



FINANCIAL LEVERAGE OF SELECT INDIAN AUTO ANCILLARY COMPANIES

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ABSTRACT

Economic development of any nations depends on industrial development. Auto ancillary industry is one of the fastest growing industries and is riding on the success of the automobile sector. Coupled with growing demand and technological advancements, the auto ancillary industry in India has emerged as a key market in Asia as well as in the world. This study examines the factors that determine Financial Leverage in Indian Auto Ancillary Industry. Sample of the study consists of ten companies selected on the basis of Stratified random sampling techniques. The required data used for the study has been collected from ACE Equity database for a period of sixteen years from 1998-1999 to 2013-2014. Correlation, regression and step wise regression were used for the analysis of the data. From the analysis, it is clear that among the fourteen variables, Solvency ratio and liquidity are the variables which decide the state of Financial Leverage.

KEYWORDS–AUTO ANCILLARY INDUSTRY, FINANCIAL LEVERAGE, DEBT-EQUITY RATIO, LIQUIDITY, SOLVENCY RATIO

Introduction

Economic development of any country depends on industrial development, it paves the way for all-round development of the economy by reducing debt burden, promoting FDI, enhancing self-reliant production, eradicating poverty as well as uplift of the standard of living of the people. Functioning of various industries depends upon the return of the company. The return of the company depends upon volume of profit and indeed volume of profit depends upon how the company uses its Finance. Since the liberalization of Indian economy, there has been an upsurge in research on company Finance, particularly aimed at understanding how companies finance their activities in these specific ways.(Ashok Kumar Panigrahi and Narsee Monjee, 2010).In the liberalized era a major restructuring has taken place with the emergence of more technologically advanced segments among industrial companies. By the mid-90s the private capital had surpassed the public capital. In the light of this situation, it is desirable to identify the factors that determine the Financial Leverage of Indian Auto Ancillary Industry in the liberalized era after the initialization of World Trade Organization (WTO).The Indian Auto Ancillary Industry is renowned worldwide for quality and productivity and has emerged as a significant contributor to the global automotive chain. India now supplies a range of high-value and critical components to global automakers such as General motors, Toyota, Ford, Fiat, Honda, Hyundai and Volkswagen amongst others. (www.eresearchglobal.com)

Literature Review

Michael G.Ferri and Wesley H.Jones (1979) identified the relationship between financial structures and its size, variability of income and operating leverage. The study concluded that firm's leverage is related to its size and operating leverage.Suresh Babu and P.K. Jain (1998) found that SEBI regulations, chief executives values and philosophy are the important non-Financial factors affecting the capital structure of the Private Corporate Sector firms in India.Arvin Ghosh, Francis Cai and Wenhui Li (2000) analysed the important determinants of capital structure in the U.S. manufacturing industries. The study exhibits that the relationship between business risk and leverage is quadratic and it is first increasing and then decreasing, the results of the study is more close to the traditional theory. Aydin Ozkan (2001) investigated the empirical determinants of target capital structure of firms.The study concluded that profitability, liquidity and growth opportunities exert a negative effect on the capital structure choice of firms, there exists an inverse relationship between non-debt tax shields and borrowing ratio of firms.Saumitra.N.Bhaduri (2002) attempted to study the capital structure

choice of developing countries through a case study of Indian corporate sector. The study portrayed that the optimal capital structure choice is influenced by factors such as growth, cashflow, size, product and industry characteristics. Nirmala S (2010) studied the Corporate capital structure in India and reported that Return on Equity is significantly associated with Debt-Equity ratio. Usman .M.V (2014) examined the determinants of capital structure of large taxpayer share companies in Ethiopia. The results of the study show that the size, age, tangibility, liquidity position and non-debt tax shield of a company are positively correlated with leverage, whereas profitability, earnings volatility and dividend payout ratio are negatively associated with leverage. It is seen from the previous studies that capital structure decisions are the vital decisions of a company. It is found that the research on capital structure is more in case of developed countries than in developing countries. It is also further inferred that the period covered for research is of shorter tenure. This study is an attempt to study the capital structure in the post liberalization period after the initialization of WTO for a period of sixteen years of select Indian Auto ancillary companies.

Objective of the study

The objective of the study is to determine the factors that determine the Financial Leverage of select companies in the Indian Auto Ancillary Industry.

Significance of the study

The results of the study may help the Finance managers to decide optimum capital structure, in addition to that it may provide some insights to investors to choose their portfolio.

Limitations of the study

As the study is based on secondary data, the limitations of the secondary data will influence the study.

Methodology

This study has been carried out with a sample of ten companies from Indian Auto Ancillary Industry. The companies have been selected based on the basis of stratified random sampling techniques. The data used are secondary in nature and it has been collected from ACE Equity database for a period of sixteen years from 1998-1999 to 2013-2014. Debt-Equity ratio is the dependent variable and this dependent variable is tested with fourteen independent variables. Correlation, Regression and Step wise regression were the statistical tools used for the analysis of the data.

Hypotheses

There exists no association between select independent variable and the Financial Leverage of the company.

Table 1
Nature and Strength of relationship between select independent variables and FinancialLeverage – Correlation analysis

Variables	r	r ²
Size	-0.233**	0.054
Profitability	-0.339**	0.115
Non Debt Tax Shield	0.145	0.021
Liquidity	0.094	0.009
Dividend Payout Ratio	-0.278**	0.077
Growth	-0.095	0.009
Age	-0.186*	0.035
Effective Tax Rate	0.039	0.002
Interest Coverage Ratio	-0.187*	0.035
Selling and Distribution Ratio	-0.126	0.016
Return On Equity	-0.200*	0.040
Solvency ratio	-0.700**	0.490
InflationRate	-0.059	0.003
Bank Rate	-0.120	0.014

* Significant at five per cent level ** Significant at one per cent level

It can be inferred from the correlation analysis (Table 1) that, theseven variables such as non-debt tax shield, liquidity, growth, effective tax rate, selling and distribution expenses ratio, inflation rate and bank rate are not associated with debt-equity ratio. The nature and strength of seven variables which are associated with debt equity ratio are explained in the following paragraphs

i)Size

The variable size is found to have significant association with debt equity ratio. It is inferred from the correlation analysis that, this variable which is natural log of gross tangible assets is negatively associated with debt equity ratio implying that an increase in size would decrease the debt level in the

capital mix. The co-efficient of determination (r^2) shows that, the size accounts for 5.4 percent of the variation in the level of debt-equity ratio.

ii) Profitability

The results of the correlation exhibits that, Profitability is significantly associated with debt-equity ratio. It is further observed from the correlation analysis that the variable Profitability which as a measure of earnings before interest and tax to total assets is negatively associated with debt equity ratio. The coefficient of determination (r^2) shows that, the profitability accounts for 11.5 percent of the variation in the level of debt-equity ratio.

iii) Dividend Payout Ratio

The Dividend Payout Ratio is identified to have significant association with debt equity ratio. It is revealed from the correlation analysis that this variable as a measure of total ordinary dividend paid to profit reported is negatively associated with debt equity ratio indicating that an increase in this ratio would decrease the level of debt equity ratio. The coefficient of determination (r^2) shows that, the dividend payout ratio accounts for 7.7 percent of the variation in debt equity ratio.

iv) Age

The results of correlation analysis opined that the variable age is significantly associated with debt equity ratio. It is clear from the correlation analysis that this variable is negatively associated with debt equity ratio indicating that an increase in this ratio would decrease the level of debt equity ratio. The coefficient of determination (r^2) shows that, the age accounts for 3.5 percent of the variation in the debt equity ratio.

v) Interest Coverage Ratio

The interest coverage ratio of the companies is significantly associated with the debt equity ratio. It is inferred from correlation analysis that, this variable which is measured as the ratio of earnings before interest and taxes and interest is negatively associated with debt-equity ratio indicating that, an increase in this ratio would decrease the debt level in the capital mix. The coefficient of determination (r^2) shows that, interest coverage ratio accounts for 3.5 percent of the variation in the level of debt-equity ratio.

vi) Return On Equity

The return on equity is significantly associated with the debt equity ratio. It is observed that this variable as a measure of profit after tax to net worth is negatively associated with debt equity ratio

implying that, an increase in this ratio would reduce the level of debt equity ratio. The coefficient of determination (r^2) shows that, return on equity accounts for 4 percent of the variation in debt equity ratio.

viii) Solvency Ratio

The solvency ratio is significantly associated with debt equity ratio. It is evident from the correlation analysis that, this variable as a measure of total assets to total borrowings plus current liability minus advance payment of tax is negatively associated with debt equity ratio implying that, an increase in this ratio would decrease the level of debt equity ratio. The coefficient of determination (r^2) shows that solvency ratio accounts for 49 percent of the variation in debt equity ratio.

Determinants of Financial Leverage - Multiple Regression Analysis

The results of the analysis shown in the Table 2 indicate that, the explanatory variables such as size, dividend payout ratio, growth, age, effective tax rate, interest coverage ratio, selling and distribution expenses ratio, return on equity, inflation rate and bank rate are not associated with leverage. Profitability, non-debt tax shield, current ratio and solvency ratio are the four variables that significantly influence the level of debt equity ratio in the Auto Ancillary industry are explained in the following paragraphs.

In the regression equation, fourteen explanatory variables have been regressed on Debt Equity ratio. The significance of the regression coefficient is tested through 't' statistics. R^2 value, calculated to ascertain the goodness of fit of the regression equation, has been tested for its significance through 'F' statistics. The levels of confidence chosen for 't' and 'F' statistics are five and one per cent.

i) Profitability

The influence of profitability on debt equity ratio is negative and significant at five percent level. The contribution of profitability to debt-equity ratio is 2.302, which shows that a decrease in earnings before interest and tax has negative impact on debt-equity ratio, keeping the other variables constant.

ii) Non-Debt Tax Shield

Non- debt tax shield is measured by depreciation plus amortization to total assets. Regression coefficient between non-debt tax shield and debt equity ratio is 4.860 signifying a positive relationship between two variables. An increase of one unit in non-debt tax shield will have a positive impact on debt equity ratio by 4.860 units

Table2
Determinants of Financial Leverage - Multiple Regression Analysis

Variables	Regression coefficient	Standard error	t
Size	-0.045	0.035	-1.290
Profitability	-2.302*	1.148	-2.004
Non Debt Tax Shield	4.860**	1.789	2.716
Liquidity	0.083**	0.027	3.072
Dividend Payout Ratio	0.001	0.001	-0.231
Growth	-0.186	0.202	-0.917
Age	-0.002	0.003	-0.563
Effective Tax Rate	0.154	0.170	0.908
Interest Coverage Ratio	0.001	0.001	0.544
Selling and Distribution Ratio	1.369	1.081	1.266
Return On Equity	0.291	0.755	0.386
Solvency ratio	-0.560**	0.067	-8.336
InflationRate	0.010	0.014	0.713
Bank Rate	-0.027	0.033	-0.832

* Significant at five per cent level

** Significant at one per cent level

Constant	: 2.190	R ²	: 0.536
Std. Error of Estimate	: 0.345	R ²	: 0.577 **

Regression Equation

$$\text{Debt-Equity Ratio} = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} + b_{13}X_{13} + b_{14}X_{14} + e$$

Where,

a	: intercept term	x ₈	: Effective Tax Rate
b ₁ ...b ₁₄	: Regression coefficients	x ₉	: Interest Coverage Ratio
x ₁	: Size	x ₁₀	: Selling and Distribution expenses ratio
x ₂	: Profitability	x ₁₁	: Return on Equity
x ₃	: Non Debt Tax Shield	x ₁₂	: Solvency ratio
x ₄	: Liquidity	x ₁₃	: Inflation rate
x ₅	: Dividend Payout Ratio	x ₁₄	: Bank rate
x ₆	: Growth	e	: error term
x ₇	: Age		

iii)Liquidity

The influence of liquidity on debt-equity ratio is positively significant at one percent level. The contribution of current ratio to debt-equity ratio is 0.083 which means that an increase in current ratio by one unit will increase the debt-equity ratio by 0.083 units.

iv)Solvency Ratio

It is clear from the regression analysis that solvency ratio is negatively associated with debt-equity ratio at one percent level. The regression coefficient of solvency ratio is -0.560. An increase of one unit in solvency ratio will depress debt-equity ratio by 0.560 units.

Factors prominently associated with debt-equity ratio – Step wise regression analysis

Table 3

Step	Constant	Solvency ratio	Liquidity	R ²
1	2.091	-0.655		0.490
2	1.961	-0.678	0.075	0.525

In the stepwise regression equation, the variable ‘solvency ratio’ is introduced as the first variable and the contribution of this variable is found to be 49 percent. The variable, ‘liquidity’

when introduced in the second step along with the variable ‘solvency ratio’ accounts for 52.5 percent of the variation to debt-equity ratio thereby increasing its contribution by 3.5 percent.

The total contribution of the two variables viz., ‘solvency ratio’ and ‘liquidity’ accounts for 52.5 percent. The R^2 value of the multiple regression amounts to 57.7 percent. It can be concluded that the difference in the R^2 value i.e. 5.2 percent is the contribution of the remaining independent variables to the dependent variable debt-equity ratio.

Suggestions

The study analyzes the factors that determine the Financial Leverage of the select Indian Auto Ancillary companies. From the analysis it is clear that, solvency ratio which is a measure of total assets to total borrowings plus current liabilities minus advance payment of tax is the major determinant of the Financial Leverage of the Auto ancillary industry, the next factor to solvency ratio is liquidity which determines the Financial Leverage of the Auto ancillary industry. The results of the study shows that, profitability is negatively related to debt, this shows that companies which are in need of funds do not raise capital from the capital market and they depend on their retained earnings as their source of finance. Debt can be used to reduce the tax burden. The results of the study may help the Finance managers of the companies to take vital decisions relating to Financial Leverage, it may also help the investors in selecting their right portfolio. Further, Financial Leverage of manufacturing industry may be compared with Financial Leverage of service industry, Financial Leverage of companies in developing country may be compared with that of developed country.

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