Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online)
Vol 2, No 3, 2011

Input-output Analysis: An Experience from Financing Mix Mechanism in Automobile Sector

Prajnadipta Das
Centre for IT Education,
Plot-4, Sector-A, Zone-B, Mancheswar Industrial Estate,
Bhubaneswar, Orissa, India.
Tel: +919438485460, E-mail: pddas1@gmail.com

Abstract

The present paper seeks to analyze the impact of financing mix on the net income or the earning per share (EPS) of the automobile company at the maximum level. It analyse changing the financing mix which means that changing the level of debts and into change in the level of debt affecting the interest payable by that firm. It is because higher the level of debt, higher would be the fixed obligation to honour the interest payments to the debt providers. Financing mix is a useful mechanism to increase the value of a firm. The mix of various types of debt and equity refers to financial mix of a firm. The more debt capital a firm has in its capital structure, the more highly leveraged the firm is considered to be. Decrease in interest would increase the net income and thereby the earning per share (EPS), and it is a general belief that the increase in EPS leads to increase in the value of the firm.

Keywords: Financing mix, Earning Per share (EPS), debt-equity ratio

Input-output Analysis: An Introduction

The amount of investment flowing to an economy normally depends on the rate of return it is likely to generate. Sectoral pattern of investment depends on the income generating capacity of the different sectors of the economy. The present paper is an attempt to identify the sectoral interdependence in the economy and to link it with the growth strategy of GDP to the Indian economy. There is also an attempt to link the sectoral origin of income to the multiplier values of the sectors to estimate the multiplier impact of investment in the stocks.

Financing Mix:

Financial mix deals with an important financial management question: 'what should be the ratio of debt and equity?' Before searching to find the answer to this question, one should define the objective clearly. In the context of financial management, the purpose of any financial decision is to maximize the shareholder's wealth or increase the value of the firm. The other question which hits the mind in the first place is whether the change in financing mix would have any impact on the value of the firm. The question is a valid one as some experts believe that financial mix has an impact on the value and while others don't consider it a viable proposition.

Financial Mix and Value:

Financial mix at the maximum is seen to have an impact on the net income or the EPS (Earning per Share) of a company. Changing the financing mix means changing the level of debts and change in the level of debt that can affect the interest payable by that firm. Decrease in interest would increase the net income and thereby the Earning Per Share (EPS), and it is a general belief that the increase in EPS would lead to increase in the value of the firm.

Apparently, under this view, financial mix is a useful tool to increase the value of the firm but, at the same time, nothing comes without a cost. Financial mix increases the risk of bankruptcy. It is because higher the level of debt, higher would be the fixed obligation to honour the interest payments to the debt providers.

Discussion of financial mix has an obvious objective of finding an optimum capital structure, leading to maximization of value of a firm, if cost of capital is high. The mix of various types of debt and equity refers to financial mix of a firm. The more debt capital a firm has in its capital structure, the more highly leveraged the firm is considered to be.

Determining the financial mix can be considered as useful mechanism to a scortain the firm's capital structure. Every firm needs money to operate and start up with the means which is called 'capital'. The main decision to be taken is to determine how this will be generated and the resultant capital structure of the firm is called the financial mix

Objective of the study:

The specific objectives of the study are based on ratios like, Debt Equity Ratio, Long Term Debt Equity Ratio, Debt Coverage Ratios, Interest Coverage ratio, Total Debt to Owners Fund ratio and current ratio. The analysis of financing mix is made on the basic proportion of ratios by indicating their inter-relationship. Thus, the major objectives are

(a) to study the effect of corporate capital structure in Indian industries in the post-liberalization decade.

(b) to identify the factors responsible for low or high performance of the companies in building a good capital base in financing mix and EPS

(c) to determine the intra sector comparison in financing mix

(d) to identify the key ratios responsible for good financing mix

(e) to analyze the performance relating earning per share sector wise

(f) to identify problems and suggest measures to improve the financing pattern and mix in the capital structure.

Tools and techniques used: Regression, Linear trend and Durbin Watson Model

An Experience from automobile sector:

Automobile Sector:

The contribution of Automobile Industry to India's GDP has been substantial. The Automobile Industry is one of the fastest growing sectors in India. The increase in the demand for cars, and other vehicles, powered by the increase in the income is the primary growth driver of the automobile industry in India. The introduction of tailor made finance schemes, and easy repayment schemes have also helped the growth of the automobile sector.

Role of Automobile Industry in India GDP-Facts

India has become one of the international players in the automobile market and in the year 2008-09, the Indian Automobile Industry produced 2.56 million four wheelers and 10 million two and three wheelers .India ranks 2nd in the global two-wheeler market and is the 4th biggest commercial vehicle market in the world. Further, India ranks 11th in the international passenger car market and ranks 5th pertaining to the number of bus and truck sold in the world. Here, it is expected that the Automobile Industry in India would be the 7th largest automobile market within the year 2016

The variables taken for the study have been included for measuring the different relationship, trend of Automobile industry. The independent variables are current ratio, debt equity ratio, long term debt equity ratio, debt coverage ratios, interest coverage ratio and total debt to owners fund where as the dependent variable have been taken as earning per share (EPS). Step method and excluded variables have been used along with enter method. Durbin Watson model has also been used to evaluate the trend relation.

Analysis of results:

Table-1: Output table

R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R^2 Change	F Change	df1	df2	Sig. F Change	
0.934(a)	0.872	0.830	7.587	0.872	20.529	1	3	0.020	3.180

a. Predictors: (Constant), Interest Coverage Ratio

b. Dependent Variable: Earning per share

Stepwise (Criteria: F-to-enter >= 3.840, F-to-remove <= 2.710).

The output table-1 shows the model summary of both dependent and independent variables and the correlation coefficient between these variables is 0.934, which signify a strong relationship. Further, R^2 represents 0.872 which explains the variations in Earning Per Share is due to the change in interest coverage, when other variables differ. For assessing the strength of this measurement , the standard error of the estimate is compared in the output table to the standard Error of Earning per Share reported in the output table-1. The earning per share, for the total value in financial activities reveals a positive as F value i.e. 20.529, which shows much higher with the change in earning per share also. Further, in the test of Durbin Watson, the value also indicates a positive value which is also greater than 2. It means this automobile sector has maintained a better trend in the financing mix since variables taken in the study have shown significant values.

Table-2: Output table

ANOVA(b)		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1181.87	1	1181.875	20.529	0.020(a)
	Residual	172.716	3	57.572		
	Total	1354.59	4			

a. Predictors: (Constant), Interest Coverage

b. Dependent Variable: Earning per share

The Output table-2 (ANOVA) reports a significant F statistic of 20.529, indicating the using the model better than mean. As observed from the regression values has a lesser impact on the value of Earning per Share during the period of study. Nearly 90 percent variation in Earning Per share has been explained and it is due to the change in Interest and Taxes. The values portrayed in the table signify that a more earning per share that could be expected in the automobile companies, if interest coverage ratio would be maintained properly.

Table-3: Output table

Coefficient	UnStandardized Coefficient		Standardized Coefficient	t-value	Significance
	B	Std.Error	Beta		
Constant	10.695	10.717		0.998	0.392
Interest Coverage Ratio	0.217	0.048	0.934	4.531	0.020

a. Dependent variable: Earning Per Share

This coefficient table-3 (Output table) shows the coefficients of the regression line. It states that the expected EPS is equal to 0.217 X interest .coverage ratio +10.695 (constant). In this linear regression model, the significance value of estimate is considerably lower i.e., about 0.020. Even though the fitness of the model looks positive, the first section of the coefficients table shows that there are too many predictors

in the model. There are several non-significant coefficients, indicating that these variables such as current ratio, debt Equity ratio, and long term debt to equity and total debt to owners fund to do not contribute much to the effect for change in Earning per share.

Therefore, to determine the relative importance of the significant predictor i.e. interest coverage factor, which is actually contributing to a more towards the change in EPS, because it shows a high standardized coefficient i.e. 0.934 (Coefficient table-). Here, standard error reveals 0.048, which is very low and significant. So these two variables are more elastic in nature during the period of study. Further, Beta (unstandardised) values indicate the growth and here it shows a less value, i.e. 0.217 means a less amount of EPS with the total factors taken in the study to evaluate the finance mix in the companies. Here the t-value shows 4.531, which is also higher and it indicate for interest coverage ratio, which is higher and significant to the financing mix of the sector.

Table-4: Output table

Excluded variables	Beta value	t- value	Significance	Partial correlation	tolerance
Current ratio	-0.199	-0.808	0.504	0.-496	0.795
Debt Equity Ratio	-0.034	-0.131	0.908	0.092	0.945
Long Term Debt Equity Ratio	0.001	0.003	0.998	0.002	0.437
Total Debt to Owners Fund Ratio	0.034	-0.129	0.909	-0.091	0.923

a. Predicators in the model (constant) , Interest Coverage Ratio

b. Dependent variable: Earning per Share

The output table-4 indicates the excluded variables from the variables taken in the study representing the change in EPS from Investing Activities underlying annual periodicity during the period of study. Creating a better mix, EPS from Financing Activities means identifying any periodic components as: Proceeds from issue of shares, total debt burden and cash flow from other activities. Now it reveals that, any change in EPS from financing Activities is due to the intervention of interest on debt activities (Financing). It is to determine the period during which the EPS series showed significant level changes in current ratio as t-value shows significant than other activities. However, to limit the cases in order to measure the total factors relating to financing mix activities have been included. The variable representing the financing mix activities are not significant when it is above 0.05. Here the ratios are above the value and are insignificant to the factor "EPS in financing activities" except one factor i.e. current ratio. Using estimates of 't' values analysis in this context, it has been analyzed that shift in proportion share in EPS is not dominated by the independent factors. In this respect, this significance value is more and implies a weak correlation between the variables (both for dependent and independent). So net cash flow from financing activities has a much less effect while the change in these ratios occurs except current ratio and interest coverage ratio.

Table-5: Output table

Residuals Statistics	Minimum	Maximum	Mean	Std. Deviation	No. of years
Predicted Value	42.39	86.141	56.754	17.189	5
Residual	-7.107	10.661	.000	6.571	5
Std. Predicted Value	-.835	1.710	.000	1.000	5
Std. Residual	-.937	1.405	.000	.866	5

a) Dependent Variable: Earning per share

The residual statistics shows (output table-5) the factors associated with Earning Per share in Financing mix of the automobile sector within 5 years period. The major source in financing is from the issue of shares and debentures and other activities. The residuals output table shows that issue of shares varies in 17.189 percent where as others fluctuates less. That indicates a good amount of increase in cash during the period of study. The standard deviation is more in the predicted variables of the automobile sector, except the interest coverage ratio in financing mix activities.

Conclusion:

Financing mix is found registering an impact on the net income or the EPS (Earning per Share) of a company. Changing in the financing mix means changing in the level of debts and the level of debt can affect the interest payable, ultimately the interest payments would be more or less. Decrease in interest would increase the net income and thereby the Earning Per Share (EPS) and it is a general belief that the increase in EPS leads to increase in the value of the firm. Under this view, financing mix is a useful tool to increase the value of a firm. The result shows that the correlation coefficient between these independent and dependent variables is positive implying strong association. Further, it explained the variations in Earning Per Share and found that it is due to the change in interest coverage only as compared to other variables as it was most significant.

References

De-Miguel, A. and Pindado, J. (2001). Determinants of capital structure: new evidence from Spanish panel data, *Journal of Corporate Finance*, 7:77-99.

Elsas, R., Flannery, M.J,and Garfinkel, J.A. (2007). Major investments, firm financing decisions, and long-run performance, Working paper, Ludwig-Maximilians-University Munich, University of Florida, and University of Iowa,197-232.

Fama, E.and French, K. (2002). Testing Tradeoff and Pecking Order Predictions about Dividends and Debt, *Review of Financial Studies*, 15 (Spring), 1-37.

Flannery, M.J., Rangan, K.P. (2006). Partial adjustment toward target capital structures, *Journal of Financial Economics*, 79(3), 469-506.

Gay B. Hatfield, Louis T.W. Cheng,and Wallace N. Davidson (1994). The determinants of Capital Structure: the effect of firm and industry debt ratio on market value, *Journal of Financial and Strategic Decisions*, Volume 7, Number 3, (fall).

Graham, J. R. (2000), How big are the tax benefits of debt? *Journal of Finance*, Vol. 55, pp. 1901-41.

Greene, W. H. (2007). *Economic Analysis*, Fifth edition, Prentice Hall.

Hadlock, C. J. and James, C. M. (2002), Do banks provide financial slack? *Journal of Finance*, Vol. 57, pp. 1383-420.

Hamada, R.S.(1972). The Effect of the Firm's Capital Structure on the Systematic Risk of Common Stocks, *Journal of Finance*, December, pp. 435-452.

Harris, M.,and A. Raviv (1991). The Theory of Capital Structure, *Journal of Finance*, 46, March 1991, pp. 297- 355.

Harvey, Campbell R.; Karl V. Lins; and Andrew H. Roper.(2004). The Effect of Capital Structure When Expected Agency Costs Are Extreme, Journal *of Financial Economics*, Vol. 74, October,

Huang, R.,and Ritter, J. R. (2007). Testing theories of capital structure and estimating the speed of adjustment, working paper, Kennesaw State University and University of Florida.

Joseph, T.L. Ooi (2000). Managerial opportunism and the capital structure decisions of property companies, *Journal of Property Investment & Finance*, vol. 18, No. 3.