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EFFECT OF LEVERAGE RATIO AND OWNERSHIP STRUCTURE ON INTERNATIONALIZATION OF INDIAN FIRMS

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ABSTRACT

The paper attempts to find a relation between internationalization of firms & the amount of leverage and ownership stake in the capital structure. 'Ownership' & 'Leverage' have been taken as independent variables for the purpose of this study; and 'Degree of internationalization' - defined as 'the percentage of total sales coming from foreign operation' is taken as the dependent variable for the purpose of this analysis. The multivariate dummy regression was run on the data of 100 firms to determine the nature of relationship between the capital structure and internationalization of firms. Further, t-test was used to find the strength of this relationship.

The study found that a significant relationship exists between the degree of internationalization and capital structure. Ownership impacts internationalization, much more than leverage. Also the number of years used in the study was found insignificant to influence the nature of relationship.

Key Words: *Leverage, Ownership, Internationalisation, Capital Structure, Business Risk*

INTRODUCTION

Business: Capital structure and Ownership

Capital structure is the combination of debt and equity that funds an organization's strategic plan to run its regular operations and future expansion while

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optimizing flexibility and minimizing cost. But there is no magical proportion of debt that a company can take on to achieve the above said objectives. The debt to equity relationship varies with industry and firm's life cycle.

However, from the perspective of an investor, the consensus is to invest in companies with strong balance sheets, i.e. companies having lower debt and higher equity levels. Higher leverage (too much debt vs. equity) restricts the freedom of companies and also results into higher interest payment, causing severe impact on profitability. Yet, debt financing is the major source of funding for organic and inorganic growth of companies worldwide.

Ownership plays a crucial role in a firm's decision making and thus affects its responsiveness and performance. This effect is quite evident when we compare the performance of private and public companies in India. Decision-making in any firm is embedded with inherent conflicts between different parties inside the firm. The principal-agent theory mentions the conflict between shareholders and management. There are issues related to control right and cash flow right. The question of what may be the most efficient ownership structure is, therefore, as relevant as ever. Ownership decision indirectly impacts the firm's strategy to expand and achieve business goals. Ownership also affects a firm's risk taking abilities and in turn, the key decisions it takes for its growth.

Purpose of Debt in the Capital Structure

Some firms contain debt in their capital structure, whereas others rely completely on equity financing. Also, the proportion of debt in the capital structure varies from time to time a given firm. Therefore, before analysing at length the effect of internationalization on capital structure, and vice versa; it becomes important to understand this aspect in totality.

Business Risk

The inherent 'riskiness' in the nature of an industry influences the debt-equity ratio for firms belonging to the industry. Higher volatility in profits results in decreased dependence on debt as higher debt in capital structure would further increase the risks involved. This can be observed in the cases of software and construction industries in the post-recession times (post 2008). In general, the higher the business risk, lesser the optimal debt ratio.

Industry Specific Factors

Capital intensive firms have high debt in comparison to equity. Airline industry is a suitable example. This can also be seen in Machinery and Steel industry whose debt equity ratios are generally on the higher side. The ratio can also be linked to amount of tangibles or intangibles in a firm. Generally, it has been seen that software industry has large intangibles which results in low debt equity ratio.

Internationalization

It has been seen that post internationalization, firms support a higher debt percentage in the capital structure. However, one perspective also says that internationalization increases the risk exposure of the business and hence, decreases the debt capacity. This aspect has been further explored through data analysis in the following sections.

Impact of Internationalisation on capital structure

Degree of internationalisation has an impact on the overall capital structure of the company. The opportunity to diversify risks across various markets directly helps in reducing the overall cost of capital of the firm. The choice of capital to finance the new opportunity in the international market can thereby influence the overall capital structure and the cost of capital. Due to difference in legal, cultures of different nations and increase in the degree of asymmetry, monitoring firms across regions becomes difficult. The arbitrage opportunity and increase in the number of choices for investment leads to conflict of interests between shareholders and debt holders which can increase the cost of capital and change the capital structure of the firm. Therefore, given the market imperfections firms usually avoid costly external market transaction and utilise internal market transaction.

Impact on Equity

Increase in the degree of internationalisation of a firm leads higher risks for the equity shareholders this can be due to the high exchange rate fluctuations hence, the demand for higher returns from the shareholders. There is a counter view to this which suggests that some equity holders view internationalisation operations as view to diversify the risk of shareholder which can also reduce the cost of equity.

Impact on Debt

Many studies have suggested that a higher degree of internationalisation leads to greater amount of total and long term debts. The diversification risks for the shareholders increase the cost of equity, hence financing from debt becomes cheaper which help in reducing the overall cost of capital of the firm. Internalisation can also offer opportunity of product diversification for a firm which increases the debt capacity of the firm as diversification reduces risks and bankruptcy costs for a firm. The counter view to this suggest that internationalisation of a firm provides growth opportunity for the firm and whenever there is a growth opportunity the portfolios of investment increase which can lead higher agency cost .Therefore, Multi-national Companies (MNCs) having better growth opportunity tend to be financed by equity rather than debt.

Impact on overall capital structure

These effects on debt and equity affects the overall capital structure of the firm thereby changing the cost of capital. Most companies follow the strategy of financing through debt to reduce the cost of capital but after a point the shareholders demand higher return due to increase in bankruptcy cost there by increasing the overall cost of capital. The debt financing is the preferred choice and MNCs use foreign currency financing as instrument of hedging the risks. The origin of the firm also plays a crucial role in the capital structure of the firm .When firm from a developed and stable country make investments in an unstable country it has higher risks and debt usage decreases. Whereas when firms invest in more stable countries the risks decreases and the debt capacity of the firm increases. For example: Canadians MNCs have higher debt to equity ratio compared to that of US MNCs.

LITERATURE REVIEW

Aggarwal & Kyaw (2010) contradict the traditional belief that firms with international operations & multinational operations are bigger in size and hence have a higher debt capacity. The debt capacity of such firms should be expected to be lower due to the increased risk of international exposure. Their study gives empirical evidence to support that, keeping other factors constant, multinational firms have considerably lower debt ratios than comparable domestic firms, and moreover, debt ratios further decrease with increasing multi-nationality. With increasing degrees of internationalization, firms play a trade off with risk and debt in capital structure.

Singh & Nejadmalayeri (2003) examine firms' debt-equity ratios post-internationalization, from a cost-of-capital perspective. This study of French firms substantiates that internationalized firms have a higher degree of long-term debt, which greatly reduces the cost of capital, despite increasing equity risk. Despite the debt servicing cost, agency cost, equity risk, the overall cost of debt-equity financing is reduced.

Mitto & Zhang (2008) substantiate that the debt ratios of firms with international operations is a function of combination of home country and host country factors and leverage determinants across countries. They give empirical evidence of Canadian multi-national corporations operating in the U.S. and having higher leverage than their domestic counterparts, due to lower agency costs of debt in the U.S. operations.

Drobetz *et al.* (2013) study the industry specific factors for international shipping companies that govern their debt-equity structure. While asset tangibility has a positive relationship with the degree of leverage, factors like profitability, operating leverage volatile macro-economic environment are all inversely related to leverage in the shipping industry.

Bjork *et al.* (2001) analyse the impact of internationalisation on the capital structure of a company. Their study is based on debt-equity ratio of Swedish multi-national and domestic companies, sampled from the Stockholm stock exchange. They hypothesised that MNCs have greater debt-equity ratio than domestic companies, and that MNCs with high level of international presence, with higher international trade, and with higher foreign ownership have higher ratios. Contrary to the previous studies, the analysis reported that none of the hypotheses held statistical significance. This was different from the results obtained for U.S. companies by other authors. The main reason cited by the scholars for this difference was the small size of Swedish MNCs and the cultural difference in terms of the risk propensity of Swedish MNCs.

A number of studies (Tsai, 2013) have used multiple regressions to test whether a Small and Medium-Sized Enterprise's (SME) degree of internationalisation affects the risk premium which may be associated with the bank loans it may have taken. The relationship between the SME's debt ratios and its internationalisation, while controlling other important loan and firm characteristics, is also analysed. An SME

with a higher degree of internationalisation ends up paying lower interest rates on bank loans and its debt ratio is inversely related to its internationalisation degree.

Saito *et al.* (2010) take a comparative approach in analysing the capital structure of Brazilian companies with foreign activities (MNC) vis-a-vis companies which have mostly local activities. They focus on whether the internationalised companies utilise more debt as compared to locally active companies in Brazil. The authors were the first to empirically test if international activity and debt financing are related. They claim that access to international capital market is frequently suggested as a motivation for companies to internationalise.

Oesterle *et al.* (2013) analyse, for 102 German manufacturing firms, the relationship between the amount of shareholder ownership in a firm and the degree to which the firm is internationalised. Following a principal-agent theory approach and focusing on the ownership-stake related motivation and the amount of bargaining powers that owners have over managers, they suggest that these determine the degree of internationalisation. The study concludes that the degree of internationalisation and the ownership structure do not have a linear relationship; instead it is a U-shaped curve. There are three points identified in this curve, when the ownership of a single shareholder is quite low they have lesser control over managers and managers do pursue their own interests over the firm and internationalise. As the ownership of a single shareholder increases it reaches a point where the degree of internationalisation is negatively related as influence over the manager increases.

An analysis of Grindlays Bank, a British overseas bank, from the year 1828 to 2000, by Tschoegl (2003), helps us understand the internationalisation process of the bank and the rearrangement of the ownership of assets that has taken place throughout the internationalisation process. Grindlays Bank is famous for its long history of ownership changes, divestitures and acquisitions. The re-arrangement in the ownership of the assets in the case of Grindlays Bank was observed to be gradual and incremental, rather than abrupt. There are various factors that proved these changes which can be external, such as political governments nationalised, or internal, such as managerial decisions to acquire a company. The research also argued that this phenomenon can be generalised for other industries and sectors.

George, Wiklund & Zahra (2005) analyse 889 Swedish SMEs and determine the roles the ownership structure plays in the internationalisation of a firm. They report

that the ability to take risks and expand the scope of the firm is dependent on the owners. The internal owners (CEO and other executives) are risk averse. On the other hand, venture capitalists are more likely to take risky decisions towards internationalisation of an MNC.

OBJECTIVE

This research aims to study the internationalization of a firm as a function of leverage ratio and ownership structure. With greater exposure to international risk, the proportion of debt in the company's capital structure is likely to decrease (since debt is a riskier form of capital). However, this may not be the case, owing to certain host specific, home-country specific and industry specific factors, and other related parameters. This has been empirically studied in this paper.

HYPOTHESES

The following hypotheses have been proposed by the authors.

Hypothesis 1: A firms' leverage increases with higher degree of internationalization.

Hypothesis 2: The promoter's/family's stake in the firm decreases with increasing degree of internationalization.

METHODOLOGY

In order to develop a relationship between the family ownership of a firm, the internationalization of a firm and the amount of debt employed in the capital structure of the firm, first these variables were defined in terms of quantifiable values. Next the statistical technique of multivariable regression using dummy variables was applied to develop the relationship, and finally the strength of the relationship was determined using t- tests. We briefly describe each step below-

Variables

1. The degree of Internationalization was defined as the percentage of total sales coming from foreign operation, i.e.

Degree of Internationalization (DOI) = Total Forex Earnings/ Total Sales

2. The Ownership of a firm was defined as the shares of the firm held by Individuals or Hindu Undivided Family (HUF)

3. Finally, the Leverage ratio used was the Debt/Equity ratio defined as Total Debt/ Total Equity

Data Source

The data for 100 firms was taken from Prowess 4 database. The predefined company set of CNX 500 was taken for the purpose of this report. Firms were first filtered out on the basis of foreign exchange (forex) earnings; firms having no forex earnings were removed from the data set. Next, firms without percentage data on shares held by 'individuals or HUF' were filtered out. In this way, a data set of around 190 companies was compiled. Amongst these, we chose the top 100 firms on the basis of sales.

Data was taken for the 6 years- 2007, 2008,2009,2010,2011 and 2012. The Ownership data prior to 2006 was not available in the Prowess database.

Statistical Technique used: Multivariable Dummy Regression

Regression analysis is a technique used to estimate the relationship between variables. The dependent variable is the response variable and it depends on the independent (predictor) variables. When a dependent variable is dependent on two or more independent variables, the regression is called a multivariable regression.

A dummy variable takes 0 or 1 values to indicate the absence or presence of some categorical effect that can shift the outcome. It is used most often when the measure of variable is nominal or ordinal.

In our analysis, Degree of Internationalization (DOI) is the dependent variable. The independent variables are Ownership and Leverage (Debt/Equity).

For each of the 5 years are 5 dummy variables – DT_1 , DT_2 , DT_3 , DT_4 and DT_5 corresponding to years 2008, 2009, 2010, 2011 and 2012. 2007 has been taken as the base year.

The regression equation can be described as:

$$DOI = A_0 + \beta_1 * (Ownership) + \beta_2 * (Leverage) + \beta_3 * DT1 + \beta_4 * DT2 + \beta_5 * DT3 + \beta_6 * DT4 + \beta_7 * DT5$$

, where β_i are the partial regression coefficients.

FINDINGS

Model summary and ANOVA tables show F-test result is significant. It can be concluded that 9.2% variability in the degree of internationalization (DOI) can be

explained by these two variables (ownership and leverage ratio).

Table I. Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.320 ^a	.103	.092	22105	.103	9.566	7	586	.000

a. Predictors: (Constant), 2011, Ownership, Leverage, 2008, 2010, 2009, 2012

Table II. ANOVA (Analysis of variance)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.272	7	.467	9.566	.000 ^b
	Residual	28.633	586	.049		
	Total	31.904	593			

a. Dependent Variable: DOI

b. Predictors: (Constant), 2011, Ownership, Leverage, 2008, 2010, 2009, 2012

Correlation values in table III suggest that there is no correlation among ownership and leverage as the value of 0.113 is insignificant to define any correlation. Therefore, there is no multi-collinearity in the model.

Table III. Correlation

Correlations									
	DOI	Ownership	Leverage	2007	2008	2009	2010	2011	
Pearson Correlation	DOI	1.000	.294	.157	-.003	.016	-.007	-.019	-.015
	Ownership	.294	1.000	.113	.018	.003	-.006	-.024	-.018
	Leverage	.157	.113	1.000	-.046	.017	-.085	.061	-.039
	2007	-.003	.018	-.046	1.000	-.200	-.200	-.200	-.200
	2008	.016	.003	.017	-.200	1.000	-.200	-.200	-.200
	2009	-.007	-.006	-.085	-.200	-.200	1.000	-.200	-.200
	2010	-.019	-.024	.061	-.200	-.200	-.200	1.000	-.200
	2011	-.015	-.018	-.039	-.200	-.200	-.200	-.200	1.000

Table IV. Outcome of t-tail test

Coefficients ^a									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	1.37	.024		5.614	.000			
	Ownership	.004	.001	.279	7.089	.000	.294	.281	.277
	Leverage	.019	.006	.125	3.153	.002	.157	.129	.123
	2008	.008	.031	.013	.253	.800	.016	.010	.010
	2009	.004	.031	.006	.126	.899	-.007	.005	.005
	2010	-.009	.032	-.015	-.294	.769	-.019	-.012	-.012
	2012	.005	.032	.008	.159	.873	.027	.007	.006
	2011	.002	.031	-.003	-.052	.959	-.015	-.002	-.002

a. Dependent Variable: DOI

From the Coefficients table, we can write the regression equation as follows:

$$DOI = 0.137 + 0.004 * (Ownership) + 0.019 * (Leverage) + 0.008 * DT1 + 0.004 * DT2 - 0.009 * DT3 + 0.005 * DT4 - 0.002 * DT5$$

However, t- test shows that the values of DT_1 , DT_2 , DT_3 , DT_4 and DT_5 do not lie in the 5% confidence interval, and hence are not significant in the regression.

Therefore the final regression equation comes to be:

$$DOI = 0.137 + 0.004 * (Ownership) + 0.019 * (Leverage) \quad (\text{This is in decimal units})$$

Moreover, we see from the standardized Beta values that Ownership affects the Degree of Internationalization more than the Leverage. The Standardized Beta value for Ownership is 0.279 which means that 1 unit change in Ownership leads to a 0.279 unit change in DOI, whereas a 1 unit change in leverage leads to 0.125 unit change in DOI.

If we look at the regression equation across different time periods, with 2007 as the base, we find the following equations:

$$DOI (2008) = 0.145 + 0.004 * (Ownership) + 0.019 * (Leverage)$$

$$DOI (2009) = 0.141 + 0.004 * (Ownership) + 0.019 * (Leverage)$$

$$DOI (2010) = 0.128 + 0.004 * (Ownership) + 0.019 * (Leverage)$$

$$DOI (2011) = 0.142 + 0.004 * (Ownership) + 0.019 * (Leverage)$$

$$DOI (2012) = 0.135 + 0.004 * (Ownership) + 0.019 * (Leverage)$$

We observe that across the years there is not much change in the degree of Internationalization measurement, compared to the base year 2007.

CONCLUSION

There is significant relationship between Degree of Internationalization, Leverage Ratio and Ownership Structure of a firm, though ownership has a larger impact on DOI. Ownership and leverage ratio are not correlated and one does not affect the other. Years in consideration does not have much effect on DOI. This is interesting to note specially given the fact that the economic scenario post 2008 was bleak, compared to that in 2007. However, it seems that the firms' degree of internationalization was not greatly affected when analyzed in terms of the Family

Ownership and Leverage levels. Though this cannot be entirely concluded from this analysis alone, and has scope for further research since the time dummy variables lie outside the chosen 5% confidence interval.

The study and its results can prove to be relevant for dynamically internationalizing Indian firms, especially in the current situation of mergers and acquisitions. Globalisation has caused firms' ownership structures to remain in a perennial state of flux. The observations drawn in this paper can help Indian firms looking to embark on international expansion, to take decisions about rationalising their leverage and ownership in order to derive maximal benefit.

LIMITATIONS

The number of independent variables taken for the study is small. More independent variables will enable better inference from the model. Our study utilised the top 100 companies from the CNX 500 Index, based on sales in 2012. This may affect generalizability of the findings to other companies. This research uses Degree of Internationalization as an indicator of internationalization of a firm. Other indicators can be analysed for better appropriateness. Our study is limited by the period of time taken into consideration. These 'number of years' were constrained by the availability of ownership data.

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