



Capital Structure Analysis of Selected Petroleum Companies in India- An Empirical Study

KEYWORDS

Debt Funds, Equity Funds, Financial Leverage, Financial Risk

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ABSTRACT *Petroleum industry in India (PII) has got immense importance due to the huge demand for their petroleum products. Role of petroleum industry in India's GDP is very significant as it is one of the biggest contributors to both central and state treasuries. In this study an attempt has been made to examine the Capital Structure of the selected companies of PII. It is found that all the selected companies of PII are running with low debt fund. HOECL largely employing shareholders funds in their assets and EOL is on high degree financial risk.*

Introduction

Petroleum industry has very high importance in national economy. Any change in the price of petroleum products may change the general price level in the market. Therefore, it is pertinent to go for a study on the financial performance of the companies to understand their strength and weaknesses. The present paper deals with the capital structure analysis of selected companies in India. Capital structure refers to the way a corporation finances its assets through some combination of equity, debt or hybrid securities. The capital structure of any company has impact on its profitability. Success and growth of earning to the owners equity is largely depends on capital structure. Therefore, it is very imperative to have study on Capital Structure in order to further strengthening the companies. Capital structure can be well judged with the help of Ratio Analysis.

Review of Literature

Jain & Yadav (2003) concluded that Indian companies employing a greater amount of total debt than Singaporean Thai Companies. The proportion of short-term debt is particularly high in Thai companies. Gowda, Sharma & Muzher (2006) concluded that the changes in the EPS is not only due to the debt-equity factors. There are certain other variables, which have an impact on the EPS of the firms. Kaur and Khullar (2009) concluded that there is a significant variation in the capital structure practices of the firms between Indian Cement and Automobile Industry and established that business risk, profitability and WACC are important determinants of capital structure. Padmini, & Reddy (2012) found that the degree of financial leverage did not alter the earning of the shareholders favourably in Indian Pharmaceutical Industry.

Objective of the study

The objective of the present study is to analyse the capital structure of selected petroleum companies in India during the period of 2000-2001 to 2009-2010.

Hypotheses

The present study based on the following hypotheses:

H₁: Individual Company's capital structure ratios does not significantly vary from the average ratio of the industry .

H₂: There is no significant difference of capital structure ratios among the sample companies.

Research Methodology

This is purely an empirical study for a period ten years. There are 12 sample companies selected out of 32 defined population size. Capital structure have been analysed with the help of three selected ratios i.e. Debt Equity Ratio (DER), Shareholders' fund to Capital Employed Ratio (SFTCER) and Financial Leverage (FL). Moreover, for analysing and presentation of the data, few statistical measures have been used. These are Rank, Mean, Range, Standard Deviation (SD), Coefficient of Variation (CV), Difference between Average Ratio of the Company and Average Ratio of the Industry (CA-IA) i.e. average of averages and relevant statistical techniques & test i.e. ANOVA and t-test

ANALYSIS AND DISCUSSION

Debt Equity Ratio (DER)

This ratio shows the relative contribution of debt financiers and equity financiers in long term fund or this ratio reflects the proportion of outsider's fund vis-a-vis share capital.

TABLE – 1
Debt Equity Ratio of the selected companies of Indian Petroleum Industry

Sl. No.	Name of the company	2000 - 2001	2001-2002	2002-2003	2003 - 2004	2004 - 2005	2006 - 2007	2005 - 2006	2007 - 2008	2008 - 2009	2009 - 2010	Mean	Range	Standard Deviation(SD)	Coefficient of Variation (CV) (%)	CA-IA (%)
1	ONGC	0.14779	0.11812	0.02239	0.08333	0.03890	0.00604	0.00198	0.00052	0.00034	0.00006	0.04	0.15	0.05	131.05	94.88
2	GAIL	0.49	0.45	0.32	0.29	0.23	0.12	0.19	0.10	0.08	0.09	0.24	0.41	0.15	63.90	71.10
3	BPCL	1.02	0.96	0.69	0.46	0.61	0.54	0.92	0.65	1.75	1.70	0.93	1.29	0.46	49.13	13.43
4	HPCL	0.55	0.54	0.20	0.22	0.26	1.10	0.76	1.59	2.12	1.84	0.92	1.92	0.71	77.16	12.12
5	OIL			0.111	0.073	0.067	0.119	0.057	0.022	0.006	0.003	0.06	0.12	0.04	77.81	93.01
6	IOCL	1.29	1.25	0.77	0.53	0.67	0.78	0.90	0.86	1.02	0.88	0.89	0.76	0.24	26.74	9.22
7	CPCL	0.92	1.19	1.53	1.47	1.20	0.70	1.20	0.71	0.50	1.18	1.06	1.02	0.34	32.05	29.30
8	NRL	2.16	1.73		1.03	0.45	1.05	0.35	0.88	0.02	0.08	0.86	2.14	0.73	84.53	5.14

9	MRPL	4.15	4.54	2.45	2.29	1.60	0.86	1.38	0.54	0.42	0.30	1.85	4.24	1.51	81.36	126.29
10	EOL	2.75	3.29	3.67		2.13	2.86	2.41	2.70	2.44	1.99	2.69	1.69	0.54	19.96	228.80
11	HOE-CL	0.004	0.00	0.00	0.00	0.12	0.34	0.07	0.15	0.12	0.59	0.14	0.59	0.19	137.09	83.02
12	SETL	0.00	0.00	0.00	0.00	0.00	0.25	0.24	0.30	0.25	0.10	0.11	0.30	0.13	113.99	86.04
	Average	1.23	1.28	0.89	0.59	0.61	0.73	0.71	0.71	0.73	0.73	0.82				

Source: Compiled and computed from Annual Reports.

Analysis of Debt Equity Ratio (DER)

From table-1 it is clear that the average DER of the companies varies in-between 0.04 to 2.69. During the study period, average DER registered highest at 2.69 for EOL and lowest at 0.40 for ONGC. It has observed that over the years, DER of all the sample companies is changing. Moreover, sample companies have got different range of their DER. Among all, MRPL has shown high variation and OIL has shown comparatively a low variation of their DER at a range of 4.24 and 0.12 respectively. DER found to be highly inconsistent in MRPL in terms of SD and HOECL in terms of CV. On the contrary, DER found comparatively consistent in OIL in terms of SD and EOL in terms of CV. Table also depicts that among the sample companies, EOL's average DER is largely varying from its average DER of the industry, while NRL is comparatively closer.

After testing the statistical hypothesis i.e. H_1 , it is confirmed

that when compared with average of the Industry, the null hypothesis is accepted for BPCL, HPCL, IOCL, CPCL and NRL and drawn the conclusion that companies DER does not significantly different from average DER of the Industry. Alternative hypothesis is accepted for ONGC, GAIL, OIL, MRPL, EOL, HOECL and SETL. Therefore, there is significant difference between DER of ONGC, GAIL, OIL, MRPL, EOL, HOECL and SETL that of average DER of the Industry.

In testing H_2 it is found that the critical value at 5% significant level is 1.88 which is less than F, calculated value i.e. 17.71. Therefore, the null hypothesis is rejected. Hence, it is concluded that the DER position of selected companies of Petroleum Industry in India (PII) differs significantly.

Shareholders' Fund to Capital Employed Ratio (SFCER)

It explains the relationship between the proprietors' fund and capital employed. Capital employed is the value of the assets that contribute to a company's ability to generate revenue.

TABLE - 2
Shareholders' Fund to Capital Employed Ratio of selected petroleum companies

Sl. No.	Name of the company	2000 - 2001	2001-2002	2002-2003	2003-2004	2004 - 2005	2005 - 2006	2006-2007	2007-2008	2008 - 2009	2009 - 2010	Mean	Range	Standard Deviation (SD)	Coefficient of Variation (CV) (%)	CA-IA (%)
1	ONGC	87.54	77.04	85.82	70.81	75.96	74.25	74.57	78.64	77.25	78.09	78.00	16.72	5.12	6.56	27.75
2	GAIL	66.91	60.28	66.69	68.90	72.62	75.62	81.09	83.42	85.39	85.41	74.63	25.13	8.93	11.96	22.24
3	BPCL	49.52	46.78	54.10	62.57	56.84	48.44	89.77	81.59	35.11	36.21	56.09	54.66	17.81	31.75	8.12
4	HPCL	64.51	57.58	70.71	71.05	70.33	52.05	44.57	36.49	30.58	33.34	53.12	40.47	16.08	30.27	12.99
5	OIL			76.95	80.85	82.51	84.95	80.89	88.39	90.69	92.96	84.77	16.01	5.50	6.49	38.85
6	IOCL	43.83	40.86	51.09	58.72	54.83	48.94	52.13	50.35	46.82	50.87	49.85	17.86	5.15	10.33	18.36
7	CPCL	52.31	41.40	36.57	37.63	40.93	41.14	52.73	53.42	61.15	42.76	46.01	24.59	8.23	17.89	24.65
8	NRL	31.75	36.80		43.51	57.42	63.21	7.88	3.40	88.94	84.62	46.39	85.54	30.25	65.22	24.02
9	MRPL	21.49	22.51	39.27	37.19	39.18	41.02	48.16	59.37	64.92	70.37	44.35	48.88	16.52	37.24	27.36
10	EOL	26.86	23.34	21.41		31.84	29.24	25.82	26.99	30.24	34.66	27.82	13.25	4.15	14.90	54.43
11	HOE-CL	103.98	110.61	105.84	106.57	92.63	100.56	82.40	90.18	91.35	63.00	94.71	47.60	14.26	15.06	55.13
12	SETL	100.00	88.82	85.73	84.32	83.19	65.74	63.08	60.41	63.73	74.79	76.98	39.59	13.39	17.39	26.09
	Average	58.97	55.09	63.11	65.65	63.19	60.43	58.59	59.39	63.85	62.26	61.05				

Source: Compiled and computed from Annual Reports.

Table-2 has shown the Shareholders Fund to Capital Employed Ratio (SFCER). It is apparent from the table that the average SFCER of the companies varies in-between 27.82 to 94.71. On an average, this ratio found highest at 94.71 for HOECL and lowest at 27.82 for EOL. It is observed that companies have different range of its SFCER. It indicates that spread of this ratio is different from company to company. Table recorded comparatively a large spread of SFCER for NRL and less spread for EOL in terms of range. Furthermore, as standard deviation reflects this ratio is found to be more inconsistent in NRL while it is consistent in EOL. However, CV reveals that, SFCER is more inconsistent in NRL and found consistent in OIL. It is also explored that average SFCER of the sample companies is varying from its average SFCER of the industry at different extent and the difference is large in HOECL by 55.13% followed by EOL. On the contrary, aver-

age SFCER of BPCL found to be closer to the average SFCER of the industry.

When tested the hypothesis i.e. H_1 , it is confirmed that the null hypothesis is accepted for BPCL, HPCL and NRL. Alternative hypothesis is accepted for rest of the sample companies. Therefore, there is significant difference between the SFCER of ONGC, GAIL, OIL, IOCL, CPCL, MRPL, EOL, HOECL and SETL that of Industry.

After testing H_2 it is found that the critical value at 5% significant level is 1.88 which is much lesser than F, calculated value i.e. 19.38 Therefore, the null hypothesis is rejected. Hence, it is concluded that the SFCER position of sample companies are significantly different.

Financial Leverage

The use of fixed charges capital like debt with equity capital in the capital structure is described as financial leverage or trading on equity.

TABLE – 3
Financial Leverage of selected petroleum companies

Sl.No.	Name of the company	2000 - 2001	2001-2002	2002-2003	2003-2004	2004 -2005	2005 - 2006	2006-2007	2007-2008	2008 - 2009	2009 - 2010	Mean	Range	Standard Deviation (SD)	Coefficient of Variation (CV) (%)	CA-IA (%)
1	ONGC	1.057	1.029	1.009	1.004	1.002	1.001	1.001	1.001	1.005	1.01	1.01	0.06	0.02	1.81	43.47
2	GAIL	1.13	1.13	1.07	1.05	1.05	1.04	1.04	1.02	1.02	1.02	1.06	0.11	0.04	3.91	40.99
3	BPCL	1.23	1.23	1.12	1.04	1.10	1.61	1.19	1.26	3.16	1.43	1.44	2.12	0.63	43.60	19.64
4	HPCL	1.29	1.24	1.06	1.02	1.05	1.62	1.22	1.69	3.92	1.43	1.55	2.91	0.86	55.61	13.11
5	OIL			1.015	1.022	1.010	1.006	1.006	1.013	1.003	1.01	1.01	0.02	0.01	0.69	43.56
6	IOCL	1.56	1.34	1.09	1.05	1.10	1.15	1.14	1.15	1.91	1.11	1.26	0.87	0.28	21.86	29.50
7	CPCL	1.89	2.44	1.22	1.08	1.17	1.24	1.21	1.11	0.62	1.20	1.32	1.82	0.50	37.77	26.23
8	NRL	4.91	2.50		1.28	1.10	1.07	1.04	1.06	1.07	1.01	1.67	3.90	1.30	78.05	6.59
9	MRPL	0.11	0.14	0.13	1.65	1.16	1.30	1.20	1.09	1.08	1.07	0.89	1.54	0.55	62.25	50.15
10	EOL	1.84	1.28	1.33		2.18	1.23	1.20	1.14	-1.01	42.32	5.72	43.33	13.75	240.35	219.98
11	HOECL	1.01	1.00	1.00	1.00	1.03	1.11	29.83	1.19	1.16	1.12	3.95	28.83	9.10	230.49	120.68
12	SETL	1.00	1.00	1.00	1.00	1.00	1.02	1.05	1.08	1.05	1.05	1.03	0.08	0.03	3.01	42.58
	Average	1.55	1.30	1.00	1.11	1.16	1.20	3.51	1.15	1.33	4.56	1.79				

Source: Compiled and computed from Annual Reports.

Analysis of Financial Leverage

From the above table it is clear that all the sample companies have leverage in their capital structure at different level. On an average DFL is greater than 1 in all the cases except MRPL, this has proved the existence of leverage. MRPL's average DFL is less than 1 because of its losses in first three years of the study period; otherwise it has got average DFL at 1.22 from 2003-04 to 2009-10, Therefore MRPL also a levered firm. It is observed that the EOL and HOECL are at high financial risk as both the company registered comparatively high average DFL at 5.72 and 3.95 respectively. However, there is variation in DFL at different level in all the sample companies. Furthermore, it is clear from the table that DFL of EOL is largely varying from its industry while DFL of NRL found closer.

After testing the statistical hypothesis i.e. H_1 , it is confirmed that when compared with industry average, the null hypothesis is rejected for MRPL and concluded that there is significant difference between the DFL of MRPL that of Industry. For rest

of the sample companies, null hypothesis is accepted and confirmed that there is no significance difference between the DFL of individual company that of Industry.

In the case of H_2 , The calculated value i.e. 0.921 is less than of critical value i.e. 1.88 at 5% level of significance. Therefore, the null hypothesis is accepted and it has concluded that the DFL position of sample companies of PII is not significantly different.

Conclusion

From the above discussion it can be concluded that all the selected companies of PII are running with low debt fund especially in ONGC, OIL and NRL. Therefore, they may increase it to get the benefits of low cost capital. It has found that HOECL largely employing shareholders funds in their assets, it has crossed even 100% in the first two years. Moreover EOL is on high degree financial risk. Therefore, they may reduce the debt capital and employ more equity fund.

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