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Key Factors Influencing Capital Structure Decision of Indian Computer Software Industry

KEYWORDS: Capital Structure, Computer Software Industry, Pecking Order Theory.

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ABSTRACT *This study aims to determine the influence of various firm level characteristics such as, profitability, size, growth opportunities, asset tangibility, non-debt tax shield, risk (volatility) and liquidity on capital structure. The data was taken from secondary data source named as "Industry; financial aggregates and ratios" (PROWS) of center for monitoring Indian economy (CMIE) covering the period from 1997-98 to 2010-11 (14 years). The regression results show that profitability, size, growth and liquidity are positively and insignificantly related to leverage. Also asset tangibility, risk and non-debt tax shield has a negative relationship with leverage, which is insignificant. This result generally consisting with pecking order theory (POT) predictions as well as previous research papers.*

The capital structure decision is at the center of many other decisions in the area of corporate finance. One of the many objectives of a corporate financial manager is to ensure low cost of capital and thus maximize the wealth of shareholders. Hence, capital structure is one of the effective tools of management to manage the cost of capital. An optimal capital structure is reached at a point where the cost of the capital is minimal (Gitman 2009).

Capital structure is one of the most continuously explored subjects in finance. Numerous empirical works have been done after the MM works in 1958. The early studies were concentrated on MM Hypothesis. They supported the net operating income approach and rejected the traditional theory of capital structure. They contend in their first proposition that the market value of any firm is independent to its capital structure and is given by capitalizing its expected return at the rate appropriate to the risk class. This was theoretically very sound but was based on the assumptions of perfect capital market and no tax world. Which were not valid in reality? So this was corrected in 1963. In correction, they propounded the effect of tax on value and cost of the capital of the MM and contend that in the presence of corporate tax, the value of the firm varies with the variation of the use of the debt due to tax benefit on interest bill. Two sets of capital structure theories were developed during the latter half of the 1970s and first half of the 1980s. Ross developed one set of capital structure theories based on the asymmetric information in 1977, and Myers and Majluf developed the next set in 1984. The first set pleads that the choice of firm's capital structure signals to outside investors the information of insiders, and the second set contends that capital structure is designed to mitigate the inefficiency in the investment decision caused by the information asymmetry. In the course of the development of capital structure theory, Myers elaborated and brought out the pecking order theory in 1984 originally developed by Donaldson in 1961. According to this theory, management strongly favors internal generation as a source of new funds even to the exclusion of external sources except for occasional unavoidable bulge in the need for funds (Donaldson 1961). This theory explains, first, management prefers the internal equity financing, and then debt financing and finally external equity financing.

This study attempted to reduce the gap by analyzing a capital structure question in Indian Industries context specifically Computer Software Industry. If we look at the Indian private corporate sector, we can see that the relationship between a firm's financial leverage and its profitability, size, tangibility, growth, risk, non-debt tax shield and liquidity in Indian Computer Software industry.

Objective of the Paper:
The main objective of the present paper is to investigate empirically the impact of profitability, size, tangibility, growth, risk, non-debt tax shield and liquidity on leverage of Computer Software industry in India and testing Pecking order theory on the observed relationship order in to analyze their consistency.

More specifically the following are the objectives of the study:
(i) To find out the determinants of the financial leverage in Indian Computer Software industry.
(ii) To study relationship between leverage and its determinants.

Hypotheses:
The objective of the researcher in present study is to test pecking order theory that provides positive as well as negative relationship between leverage and different factors, so the following hypotheses have been developed according to the above said theory:

H_1: Profitability should have a negative impact on leverage.
H_2: Size should have a negative impact on leverage.
H_3: Tangibility should have a negative impact on leverage.
H_4: Growth should have positive impact on leverage.
H_5: Risk should have a negative impact on leverage.
H_6: Non-debt tax shield should have a negative impact on leverage.
H_7: Liquidity should have a negative impact on leverage

Methodology of the Study:
Source of Data:
The present study is based on secondary data collected from the corporate database (PROWS) of the Centre for Monitoring Indian Economy (CMIE) and then various issues of magazines and journals, working papers and newspapers were also accessed for the relevant.

Period of study:
To draw valid conclusions, a period of minimum ten is required for this type of studies. Hence, this study covers a period of 14 years from 1997-98 to 2010-2011.

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Statistical Tools:
An evaluation of factors determining capital structure of Indian Computer Software industry based on the following statistical tools was used: multiple regressions Analysis, "t" test, "f" test and Analysis of variance (ANOVA) and SSPS-20 software is used for the analysis.

Ordinary least square (OLS) Regression Model:
The following Regression model has been established:

LEV = β0 + β1 (PRO) + β2(SIZ) + β3(TANG) + β4(GRO) + β5(RISK) + β6(NDTS) +β7(LIQ) + ε

Where β0 = Constant's coefficient, β1- β7 = regression coefficients for independents variables

LEV = Leverage, PRO= Profitability, SIZ= Size, TANG= Tangibility, GRO= Growth,

RISK= Risk, NDTS= Non-debt tax shield, LIQ= Liquidity, ε= Error Term

Determinants of Variables' Explanation:
Debt-equity Ratio is used as dependent variable. The debt-equity ratio is computed as the ratio of long term debt and equity consist of share capital and reserves. It is calculated as: Leverage (LEV) = Long term debts / net worth.

Profitability is defined as earnings before interest, taxes and dividend and divided by book value of assets.

Firm size is measured by taking the natural logarithm of the total assets. The size of the firm can be calculated either by log of sale or by log of assets. The researcher in this study measured the firm's size by log of total assets.

Tangibility is measured as a ratio of net fixed assets divided by total assets.

Growth is measured as the change in total Sales between two consecutive years divided by previous year total Sales.

Business Risk is defined as Absolute variation in profitability.

Non-debt tax shield is defined as a ratio of total annual depreciation to total assets.

Liquidity is defined as current assets divided by current liabilities.

Data analysis and Interpretation

Table – 1: Model Summary of Computer Software industry in India

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.587	0.345	-0.420	0.08659

Data Source: Compiled from the Centre for Monitoring India Economy (January2005 and June 2012)

Table 2: ANOVA of Computer Software industry in India

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.024	7	0.003	0.451	0.839
	Residual	0.045	6	0.007		
	Total	0.069	13			

Source: Compiled from the CMIE Prowess Database

Table 3: Regression Coefficients of Computer Software industry in India

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
Beta		Std. Error	Beta			Lower Bound	Upper Bound	
1	(Constant)	0.062	2.943		0.021	0.984	-7.138	7.263
	PRO	2.174	1.795	0.955	1.211	0.272	-2.220	6.567
	SIZ	0.002	0.422	0.011	0.004	0.997	-1.032	1.035
	TANG	-2.187	2.094	-1.099	-1.044	0.337	-7.310	2.937
	GRO	0.047	0.173	0.150	0.272	0.795	-0.377	0.471
	RISK	-0.757	1.382	-0.291	-0.548	0.604	-4.138	2.624
	NDTS	-1.474	16.161	-0.141	-0.091	0.930	-41.018	38.071
	LIQ	0.042	0.164	0.354	0.258	0.805	-0.359	0.444

Source: Compiled from the CMIE Prowess Database

Estimated Ordinary least square (OLS) Regression Model:
LEV = 0.062 +0.955 (PRO) +0.011 (SIZ) -1.099 (TANG) +0.150 (GRO) -0.291 (RISK) -0.141 (NDTS) -0.354 (LIQ)

Analysis of regression results:
The overall regression analysis shown in table 1 and 2 indicates number of observation as 14 relating to the Computer Software industry in India. The overall statistical fitness of the regression model is indicated by Prob > F = 0.839 which means that the model is fit. The R^2indicate that 34.5 per cent variation in leverage is explained by profitability, size, tangibility, growth, risk, non-debt tax shield and liquidity, while the remaining 65.5 percent is explained by unobserved factors. The adjusted-R^2 is 142 percent lower than the $R^2$and is indicated as -42 percent.

Profitability:
The table 3 shows a positive relationship between profitability and leverage with the coefficient value as 0.955 insignificant with P-value as 0.272. It shows that a one unit reduce in profitability will increase the leverage by 0.955.The positive relationship between profitability and leverage rejects the first hypothesis and also consistent with the Pecking order theory, but it supports Trade-off theory, which states that there is a positive relationship between profitability and leverage. This finding is also consistent with the same findings by Bhat, Ramesh (1980), Mohan Sahoo and Omkarnath (2005), Bhattacharjee (2010), And Mohan Raj (2011). Positive relationship between profitability and leverage indicates that more profitable firms in Computer Software industry in India uses higher amount of debt.

Size of the firm:
The table- 3 also shows another positive relationship between firm's size and leverage with coefficient value as 0.011 insignificant with P-value as 0.997. It shows that a one unit decrease in firm's size will increase the leverage by 0.011. This positive relationship between both variables rejects the 2nd hypothesis and not consistent with pecking order theory. It is also consistent with the similar finding of the following researchers; Marsh (1982), Titman and Wessels (1988), Rajan and Zingales (1995), Kakani (1999), Ravinder Vinayek and

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Ravi Kumar Gupta (2002), Deesomsak et al (2004), Mohan Sahoo and Omkarnath (2005), Ravinder Vinayek and Anju Gupta (2010), Ali (2011) and Amsaveni and Gomathi (2012).

Tangibility:
Table- 3 indicates a negative relationship between firm's tangibility of fixed assets and leverage with coefficient value as -1.099 insignificant with P-value as 0.337. It shows that a one unit increase in tangibility of fixed assets will reduce the level of leverage by 1.099. This negative relationship between both variables accept the 3rd hypothesis and also consistent with pecking order theory. It is consistent with the same findings by Harris and Raviv (1991), Rajeswarao and Sadanandam (1995), Booth et al (2001), Manos, Green and Murinde (2001), Bhaduri and Sumitra N (2002), Mallikarjunappa and Carmeltia Goveas (2007) and Ravinder Vinayek and Anju Gupta (2010). It indicates that firms with more tangibility of fixed assets uses more leverage because fixed assets are used for providing collateral for paying back the long term loan safely.

Growth of the firm:
A positive relationship is observed between growth and leverage as indicated in table 3 with the coefficient value as 0.150 insignificant with P-value as 0.795. It accepts the 4th hypothesis as well as consistent with pecking order theory. This shows that a one unit decrease in growth will result in increase in leverage by 0.150. This relationship between both variable is consistent with the following researcher's findings; Gupta (1969), Toy et al (1974), Bhole (1980, 2000), Bhaduri, Sumitra (2000, 2002a), Bhole and Mahakud (2004), Mohan Sahoo and Omkarnath (2005), Nrender and Abhinav Sharma (2006), Mohan Raj (2011), Ali (2011), Amsaveni and Gomathi (2012) and Palvannan and Sekhar (2013). The reason of this relationship might to be that growing firms in Computer Software industry of India uses more amount of long-term debt than internal source of financing.

Risk (Volatility):
Table 3 shows a negative relationship between risk and leverage with coefficient value as -0.291 insignificant with P-value as 0.604. This indicates that a one unit increase in risk will also decrease leverage by 0.291. This negative relationship between both variables accepts the 5th hypothesis and also consistent with pecking order theory. The above relationship is consistent with the similar findings by Marsh (1982), Titman and Wessels (1988), Harris and Raviv (1991), Booth et al (2001), and Amsaveni and Gomathi (2012). This shows that firms are more likely to use internal source of financing rather than debt, because of the uncertainty about the future economic and financial performance of the firms.

Non-debt Tax shield:
The table 3 shows a negative relationship between non-debt tax shield and leverage with coefficient value as -0.141 insignificant with P-value as 0.930. This shows that one unit decrease in non-debt tax shield can cause increase in the level of leverage by 0.141. This accept the 6th hypothesis and also consistent with pecking order theory which explains the same a negative relationship between both of these variables. This finding is also consistent with the following researchers; Titman and Wessels (1988), Harris and Rave (1991), Kakani (1999), Inder Sekhar Yadav et al (2010), and Palvannan and Sekhar (2013). This relationship indicates that firms in Computer Software industry sector with low level tax shield can be deducted from the taxable income tend to use low debt than use internal source of financing.

Liquidity:
The table-3 shows a positive relationship between liquidity and leverage with coefficient value as 0.354 insignificant with P-value as 0.805. This shows that one unit decrease in liquidity can cause increase in the level of leverage by 0.354. This rejects the 7th hypothesis and also not consistent with pecking order theory which explains the same a positive relationship between both of these variables. This finding is also consistent with the following researchers; Manos, Green and Murinde (2001), and Narender and Abhinav Sharma (2006). This relationship of liquidity with leverage is somewhat puzzling. It indicates that firms in Computer Software industry uses sector, uses more debt than internal source finance, when increasing liquidity also increases the long-term debt ratio.

Findings of the study:
It can be observed from the analysis that all factors are statistically insignificant. The findings are also consistent with the pecking order theory as well as trade-off theory with the similar findings of previous researchers. The researcher concluded that the Computer Software sector should follow pecking order theory and should preferably use internal funds for financing needs, while for making leverage decision should not consider all factor that determines the leverage in Computer Software industry sector of India and do not have significant impact on leverage in this sector.

Conclusions and Suggestions:
The researchers conclude that the Computer Software industry sector of India use pecking order theory for their long term financing decision. In this sector all factors are insignificant and do not play any role in the determination of leverage in Computer Software industry sector of India.

The suggestion for the firm's Computer Software industry sector of India is that they should preferably use internal source of financing to meet their long term investment decision. The authors also suggest that the future researcher should determine the other industry factors that may impact the leverage in capital structure.

REFERENCE

[1] Amsaveni.R and Gomathi.S (2012), "Determinants of capital structure; A study of the pharmaceutical industry in India", Indian journal of finance, vol.6 (3), pp.(--). | [2] Bhaduri, Sumitra.N (2002), "Determinants of capital structure choice: A study of the Indian corporate sector", Applied financial economics, Vol.12, PP.655-665. | | [3] Bhole LM (2000), "Financing of the Private Corporate Sector Trends, Issues and Policies", Himalaya Publishing House, Mumbai. | [4] Bhole LM and Mahakud. J (2004), "Trends and determinants of corporate capital structure in India: A panel data analysis", Finance India, vol.18 (1), pp.37-55. | [5] Booth L., Aivazian V, Demirguc – Kunt. A and Maksimovic V (2001), "Capital structure in Developing countries", Journal of finance, vol.12, pp.87-130. | [6] David Durand (1952), "Costs of Debt and Equity Funds for Business: Trends and Problems of Measurement", Conference on Research in Business Finance, New York. | [7] Harris, M. and Raviv, A. (1991), "The Theory of Capital Structure", Journal of Finance, Vol.46 (1), pp. 297-355. | [8] Inder Sekhar Yadav, Panindra Goyari and Naresh Kumar Sharma (2010), "Determinants of Capital Structure of Corporate Firms; Panel data Evidence from India", Asian Economic Review, Vol.52 (2), pp.331-355. | [9] Liaqat Ali (2011), "The Determinants of Leverage of the listed Textile Companies in India", European Journal of Business and management, Vol.3 (12), pp.54-59. Available online at www.iiste.org | [10] Mallikarjunappa T and Carmelita Goveas (2007), "Factors determining the capital structure of pharmaceutical companies in India", The ICFAI journal of applied finance, vol.13 (11), pp.56-72. | [11] Marsh P (1982), "The choice between equity and debt: An empirical study", Journal of finance, vol.37 (1), pp.121-144. | [12] Modigliani.F and miller (1958), "The cost of capital, corporation finance and the theory of investment", The American economic review, vol.48 (3), pp.261-297. | [13] Modigliani, F and miller (1963), "Corporation income, taxes and the cost of capital; a correction", The American economic review, vol.53 (3), pp.337-347. | [14] Mohan Raj (2011), "Determinants capital structure decision in India manufacturing industries: An empirical analysis", International journal of research in computer application and management, vol.1 (8), pp.139-142. | [15] Mohan Sahoo S and Omkarnath G (2005), "Capital Structure of Indian private corporate sector: an empirical analysis", The ICFAI Journal of Applied Finance,pp.40-56. | [16] Myers SC (1984), "The capital structure puzzle", Journal of finance, vol.32, pp.147-175. | [17] Myers SC, Majluf NS (1984), "Corporate Financing and Investing Decisions When Firms have Information that Investors do not have", Journal of Financial Economics, Vol.13, pp.187-221. | [18] Narender V and Abhinav Sharma (2006), "Determinants of capital structure, in public enterprises", ICFAI journal of applied finance, vol.12, pp.14-28. | [19] Ozkan Aydin (2001), "Determinants of Capital Structure and Adjustment to Long Run target: Evidence from UK Company Panel Data", Journal of Business and Accounting, Vol.28, pp.175-198. | [20] Rajan G.R and Zingales L (1995), "What Do We Know About Capital Structure? Some evidence from International data", Journal Finance, Vol.50, pp.1421-1460. | [21] Rajeswara Rao M. K and Sadanandam (1995), "Impact of capital structure decisions on operating performance of state enterprises of A.P: A correlation analysis", Finance India, vol. 9(1), pp.69-84. | [22] Ram Kumar Kakani (1999), "The determinants of capital structure - An econometric analysis", Finance India, vol.13 (1), pp.51-69 | [23] Ravider Vinayak and Anju Gupta (2010), "Determinants of capital structure in Drugs and Pharmaceutical industry in India: A comparative study of pre and post liberalization period", The Indian journal of commerce, vol.63 (3), pp.26-38. | [24] Titman S and Wessel's R (1988), "The Determinants of Capital Structure Choice", Journal of Finance, Vol.43, pp.1-19. |