value therefore null hypotheses is rejected. So, it can be concluded that there is a significant difference in proprietary ratio of selected private power sector companies.

Table No.4: Capital gearing Ratio of the selected private power sector companies
(in times)

Year	Adani Power	Tata Power	Torrent Power	JSW Energy
2016-17	3.69	0.53	1.18	0.35
2017-18	0.24	0.63	1.11	0.26
2018-19	0.92	0.62	0.90	0.20
2019-20	0.43	0.71	0.79	0.14
2020-21	0.12	0.78	0.59	0.06
Average	1.08	0.65	0.91	0.20
S.D.	1.49	0.10	0.24	0.11
C.V. (%)	138.02	14.53	26.22	54.95

(Source: Computed from Annual Reports)

From the above table no.3 it shows that highest average proprietary ratio is 1.08 times in Adani Power and lowest is 0.20 times in JSW Energy. In Adani Power S.D. and C.V. are 1.49 and 138.02% respectively. The lowest CV shows in Tata power among selected private power sector companies during the study period.

Testing of Hypothesis

H0 = There is no significant difference in capital gearing ratio of selected private power sector companies.

H1 = There is a significant difference in capital gearing ratio of selected private power sector companies.

Table No. 4 A: Calculation of One Way ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.198455	3	0.732818	1.274118	0.316886	3.238872
Within Groups	9.20252	16	0.575158			
Total	11.40098	19				

(Source: Computed)

From above table no.4A it can be analyzed that the table value of F is 3.24 and the calculated value for this ratio is 1.27 so calculated value is lesser than table value therefore null hypotheses is accepted. So, it can be concluded that there is no significant difference in capital gearing ratio of selected private power sector companies.

Table No.5: Interest coverage Ratio of the selected private power sector companies
(in times)

Year	Adani Power	Tata Power	Torrent Power	JSW Energy
2016-17	0.28	2	1.56	1.63
2017-18	0.24	2	2.64	1.76
2018-19	0.82	1.88	2.4	1.95
2019-20	0.71	1.87	2.73	2.25
2020-21	0.22	1.58	3.2	2.46

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Average	0.45	1.87	2.51	2.01
S.D.	0.29	0.17	0.60	0.34
C.V. (%)	63.30	9.20	24.07	17.06

(Source: Computed from Annual Reports)

From the above table no.5 it shows that highest average interest coverage ratio is 2.51 times in Torrent Power and lowest is 0.45 times in Adani Power. In Torrent Power S.D. and C.V. are 0.29 and 63.30% respectively. The lowest CV shows in Tata power among selected private power sector companies during the study period.

Testing of Hypothesis

H0 = There is no significant difference in interest coverage ratio of selected private power sector companies.

H1 = There is a significant difference in interest coverage ratio of selected private power sector companies.

Table No. 5 A: Calculation of One Way ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	11.62742	3	3.875807	26.11334	2.11E-06	3.238872
Within Groups	2.37476	16	0.148423			
Total	14.00218	19				

(Source: Computed)

From above table no.5A it can be analyzed that the table value of F is 3.24 and the calculated value for this ratio is 26.11 so calculated value is higher than table value therefore null hypotheses is rejected. So, it can be concluded that there is a significant difference in interest coverage ratio of selected private power sector companies.

Limitation of Study

1. The study is mainly based on the published financial data, so finding will depend on the accuracy of such data.
2. The researcher has restricted this study up to four selected Private power sector companies for limited period, so findings may not be generalized to whole Power sector companies.
3. The solvency analysis is analyzed on the basis of selected financial ratios, while other factors also affecting to solvency are ignored by researcher.

Conclusion

There is a high consistency in solvency ratio of Tata Power and low consistency in solvency ratio of Adani Power during the study period. There is a significant difference in Debt to total assets ratio, Proprietary ratio, and interest coverage ratio of selected private power sector companies. There is no significant difference in Debt-equity ratio and capital gearing ratio of selected private power sector companies.

References

1.M.Krishna Moorthi, M. N. (2012). Long term solvency (Leverage) analysis of selected steel companies in India-An empirical study, Volume 2, Issue 4. International Journal of Management Research and Review.

2.Sivanandam, R. A. (2012). Long-term and short-term solvency status of select cement, Volume 2, Issue 2. International Journal of Engineering and Management Research.

Websites

1.www.adanipower.com

2.www.tatapower.com

3.www.torrentpower.com

4.www.jsw.in

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