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An Empirical Investigation into the Determinants of Capital Structure of Hindustan Newsprint Limited

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Abstract:

The financing decision of the firm i.e. deciding of the proportions of debt and equity is one of the basic decisions oriented to the achievement of the maximization of the shareholders wealth. And therefore, the corporate are forced to have a clear vision on whether to go for equity or debt. Even if the firm decides to choose debt form of financing, they need to have a clear vision on the factors that contribute to the choice of debt and how to go about the forms of debt. Hence, determination of optimum debt level and its impact on the firms overall capital structure is regarded as an integral part of the financial decisions. Against this backdrop, the study of the determinants of capital structure of the Indian firms assumes significance. Thus, in this study, capital structure mix and its determinants are analyzed by using multiple linear regression models to find the relationship among the determinants of capital structure of Hindustan Newsprint Limited, one of the leading public sector paper companies in India. The overall analysis of determinants of capital structure reveals that corporate size, growth rate, Debt-service capacity and non-debt tax shields had a positive and statistically significant relationship with the capital structure of the Hindustan Newsprint Limited during the study period. Among the selected variables asset tangibility, profitability, liquidity and business risk found negative relationship with the capital structure decisions of majority of the selected companies during the period under investigation.

Keywords: *Capital Structure, Asset tangibility, Size, Growth Rate, Profitability, Liquidity, Business Risk, Debt – Service Capacity and Non-Debt Tax Shields.*

1. Introduction

Financial management of any corporate sector revolves around three major decisions, viz., financial decisions, investment decisions and dividend decisions. Financial decisions are concerned with the sources of finance, i.e. from where finances should be raised. There are basically two sources of finance i.e. short-term and long-term. Short-term sources of finance generally include short-term loan, bills payable, bank overdraft, cash credit and advances, creditors, etc. The long-term sources of finance of the company are also called permanent sources of finance. The capital structure of a company is determined by the long-term sources of finance. Pandey (2005, p.5) stated that the term capital structure is used to represent the proportionate relationship between debt and equity. A business enterprise generally procures its permanent capital in the form of long-term debt, preference shares, ordinary shares and reserves and surpluses. These are individual components, which when taken together, would constitute a company's capital structure. Thus the aim of capital structure management is the profit maximization or wealth maximization ensuring minimum cost of capital and maximum rate of return to the common shareholders. Chakraborty (1981, p.111) stated that a judicious mix of debt and equity securities would maximize the value of equity. The financial manager of corporate has to plan an optimum capital structure for the company in such a way that it gives the maximum benefits and thus maximizes the wealth of shareholders.

Capital structure is the composition of debt and equity securities that are used to finance company's assets. Both debt and equity securities are used by most of the companies to raise funds. Having determined its investment policy, a company should plan the sources of finance and their mix. Companies which do not formally plan their capital structures are likely to have uneconomical and imbalanced capital structures and could face unforgivable difficulties in raising capital on favourable terms in the long-run. Also inappropriate mix of sources of finance can render the operations of the companies inflexible. The composition of capital

structure is governed by a number of factors and no uniform standard can be prescribed for all the enterprises. Sectors of industry or trade to which a particular enterprise belongs can, however, provide a broad pattern of composition. For instance, a public utility concern, such as an electricity supply company can absorb a greater proportion of borrowed funds than an enterprise in a more competitive sector of industry due to more stability in earnings in the case of former than the latter. Within these broad parameters, each enterprise will have to plan its own capital structure keeping in view both its short-term requirements and long-term expansion programmes.

2. Statement of the Problem

The financing decision of the firm i.e., deciding of the proportions of debt and equity is one of the basic decisions oriented to the achievement of the maximization of the shareholders wealth. And therefore, the corporate are forced to have clear vision on whether to go for equity or debt. Even if the firm decides to choose debt form of financing, they need to have a clear vision on the factors that contribute to the choice of debt and how to go about the forms of debt. Hence, determination of optimum debt level and its impact on the firms overall capital structure is regarded as an integral part of the financial decisions. The financial decision is not only confined to fund rising operations but extends beyond to it, to cover utilization of funds and monitoring its uses. India is the second fastest growing economy in the world at present. This is one of the important emerging economies in the world in terms of foreign capital inflow. In order to make a mark in the global arena India has to make large investment in different sectors and its corporate sector has to gear itself up for global competition. For this purpose, effective sourcing of funds is very crucial. Against this backdrop, the study of the determinants of capital structure of the Indian firms assumes significance. Thus, in this part, capital structure mix and its determinants are analyzed by using multiple linear regression models to find the relationship among the determinants of capital structure of the selected company.

3. Selection of sample

Keeping in view of the scope of the study, it is decided to select Hindustan Newsprint Limited which is one of the large scale public sector paper companies under Indian paper industry having highest market share of 10.49 per cent. The period 1997-98 to 2009-10 is selected for this study of Indian paper industry. This 13 years period is chosen in order to have a fairly, reasonably reliable and up -to-date financial data would be available.

4. Sources of data

The data required for the study have been obtained from secondary sources. The study is mainly based on secondary data. The major sources of data analysed and interpreted in this study related to all those companies selected is collected from “PROWESS” database, which is the most reliable and the empowered corporate database of Centre for Monitoring Indian Economy (CMIE). Besides Prowess database, relevant secondary data have also been collected from BSE Stock exchange official directory, CMIE publications, published annual reports of the companies, annual survey of industries, business news papers, Reports on Currency and Finance, Centre for Industrial and Economic Research (CIER’s) Industrial Data Book, publications of the Indian Pulp and Paper Technical Association (IPPTA), Libraries of various research institutions, through internet and from official websites of the selected companies. Various journals and periodicals on finance and industry have also been reviewed.

5. Analysis of Determinants of Capital Structure

There are three major capital structure theories namely, Trade-off Theory [Kraus, A., Litzenberger, R. (1973), Kim (1978)], Pecking-Order Theory [Myers (1984) and Myers and Majluf (1984)], Agency Cost Theory [Jensen and Meckling (1976)]. These theories examined the determinants of capital structure from different aspects and concluded different outcomes as far as the choice of the determination of the level of financial leverage is concerned. In the meanwhile, empirical evidence has sometimes proven to be inconsistent to a particular theory that they have tested. The most striking example is that of the empirical testing of pecking order theory, where various researchers have concluded in different, inconsistent conclusions [Harris and Raviv (1991)]. Thus, researchers have been trying to test different determinants of capital structure through empirical studies. This study is one more attempt in this direction to focus attention on the role of these variables such as asset tangibility, corporate size, growth rate, profitability, liquidity, business risk, debt- service capacity and non-debt tax shields as the major variables that influence the capital structure of the selected large scale Indian paper companies. The variables which were selected in this regard are defined below:

5.1. Leverage

In this study, leverage was taken as the dependent variable. Leverage is defined by different authors in different ways. According to Rajan and Zingales (1995), the definition of leverage depends on the objective of the analysis. Accordingly, there exist different definitions of leverage such as debt equity ratio, debt-to-capitalization, total liabilities-to-total assets, and debt-to-total assets. For analyzing the composition of capital structure, normally the debt equity ratio is employed as a principal tool for financial analysis. The term ‘debt’ signifies the total indebtedness of the company. The total debt includes both short-term and long-term interest bearing securities. Equity refers to own funds as represented by net worth. The fundamental object of calculating leverage is to measure the relative interest of owners and creditors in the company from the creditor’s point of view. It covers the range and measures the extent to which their interest is covered by owned funds. The higher the coverage of the owned funds, the lower will be the leverage and the greater will be the protection to the creditors against possible losses in the event of liquidation. It is defined as the ratio of total debt to net worth.

Several independent variables are taken to assess the determinants of capital structure and their influence in deciding the capital structure pattern. The explanatory variables used in this study are: asset tangibility, corporate size, growth rate, profitability, liquidity, business risk, debt-service capacity and non-debt tax shields. These variables are selected based on the theoretical grounds and also the results of existing studies claim that they are the important determinants of capital structure.

5.2. Assets Tangibility [TAN]

The tangibility of assets represents the effect of the collateral value of assets on the firm's gearing level (Rajan and Zingales, 1995). The empirical results on the impact of tangibility on the firms' capital structure are mixed. Some support a positive relationship, others show a negative relationship and some indeterminate. The studies that support a positive relationship argued that tangibility diminishes the information asymmetry between inside managers and outside bond holders. The positive association between tangibility of assets and leverages has been studied by Wald (1999), Booth et al. (2001), Chen (2004), Mitali Sen (2005), Santi Gopal Maji (2007), Attaullah Shah (2007) and Bapita Agarwal (2009).

In general the best financing strategy is to match debt maturities with assets maturities. It would, therefore, be expected to find long-term debt associated with fixed assets and short-term debt with current assets. Companies may also find it advantageous to use secured debt and, hence, companies with more fixed assets may be expected to issue more debt to take advantage of cheaper source. Therefore, companies with high proportion of fixed assets tend to use more long-term debt. As observed above, the higher the proportion of fixed assets, the higher would be a company's long-term debt ratio. It is, therefore, included as a measure of assets composition in this model. This is taken as the ratio of fixed assets to total assets.

5.3. Corporate Size [CS]

The rationale for the belief that the company's size is influenced with respect to capital structure lies in the evidence that larger companies may be more diversified, less risky, enjoy easier access to the capital market, received higher rating for their debt issue, pay lower interest rates on borrowed funds and less prone to bankruptcy. These arguments suggest that larger companies should be highly leveraged.

A small company may face great difficulties in raising long-term funds. If it is able to obtain some long-term funds, it will be available at a higher rate of interest and also in inconvenient terms. Small companies, therefore, depend on share capital and retained earnings for their long-term funds. But the small sized companies are reluctant to issue new equity share capital because of risk of dilution of control. Further, very high cost of outside equity funds and the various psychological factors associated to take new equity is a bane for the small sized companies. The small companies, therefore, sometimes limit the growth of their business to what can easily be financed by retaining the earnings and to seek large short-term loans, besides taking the advantages of whatever trade credit is available. In this study, corporate size is defined as the natural logarithm of sale of the firms.

5.4. Growth Rate [GR]

Empirically, there is much controversy about the relationship between growth rate and the level of leverage. Pecking order hypothesis suggests a negative relationship between leverage and growth opportunity. This is consistent with the increased operating efficiency of the firm. They argue that firm's that are better managed rely less on outside financing. Securities are sold when growth is expected at a rate more rapid than can be financed by retained earnings. In general, fast growing companies with great need for funds are more likely to use debt. Management hopes to profit from trading on equity and to be able to retire such obligations from the profit of expansion. If such expectations are realized, the existing equity shareholders gain from the expanded earning power that has been shared with new shareholders. But if earnings do not materialize, the company risks a cash drain from paying interest and principal that such prior securities require. Also, in view of perceived high cost of floating new equity and greater desire for capital structure flexibility, the only practical alternative is to fund expansion through debt which can be acquired and liquidated more easily. Thus, growth rate is defined as the rate of growth of the total assets.

5.5. Profitability [PR]

Several studies found return on investment or earning rate to be negatively correlated with debt ratio. There are several possible reasons for this. First, high profitability will automatically tend to reduce the debt funds, during periods of increasing profits to redeem their debentures and convert their preference shares and debentures into equity shares. Finally, equity issue tends to be made following periods of abnormally good performance. The most commonly used measure of profitability is the return on investment. Thus, in this study return on investment was used as the measure of profitability. It is defined as earnings before interest and taxes divided by total assets.

5.6. Liquidity [LI]

Liquidity ratios are mostly used to judge a firm's ability to meet its short-term obligations. They provide information about the ability of the firm to remain solvent in the event of adversities. The liquidity ratio may have conflicting effects on the capital structure decisions. First, the firms with higher liquidity ratios might have relatively higher debt ratios. This is due to greater ability to meet short-term obligations. From this view point, one should expect a positive relationship between the firms' liquidity positions and its debt ratio. However, firms with greater liquid assets may use their assets to finance their investments. Therefore, the firm's liquidity position should exert a negative impact on its leverage ratio. Ozkan (2001) reported a negative impact of liquidity on firms borrowing decisions. Liquidity has been arrived at by scaling current assets by current liabilities.

5.7. Business Risk [BR]

Business risk is defined as the uncertainty inherent in the projection of future operating income or EBIT is one of the most important determinants of a firm's capital structure. Business risk varies not only from one industry to another but also among firms in the same industry. Further, business risk can change over time. Business risk depends on a number of factors, the more important of which include the demand variability, sales price variability, input price variability, ability to adjust output prices for changes in input prices and the extent of fixed cost. e.g., administrative salaries, depreciation, insurance, lump sum spent on intermittent advertisement programs, property tax, rent etc., The companies in which demand of product, selling price and input price variability is highly uncertain are exposed to a high degree of business risk. The companies having greater ability to adjust output prices when their input prices fluctuate would have lower business risk. The company is exposed to a relatively high degree of business risk, if it has more fixed cost.

Hence, unstable earnings, whatever their cause, may be, make the use of debt dangerous and less attractive to investors. Companies subject to this risk should avoid debts; keep preference share capital at a minimum and favour equity share capital and retained earnings as sources of long-term funds. As a result, one may anticipate that the business risk has inverse bearing on the ability to raise debt funds in company's capital structure. Hence, business risk is defined as the percentage change in EBIT divided by percentage change in sales.

5.8. Debt Service Capacity [DSC]

The measure of debt service capacity is the interest coverage ratio. This ratio shows the relationship between a committed payment and the source for that payment. A high interest coverage ratio means that the firm can meet its interest burden even if earnings before interest and taxes (EBIT) suffer a considerable decline. A low interest coverage ratio may result in financial embarrassment when EBIT decline. A higher ratio is desirable; but too high ratio indicates that the firm is very conservative in using debt and that is not using credit to the best advantage of shareholders. A lower ratio indicates excessive use of debt or inefficient operations. Thus, the higher the capacity of the firm to serve the debt, the debt ratio of the firm is likely to be higher. It is defined as the earnings before interest and taxes divided by interest.

5.9. Non-Debt Tax Shields [NDTS]

The impact of taxes on the financing choice of the firm has been extensively researched in the corporate finance literature. De Angelo and Masulis proposed that firms may have deductibles other than debt to reduce their corporate tax burden and therefore, debt and non-debt tax shields could act as substitutes. The non-debt related tax shields such as depreciation, investment tax credits etc., have been taken as a variable to study the impact of tax on debt policy. They argued that the existence of large tax shields relative to their income would induce the firm's to use less borrowed capital. NDTS is defined as the proportion of depreciation to total assets.

6. Specification of the Model

Many factors influence the capital structure of companies. This study has been conducted by choosing eight independent variables and one dependent variable to analyse the determinants of the selected large scale paper companies in India. Multiple regression models have been used to test the theoretical relationship between the financial leverage and determinants of capital structure. To perform multiple regressions, the study computes the values of all the independent variables and dependent variable taking the data of selected companies in the paper industry for the individual years, viz., from 1997 to 2010.

$$Y = \alpha + \beta_1 \text{TAN} + \beta_2 \text{CS} + \beta_3 \text{GR} + \beta_4 \text{PR} + \beta_5 \text{LI} + \beta_6 \text{BR} + \beta_7 \text{DSC} + \beta_8 \text{NDTS} + e_{ij}$$

Where,

- TAN - Asset tangibility measures the ratio of fixed assets to total assets
- CS - Corporate size is natural logarithm of sale of the firms (i) in the year (t)
- GR - Growth rate measures rate of growth of the total assets.
- PR - Profitability measures the proportion of EBIT to total assets
- LI - Liquidity is the proportion between current assets and current liabilities
- BR - Business risk measures the changes in EBIT due to changes in sales
- DSC - Debt-service capacity measures the proportion of EBIT to interest
- NDTS - Non-debt Tax Shields is the proportion of depreciation to total asstes
- α - Constant term for the firm (i) in the year (t)
- β 's - Regression co-efficient of the independent variables and
- e_{ij} - Error term

7. Statement of Hypotheses

This study has tested the following hypotheses in relation to the defined variables of capital structure of Indian large scale paper companies.

- A firm with higher percentage of fixed assets will have lower debt ratio.
- Corporate size negatively related to capital structure.
- Firm's with higher growth rate will have lower leverage.
- Profitability negatively related to capital structure.
- Liquidity is negatively related to capital structure.
- Business risk is negatively related to leverage.
- Debt service capacity is a negatively related to capital structure
- Non-Debt tax shields are negatively related to capital structure.

Table 1 elucidates the details of independent variables, definitions, theoretical predicted sign and related empirical results of past studies conducted by various researchers.

8. Empirical Analysis

Table 2 gives an account of the regression details of each of the independent variables with the dependent variable for Hindustan News Print Limited during the study period. Analysis of the regression results of Hindustan Newsprint Limited reveals that the R^2 (0.99), adjusted R^2 (0.93) and the F value (63.48) was highly significant, which implies that the independent variables collectively explains around 99 per cent of the total variation of the dependent variable. It is evident from the table that the co-efficient of the variables corporate size, growth rate, debt service capacity and non-debt tax shields are positive and found to be significant in explaining capital structure. However, the other variables like, asset tangibility, profitability, liquidity and business risk is found to be negative, which proves an inverse relationship with capital structure of Hindustan Newsprint Limited during the study period.

The result of the analysis reports that all the variables except profitability and debt-service capacity are found to be statically significant in explaining the capital structure pattern of Hindustan Newsprint Limited. It is also evident from the Table 2 that liquidity is stronger determinant of capital structure followed by business risk, non- debt tax shields, growth rate, corporate size and asset tangibility. As expected asset tangibility, corporate size, growth rate, liquidity, business risk and non-debt tax shields did support the hypothesis with the expected sign while, profitability and debt service capacity variables did not support the hypothesis rather these appear with opposite sign. The overall explanatory power of the model has been good and these results are further supported by the F value (63.48), which is found to be highly significant at one per cent level. The statistical value of DW test (1.74) indicates the non-existence of an autocorrelation among these variables. Thus, it is concluded that asset tangibility, corporate size, growth rate, liquidity business risk and non-debt tax shields are proved to be the significant determinants of capital structure of Hindustan Newsprint Limited.

9. Conclusion

The overall analysis of determinants of capital structure reveals that corporate size, growth rate, Debt-service capacity and non-debt tax shields had a positive and statistically significant relationship with the capital structure of the Hindustan Newsprint Limited during the study period. Among the selected variables asset tangibility, profitability, liquidity and business risk found negative relationship with the capital structure decisions of majority of the selected companies during the period under investigation.

10. References

1. Krus, A., and Litzenberger, (1983). "A State Performance Model of Optimal Financial Leverage", the Journal of Finance, .28: 911-921.
2. Kim (1984). "On the Existence of an Optimal Capital Structure: Theory and Evidence", Journal of Finance, 39: .857-878.
3. Myers and Majluf (1984). "Determinants of Capital Structure of Indian Companies", Journal of Economic Perspective, 5: 34-39.
4. Jenson and Mackling (1976). "Theory of the Firm-Managerial Behaviour, Agency Costs and Ownership Structure", Journal of Financial Economics, 3: 305-360.
5. Harris and Raviv (1991). "The Theory of Capital Structure", the Journal of Finance, XLVI (1): 297-355.
6. Rajan, R.G. and Zingles, I. (1996). "What do we know about Capital Structure? Some Evidence from International Data", Journal of Finance, 50:1421-1460.
7. Wald, J.K (1999). "How firm Characteristics affect Capital Structure: An International Comparison", Journal of Financial Research, 22: 161-187.
8. Booth, Aivazian, Demirguc-Kunt and Maksimovie (2001). "Capital Structures in Developing Countries", Journal of Finance, 56 (1): 87-130.
9. Chen, J.J (2004). "Determinants of Capital Structure of Chinese; Listed Companies", Journal of Business Research, 57: 1341-1351.

10. Mitali Sen (2005). "An empirical Study of the Factors Influencing the Capital Structure of Indian Commercial Banks", The ICFAI Journal of Finance, 11(5): 53-59.
11. Santi Gopal Maji and Santanu Kumar Ghosh (2007). "Determinants of Capital Structure of Indian Companies-Pecking order theory or Trade-off Theory", The ICFAI Journal of Applied Finance, 13(1): 5-28.
12. Attaullah Shah and Safiullah Khan (2007). "Determinants of Capital Structure: Evidence from Pakistani Panel Data", International Review of Business Research Papers, 3(4): 265-282.
13. Bapita Agarwal (2004). "Capital Structure of India in Private Corporate Sector- An Empirical Analysis", The Journal of Finance, 3 (3).
14. Ozkan, A. (2000). "Determinants of Capital Structure and Adjustment to Long Run Target: Evidence from UK Company Panel Data", Unpublished Manuscript, Duzharn University.
15. De Anglo and Maulis R.W (1980). "Optimal Capital Structure under Corporate and Personal Taxation", Journal of Financial Economics, 8: 3-9.
16. Ramesh, K., Singla (1996). "Corporate Capital Structure - Planning and Determinants", New Delhi: Deep and Deep Publications.
17. Sudhansu and Omkarnat (2005). "Capital Structure of Indian Private Corporate Sector- an Empirical Analysis", The ICFAI Journal of Applied Finance, 11(10) 40-45.
18. Vunyale Narender and Abhinav Sharma (2006). "Determinants of Capital Structure in Public Enterprises", The ICFAI Journal of Applied Finance, 12(7).
19. Boopen Seetanah, Kesseven Padachi and Rishi Ronowah (2007). "Determinants of Capital Structure: Evidence from a Small Island Developing State", The ICFAI Journal of Applied Finance, 13(5): 5-28.
20. Santi Gopal Maji and Santanu Kumar Ghosh (2007). "Determinants of Capital Structure of Indian Companies-Pecking Order theory or Trade-off theory", The ICFAI Journal of Applied Finance, 13(1): 5-28.
21. Ramkumar, S. Kakani and Reddy, V.N. (1996). "Econometric Analysis of the Capital Structure Determinants", Decision, 23 (1-4):73-98.
22. Bidyut Jyoti Bhattacharjee (2010). "An Empirical Investigation into the Determinants of Capital Structure of Indian Industries", The IASMS Journal of Business Spectrum, II (2): 1-19.

Annexure

Variables	Definitions	Theoretical Predicted Signs	Related Empirical Literature
Tangibility of Assets (TAN)	Fixed Assets / Total Assets	(+)	Rajan and Zingales (1995), Ramesh K.Singla (1996), Wald (1999), Booth et al. (2001), Chen (2004), Sudhansu et al. (2005), Mitali Sen (2005), Vinayale Narender (2006), Boopen et al. (2007), Santi Gopal majit (2007), Attaullah shah (2007).
Corporate Size (CS)	Natural Log of Sales	(+)	Ramesh K.Singla (1996), Sudhansu et al. (2005), Vanyale Narender and Abhinav Sharma (2006), Boopen et al. (2007), Santi Gopal Maji (2007).
		(-)	Rajan and Zingales (1995), Ramkumar et.al. (1996), Narayan Rao (2001), Attaullah Shah (2007).
Growth Rate (GR)	Growth of Total Assets	(+)	Ramesh K.Singla (1996), Ramkumar et al. (1996), Bidyut Jyoti Bhattacharjee (2010).
		(-)	Sudhansu (2005), Vunyale Narender (2006), Attaullah Shah and Safiullah Khan (2007).
Profitability (PR)	Return on Investment Earnings Before	(+)	Sudhansu Mohan et al. (2005), Ramesh K.Singla (2006) Attaullah Shah (2007)
	Interest and Tax/Total Asset	(-)	Ramkumar et al.(1996), Vunyale Narender and Abinav Sharma (2006), Boopen et al. (2007), Bidyut Jyoti Bhattacharjee (2010).

Liquidity (LI)	Current Asset/ Current Liability	(+)	Vunyale Narender and Abinav Sharma (2006), Bidyut Jyote Bhattacharjee (2010).
		(-)	Rajan And Zingales (1995), Wald (1999), Ozkan (2001), Boopan seetanah et al. (2007).
Business Risk (BR)	Percentage Change in Earnings Before Interest and Tax / Percentage change in Sales	(+)	Ramesh K. Singla (1996), Boopan Seetanah et al. (2007).
		(-)	Booth et al. (2001), Wald (1999), Chen (2004).
Debt- Service Capacity (DSC)	Earnings Before Interest and Tax/ Interest	(+)	Ramesh K. Singla (1996).
		(-)	Ramesh K.Singla (1996).
Non-debt Tax shield (NDTS)	Depreciation / Total Assets	(+)	Ramkumar et al. (1996), Sudhansu et al. (2005), Vunyale Narender and Abinav Sharma (2006).
		(-)	Wald (1999), Boopen et al. (2007), Attullah Shah and Safiullah khan (2007).

Table 1: Independent variables and definitions

(Dependent variable: Debt equity ratio)

$$[DE=\alpha+\beta_1(TAN)+\beta_2(CS)+\beta_3(GR)+\beta_4(PR)+\beta_5(LI)+\beta_6(BR)+\beta_7(DSC)+\beta_8(NTDS)+ e]$$

Independent variable	Beta co-efficient	t -value	Result
Constant	0.13		
Asset Tangibility (TAN)	-0.14	1.46***	Significant
Corporate Size (CS)	0.58	1.73***	Significant
Growth Rate (GR)	0.21	2.20**	Significant
Profitability (PR)	-0.04	0.25	Insignificant
Liquidity (LI)	-0.93	13.11*	Significant
Business Risk (BR)	-0.21	2.90*	Significant
Debt- Service capacity (DSC)	0.02	0.14	Insignificant
Non- Debt Tax Shields (NDTS)	0.33	2.76*	Significant
R² = 0.99			
Adj. R² = 0.93			
F = 63.48			
P = 0.001			
DW = 1.74			

Table 2: Determinants of capital structure of Hindustan Newsprint Limited - Regression results

Abbreviation:

- TAN - Ratio of fixed assets to total assets
- CS - Natural logarithm of sales;
- GR - Rate of growth of the total assets.
- PR - Proportion of EBIT to total assets
- LI - Ratio of current assets to current liabilities

- BR - Changes in EBIT due to changes in sales
- DSC - Proportion of EBIT to interest
- NDTS -Proportion of depreciation to total asstes
- β 's - Regression co-efficient
- * - Significant at 0.01 level ; ** - Significant at 0.05 level ;
- *** - Significant at 0.10 level
- D.W- Durbin Watson Statistics

Source: Computed