Profitability and Development of Indian firms based on Financial Dynamics

Ankur Agrawal, Ashish Saxena, K R Gola, Sunil Joshi

Abstract: The Judicial blend of debt and equity at which cost of capital is least and estimation of the firm is most maximum is named as optimal capital structure of a firm. The capital structure decision can impact the estimation of the firm through the profit accessible to the investors which amplify the investors' wealth, notwithstanding this capital structure can influence the estimation of the organization by improving its expected income. Hence, the debt ratio changes when there is an irregularity between inside assets and genuine speculation openings and there is data asymmetry in the market. The significance of a proper capital structure is, along these lines, self-evident. Primary variables affecting Capital Structure have been examined right now distinguish the degree of their capital structure impact. The fundamental reason for existing is to look at the effect of "ten financial factors" in particular: profitability, size, risk in the business, asset structure, debt service, development, office cost, bankruptcy ratio, charge shield in tax and uniqueness on the capital structure of chosen organizations, which is spoken to by LEV D/E. Ten unique divisions from Indian corporate have been picked, to break down the significant determinants of capital structure. The information has been drawn from the official sites of the organizations for a time of 2008 to 2018; the information has been gathered for 400 recorded organizations from ten chose segments with the end goal of investigation. Multiple regressions have been applied to discover the noteworthy determinates. Profitability, Growth and Development of the firm, size have pivotal and positive relationship with leverage.

Keywords: Capital Structure, leverage, profitability, asset structure, business risk, debt service, agency cost, bankruptcy ratio, growth and uniqueness.
Paper Classification: Research Paper

I. INTRODUCTION

The proportion of debt and equity, which leads estimation of the firm to the most extreme cost of capital to the least, is known as optimal capital structure.

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This legal blend of capital structure decision is a perfect circumstance for any association and that is the explanation, capital structure decision is one of the most easily proven wrong issues among the corporate account researchers. It is a far from being obviously true issue since origin when Modigliani and Miller's (1985) gave unimportance suggestion.

The recommendation has determined different conditions under which capital structure is superfluity for the venture; thusly hypothetical and exact confirmations have indicated that estimation of a firm can be affected by fluctuating capital structure, through the acquiring access to the investors which expands the investors' wealth on any change either in the normal winning of a firm or cost of capital or both the capital structure get influenced. Where in actuality is that financing mix can't influence the complete payment of the firm as it is dictated by the speculation choices? Be that as it may, gaining that has a place with the conventional shareholders' can get influenced by these choices. The mixing of obligation and value is dynamic in nature as it relies on the expense and advantage of financing of debt and equity in the given time span.

It is a well-established reality that the cost of equity is not exactly the costs of debt as buoyancy and data for costs of debt are not as much as value. Then why the greater part of the gainful firms get less on the opposite less beneficial firms have more debt and consider the tax cut of debt at the second spot. This can be very much clarified by hierarchy hypothesis.

Hence, the debt ratio changes when there is an irregularity between inside assets and genuine speculation openings and there is data asymmetry in the market (25). High level of data asymmetry builds the influence because of the leverage of educational expense as an obligation for debt financing. The ideal capital structure is typically included some debt. By and large, a few firms can't distinguish this optimal point absolutely, yet they should endeavor to locate an optimal range for capital structure.

II. OBJECTIVE OF THE STUDY

1. To investigate how growth and development affect the leverage ratio.
2. To examine how asset structure impacts leverage ratio.
3. To look at the effect of profitability on leverage ratio.
4. To decide the impact of debt service ratio on leverage ratio.
5. To assess if office cost affects leverage ratio.
6. To check whether the size of a firm has impacts leverage ratio.
7. To consider the effect of business risk on leverage ratio.
8. To investigate whether tangibility impacts on leverage ratio proportion of a firm.
9. To look at how bankruptcy impacts leverage ratio of a firm.

10. To investigate if non-debt tax affects the leverage ratio of a firm.

III. REVIEW OF LITERATURE

Rao (2001), examined eighty-five assembling organizations in India during pre and post-progression system. He found that the obligation has been diminished in the capital structure of the organizations in the post-progression time of liberalization. The principle determinants that had contributed the capital structure before the advancement time frame were chance, resource type and benefit though productivity, development and resource type were the fundamental determinants in the post-progression period for liberalization.

To examine the influence design in creating nations, a contextual analysis had been directed by Bhadudi (2002), for the Indian corporate segment. He conveyed an investigation for in excess of 350 organizations from 9 distinct parts. He read for the period 1989-90 to 1994-95. Based on his investigation he discovered, size of a firm, income from tasks, development rate and explicit item by industry are the principal supporters of wards the achievement of ideal capital structure decision.

An investigation of 17 enterprises with an example size of 210 organizations across India had been conveyed by Gupta (2004), for the time of 1992-2000. He utilized investigation of change and relapse for multiple regression models, to discover the variety in capital structure over the businesses. He announced a critical variety paying off debtors value for debt-equity across businesses. Assessment for tax shield and deterioration on resource were discovered huge and positive associated with obligation with debt-equity while the size of the firm was discovered irrelevant for leverage.

An explorative investigation of the capital structure of private parts Indian organizations had been led by Bhayani (2005). He played out this by examining 504 organizations list in stock trade from 1995 to 2003-04. The guessed on the basis of hypothesis development that the obligation extent in the capital structure of a firm (debt-equity proportion) relies on upon, size of the firm, degree of profitability and resource structure of a firm. He utilized multivariate relapse investigation to discover the critical components for assurance of capital structure. He reasoned that the firm that has contributed significant extent of its complete capital in fixed resources will, in general, have a higher debt extension of proportion in their capital structure i.e, they have higher obligation proportion than littler firms, which required less fixed resources. Besides as the capital utilized by the firm expands, the obligation capital additionally increments on the opposite as the benefit builds the organizations will, in general, utilize multivariate regression analysis in their capital structure. He likewise pushed that organizations follow an objective capital structure during the assessment time frame. These outcomes are in accordance with the hypothetical system accessible in the money related writing.

The connection between the financing choice of a firm and its money related financial performance had been analyzed by Madan(2007). He attempted to set up a debt-equity ratio proportion for the industry of hotel. For this propose, he investigated and analyzed the debt-equity ratio structure and financially execution of different lodgings in India and China. He likewise examines whether capital structure choices assumes a critical job in the general development of an organization. He discovered profit for value as the major dependable factor for capital structure.

An investigation had been done by Sinha and Ghosh (2008), he contemplated present-day capital structure speculations and attempted to build up the connection among leverage and different activity determinants with an explicit sign, reason, magnitude and qualities. The examination additionally attempted to see if the idea of determinants of capital structure for Indian firms is static or dynamic in nature. The result of the examination recommends that determinants of corporate capital structure change in sign and extent concerning time nature of the association and period of the lifecycle of the organization.

Anyway, benefit, substantial quality of advantages, development rate and size of a firm assumes a noteworthy job in the assurance of ideal capital structure.

An endeavor has been made by Xu (2009), to uncover the impact timing of promoting. He considered the Canadian company's capital structure, all together and contrasted and US firms, division shrewd. No proof was found in the examination which could show the effect of timing of market on capital structure. The outcome was comparable for Canadian just as of US firms. The impact of timing of advertising was brief for Canadian just as for US firms. It doesn't have any lasting effect on capital structure.

For Sri Lankan organizations, Pratheepkanth (2011) attempted to set up a connection between financial performance execution of an organization and its capital structure. For this examination, he had gathered the budgetary information of recorded organizations of Sri Lanka for a time of five years i.e, from 2005 to 2009. He found that there is a negative connection between budgetary execution pointers and capital structure of the firm. He additionally found that a large portion of the organizations in Sri Lanka utilized obligation capital in their capital structure that why the debt coverage ratio is the primary determinant for the capital structure of Sri Lankan organizations.

Size of an organization, substance of advantages, non-debt charge shield and development rate were found decidedly related with capital structure of organizations. Liquidity and business hazard were found adversely related with the capital structure of organizations, in the investigation directed by Amsaveni and Gomathi (2012), for understanding the capital structure elements for the chose organizations. The outcomes were incompletely in accordance with exchange off hypothesis and the hierarchy hypothesis of capital structure.

The exploration had been directed for sugar industry in India by Palvannan and Sekhar (2013). He attempted to discover the significant determinants of capital structure for sugar firms in India. The consequence of the examination uncovered that debt administration limit, business hazard, development, size and Non-debt tax shields were the huge determinant of the capital structure of sugar factories.

Handoo and Sharma (2014) Studied 870 privet and government segment recorded organizations to discover the most significant determinants of capital structure. The timeframe of the examination was from 2001 to 2010. He closed determinants, for example, development, size, cost of debt, tax rate, debt administration limit and productivity significantly affects influence for the picked Indian organizations.

Acar (2018), in his examination he attempted to distinguish the firm-explicit determinants of the capital structure for non-budgetary firms in Turkey. For this reason he took non-debt related from 2009 to 2016. Aftereffects of the examination show that liquidity, productivity, size, substantial quality and non-obligation charge shield are noteworthy while development and unpredictability are immaterial determinants of the capital structure.

Duka (2019) attempted to discover the impact of determinants on financial influence in the Indian Steel industry. The fundamental target of this examination was to research the present capital structure of Indian steel industry from years 2010 until 2017 and to perceive how the chose determinants corresponded with financial influence. It was discovered that seven determinants specifically gainfulness, non-debt charge shield, liquidity, resource structure, development openings size and hazard were discovered corresponded. Benefit and liquidity saw as decidedly related with debt proportion, though resource structure saw as adversely associated with debt proportion.

IV. HYPOTHESIS OF THE STUDY

H0: There is no connection between Leverage ($LEV_{D/E}$) and the specific dependent variable.

H1: $LEV_{D/E}$ is emphatically related impacted by growth.

H2: $LEV_{D/E}$ is emphatically related impacted by the structure of the asset.

H3: $LEV_{D/E}$ is emphatically related impacted by debt service ratio.

H4: $LEV_{D/E}$ is emphatically related impacted by size.

H5: $LEV_{D/E}$ is emphatically related impacted by insolvency cost for bankruptcy.

H6: $LEV_{D/E}$ is emphatically related impacted by tangibility.

H7: $LEV_{D/E}$ is contrarily related affected by the risk of the business.

H8: $LEV_{D/E}$ is contrarily related affected by agency cost.

H9: $LEV_{D/E}$ is contrarily related affected by non-debt-tax.

H10: $LEV_{D/E}$ is contrarily related affected by non-obligation charge.

V. RESEARCH METHODOLOGY

On the basis of comprehensive literature review ten independent variables i.e, Growth, Asset structure, Profitability, Debt Service, Agency, Size of the company, Business Risk, Uniqueness, Bankruptcy and Tax- Shield has been taken and impact of these variables has been studied on dependent variables i.e., leverage ratio. The questionnaires are been distributed to various experts through both methods such as, paper and paperless. This study is been conducted during the span of 6 months from companies. Multiple regression models have been applied to study the relationship.

Main objective of the study is to find whether the selected independent variables have been instrumental to define the dependent variable. For this purpose we have applied t- test. In place of actual values of dependent and independent variables, logarithmic value has been considered.

A. The Multiple Regression Model

To analyzed the capital structure determinants, regression model is used

$$LEV_{D/E} = \alpha + \beta_1.G + \beta_2.A + \beta_3.P + \beta_4.D + \beta_5.Ag + \beta_6.S + \beta_7.R + \beta_8.U + \beta_9.B + \beta_{10}.T + \text{\euro}$$

Where, α is constant, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}$ are coefficient of variables and $\text{\euro}$ is residual term and

G =Growth, A = Asset structure, P = Profitability, D = Debt Service, Ag = Agency Cost, S = Size of the company, R = Business Risk, U = Uniqueness, B= Bankruptcy, T= Tax-Shield

Table 1:- Measurement of Dependent and Independent variable for the study

Variables	Indicators	Measurement
Dependent Variables		
Leverage	Debt –Equity Ratio	Long Term Debt ÷ Capital Employed
Independent Variables		
Determinants of Capital Structure	Growth	CAGR of Total Assets
	Asset Structure	Total Fixed Assets ÷ Total Assets
	Profitability	EBIT ÷ Total Assets
	Debt service capacity	Total Interest Paid ÷ EBIT
	Agency Cost	(Total Assets $_t$ - Total Assets $_{t-1}$) ÷Total Assets
	Size	Natural Log of Total Asset
	Business Risk	Standard Deviation of EBIT
	Uniqueness	Expenditure on Research and Development ÷ Total Sales
	Bankruptcy Cost	Standard Deviation of first difference in PBIT÷ Total Interest Expenses
	Non-Debt-Tax shield	Depreciation on Fixed Assets ÷ Total Assets

VI. ANALYSIS

'Table - 1', the model synopsis portrays that the variety in subordinate variable LEV D/E (Debt equity ratio) over the business is completely clarified by the autonomous factors. Checking of the linear relationship is a prime worry in relapse on regression model and 'R', the connection measurement shows that the factors are associated. In the table, 'R' measurement for different enterprises shows that the ward and the free factors have corresponded.

The second measurement in the table i.e., R square (Coefficient of assurance) clarifies the variety of ward factors. We have taken the instance of customer electronic gadgets to clarify this. R square is 0.980 which means that 98 per cent of the watched fluctuation in subordinate variable i.e., LEV D/E can be clarified by the free factors whereas staying 2 % difference in a subordinate variable is ascribed to another variable. The following measurement is balanced R square, which is better over R. It takes into thought real example size. Which is 0.880, states that 88 per cent of the watched fluctuation in subordinate variable i.e., LEV D/E can be clarified by the free factors, in the real example. In our investigation, the standard blunder is additionally short of what one for all the ventures which shows the variety in the information is less.

Durbin-Watson test has been applied to check the reliance between residuals of factors. The scope of the test measurement lies between 0-4, 0 showing the positive connection and 4 demonstrating negative connection. In our examination the estimation of Durbin-Watson test in close to 2 (2.237 in the event of shopper gadgets electronically), which demonstrates the almost nonpartisan connection between residuals. All the above measurements in our investigation show that LEV D/E (Debt-Equity proportion) can be anticipated with the assistance of the chose free factors taken in the model for buyer electronic gadget industry and staying all businesses can be comprehended with a similar relationship.

ANOVA table, Table-2, the summery portrays how well variety in subordinate variable for example LEV D/E (Debt-Equity proportion) is considered by the anticipated model. For purchaser hardware the hugeness is coming to 0.047 which is under .05 (5%). This means the invalid speculation is dismissed. This basically implies that the reliant variable for example LEV D/E has relationship with the autonomous factors taken in the anticipated model. Staying all enterprises can be comprehended with a similar relationship.

The sort and level of connection between the reliant and free factors are uncovered by the following table for example Table-3. The coefficients in the table empower us to comprehend that the connection between the LEV D/E and other chose subordinate factors at a 10% degree of essentialness. On the off chance that we see for customer gadgets industry the determinants (factors) in particular development, gainfulness and resource structure are discovered huge though the connection between LEV D/E and different factors in particular business, size, chance, organization cost, charge shield, obligation administration and uniqueness is just because of possibility. Accordingly out of the chose ten determinants (free factors), just three have demonstrated to be factually significant for deciding the D/E proportion for the business. Staying all businesses can be comprehended with a similar relationship.

VII. FINDINGS

Most definitely it is huge for the home machine appliances. At the point when it is estimated as debt to capital employed ratio proportion and critical for sugar, home apparatuses and textile industry, it is estimated as far as long term debt ratio proportion.

1. The profitability is a noteworthy determinant for 7 ventures out of 10 in particular chemical, iron and steel, electronic gadgets for consumers, textile, power and electricity, coordination's and transport and mining and minerals when it is estimated as debt to capital employed ratio proportion. It is noteworthy for 4 businesses in the particular chemical, mining and minerals, customer gadgets and coordination's and transport when the capital structure is estimated as total debt ratio. Productivity on profitability is again huge for 4 businesses in particular home apparatuses, material, coordination's and transport and mining and minerals when is estimated as long term debt ratio. So according to our discoveries, productivity is a significant determinant of capital structure as it impacts practically all the chose ventures in both of the structures.

The benefit structure is noteworthy determinant for 5 enterprises to be specific, cement, chemical, sugar, shopper electronic gadgets and material industry when it is estimated as debt to capital employed ratio. It is noteworthy for chemical and sugar enterprises when capital structure is estimated as the total debt ratio. Huge for two enterprises to be specific home apparatuses and sugar industry is estimated as long term debt ratio. So we can reason that advantage structure is a significant determinant of capital structure for assembling and agro-based industry and it isn't huge for the administrative manufacturing industry in India.

3. The business chance is a critical determinant for 3 ventures specifically cement chemical and iron and steel industry when it is estimated as debt to capital employed proportion. It is critical for cement, chemical and home machines enterprises when it is estimated as long term debt proportion. So we can reason that the business chance is a huge determinant of capital structure for assembling industry in India.

4. The debt service limit is a critical determinant for 2 ventures to be specific sugar and mining and minerals when it is estimated as debt to capital employed ratio. It is noteworthy for iron and steel and consumer electronics ventures when it is estimated as long term debt ratio. It is huge for iron and steel, home machines and mining and minerals when it is estimated regarding long term debt ratio.

5. The office cost is noteworthy for mining and minerals industry when it is estimated as debt to capital employed or long term debt ratio whereas it is critical for iron and steel industry when it is estimated regarding complete debt ratio. So we infer that organization cost is definitely not a conspicuous determinant of capital structure.

6. The insolvency cost is critical just for sugar and home apparatus enterprises, when it is estimated as absolute debt and long term debt ratio separately. So again we infer that insolvency cost is anything but an unmistakable determinant of capital structure, according to our investigation.

7. The development opportunity is huge for five businesses to be specific concoction, iron and steel, home machines, purchaser gadgets and sugar industry, when it is estimated as debt to capital employed ratio. In this manner, the development chance of a firm is again a significant determinant of capital structure particularly, for assembling industry.

8. The tax shield is noteworthy for sugar and force and power industry when it is estimated as debt to capital employed ratio. It is noteworthy for material and coordination's and transport enterprises when it is estimated regarding complete debt ratio and critical for strategic and transport industry when it is estimated as long term debt ratio. So we reason that the duty shield is a moderate determinant of capital structure particularly for agro-based and administration industry.

9. The uniqueness which is a proportion of cost on innovative work is a critical determinant of capital structure for home machines industry just, according to the outcomes.

VIII. CONCLUSION

With the assistance of this examination, an endeavored has been made to investigate the significant determinants of capital structure for chosen listed organizations during the time of 2008 to 2018. $LEV_{D/E}$ (influence) has been taken as a clarified variable, which is estimated as the debt ratio proportion for the chose recorded organizations. Profitability, risk in the business, growth and development, tax shield, size, uniqueness, asset structure, debt service administration, bankruptcy and office cost has been taken as informative factors. The chronological empirical examination of the investigation shows development opportunity, productivity with profitability and size of the firm are the most significant determinants of capital structure and has a positive relationship with influence on leverage. Then again tax shield, bankruptcy proportion, uniqueness and organization cost have a negative relationship.

Consequences of the investigation are steady with the built-up speculations of capital structure. The productivity of profitability of the organization and size of the organization has appositive relationship with leverage; the outcome is in accordance with the hierarchy hypothesis. So also the negative connection between asset structure and influence on leverage is in accordance with the exchange off hypothesis. The observational discovering illuminates the importance level of determinants for the chose Indian organizations, which expresses that growth and development opportunity, size and profitability are the most noteworthy to decide the capital structure of an organization whereas uniqueness, tax shield, asset structure, debt service administration, office cost, risk of the business, bankruptcy not all that huge in the Indian setting. The examination has wide appropriateness as it tosses the light upon the conduct of influence with the changing financial proportions of the organization. The financial managers of an organization must investigation the connection between different ratio proportions before settling on significant choices relating to the leverage of an organization.

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ANNEXURE-1

Predictors (Constant), Uniqueness, Debt Service, Profitability, Tax Shield, Assets Structure, Bankruptcy, Growth, Agency Cost,

a. Business Risk, Size. b. Dependent Variable: $LEV_{D/E}$

Table: 2: Model summery table for multiple regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Cement	0.688	0.473	0.43	0.1478	2.467
Chemical	0.954	0.911	0.847	0.9654	2.1728
Iron & Steel	0.909	0.827	0.711	0.77408	1.273
Home Appliances	0.872	0.76	0.741	0.94678	2.241
Consumer Electronics	0.99	0.98	0.88	0.25609	2.237
Sugar	0.718	0.516	0.364	1.01328	2.08
Textile	0.968	0.937	0.864	0.91467	1.799
Power & Electricity	0.686	0.471	0.178	0.9848	1.9682
Logistics &Transports	0.943	0.89	0.616	0.9676	2.025
Minerals &Mining	0.981	0.964	0.948	0.6289	1.8826

Table: 3: ANOVA Table for regression of $LEV_{D/E}$ ratio

| Industries	F	Sig.
Cement	4.6002	.028
Chemical	14.470	.003
Iron & Steel	5.921	.001
Home Appliances	.190	.034
Consumer Electronics	23.7079	.047
Sugar	3.408	.004[a]
Textile	1.90	.008
Power &Electricity	2.383	.050
Logistics &Transports	1.405	.048
Minerals & Mining	3.738	.038

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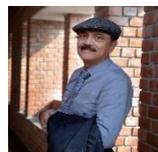
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