

CAPITAL STRUCTURE ANALYSIS OF A MICRO ENTERPRISE – A CASE STUDY OF P. L. PLAST PRIVATE LIMITED

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Abstract

Finance decision is one of the important decisions of financial management in any Enterprise. Capital structure refers to the combination of debt and equity.

Keywords:

Degree of Financial
Leverage; Degree of
Operating Leverage;
Interest Coverage ratio;
Proprietary ratio;
Solvency ratio.

The financial manager has to strike a balance between various sources of funds so as to maximise return of an Enterprise without affecting risk composition in the business. An optimal capital structure is very much essential to maximise the owner's wealth of any Enterprise. In this paper, an attempt is made to analyse the capital structure in P. L. Plast Private Limited. P. L. Plast Private Limited is a Micro Enterprise located in Nellore district of Andhra Pradesh state in India. The Enterprise is manufacturing agricultural pipes. The Micro Enterprise has an annual turnover of Rs. 113.1 Lakhs as per 2015-16 annual accounts. The total assets of the company are Rs.164.3 Lakhs. In this paper composition of capital structure in the enterprise for a period of ten years is analysed. Leverage analysis was also done. Debt-

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Equity ratio, Proprietary Ratio, Solvency Ratio, Fixed Assets to Net worth Ratio, Fixed Assets Ratio, Current Assets to Proprietary Ratio and Interest Coverage Ratio are calculated for the study period. Chi-square test is used for testing Hypotheses.

1. Introduction

Finance decision is one of the important decisions of financial management in any Enterprise. It deals with capital structure or finance mix of an Enterprise. Capital structure refers to the combination of debt and equity. The financial manager has to strike a balance between various sources of funds so as to maximise return of an Enterprise without affecting risk composition in the business. An optimal capital structure is very much essential to maximise the owner's wealth of any Enterprise. In this paper, an attempt is made to analyse the capital structure in P. L. Plast Private Limited. P. L. Plast Private Limited is a Micro Enterprise located in Nellore district of Andhra Pradesh state in India. The Enterprise is manufacturing agricultural pipes. The Enterprise was started in the year 2002. It is an ISI certified company. The Micro Enterprise has an annual turnover of Rs. 113.1 Lakhs as per 2015-16 annual accounts. The total assets of the company are Rs.164.3 Lakhs. The company has a man power of eighteen.

2. Review of Literature

J. H. Chua et al., (1993)¹ made a study on the capital structure of forty three private companies in Canada from 1993-1998. Shyam-Sunder, L. et al., (1999)² studied on the pecking order Models for corporate financing in one hundred fifty seven industrial units in US existed between 1971 and 1989. Kaur, R. et al., (2009)³ investigated on the determinants of capital structure in eight best doing Textile units in India from 2003-04 to 2007-08. Bhayani, S. J (2009)⁴ had conducted study on impact of Financial Leverage on cost of capital and valuation of Indian cement Industry. Dr. A.Vijayakumar (2011)⁵ examined the trade-off and pecking order hypotheses in twenty automobile firms in India and found that more profitable companies had less debt. S. Ramaratnam et al., (2013)⁶ examined the determinants of capital structure in Pharmaceutical

companies in India. Thomas, A. E (2013)⁷ examined the capital structure of twenty one units in Indian cement industry from 2003-04 to 2007-08. Srivastava, N., (2014)⁸ had examined the determinants of leverage in ten cement companies in India over a period of 2008-2012. Lyubomira Koeva-Dimitrova (2016)⁹ had analyzed the capital structure of the medical diagnostic-consultative centres in Varna city for the purpose of assessing their long-term solvency and existence of financial risk. Radojko Lukić et al., (2016)¹⁰ investigated the determinants of capital structure in Serbia's commercial sector. Venkateswararao.Podile (2017)¹¹ had examined the recent MSME policy of Andhra Pradesh. Venkateswararao.Podile et al., (2017)¹² examined working capital management in PL Plast Pvt Ltd. Venkateswararao.Podile et al., (2017)¹³ had examined various Government schemes supporting MSMEs in India. Chandrika Prasad Das et al., (2018)¹⁴ had conducted a study in India to find out the determinants of capital structure and their impact on financial performance by using secondary data taken from fifty top manufacturing companies and by using regression model. Venkateswararao.Podile et al., (2018)¹⁵ examined working capital management in Sri Rama Chandra Paper Boards Ltd. Venkateswararao.Podile (2018)¹⁶ examined working capital management in Tulasi seeds Pvt.Ltd. Venkateswararao.Podile et al., (2018)¹⁷ studied working capital management in Sri Nagavalli solvent oils Pvt. Ltd. Venkateswararao.Podile et al., (2018)¹⁸ analysed working capital management in Naga Hanuman Solvent Oils Private Limited. Venkateswararao.Podile (2018)¹⁹ examined working capital management in Cuddapah Spinning Mills Ltd. Venkateswararao.Podile et al., (2018)²⁰ studied working capital management in Kristna Engineering Works. Venkateswararao.Podile et al., (2018)²¹ examined working capital management in Radhika Vegetables Oils Pvt. Ltd. Venkateswararao.Podile et al., (2018)²² examined working capital management in Power Plant Engineering Works in Andhra Pradesh. Venkateswararao.Podile et al., (2018)²³ examined working capital management in Nagas Elastomer Works. Venkateswararao.Podile et al., (2018)²⁴ had studied working capital management in M.G.Metallic Springs Pvt. Ltd. Venkateswararao.Podile et al., (2018)²⁵ had studied working capital management in Sri Srinivasa Spun Pipes Company. Venkateswararao.Podile et al., (2018)²⁶ had studied working capital management in Raghunath Dye Chem Pvt. Ltd. Venkateswararao.Podile et al., (2018)²⁷ had examined working capital management in Maitreya Electricals Pvt. Ltd. Venkateswararao.Podile et al., (2018)²⁸ had examined working capital management in Laxmi Vinay Poly Print Packs Pvt. Ltd.

Venkateswararao.Podile et al., (2018)²⁹ had done capital structure analysis of M.G.Metallic Springs Pvt. Ltd. Venkateswararao.Podile et al., (2018)³⁰ had done capital structure analysis of Naga Hanuman Solvent Oils Private Limited. It was found that most of the studies dealt with capital structure in large companies. Some of the studies dealt with MSME policies. Some other studies though dealt with MSMEs, they were confined to working capital management. Few studies dealt with capital structure analysis in MSMEs. There was no study on capital structure analysis of a Micro enterprise which is manufacturing agricultural pipes. Hence, this study is taken up.

3. Objectives

The general objective of the study is to analyze the capital structure of P. L. Plast Private Limited. The specific objectives include the following.

1. To examine composition of capital structure in P. L. Plast Private Limited during the period of study.
2. To analyze the status of Degree of Operating Leverage, Degree of Financial Leverage and Degree of Combined Leverage in P. L. Plast Private Limited during the period of study.
3. To investigate long term solvency position P. L. Plast Private Limited during the period of study.
4. To examine the coverage of financial expenses in the Micro enterprise during the period of study.

To offer suggestions for improvement of capital structure decisions, if required

4. Hypotheses

H₀₁: Degree of Operating Leverage in P. L. Plast Private Limited is uniform during the period of study.

H₀₂: Degree of Financial Leverage in P. L. Plast Private Limited is uniform during the period of study.

H₀₃: Degree of Combined Leverage in P. L. Plast Private Limited is uniform during the period of study.

H₀₄: Debt - Equity Ratio in P. L. Plast Private Limited is uniform during the period of study.

H₀₅: Proprietary Ratio in P. L. Plast Private Limited is uniform during the period of study.

H₀₆: Solvency Ratio in P. L. Plast Private Limited is uniform during the period of study.

H₀₇: Fixed Assets to Net worth Ratio in P. L. Plast Private Limited is uniform during the period of study.

H₀₈: Fixed Assets Ratio in P. L. Plast Private Limited is uniform during the period of study.

H₀₉: Current Assets to Proprietary funds Ratio in P. L. Plast Private Limited is uniform during the period of study.

H₁₀: Interest Coverage Ratio in P. L. Plast Private Limited is uniform during the period of study

5. Methodology

The present study is mainly based on secondary data. The data is taken from the financial statements including balance sheet, trading account and profit and loss account of P. L. Plast Private Limited. The period of study is ten years covering the financial years from 2006-07 to 2015-16. The data gathered is analyzed through the technique of percentages and certain appropriate ratios relating to capital structure of the enterprise. Degree of Operating Leverage, Degree of Financial Leverage and Degree of Combined Leverage are calculated during study period for leverage analysis. The ratios covered include Debt – Equity Ratio, Proprietary Ratio, Solvency Ratio, Fixed Assets to Net worth Ratio, Fixed Assets Ratio, Current Assets to Proprietary Ratio and Interest Coverage Ratio. Chi-square test is used for testing the hypotheses formed.

6. Composition of capital structure

The data in table-1 represent the fact that Share capital as a percentage of total equity capital has varied between 77.8 during 2014 and 2016 and 95.5 during 2007. It is also observed that reserves and surplus as a percentage of total equity capital had varied between 4.5 during 2007 and 22.2 during 2014 and 2016. Total equity capital as a percentage of total capital has varied between 8.2 during 2016 and 39.8 during 2010. It is also observed that long term debt as a percentage of total debt had varied between 66.3 during 2016 and 94.0 during 2012. On the other hand, short term debt as a percentage of total debt has varied between 6.0 during 2012 and 33.7 during 2016. Total debt capital as a percentage of total capital has varied between 60.2 during 2010 and 91.8 during 2016.

Table-1: Structure and Composition of Capital structure in P. L. Plast Private Limited during 2006-2007 to 2015-2016

(Figures in Lakhs)

Particulars	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Equity capital										
Share capital	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
% of Total Equity capital	95.5	93.8	91.3	88.2	85.4	82.7	79.5	77.8	80.8	77.8
Reserves & Surplus	0.5	0.7	1.0	1.4	1.8	2.2	2.7	3.0	2.5	3.0
% of Total Equity capital	4.5	6.3	8.7	11.8	14.6	17.3	20.5	22.2	19.2	22.2
Total Equity Capital	11.0	11.2	11.5	11.9	12.3	12.7	13.2	13.5	13.0	13.5
% of Total Capital	23.3	18.2	31.6	39.8	15.0	14.4	12.2	10.7	9.2	8.2
Debt Capital										
Long Term Debt	31.2	42.5	19.9	13.1	64.7	70.7	85.9	81.3	102.8	100.0
% of Total Debt capital	86.2	84.7	79.9	72.8	92.8	94.0	90.2	72.3	80.4	66.3
Short Term Debt	5.0	7.7	5.0	5.0	5.0	4.5	9.3	31.1	25.1	50.8
% Total Debt capital	13.8	15.3	20.1	27.8	7.2	6.0	9.8	27.7	19.6	33.7
Total Debt Capital	36.2	50.2	24.9	18.0	69.7	75.2	95.2	112.4	127.9	150.8
% of Total Capital	76.7	81.8	68.4	60.2	85.0	85.6	87.8	89.3	90.8	91.8
Total Capital	47.2	61.4	36.4	29.9	82.0	87.9	108.4	125.9	140.9	164.3

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

7. Leverage Analysis

Leverage analysis is useful for understanding the ability of the enterprise to magnify the effect of changes in sales on operating profit, the effect of changes in operating profit on Net Income and the effect of changes in sales on Net Income.

Degree of Operating Leverage

The Degree of Operating Leverage has varied between -2.88 and 9.60. Operating leverage is favourable during 2009, 2010, 2012 and 2013 as DOL is greater than one. Operating leverage is un-favourable during other six years as DOL is less than one. It is found in the significance test that Degree of Operating Leverage is not uniform during the period of study.

Table-2: Degree of Operating Leverage

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Percentage change in EBIT	1.9	5.7	10.7	-	35.5	7.5	148.8	10.3	1.0	14.4
Percentage Change in Sales	44.6	24.9	6.6	-	22.1	34.7	15.5	-9.4	6.0	-5.0
DOL	0.04	0.23	1.62	1.61	0.22	9.60	1.10	0.17	-	2.88

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Degree of Operating Leverage = 77.6. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919. Calculated value is greater than Critical Value i.e., $77.6 > 16.919$, Hence, H_{01} is Rejected.

Degree of Financial Leverage

The Degree of Financial Leverage has varied between -40.00 and 10.53. Financial leverage is favourable during 2007 and 2009 as DFL is greater than one. Financial leverage is un-favourable during other eight years as DFL is less than one. It is found in the significance test that Degree of Financial Leverage is not uniform during the period of study.

Table-3: Degree of Financial Leverage

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Percentage change	20.0	0.0	50.0	33.3	0.0	0.0	25.0	-40.0	-	-

in Net income									266.7	200.0
Percentage change in EBIT	1.9	5.7	10.7	-35.5	7.5	148.8	-10.3	1.0	14.4	9.0
DFL	10.53	0.00	4.67	-0.94	0.00	0.00	-2.43	-40.00	-18.52	-22.22

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Degree of Financial Leverage = 304.9. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919. Calculated value is greater than Critical Value i.e., $304.9 > 16.919$, Hence, H_{02} is Rejected.

Degree of Combined Leverage

The Degree of Combined Leverage has varied between -6.67 and 53.34. Combined leverage is favourable during 2009 and 2015 as DCL is greater than one. Combined leverage is unfavourable during other eight years as DCL is less than one. It is found in the significance test that Degree of Combined Leverage is not uniform during the period of study

Table-4: Degree of Combined Leverage

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Percentage change in Net income	20.0	0.0	50.0	33.3	0.0	0.0	25.0	40.0	266.7	200.0
Percentage Change in Sales	44.6	24.9	6.6	-22.1	34.7	15.5	-9.4	6.0	-5.0	37.6
DCL	0.45	0.00	7.58	-1.51	0.00	0.00	-2.66	-6.67	53.34	-5.32

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Degree of Combined Leverage = 615. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919. Calculated value is greater than Critical Value i.e., $615 > 16.919$, Hence, H_{03} is Rejected

8. Capital structure Ratios

Capital structure ratios are useful for understanding long term solvency of the Enterprise. Long term solvency means ability of the enterprise to meet long term obligations.

Debt-Equity Ratio

The Debt-Equity ratio of the Enterprise varied between 1.5 during 2010 and 11.2 during 2016. It is found in the significance test that Debt-Equity ratio is uniform during the period of study. Debt- Equity ratio is very high during the period of study except during 2009 and 2010. High Debt- Equity ratio indicates low margin of safety for creditors. It is also not good for the enterprise as it will not get credit without paying higher interest.

Table-5: Debt-Equity Ratio

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Outside funds	36.2	50.2	24.9	18.0	69.7	75.2	95.2	112.4	127.9	150.8
Share Holders funds	11.0	11.2	11.5	11.9	12.3	12.7	13.2	13.5	13.0	13.5
Debt-Equity Ratio	3.3	4.5	2.2	1.5	5.7	5.9	7.2	8.3	9.8	11.2

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Debt-Equity Ratio = 15.5. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919. Calculated value is less than Critical Value i.e., $15.5 < 16.919$, Hence, H_{04} is accepted.

Proprietary Ratio

The Proprietary ratio of the Enterprise varied between 0.1 and 0.4 during the period of study. It is found in the significance test that Proprietary ratio is uniform during the period of study. Proprietary ratio is low during all the years of the study which indicates low long term solvency position of the enterprise.

Table-6: Proprietary Ratio

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Share Holders funds	11.0	11.2	11.5	11.9	12.3	12.7	13.2	13.5	13.0	13.5
Total Assets	47.2	61.4	36.4	29.9	82.0	87.9	108.4	125.9	140.9	164.3
Proprietary Ratio	0.2	0.2	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Proprietary ratio = 0.5. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919 Calculated value is less than Critical Value i.e., $0.5 < 16.919$, Hence, H_{05} is accepted.

Solvency Ratio

The Solvency ratio of the Enterprise varied between 0.6 during 2010 and 0.9 during last six years of the study. It is found in the significance test that Solvency ratio is uniform during the period of study. Solvency ratio is comparatively high during the period of study indicating low long term solvency.

Table-7: Solvency Ratio

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total Liabilities to outsiders	36.2	50.2	24.9	18.0	69.7	75.2	95.2	112.4	127.9	150.8
Total Assets	47.2	61.4	36.4	29.9	82.0	87.9	108.4	125.9	140.9	164.3
Solvency Ratio	0.8	0.8	0.7	0.6	0.9	0.9	0.9	0.9	0.9	0.9

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Solvency ratio = 0.12. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919 Calculated value is less than Critical Value i.e., $0.12 < 16.919$, Hence, H_{06} is accepted.

Fixed Assets to Net worth Ratio

The Fixed Assets to Net worth ratio of the Enterprise varied between 0.2 during 2015 and 1.2 during 2007. It is found in the significance test that Fixed Assets to Net worth ratio is uniform during the period of study. Fixed Assets to Net worth ratio is greater than one during first two years of the study. During the last eight years of the study, it is less than one, indicating that owner funds are more than fixed assets in the enterprise which is good.

Table-8: Fixed Assets to Net worth Ratio

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fixed Assets	12.9	11.1	9.5	8.2	7.1	6.1	5.2	4.5	2.7	9.2
Share Holders funds	11.0	11.2	11.5	11.9	12.3	12.7	13.2	13.5	13.0	13.5
Ratio	1.2	1.0	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.7

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Fixed Assets to Net worth ratio = 1.4. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919 Calculated value is less than Critical Value i.e., $1.4 < 16.919$, Hence, H_{07} is accepted.

Fixed Assets Ratio

The Fixed Assets ratio of the Enterprise varied between 0.02 during 2015 and 0.33 during 2010. It is found in the significance test that Fixed Assets ratio is uniform during the period of study. Fixed Assets ratio is always less than one and also very low indicating that majority of long term funds are also available for financing working capital requirements. This is good for the enterprise.

Table-9: Fixed Assets Ratio

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fixed Assets	12.9	11.1	9.5	8.2	7.1	6.1	5.2	4.5	2.7	9.2
Total Long Term funds	42.2	53.7	31.4	25	77	83.4	99.1	94.8	115.8	113.5

Fixed Assets Ratio	0.31	0.21	0.30	0.33	0.09	0.07	0.05	0.05	0.02	0.08
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Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Fixed Assets ratio = 0.9. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919 Calculated value is less than Critical Value i.e., $0.9 < 16.919$, Hence, H_{08} is accepted.

Current Assets to Proprietary Funds Ratio

The Current Assets to Proprietary Funds ratio of the Enterprise varied between 3.6 during 2009 and 11.0 during 2016. It is found in the significance test that Current Assets to Proprietary Funds ratio is uniform during the period of study. Current assets to proprietary funds ratio is high during the period of study.

Table-10: Current Assets to Proprietary Funds Ratio

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Current Assets	41.3	55.4	41.9	57.4	90.5	77.5	101.7	119.8	136.3	148.9
Share Holders funds	11.0	11.2	11.5	11.9	12.3	12.7	13.2	13.5	13.0	13.5
Ratio	3.8	4.9	3.6	4.8	7.4	6.1	7.7	8.9	10.5	11.0

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Current Assets to proprietary funds ratio = 9.3. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919 Calculated value is less than Critical Value i.e., $9.3 < 16.919$, Hence, H_{09} is accepted.

Interest Coverage Ratio

The Interest Coverage ratio of the Enterprise varied between 1.0 during 2015 and 1.2 during 2010 and 2011. It is found in the significance test that Interest Coverage ratio is uniform during the period of study. Lower interest coverage ratio is not safe for long term creditors.

Table-11: Interest Coverage Ratio

(Figures in Lakhs)

Years	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EBIT	5.3	5.6	6.2	4.0	4.3	10.7	9.6	9.7	11.1	12.1
Interest	5.0	5.3	5.8	3.4	3.6	10.1	8.9	9.2	11.3	11.4
Interest Coverage Ratio	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.0	1.1

Source: Annual Reports of P. L. Plast Private Limited from 2006-07 to 2015-2016.

Calculated value of χ^2 for Interest coverage ratio = 0.03. The Critical value of χ^2 at 9 degrees of freedom at 5% level of Significance is 16.919 Calculated value is less than Critical Value i.e., $0.03 < 16.919$, Hence, H_{10} is accepted.

9. Conclusion

To conclude, Operating leverage is unfavourable for six years, financial leverage is unfavourable for eight years and combined leverage is unfavourable for eight years during the period of study. Degree of Operating Leverage, Degree of Financial Leverage and Degree of Combined Leverage are not uniform during the period of the study. All capital structure ratios are uniform during the period of study. High Debt-Equity ratio, low proprietary ratio and high solvency ratio indicates that long term solvency position is not good in Enterprise. There is less margin of safety for long term creditors. Fixed Assets to Net-worth ratio during the last eight years of the study, it is less than one, indicating that owner funds are more than fixed assets in the enterprise which is good. Fixed Assets ratio is always less than one and also very low indicating that majority of long term funds are also available for financing working capital requirements. Lower interest coverage ratio indicates low margin of safety to creditors, which may make credit costly for the enterprise. To conclude, there is further scope for the improvement in management of capital structure in the enterprise.

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