Review Article

An Empirical Examination of Factors Determining Capital Structure Indian Micro Scale Industries

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Abstract - *The present paper aims to investigate the determinant of capital structure of 40 MSME from four different industrial sectors. The research was conducted from the year 2015 to the year 2019. The present empirical study examines the capital structure determinants across all sectors. Panel Data analysis was conducted by devising STATA. Multiple regression analysis has been conducted. The findings of the study depict that size of a firm and risk level among firms have emerged as the strong determinants affecting the capital structure of firms across all sectors under study. Institutional ownership and Asset structure have been proved the least effective determinants of capital structure across firms. The present study implies that institutional owners of companies that are highly liquid, pay high dividends, and fall under high tax brackets do not rely on debt financing.*

Keywords - *Capital Structure, MSME, Panel Data, STATA*

I. INTRODUCTION

Investment decision is one of the most crucial decisions for firms as it involves the wealth of shareholders. An investment is a commitment of funds made in the expectation of some positive rate of return. The growth and profitability of a firm largely depend upon the return from the investment and risk appetite of the firm. A firm may use borrowed funds or owners' funds to make such investments. Thus capital structure has always been an important and challenging decision for the management of a firm. Capital structure decisions mainly involve determining the right mix of debt and equity so as to maximize the market value of the firm and minimize the cost of the capital for maximizing the wealth of the shareholders, which is the major objective of the firm. Yusuf et al. (2015) observe that asset structure, liquidity, and firm value have a significant influence in determining the capital structure of the firm. Ma, J. H. (2015) analyzes that profitability, debt-paying ability, and enterprise scale have a significant impact on the capital structure of the firm. Hoque et al. (2014) reveal that financial risk, profitability, liquidity, operating risk are the important determinants of capital structure. Azhagaiah and Gavoury (2011) provide evidence that firms prefer 100% debt financing when they access tax-deductible interest. Dogra and Gupta (2009) identify the impact of age of firm, size of the firm, the growth rate on the capital structure of firms. Mazur (2007) recommends in his study that in the current business scenario, the focus has been shifted from trade-off theory to pecking order theory.

These studies have largely examined the determinants of capital structure in the case of large manufacturing companies. MSMEs play a vital role in emerging economies like India. Few researchers have made an attempt to dive a little deeper into the context of understanding the financing of MSME in India. The current research paper makes an attempt to explore the influential factors affecting the capital structure decisions of MSMEs in India. The present research acts as a guiding tool into the issues related to MSME financing in India. It examines the important factors that influence the capital structure decisions of Indian MSMEs.

II. MICRO SMALL MEDIUM ENTERPRISE (MSMEs) IN INDIA

New ideas and approaches are necessary to keep business enterprises in dynamic and buoyant condition. MSMEs act as a backbone in the economic and industrial development of developing economies. Garg and Walia (2012) support the fact that the catalytic growth of MSMEs has emerged as a major contributor to gross domestic product (GDP), employment, and exports in the Indian economy using the OLS technique. The Sector consisting of 36 million units, as of today, provides employment to over 80 million persons. The Sector, through more than 6,000 products, contributes about 8% to GDP besides 45% to the total manufacturing output and 40% to the exports from the country. Bodla (2004) concluded that MSMEs are no way less than their large-scale counterpart industries in so far as the utilization of resources is concerned. The Micro, Small and Medium Enterprises Development Act, 2006, lays down the following categories for various enterprises:

Descriptions	Manufacturing Industries (in Indian ₹)	Service Industries (In Indian ₹)
Micro Enterprises	Up to 25 Lakh	Up to 10 Lakh
Small Enterprises	Above 25 Lakh and Up to 5 Crores	Above 10 Lakh and Up to 2 Crores
Medium Enterprises	Above 5 Crores and Up to 10 Crores	Above 2 Crores and Up to 5 Crores

Source - Ministry of Micro, Small and Medium Enterprises (MSME)

MSMEs play a dominant role in providing large employment opportunities at comparatively lower capital costs than large industries but also help in the industrialization of rural & backward areas, reducing regional imbalances, assuring more equitable distribution of national income and wealth. MSMEs are complementary to large industries as ancillary units, and this sector contributes enormously to the socio-economic development of the country.

III. DATA AND RESEARCH METHODOLOGY

A. Data

In the present research, an attempt has been made to examine the capital structure decisions of non-financial MSMEs in India. The period of the research study is six years, from January 1, 2015, to December 31, 2019. MSMEs from four economic sectors (Pharmaceutical, IT, FMCG, and Infrastructure) have been shortlisted according to the role of MSMEs in their growth. The necessary data of 40 companies (10 companies from each sector) related to research has been extracted.

B. Variables

Over the years, numerous variables have been employed by the researchers that may have a probable effect on the capital structure of companies. The present research study considers the following variables to examine the effect of variables affecting the capital structure of Micro, Small, and Medium enterprises.

a) Dependent Variables

After reviewing the previous research studies and on the basis of the current business scenario, Leverage has been used as the dependent variable, a representative of the capital structure of the firm. Long Term Debt Ratio variables have been used as a proxy for leverage.

$$\text{Total Debt ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

The impact of independent variables has been studied on the above variable.

b) Independent Variables

In the present research, six factors have been considered as independent variables. The following variables have been used as a proxy for these six factors in the present research

C. Profitability

In the present research, return on Equity has been used as a proxy for profitability to examine the relationship between profitability and leverage.

$$\text{Return on Equity} = \frac{\text{Profit After Tax}}{\text{Net Worth}}$$

D. Firm Size (FS)

The size of a firm plays a crucial role in the capital structure of the firm. The present research posits the existence of a relationship between firm size and the capital structure (leverage) of a firm.

$$\text{Firm size} = \log (\text{Total Sales})$$

E. Asset Structure (AS)

Capital structure and asset structure are significantly associated. Hall et al. (2004) examined a negative relationship between short-term debt and asset structure.

$$\text{Asset Structure} = \frac{\text{Total Fixed Assets}}{\text{Total Assets}}$$

F. Firm Risk (FR)

The risk associated with a firm significantly affects the capital structure of the firm. Higher is the business risk associated with the firm, the more it becomes tough for the companies to raise funds from the market. The current research posits the existence of a relationship between risk and capital structure of the firm

$$\text{Firm Risk} = \frac{\text{Total Debt}}{\text{Total Asset}}$$

G. Institutional Ownership ((IO)

Institutional owners prefer to lower debt financing in the firm as an increase in debt financing increases the financial risk of the firm.

H. Methodology

Panel data regression model has been devised to determine factors that influence the capital structure decisions of MSMEs. Regression Models

Model 1

$$\text{TDR} = \beta_1\text{ROE} + \beta_2\text{FS} + \beta_3\text{AS} + \beta_4\text{FR} + \beta_5\text{IO}$$

III. RESULTS

Table 1 provides the descriptive statistics of the variables used in the study. The total debt to capital employed ratio ranges between 1 percent to 68 percent, with an average of 25 percent. This reveals that the present sample of MSMEs is not financed mainly through debt.

Table 1. Descriptive Statistics

Varia-bles	N	Minimum	Maximum	Mean	Std. Deviation
ROE	350	0.015	1.457	0.089	0.042
FS	350	6.789	16.738	11.45	0.579
AS	350	0.152	0.937	0.685	0.217
FR	350	0.000	0.249	0.015	0.021
IO	350	0.000	0.989	0.675	0.253

A. Hausman Test

Hausman test is applied in Panel data to examine the appropriate model for the data.

Null Hypothesis: Random effect model is appropriate

Alternative Hypothesis – Fixed effect model is appropriate

Table 2. Hausman Test

Test statistics	Aggregate	FMCG	Infrastructure	IT	Pharmaceuticals
Chi^2	74.86	44.89	38.95	27.94	52.98
$P > Chi^2$	0.000	0.000	0.000	0.000	0.000

The results in the statistics table indicate that the p-value is 0.000, which leads to the rejection of the null hypothesis. It shows that the fixed effect model is a more appropriate model for our research.

Table 3. s Model r^2

	Model statistics	Industry				
		Aggregate	FMCG	Infrastructure	IT	Pharmaceuticals
r^2	Within	0.673	0.667	0.710	0.686	0.728
	Between	0.708	0.589	0.089	0.747	0.748
	Overall	0.704	0.686	0.424	0.698	0.496
	F Value	98.42	39.57	52.78	41.78	54.79
	Prob> *F*	0.000	0.000	0.000	0.000	0.000

Within r^2 refers to the observation of effects over time within firms; between r^2 refers to the observation of effects between firms at any one point in time. The r^2 values for the aggregate sample suggest that all independent variables account for 70% overall variation in the *Leverage*. The model fits according to r^2 appears to be good in the majority of cases except for FMCG industries.

B. Regression Coefficients

	FMCG	Infra	IT	Pharma	Aggregate
TDR	-0.1879**	-0.267**	−0.169	0.456*	0.338**
ROE	-0.0272	0.386**	-0.0391	0.382**	0.187**
FS	0.256**	0.0753*	0.759**	0.626**	0.375**
AS	0.043	0.079**	-1.02	-1.16	-0.978
FR	0.0823**	0.395**	0.396**	0.376**	0.311**
IO	-0.00420	-1856	-0.003	-4.78	-1.18
DummyAuto	–	–	–	–	−0.094
Dummy FMCG	–	–	–	–	−0.96**
DummyPharma	–	–	–	–	−0.549**
DummyIT	–	–	–	–	−1.524**
Constant	1.93	2.28	0.594	1.657	1.348

Source: Output of regression analysis in STATA

*Note ** Significant at 1% level of significance; * Significant at 5% level of significance.*

Panel data regression results have been depicted in Table 3. The statistics show that the firm risk (represented by FR) does not have any relationship with leverage. This may be so since Indian MSMEs do not rely too much on debt financing. Their firm risk is quite low.

IV. FINDINGS

The statistical results produce the following significant findings in the present research.

Profitability (ROE) is nonsignificant in most industries. Non Significant means there is no relationship between ROE and capital structure of firms across the industries. Akdal (2010) supports the present research findings of the negative relationship between profitability and capital structure. The statistics show that the coefficient of **Assets Structure (AS)** and capital structure is non-significant in the present study. It shows that a higher proportion of fixed assets in total assets will lower asymmetric information problems and should issue more debt. But the present empirical study, the pecking order theory is not supported. The assets structure is not correlated with capital structure. An inverse relation has emerged between **Institutional Ownership (IO)** and leverage across most industries. The inverse relationship implies that institutional owners of MSMEs are not in favor of using debt. The statistics of the present research are lined with the findings of Chaganti and Damampour (1991) and Bathala et al. (1994). **Firm Risk (FR)** has a positive relationship with leverage across all the industries. The results infer a positive relationship between **Firm Size (FS)** and capital structure (leverage) across all the industries. The present study results have been supported by the similar findings of Frank and Goyal (2003).

V. CONCLUSION

The present research focuses on the factors affecting the capital structure of MSMEs in India. The results provide some new valuable insights to the corporate as well academic researchers and provide a new platform to research MSMEs in developing countries. It has been analyzed that more emphasis should be given to creating awareness about the availability of various financing alternatives to the MSMEs. A strong financial platform should be provided to MSMEs to develop them into a potential growth engine in the country. Firm Size, Firm risk, and Tax rate have emerged as the strong determinants affecting the capital structure of firms across most of the sectors. Institutional ownership and Asset structure have been proved the least effective determinants of capital structure across firms. The present study implies that institutional owners of MSMEs that are highly liquid, pay high dividends, and fall under high tax brackets do not rely on debt financing. The study also finds that MSMEs with more tangible fixed assets resort to long-term debt as they find it easy to raise debt through collateral fixed assets. Profitable and growing MSMEs use debt only for short-term purposes.

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