International Journal of Management and Commerce Innovations ISSN 2348-7585 (Online)
Vol. 3, Issue 2, pp: (994-997), Month: October 2015 - March 2016, Available at: www.researchpublish.com

Enterprise Value and Capital Structure an Indian Sector Research Report

Neha Poddar

Vishveshwarya Group of Institution, Greater Noida, India

Abstract: **The study focuses on the relationship between the capital structure and the value of firm, many theories in the past propagated about their association and state capital structure does affect the enterprise value. Present study is an effort to test the effect of capital structure on value of enterprise. According to academic and pragmatic research there is an optimal capital structure, there is no specified methodology, yet, that financial managers can use in order to achieve an optimal debt level. However, financial theory do facilitate in understanding how the selected financing mix affects the firm's value. The various financing decisions are essential for the financial benefit of the firm. A forged decision about the capital structure may lead to financial suffering and ultimately to insolvency. The management of a firm sets its capital structure in a way that firm's value is maximized. However, firms do choose diverse financial leverage levels in their effort to get an optimal capital structure. Existing empirical research on capital structure and firm value has been largely confined to the United States and a few other advanced countries. Thus an attempt has been made to study Indian corporates**

Keywords: **Enterprise Value, Financial leverage, Capital Structure, optimal capital structure.**

I. INTRODUCTION

Analysis of the sectors Pharmaceutical, FMCG, Textile, Energy Resource, Software & IT, Power, Automobile, Steel, Telecommunication, Cement, has been done collectively using panel data model. Firstly Panel data regression is run to explain the variation in dependent variable Enterprise value due to the variation in independent variable Borrowings and Equity. The analysis is done based on all the five model of Panel Data Analysis. The above sectors are clubbed because they are taken from the common platform of CMIE Database, therefore it is easy to judge and analyze the results based on this common parameter. Many real-world firms take their capital structure decisions based on industry averages. The debate is whether capital structure decisions create firm value. The factors that drives the firm to design its own capital structure and to find the relationship between the capital structure and firm value, to what extent the capital structure does have the effect on firm value. According to traditional theory of capital structure the value of firm can increase with the judicious use of debt and equity proportion that is called as optimum capital structure and can reduce the firms cost of capital. Up to a certain point the use of leverage is beneficial beyond that point, the use of debt increase the risk of bankruptcy and financial risk of investors. The rationale behind this assumption is that debt is relatively cheaper source of funds as compared to equity. With a change in leverage, that is using more debt in place of equity, a relatively cheaper source of funds replaced a source of funds which involves a higher cost causes a decline in the overall cost of capital.

2. DATA COLLECTION

The data were collected for the past eleven year from 2001 to 2011. The value of enterprise is taken from data base and it is expected to be the book value. Similarly borrowing here means the figure includes both the short term as well as long term debt. In case of Equity the paid up value is taken.

3. SAMPLE SIZE

Total of ten sectors was selected and each sector report is prepared based on the average of five companies selected. Overall total of 50 companies were selected based on random sampling method.

4. METHODOLOGY

Panel data fixed effect regression model is being applied here to test the association between the variables because the panel data use the pool sets of data (Time series as well as cross section). Therefore at one point of time changes among the variables can be studied within all sectors. Time dummy variable is also put on study to test the effect of time on dependent variable and individual sector dummy variable is also implied.

Model I- Intercept and slope are constant across time and sectors.

Table 1.1

Regression Statistics	
Multiple R	0.92
R Square	0.85
F statistics	304.23
DW Stats	0.87
Observations	110

Table 1.2

	Coefficients	*Std Error*	*T Stat*	*P-value*	*Sig P*
Intercept	33332.0	15675.72	2.12	0.03	.964
Borrowings	2.52	0.65	3.85	0.00	.999
Equity	25.18	13.56	1.85	0.06	.933

From the above result Table 1.1 all the independent variables of Model are statistically significant at 5%. Multiple R for Model I (for all firms Pharmaceutical, FMCG, Textile, Energy Resource, Software & IT, Power, Automobile, Steel, Telecommunication, Cement) is 0.922 that is 92.2% correlation between Enterprise Value (EVA), Borrowings, Equity. It established relationship between all independent variable and dependent variable or it can be said that correlation between actual and predicted dependent variable.

EVA = Borrowings (Br) + Equity (Eq)

R^2 value implies the variation in dependent variable is due to the variation in independent variable. R^2 value of the model is 0.850 that is 85% of the variation in the borrowings of the sectors mentioned above is explained by Borrowings and Equity. Rest of the 15% variation is because of extraneous factors. Overall significance of Model I or goodness of fitness of the Model is relatively low with the F statistics of 304.23 that is significant at 99%. The validity of the model is good as 99% variation in dependent variable is explained by the independent variables of the model. The F statistics proves to be the explanatory power of the estimated model. DW is 0.8792 which seems to be data are auto-correlated which could be due to the specification error.

From the table 1.2 Slope of Borrowings is statistically significant and is having a positive coefficient which is significant at 99% stating that increase in borrowings lead to increase in the value of the firm. Slope of Equity is positive and significant with 1.85 value of T statistics. There are different views on how capital structure influences value. Some argue that there is no relationship whatsoever between capital structure and firm value, others believe that financial leverage (i.e the use of debt capital) has a positive effect on firm value up to a point and negative effect thereafter, still others contend that, other things being equal, greater the leverage, greater the value of firm.

MODEL-II Slope Coefficient constant but the intercept varies across sectors

Table 1.3

Regression Statistics	
Multiple R	0.96
R Square	0.92
F statistics	108.32
Sign F	99%
DW	1.22
Observations	110

Table 1.4

	Coefficients	*Std. Error*	*T Stat*	*P-value*	*Sig P*
Intercept	68881.7	29085.3	2.36	0.01	.98
Borrowings	5.90	0.73	8.033	2.15E-12	1
Equity	-80.09	20.52	-3.90	0.00	.99
D22	278226.7	46012.88	6.04	2.69E-08	1
D33	-53398.8	40068.7	-1.33	0.18	.81
D44	-56763.4	40210.93	-1.41	0.16	.83
D55	512186.5	107409.6	4.76	6.46E-06	.99
D66	157660	40969.3	3.84	0.00	.99
D77	58487.29	46560.87	1.25	0.21	.78
D88	-54196.4	40218.71	-1.34	0.18	.81
D99	6506.63	41485.76	0.15	0.87	.12
D10	-50142.2	40036.7	-1.25	0.21	.78

Explanation of Variables:

Constant	Intercept of Pharmaceutical	
Borrowings	Average borrowings of the sectors	
Equity	Average equity capital of the sectors	
D22	Sector Dummy Variable	Intercept of FMCG
D33	Sector Dummy Variable	Intercept of Textile
D44	Sector Dummy Variable	Intercept of Cement
D55	Sector Dummy Variable	Intercept of Energy Resource
D66	Sector Dummy Variable	Intercept of Software & IT
D77	Sector Dummy Variable	Intercept of Power
D88	Sector Dummy Variable	Intercept of Automobile
D99	Sector Dummy Variable	Intercept of Steel
D00	Sector Dummy Variable	Intercept of Telecommunication

From the above result all the independent variables of Model are statistically significant at 5%

Table 1.3 Multiple R for Model II (for all firms Pharmaceutical, FMCG, Textile, Energy Resource, Software & IT, Power, Automobile, Steel, Telecommunication, and Cement) is 0.961 that is 96.1% correlation between Enterprise Value (EVA), Borrowings, Equity. It established relationship between all independent variable and dependent variable or it can be said that correlation between actual and predicted dependent variable.

EVA = a+ b(Borrowings)+ c(Equity) + d (D22) + e (D33) + f(D44) + g(D55) +h(D66) + i(D77) + j(D88) + k(D99) +l(D00)

R^2 value implies the variation in dependent variable due to the variation in independent variable. R^2 value of the model is 0.924 that is 92.4% of the variation in the borrowings of the sectors mentioned above is explained by Borrowings and Equity. About 8% variation is because of extraneous factors. Overall significance of Model I or goodness of fitness of the Model is relatively high with the F statistics of 108.32 that is significant at 99%. The validity of the model is good as 99% variation in dependent variable is explained by the independent variables of the model. The F statistics proves to be the explanatory power of the estimated model. DW is 1.229 which seems to be data are auto-correlated which could be due to the specification error.

Slope of Borrowings is statistically significant and is having a positive coefficient which is significant at 99% stating that increase in borrowings lead to increase in the value of the firm. Modigiliani and Miller analyses that the value of firm is

maximized when its capital structure contains only debt. In other words a firm can lower its cost of capital continually with increased leverage up to a certain limit. Slope of Equity is also significant and is having a negative coefficient states that. Intercept of FMCG is statistically significant and Intercept of Energy Resource and Software & IT is also found to be statistically significant which means apart from internal firm characteristics other external factors like government policy, economic growth of country etc do impact the firm value that are out of the scope of present study.

5. CONCLUSION

Thus from above result we can say that capital structure does impact the firm value and it may have positive and negative impact, debt financing can ease the problem of over and under investment but managers may be keen towards taking negative value projects after being influenced by power of being managers and therefore to overcome with the above problem shareholders forces managers to issue debt so that after having an obligation of fixed payment of interest they forced to take positive value projects. Thus with the balancing of optimal agency cost of debt and managerial judgment optimal capital structure is determined.

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