



CAPITAL STRUCTURE AND LONG TERM SOLVENCY POSITION OF CHENNAI PETROLEUM CORPORATION LIMITED – A CASE STUDY

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Abstract

The present study, through the application of ratio analysis and statistical techniques, determined the pattern of capital structure, long term solvency position, ability to pay fixed obligation to lenders, and proportion of debt in the capital structure of Chennai Petroleum Corporation. Capital structure is the major part of the firm's financial decision which affects the value of the firm and it leads to change EBIT and market value of the shares. There is a relationship among the capital structure, cost of capital and value of the firm. The aim of effective capital structure is to maximize the value of the firm and to reduce the cost of capital. The duration of the study is of 10 years from the financial year 2005-2006 to 2014-2015. The result revealed that long term funds comprised of 56.29% of the total fund as compared to short term funds, that is, 43.71% during the entire period under study. The company used more borrowed funds, that is, 31.58% on an average than the shareholders' funds, i.e. 24.71%. This study concluded that Chennai Petroleum Corporation least preferred equity financing so that the financial risk of the company was high. However the company did enjoy the benefits of capital gearing. The trends of interest coverage ratios are mixed, but interest payment is fully covered by the earnings before interest and taxes. Hence the study concluded that to enjoy the benefits of financial leverage, Chennai Petroleum Corporation should tap into the debt fund.

Introduction

The petroleum industry plays a vital role for economic development of any country. The various important functions of this industry are exploration, extraction, refining, transporting and obviously marketing of various petroleum products. Fuel Oil and Gasoline (Petrol) are the most important products of this industry. Petroleum is also used as the raw material for the production of various pharmaceutical products, fertilizers and chemical products etc. The Uniqueness petroleum industry is such an industry which has the largest earning capacity. The various petroleum products are diversified in a very wide range. The main functional areas of this industry are extraction of crude, refining of crude, processing and transporting. The main problem faced by the entire petroleum industry is the pollution problem. The refining of crude oil creates huge pollution by producing various harmful gases. Another problem is of drilling mud. When the drilling work is done a huge amount of crude, water, soil mixture gets wasted. Here innovative and upgraded technology is required to minimize the wastage of petroleum. The leakage and drainage problems are also one of the major barriers in case of refinery work. Good piping technology and proper drainage system is also very essential in this industry.

The selection of a suitable pattern for financing a company's operations depends on numerous issues and elements such as age of the company, growth opportunities, profitability, volatility in earnings, collateral value of tangible assets, regulations of the country, attitude of the management, economic condition, government policies, effect of leverage, etc. One of the most important and critical aims of finance managers is to maximize the shareholders' wealth, which is the result of some decisions like lower cost of capital, generate tax shield due to financing through debt, reducing conflict between shareholders and managers, and so forth. All these aims and decisions are related to corporate financial pattern or trend. Capital structure pattern means the capital structure with equity shares only; capital structure with equity as well as preference shares, and debt capital. In case there is a high proportion of debt capital in the capital structure of a company, then it is called levered company, and if all the operations of a company are financed with the help of equity capital only, then it is called unlevered company. Raising of funds through debt is cheaper as the interest is deductible from taxable income, but debt beyond a certain limit increases the financial risk and leads to financial distress or insolvency. In this paper an attempt has been made to analyses the Capital Structure Pattern and Long Term Solvency Position of Chennai Petroleum Corporation Limited.

Importance of the Study

The oil and gas industry is plays a vital role of a nation. This industry has helped in the growth of the Indian economy. The biggest increases in demand for oil and gas are occurring in the developing world, which is also where most of the world's proven oil and gas reserves are located. International energy company's investors, equipment suppliers, contractors and consulting firms are therefore shifting their attention from developed countries to developing countries, which are likely to offer more business opportunities in the oil and gas sector in the future. Although many new projects are being formulated, most do not take off because of the difficulties of securing sufficient financing. Project sponsors are being forced to design



more flexible and innovative financing packages involving a range of partners from both the public and private sectors. The commercial and political risks often discourage potential partners. In an effort to facilitate the flow of funds, the World Bank recently revised its strategy in the oil and gas sector, giving greater emphasis to helping governments and private companies manage and mitigate project risks.

Capital Structure Theories

Capital structure is a relationship between equity capital and debt capital to minimize the cost of capital and maximize the share price. Durand (1952) introduced two approaches of capital structure. One approach, which is called net income method, states that with the use of leverage, the weighted average cost of capital will decline, and the total value of the company will increase. The alternative approach, called the net operating method, states that the total value of the company remains unaltered, and the weighted average cost of capital remains constants with the use of leverage. Solomon (1963), who came out with the intermediate approach of capital structure, argued that once the cost of debt declines up to the accepted level, the value of the company increases; once, the leverage level exceeds the accepted level, the cost of debt will increase, as the probability to default in interest and principal payment increases, and the value of the firm also decreases. This is the traditional approach of capital structure, which may be called as the optimal capital structure.

The modern approach to capital structure began with the shaping paper of Modigliani and Millar (1958), which supported the net operating income approach of Durand, and rejected the traditional approach. Modigliani and Miller approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market. In other words MM approach maintains that the average cost of capital does not change with change in the debt weighted equity mix or capital structures of the firm.

Methodology of the Study

The study is based on secondary data collected from the audited Profit & Loss A/c and Balance Sheet associated with schedules, annexure available in the published annual reports of Chennai Petroleum Corporation Limited and this paper based on case study method.

Period of the Study

The period of the study from the financial year 2005-2006 to 2014-2015.

Tools of Data Analysis

The available data have been analyzed by statistical tools like Mean, Standard Deviation, Co-Variance, Correlation and t-Test Paired Two Sample for Means.

Assortment of Capital Structure

A company should properly plan its capital structure because to maximize the uses of funds. The basic objective of capital structure planning is to minimize the cost of capital and to maximize the stock price of the company. It is not possible to find out the optimal proportion of debt-equity where the capital structure delivers optimum results, the pattern of capital structure in Chennai Petroleum Corporation from the financial year from 2005-2006 to 2014-2015 is revealed in the Table 1.

Table 1 Capital Structure Pattern of Chennai Petroleum Corporation (Rs in Crores)

Particulars	Years										Total	AVG (%)
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15		
Share Capital	149	149	149	149	149	149	149	149	149	149	1490	1.32
Reserve & Surplus	2132	2488	3315	2918	3313	3616	3644	1877	1573	1506	26382	23.39
Shareholders Fund	2281	2637	3464	3067	3462	3765	3793	2026	1722	1655	27872	24.71
Secured loan	1225	579	515	419	406	2490	3350	2543	826	175	1400	1.24
Unsecured Loan	1522	1254	1934	1128	3670	3808	2600	3163	2102	1908	23089	20.47
Borrowed Funds	2747	1833	2449	1547	4076	6298	5950	5706	2928	2083	35617	31.58
Long term Funds	5028	4470	5913	4614	7538	10063	9743	7732	4650	3738	63489	56.29



Current Liabilities	2809	3070	3223	2841	2135	4231	7568	6204	6653	4761	43495	38.56
Provisions	807	937	1411	882	903	275	177	163	113	138	5806	5.15
Short term Funds	3616	4007	4634	3723	3038	4506	7745	6367	6766	4899	49301	43.71
Total Funds	8644	8477	10547	8337	10576	14569	17488	14099	11416	8637	112790	100

Source: Compiled from Annual Report of Chennai Petroleum Corporation

From the Table 1, it is clearly display that the long term funds comprised of 56.29% of the total funds as compared to the short term funds, that is, 43.71% during the entire period under study. Hence there were a greater proportion of long term funds in Chennai Petroleum Corporation to finance its assets. Shareholders' funds jumped from Rs.2281 crores in the financial year 2006 to Rs. 1655 crores in the financial year 2015. Reserves and surplus increased by almost Rs.2132 from the financial year 2006. Shareholders' funds occupied, on an average, 24.71% of the major mass of the total funds as compared to the borrowed funds, that is, 31.58%. In other words, borrowed funds were very less as against the shareholders' funds during the entire period of the study. Chennai petroleum showed a preference to strengthen long term funds consisting of both shareholders' funds as well as long term borrowed funds in order to finance its operations.

Assessment of Long Term Solvency

The short term creditors, that is, suppliers of raw materials and bankers are more interested to know the current debt servicing ability of the company and the long term creditors, for example, financial institutions, debenture holders, and so forth are more concerned with the company's long term debt servicing ability or strength. Capital structure ratios were calculated to evaluate the solvency position of the company. The following ratios are taken as the capital structure ratios for this study: (a) Debt equity ratio, (b) Debt to total fund ratio, (c) Interest coverage ratio.

Debt Equity Ratio

To measure the relative interest of owners and creditors in the company, the debt equity ratio was calculated. This ratio is a measure of a company's financial leverage calculated by dividing its total liabilities by stockholders' equity. It indicates what proportion of equity and debt the company is using to finance its assets. A high debt/equity ratio generally means that a company has been aggressive in financing its growth with debt. This can result in volatile earnings as a result of the additional interest expenses. The generally accepted standard norm of the debt-equity ratio is 2:1. The debt equity ratio is calculated by using the following formula:

$$\text{Debt/equity} = \text{Long term Debt/Net Worth}$$

The Table 2 shows the debt equity ratios of Chennai Petroleum Corporation Limited for the year from 2005-06 to 2014-2015.

Table 2,Debt Equity Ratio of Chennai Petroleum Corporation (Rs in Crores)

Financial year	Long Term Debt (Rs)	Net Worth(Rs)	Ratio (in times)
2005-2006	2747	2281	1.20
2006-2007	1833	2637	0.70
2007-2008	2449	3464	0.71
2008-2009	1547	3067	0.50
2009-2010	4076	3462	1.18
2010-2011	6298	3765	1.67
2011-2012	5950	3793	1.57
2012-2013	5706	2026	2.82
2013-2014	2928	1722	1.70
2014-2015	2083	1655	1.26
Mean	35617	27872	1.33
SD ()	9817	7604	0.67
C.V. (%)	27.56	27.28	50.38
R	0.40		
t-test	1.4745		

Source: Compiled from Annual Report of Chennai Petroleum Corporation



It is clear from the long term debt of Chennai Petroleum Corporation significantly increased from Rs.2747 crores in financial year 2006 to Rs.2083 crores in the financial year 2015. Shareholders worth also moved from Rs.2281 crores in the financial year 2006 to Rs.1655 crores in the financial year 2015. The debt equity ratio also increased significantly from 1.20 times in the financial year 2006 to 1.26 times in the financial year 2015, but it was below the standard ratio of 2:1. The descriptive statistics that is mean, standard deviation, and coefficient of variance between debt and equity of Chennai Petroleum Corporation is 1.33 times, 0.67 times and 50.38% respectively. The coefficient of correlation and t-test paired two sample of mean between debt and equity of Chennai Petroleum Corporation is 0.40 and 1.4745, which indicates the positive correlation. On the basis of above analysis, it may be concluded that Chennai Petroleum Corporation could finance its assets or operations by employing more debt capital to derive the benefits of financial leverage and trading on equity.

Total Debt to total fund Ratio

The total debt to total fund ratio was calculated to know the proportion of debt in the financial structure of the company. Short term borrowings and long term borrowings, both were associated to calculate the total debt, and the net worth with the total debt is called the total fund. A high ratio shows that claims of creditors are greater than owners. The following formula used to arrive at the total debt to total fund ratio.

$$\text{Total Debt to Total Fund ratio} = \text{Total Debt} / \text{Total Fund}$$

The Total debt to total fund ratio of Chennai Petroleum Corporation Limited is presented in the table 3 for the year 2005-06 to 2014-15.

Table 3, Total Debt to Total Fund Ratio of Chennai Petroleum Corporation (Rs in Crores)

Financial year	Total Debt (Rs)	Total Fund (Rs)	Ratio (in times)
2005-2006	6363	8644	0.74
2006-2007	5840	8477	0.69
2007-2008	7083	10547	0.67
2008-2009	5270	8337	0.63
2009-2010	7114	10576	0.67
2010-2011	10804	14569	0.74
2011-2012	13695	17488	0.78
2012-2013	12073	14099	0.86
2013-2014	9694	11416	0.85
2014-2015	6982	8637	0.81
Mean	84918	112790	0.74
SD ()	2883	3141	0.080
C.V. (%)	3.40	2.78	10.81
R	0.97		

Source: Compiled from Annual Report of Chennai Petroleum Corporation

It is clear from that debt was increasing, with the exception of the financial years 2007 and 2009 in absolute terms, and the total fund showed an increasing trend, with the exception of the financial year 2015 during the period under study. This ratio is less than one, the mean, standard deviation, and coefficient of variation (CV) of total debt to total fund ratio in Chennai Petroleum Corporation are 0.74 times, 0.08 times and 10.81% respectively. The relationship between two such variables is highly positive, i.e. 0.97. Finally it may be concluded that the financial risk of the company is low.

Interest Coverage Ratio

This ratio is used to determine how easily a company can pay interest on outstanding debt. The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes of (EBIT) of one period by the company's interest expenses of the same period. An interest coverage ratio below 1 indicates the company is not generating sufficient revenues to satisfy interest expenses. The interest coverage ratio shows the number of times the interest charges are covered by funds that are ordinarily available for their payment.

The table 4 shows the interest coverage ratio of Chennai Petroleum Corporation Limited is presented in the table-3 for the year 2005-06 to 2014-15.



Table 4, Interest Coverage Ratio of Chennai Petroleum Corporation (Rs in Crores)

Financial year	PBT	EBIT	Interest	Ratio (in times)
2005-2006	716	890	174	5.11
2006-2007	880	1069	189	5.66
2007-2008	1717	1912	195	9.81
2008-2009	602	826	224	3.69
2009-2010	684	822	138	5.96
2010-2011	764	1018	254	4.00
2011-2012	158	408	250	1.63
2012-2013	1698	2167	469	4.62
2013-2014	331	899	568	1.58
2014-2015	742	1146	404	2.84
Mean	8292	11157	2865	4.49
SD ()	510	529	144	2.41
C.V. (%)	6.15	4.74	5.03	53.67

Source: Compiled from Annual Report of Chennai Petroleum Corporation

It can be inferred from the table 4 that there was an increasing in earnings before interest and taxes (EBIT) of Chennai Petroleum Corporation under study. The mean, standard deviation and coefficient of variation (CV) of interest coverage ratio in Chennai Petroleum Corporation are 4.49 times, 2.41 times and 53.67% respectively. It is evident the interest charged is fully covered by the earnings before interest and taxes.

Conclusion

The Indian oil and gas (O&G) sector is projected to touch around US\$ 139,814.7 million by 2015 from US\$ 117,562.9 million in 2012. The New Exploration Licensing Policy (NELP) was envisioned to deal with the ever-growing gap between demand and supply of gas in India. It has successfully attracted both foreign and domestic investment in the industry. India's economic growth is closely linked to energy demand. The need for oil and gas, which are among the primary sources for meeting energy requirements, is thus projected to grow further. The present study reveals that in the capital structure of Chennai Petroleum Corporation, long term funds comprised of 56.29% of the total fund as compared to short term funds, that is, 43.71% during the entire period under study. The company used more borrowed funds, that is, 31.58% on an average than the shareholders' funds, i.e. 24.71%. This study concluded that Chennai Petroleum Corporation least preferred equity financing so that the financial risk of the company was high. However the company did enjoy the benefits of capital gearing. The trends of interest coverage ratios are mixed, but interest payment is fully covered by the earnings before interest and taxes. It is concluded that to utilize the benefits of financial leverage, and this study would aid the financial and managers to evaluate the pattern of financing and assess the leverage position of any company.

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