

CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE: A COMPARATIVE STUDY OF TATA MOTORS AND ASHOK LEYLAND LIMITED

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Abstract

In this paper, an attempt was made to analyze the effect of financial performance on the capital structure of the selected automobile companies in India. The study period covers eleven years from 2007-08 to 2017-18. The data were collected from annual reports of the automobile companies. The study revealed that managerial efficiency and profitability have no significant impact on capital structure in Tata Motors and liquidity has significant impact on capital structure in Tata Motors. The study also revealed a significant impact of financial performance on capital structure in Ashok Leyland.

Key words: Financial performance, capital structure, profitability, liquidity, etc.

1. Introduction

In context of managing finance, value maximization is considered to be the foremost aspect. Value is recognized as the value to the investors who supply the requisite fund to the firm. While taking decision on finance, it may be asserted that debt fund may extend return as well as risk to entity that put money into financial schemes. The term capital structure describes combination of desired equity. It is an important decision making issues while planning mixture of debt and equity. Capital structure decision, if taken wisely it will strengthen wealth of firm. If the company has too high external fund in its capital structure then the control of company may pass on to outsiders. Decision with regard to capital structure is mainly concerned with the determination of debt and equity. Capital structure assumed to have intense influence on shareholders' risk and return. All companies have some common objective like minimizing cost of capital and maximizing profitability and value. Thus, capital structure has significant role in corporate financial management. A firm's capital structure decision includes its choice of a target capital structure, average maturity of its debt, and the specific types of financing it decides to use at any particular time.

2. Literature review

Leon (2013) analyzed the correlation between leverage and profitability and also the impact of leverage on ROE and ROA. The result shows negative correlation between leverage, ROE and ROA. The study concludes that there is significant impact of leverage on ROE.

Nirajini and Priya (2013) found a positive relation between capital structure and financial performance. It was contended that capital structure has significant impact on financial performance of listed companies in Sri Lanka.

Srikanth (2014) found that companies under study did not maintain cash balance. Due to poor functional activities, profitability and liquidity were declined. Fixed assets were financed by the long-term sources.

Githire and Muturi (2015) stated that there was a positive influence of equity financing, long-term debt financing and competitive advantages on the financial performance of companies under study.

Vatavu (2015) concluded that companies which maintain a high proportion of equity avoiding borrowed funds are more profitable ones. The author asserted that shareholders' equity has a positive impact on firm's performance.

Mwangi and Birundu (2015) described that capital structure, assets turnover and asset tangibility does not have significant effects on financial performance of SMEs.

Rouf (2015) found that debt ratio, debt equity ratio and proprietary ratio have negative relationship with ROA and return of sales. Further, the total assets is positively related with firm's performance.

3. Objective of the study

The main objective of the present study is to investigate the impact of capital structure of the automobile companies. Apart from that the study examines the relationship between financial performance and capital structure of selected automobile companies.

4. Methodology

The data for this study were collected from the annual reports of selected companies in India. The data were collected for a period of eleven years from 2007-08 to 2017-18. Various accounting ratios like, DER, NP ratio, current ratio, liquid ratio, ROCE, debt to total assets, debtors' turnover ratio, creditors' turnover ratio have been used. Various statistical tools like correlation, regression and analysis of variance have been used.

5. Development of hypotheses

1. There is no significant impact of liquidity on the capital structure of the selected companies.
2. There is no significant impact of managerial efficiency on the capital structure of the selected companies.
3. There is no significant impact of profitability on the capital structure of the selected companies.

6. Analysis and interpretation

TABLE 1
Descriptive Statistics

Company	DER	DER	CR	LR	DTA	ROCE	NPR	DTR	CTR	ROA
Tata Motors	Mean	0.81	0.69	0.45	0.33	0.13	0.93	21.96	0.73	0.05
	Standard Error	0.06	0.08	0.07	0.03	0.04	1.62	1.44	0.08	0.02
	Standard Deviation	0.20	0.26	0.25	0.11	0.12	5.38	4.79	0.27	0.05
	Sample Variance	0.04	0.07	0.06	0.01	0.01	28.95	22.92	0.07	0.00
	Range	0.52	0.84	0.77	0.27	0.41	20.12	16.46	0.99	0.21
	Minimum	0.61	0.36	0.15	0.23	-0.10	-13.06	13.58	0.37	-0.06
	Maximum	1.13	1.20	0.92	0.50	0.32	7.06	30.04	1.35	0.15
	Sum	8.95	7.55	4.99	3.64	1.41	10.28	241.53	8.03	0.52
	Count	11	11	11	11	11	11	11	11	11
Ashok Leyland	Mean	0.55	1.04	0.62	0.26	0.14	4.08	13.07	0.34	0.08
	Standard Error	0.07	0.07	0.05	0.03	0.02	0.59	2.09	0.06	0.01
	Standard Deviation	0.22	0.25	0.18	0.11	0.05	1.96	6.93	0.20	0.03
	Sample Variance	0.05	0.06	0.03	0.01	0.00	3.83	48.02	0.04	0.00
	Range	0.68	0.78	0.56	0.37	0.15	5.78	23.10	0.50	0.12
	Minimum	0.16	0.70	0.30	0.07	0.06	0.29	5.73	0.07	0.04
	Maximum	0.85	1.48	0.86	0.44	0.21	6.07	28.83	0.57	0.16
	Sum	6.10	11.44	6.79	2.82	1.58	44.91	143.72	3.78	0.88
	Count	11	11	11	11	11	11	11	11	11

Source: Compiled from Annual Reports and Accounts

The above table shows value of ranges, minimum, maximum, mean, variances of the dependent and independent variables taken with respect to financial performance and capital structure. DTR of Tata Motors has high mean value. The mean value of debt equity ratio in Ashok Leyland (0.55) is lower than the Tata Motors (0.81). Tata Motors has high variances in CR, LR, ROCE, NPR, and CTR in comparison to the Ashok Leyland.

7. Test of hypothesis

Hypothesis 1: There is no significant impact of liquidity on the capital structure of the selected companies.

TABLE 2
Regression Analysis of Tata Motors

Regression Statistics	
Multiple R	0.42383579
R Square	0.17963678
Adjusted R Square	0.02545402
Standard Error	0.20219005
Observations	11

ANOVA

	DF	SS	MS	F	Significance
Regression	2	0.071614	0.035807	0.875889	0.452923
Residual	8	0.327047	0.040881		
Total	10	0.398661			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	1.09787461	0.466976	2.351032	0.046606	0.021027	2.174722
CR	-1.9143399	2.145703	-0.89217	0.39834	-6.86234	3.033661
LR	2.2694264	2.274109	0.997941	0.347532	-2.97468	7.513532

Source: Compiled from Annual Reports and Accounts

Regression analysis between debt equity ratio and liquidity states that R is 0.4238, which means there is moderate positive correlation between them. The coefficient of determination i.e. R^2 is 0.17, which implies that 17 per cent of the variance in the dependent variable has been explained by independent variables and remaining 83 per cent of variation is due to other factors. Further, regression coefficient of CR at -1.91 indicates that when CR increases by 1 per cent then DER will decrease by 191 per cent. Regression coefficient of LR at 2.26 indicates that when the firm's liquid ratio increases by 1 per cent the DER will increase by 226 per cent. The analysis of variance implies that there is significant impact of liquidity on the capital structure of Tata Motors as calculated value of F (0.875) is more than critical value of F (0.452) at 5 per cent level of significance.

TABLE 3
Regression Analysis of Ashok Leyland
Regression Statistics

Multiple R	0.548433
R Square	0.300779
Adjusted R Square	0.125973
Standard Error	0.202623
Observations	11

ANOVA

	DF	SS	MS	F	Significance
Regression	2	0.141286	0.070643	1.720649	0.239033
Residual	8	0.328449	0.041056		
Total	10	0.469735			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.756699	0.275098	2.750648	0.025034	0.122321	1.391077
CR	0.429404	0.457071	0.939469	0.374985	-0.6246	1.483411
LR	-1.0503	0.625834	-1.67824	0.131818	-2.49348	0.392873

Source: Compiled from Annual Reports and Accounts

Regression analysis between debt equity ratio and liquidity states that R is 0.548, which means there is moderate positive relationship between them. Coefficient of determination i.e. R^2 is 0.30 which implies that 30 per cent of the variance in dependent variable has been explained by independent variables and remaining 70 per cent of variation is due to other factors. The regression coefficient of CR at 0.429 indicates that when CR increases by 1 per cent then DER will increase by 43 per cent. Regression coefficient of LR at -1.05 indicates that when firm's liquid ratio increases by 1 per cent the DER will decrease by 105 per cent. Test of ANOVA rejects the null hypothesis as calculated value of F (1.720) is greater than critical value of F (0.239) at 5 per cent significance level. It implies significant impact of liquidity on capital structure of Ashok Leyland.

Hypothesis 2: There is no significant impact of managerial efficiency on the capital structure of the selected companies.

TABLE 4
Regression Analysis of Tata Motors

Multiple R	0.0410039
R Square	0.00168132
Adjusted R Square	0.24789835
Standard Error	0.22304438
Observations	11

ANOVA

	DF	SS	MS	F	Significance
Regression	2	0.00067	0.000335	0.006737	0.993292
Residual	8	0.39799	0.049749		
Total	10	0.398661			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.76270816	0.485442	1.571164	0.154787	-0.35672	1.882138
DTR	0.00187443	0.016151	0.116058	0.910467	-0.03537	0.039118
CTR	0.01319917	0.288249	0.045791	0.964599	-0.6515	0.677903

Source: Compiled from Annual Reports and Accounts

Regression analysis between debt equity ratio and managerial efficiency states that R is 0.041 that means there is almost no relationship between them. The coefficient of determination i.e. R^2 is 0.001 which implies that 0.1 per cent of variance in dependent variable has been explained by independent variables and remaining 99 per cent of variation is due to other factors. The regression coefficient of DTR at 0.0018 indicates that when DTR increases by 1 per cent then DER will increase by 0.18 per cent. Regression coefficient of CTR at 0.013 indicates that when firm's creditors' turnover ratio increases by 1 per cent the DER will increase by 1.31 per cent. The result of analysis of variance states that calculated value of F (0.006) is less than tabulated value (0.993). Therefore, the null hypothesis is accepted. Thus, there is no significant impact of managerial efficiency on the capital structure of the Tata Motors.

TABLE 5**Regression Analysis of Ashok Leyland**

Multiple R	0.880494
R Square	0.77527
Adjusted R Square	0.719088
Standard Error	0.114871
Observations	11

ANOVA

	DF	SS	MS	F	Significance
Regression	2	0.364172	0.182086	13.79915	0.002551
Residual	8	0.105563	0.013195		
Total	10	0.469735			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.886369	0.083547	10.6092	5.45E-06	0.693709	1.079029
DTR	-0.0293	0.005924	-4.94578	0.001127	-0.04296	-0.01564
CTR	0.148104	0.201062	0.73661	0.482399	-0.31554	0.611753

Source: Compiled from Annual Reports and Accounts

Regression analysis between Debt Equity Ratio and Managerial Efficiency of Ashok Leyland states that R is 0.88, which means there is high degree of positive relationship between them. Coefficient of determination i.e. R^2 is 0.775 which implies that 77% of variance in dependent variable has been explained by independent variables and remaining 23% of variation is due to other factors. The above table also gives regression coefficient and the constant of dependent variables. Regression Coefficient of DTR at -0.029 indicates that when DTR increases by 1% then DER will decrease by 2.9%. Regression coefficient of CTR at 0.148 indicates that when the firm's Creditors' Turnover Ratio increases by 1%, DER will increase by 14.8%. The result of ANOVA states that the calculated value of F (13.7) is greater than tabulated value (0.002), therefore, null hypothesis is rejected and hence it can be concluded that there is significant impact of Managerial Efficiency on the Capital Structure of the Ashok Leyland.

Hypothesis 3: There is no significant impact of profitability on the capital structure of the selected companies.

TABLE 6**Regression Analysis of Tata Motors**

Multiple R	0.43685306
R Square	0.19084059
Adjusted R Square	0.15594201
Standard Error	0.21466918
Observations	11

ANOVA

	DF	SS	MS	F	Significance
Regression	3	0.076081	0.02536	0.550318	0.663825
Residual	7	0.32258	0.046083		
Total	10	0.398661			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.64916174	0.191456	3.39066	0.011589	0.196441	1.101883
ROCE	0.18383685	1.050238	0.175043	0.866001	-2.29958	2.667255
NPR	-0.0464641	0.03968	-1.17096	0.27993	-0.14029	0.047365
ROA	3.92347977	3.377525	1.161644	0.283454	-4.0631	11.91006

Source: Compiled from Annual Reports and Accounts

Regression analysis between debt equity ratio and profitability states that R is 0.4368, which means there is moderate positive relationship between them. The coefficient of determination i.e. R^2 is 0.19 which implies that 19 per cent of variance in the dependent variable has been explained by the independent variables and remaining 81 per cent of the variation is due to other factors. The regression coefficient of ROCE at 0.183 indicates that when ROCE increases by 1 per cent then DER will increase by 18.3 per cent. Regression coefficient of NPR at -0.046 indicates that when firm's net profit ratio increases by 1 per cent the DER will decrease by 4.6 per cent. Regression coefficient of ROA at 3.92 indicates that when the firm's return of assets ratio increases by 1 per cent the DER will increase by 392 per cent. Analysis of variance implies that there is no significant impact of profitability on capital structure of Tata Motors.

TABLE 7**Regression Analysis of Ashok Leyland**

Multiple R	0.54474
R Square	0.296742
Adjusted R Square	0.004654
Standard Error	0.217238
Observations	11

ANOVA

	DF	SS	MS	F	Significance
Regression	3	0.13939	0.046463	0.984557	0.453059
Residual	7	0.330345	0.047192		
Total	10	0.469735			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.803367	0.202526	3.966738	0.005415	0.324469	1.282264
ROCE	0.331254	1.799933	0.184037	0.859202	-3.92491	4.58742
NPR	-0.04638	0.052693	-0.88017	0.407965	-0.17098	0.078221
ROA	-1.33458	3.748638	-0.35602	0.732316	-10.1987	7.529543

Source: Compiled from Annual Reports and Accounts

Regression analysis between debt equity ratio and profitability states that R is 0.544, which means there is moderate relationship between them. The coefficient of determination i.e. R^2 is 0.296 which implies that 29 per cent of the variance in the dependent variable has been explained by the independent variables and remaining 71 per cent of the variation is due to other factors. The regression coefficient of ROCE at 0.331 indicates that when ROCE increases by 1 per cent then DER will increase by 33.1 per cent. Regression coefficient of NPR at -0.046 indicates that when the firm's net profit ratio increases by 1 per cent the DER will decrease by 4.6 per cent. Regression coefficient of ROA at -1.334 indicates that when the firm's return of assets ratio increases by 1 per cent the DER will decrease by 133 per cent. The result of analysis of variance reveals that the calculated value of F (0.984) is greater than the tabulated value (0.453); therefore, the null hypothesis is rejected. It can be concluded that there is significant impact of profitability on the capital structure of the Ashok Leyland.

8. Conclusion

This paper examined the relationship between financial performance and capital structure of selected automobile companies and also analyzed the impact of financial performance on capital structure of selected companies. The analysis revealed that liquidity in both companies has significant impact on capital structure. In Tata Motors, there is no significant impact of managerial efficiency on its capital structure, while in Ashok Leyland; there is significant impact of managerial efficiency on capital structure. Profitability of Tata Motors has no significant impact on capital structure but profitability of Ashok Leyland has significant impact on its capital structure.

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