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## **The Impact of Capital-Structure Choice on Firm Performance: Empirical Evidences from South Asian Microfinance Institutions**

**D.M.N.S.W.Dissanayake, B.K.H.D. Anuranga, B.C.P. Jayarathne**

**Abstract** This research paper is investigates the impact of capital structure choice on firm performances in South Asian Microfinance Institutions. This paper was mainly influenced from the studies of Prahalathan & Ranjani, (2011) & Ebaid, (2009). Sample consists of 136 microfinance institutions for the period of 2006-2010 in the South Asian region creating 680 of observations. Multiple regression analysis and the Pearson correlation analysis have used to identify the most significant predictor variables and to identify the relationship among capital structure and performances respectively. Two dependent variables (Return on Assets and Return on Equity) measure the performance of firms and Debt/Equity is used as the independent variable of the study. Moreover, one control variable used which is also another significant variable in firm performances. Therefore, this study controls the differences in firm's operating environment by including the size variable in the model. Findings of the study correspond with the prediction of trade-off theory suggesting a positive relationship towards firm performance from size and gearing of the firm. Besides, a high negative relationship was incorporated among performance of the institution and the Debt/Equity of the firm measured by return on equity as a performance indicator. Finally, all predictor variables implied causality for all models and most notably, the gearing level of the firm did not implied causality for return on equity as a performance indicator.

**Key words:** Accounting, Business performance, Capital structure, South Asia.

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## **1. Introduction**

This paper provides facts pertaining to the capital structure theories applicable to Asian context and examines the impact of capital-structure choice on firm performance in South Asian microfinance institutions. The theories selected are among in the field of finance. Financing decision for a company provides an insight to determining optimal capital mix of various sources of funds required for financing the assets purchased, (Fernando, Rajini and Reha, 2011). Generally firms have two financing options, namely, debt and equity. The notion of the capital structure defines that the composition of the company's sources of finance, which is, once more determined by the proportion of the debt-equity mix.

Capital structure has been explained by many scholars. The seminal Modigliani and Miller (here onwards MM) (1958) paper illustrated that subject to some conditions the impact of financing on the value of the firm is immaterial. Many theoretical and empirical contributions have been able to expand the literature on capital structure. Releasing the assumptions proposed by MM, particularly by considering corporate taxes (Modigliani and Miller, 1963), personnel taxes (Miller, 1977), bankruptcy costs, agency costs (Jensen and Meckling, 1976) and information asymmetries.

Though there are number of studies in capital structure in local and international context exists, the researcher was not able to find studies pertaining to microfinance institutions. So therefore, in this paper the researcher intends to fill the gap in existence.

According to the MM proposition, a firm's value is determined by its real assets, not by the mix of the securities it issues. Given that, the researcher pursues the methodological frameworks proposed by Prahalathan & Ranjani, (2011) & Ebaid, (2009). Adding to MM proposition various authors came up with additional rationalizations. Most importantly, the seminal paper of Jensen and Meckling (1976), proposed that, the amount of leverage of a firm will affect the agency cost among managers and shareholders. This suggestion was once more affirmed by various scholars as well, (Harris and Raviv, 1991; Graham and Harvey, 2001; and Brav et al., 2005, cited in Jensen and Meckling, 1976). Moreover, the relationship among choice of the capital structure and firm performance is somewhat contradictory. Some authors postulated a positive relationship, (Taub, 1975; Roden and Lewellen, 1995; Champion, 1999; Ghosh et al., 2000) meanwhile some authors asserted a negative relationship, (Fama and French, 1998; Simerly and Li, 2000). Given all above theoretical and empirical investigations, the researcher intends to assert the impact of capital structure choice on firm performance in the perspective in South Asian microfinance institutions.

The remainder of the paper is organized as follows. The following section illustrates related literature. Next section describes the methodology of the study. The subsequent sections give description of the results obtained from the model and finally, the section presents the conclusion of the study.

## **2. Objectives of the Study**

Objective of the study is to assert the relationship among the capital structure choice and the impact it has on the firm performance in South Asian microfinance institutions during the period of 2006-2010. The objectives of the study are;

1. To empirically examine the relationship between capital structures and firm's performance in South Asian microfinance institutions.
2. To find out the significant leverage elements which determining the firm performance of microfinance institutions.

### **3. Review of Literature**

Among the literature of the capital structure, different perspectives have been postulated addressing the different industries and sectors such as manufacturing, (Prahalthan & Ranjani, (2011); Titman & Wessels, 1988), non- profit organizations, Wedig et al. 1988), joint ventures, (Boateng, 2004). One of the dominant findings of these studies was the sectoral classification is an important determinant of the capital structure. Besides, the significance of this area is affirmed by Kinsman and Newman (1999), stating that the debt level of firms is rising up sharply over the last periods. Predominantly, the choice of the capital structure can be postulated by two theories.

They are trade-off theory and pecking order theory, (Ebaid, 2009). According to trade-off theory, the firm's optimal capital structure could be determined by the trade-off among the effects of corporate and personal taxes, bankruptcy costs and agency costs. That is debt benefits include tax shields (savings) induced by the deductibility of interest expenses from pre-tax income of the firm, reduction of agency cost through the threat of liquidation which causes personal losses to managers of salaries, reputation, perquisites(Grossman et al 1982; William, 1987). Therefore more profitable firms have higher income to shield and should borrow more to take tax advantages. Thus, according to trade-off theory a positive relationship could be expected between debt level and firm's performance. A number of

studies provide empirical evidence supporting this relationship, (Taub, 1975; Roden et al, 1995; Ghosh et al, 2000).

Nevertheless, pecking order theory stresses that there is a hierarchy of firm's preference with respect to the financing of their investment. That is, issuing new shares may harm existing shareholders through value transfer from old to new shareholders. So, managers will prefer financing new investments by internal sources (i.e. retained earnings) first, if this source is not enough then managers seeks for external sources from debt as second and equity as last. Thus, according to the pecking order theory firms that are profitable and, therefore, generate high earnings to be retained are expected to use less debt in their capital structure than those do not generate high earnings, since they are able to finance their investment opportunities with retained earnings. Consequently, negative relationship could be expected between debt level and firm's performance (i.e. profitability). A number of studies provide empirical evidence supporting this negative relationship between debt level and firm's performance or profitability (Kester, 1986; Friend et al, 1988; Titman et al, 1988).

According to the previous studies, Abor (2005) investigates the relationship between capital structure and profitability of listed firms in Ghana showing that STD and TTD are positively related with firm's profitability (i.e. ROE), whereas LTD is negatively related with firm's profitability (i.e. ROE). Kyereboah-Coleman (2007) examines the relationship between capital structure and performance of microfinance institutions in sub-Saharan Africa showing that high leverage is positively related with performance (i.e. ROA and ROE). Zeitun et al (2007) examines the relationship between capital structure and performance of Jordan firms showing that debt level is negatively related with performance (both the accounting and market measures). Finally, Abor (2007) examines the relationship between debt policy (capital structure) and performance of small and medium-sized enterprises in Ghana and

South Africa showing that capital structure, especially long-term and total debt level, is negatively related with performance.

#### 4. Research Method

##### 4.1. Sample and Data

In examining the effect of the capital structure choice on firm performance of South Asian microfinance institutions, a panel data from 136 MFIs used for the period of 2006-2010. Thus the study led to complete observations of 680. Importantly, the criterion for selecting MFIs is purposive due to the data availability and accessibility. Indeed, the researcher's intention was to create a database which carries a maximum number of MFIs. Therefore, he rejected MFIs which were not corresponds with the data availability of the MFIs within the period of 2006-2010. Secondary data were obtained from the MixMarket website. From formal, informal and semi-formal sectors were accessed to gather data for the study. However the researcher intends to postulate that his sampling method is not lead to the problem of biasness of the study. The composition of the microfinance institutions is as follows.

**Table 01:** Selected MFIs according to the availability and accessibility of data

Country	No of MFIs	Selected number of MFIs
Sri Lanka	25	09
India	148	55
Bangladesh	73	28
Bhutan	1	0
Nepal	41	21
Pakistan	31	15
Afghanistan	16	08
<b>Total</b>	<b>335</b>	<b>136</b>

**Source:** *Research data*

#### 4.2. *The Variables*

The selection of variables for the study was largely influenced by Prahalathan & Ranjani, (2011) & Titman & Wessels, (1988) studies. Two accounting based firm performance measures were selected as dependent variables for the study. These are namely, Return on Equity (ROE) which computed as the ratio of net profit to average total equity, Return on Asset (ROA) which computed as the ratio of net profit to average total assets. Further, the Debt/Equity (DE) is used as the independent variable which is measured as total liabilities to total equity of the firm. Moreover, one control variable was used which is also another significant variable in firm performance, Prahalathan & Ranjani, (2011). Firm's size may influence its performance, larger firms have a greater variety of capabilities and can enjoy economies of scale, which may influence the results (Ramaswamy, 2001; Frank and Goyal, 2003). Therefore, this study controls the differences in firm's operating environment by including the size variable in the model. Size is measured by the log of total assets of the firm and included in the model to control for effects of firm size on dependent variable.

#### 4.3. *Model*

The relationship among leverage and firm's performance is measured by following regression model.

$$\text{RoA}_{I,t} = \beta_0 + \beta_1 \text{DE}_{I,t} + \beta_2 \log S_{I,t} + e_{I,t} \quad (1)$$

$$\text{RoE}_{I,t} = \beta_0 + \beta_1 \text{DE}_{I,t} + \beta_2 \log S_{I,t} + e_{I,t} \quad (2)$$

Where;

$\text{DE}_{I,t}$  = Total debt to Total Equity for firm  $I$  in year  $t$ .

$\log S_{I,t}$  = logarithm of total assets for firm  $I$  in year  $t$ .

$e_{I,t}$  = the error term.



## 5. Analysis and Results

### 5.1. Explanatory Data Analysis

Quality of data has asserted with evaluating collinearity, serial correlation (autocorrelation) analysis. Since tolerance levels of the study lie above 0.50, the researcher affirmed that the models do not corresponds with, no multicollinearity. Simply stated, all variables of the study are act independently. The notion of serial correlation was evaluated considering Durbin-Watson values. Further, models were corresponded with Durbin-Watson values which are closer to 2. Thus the researcher affirmed that the models of the study do not correspond with serial correlation. Finally, normality for the study tested with normal probability plots, showed that probability plot of the model is not too far from a straight line for all models of the study suggesting non-violation of the assumption.

### 5.2. Empirical Results

**Table 02:** Regression results over Model I and Model II.

<b>Variables</b>	<b>Return on Assets (Model I)</b>	<b>Return on Equity (Model II)</b>
<b>Intercept</b>	-18.614	36.955
<b>Debt/Equity ratio</b>	( $\beta$ 0.102) (t. 3.131) (Sig 0.002) *	( $\beta$ -1.170) (t. -4.466) (Sig 0.000) *
<b>LogS</b>	( $\beta$ 1.073) (t. 5.332) (Sig .000)	( $\beta$ -.800) (t -.495) (Sig .621)
<b>R<sup>2</sup></b>	.050	.029
<b>F</b>	17.663	9.975
<b>Obs</b>	680	680

**Source:** Research data

\*. Significant at the 0.05 level (2-tailed)

Table 02 incorporates with the analysis of the ordinary least square regression results of the relationship between the choice of capital structure and the firm performances. Besides,  $R^2$  values of the respective models imply very low levels of fitness among models. 5% and 2.9% fitness of the variables can be seen for model I and II respectively. Further above table illustrates that the annotations of the Debt/Equity Ratio imply causality for both two models. More specifically, one can identify that the Debt/Equity is a statistically significant predictor variable under 5% level of significance. Besides, the LogS (Size of the institution) is also shows causality for model I only. Statistical significance of the LogS is an evident for the causality for the model. Finally, the predictor variable, LogS, does not depict statistical significance for the model II. This implies that the annotation does not imply causality for the model II. Moreover, an average value of -18.61 can be obtained when predictor variables are set to be zero for the model I. And an average value of 36.955 can be obtained for the model II when all predictor variables are set to be zero.

**Table 03:** Correlation analysis of the variables of the study

		RoE	RoA	LogS	DER
RoE	Pearson Correlation	1	.131(**)	-.002	-.169(**)
	Sig. (2-tailed)		.001	.951	.000
	N	675	675	675	675
RoA	Pearson Correlation	.131(**)	1	.190(**)	.099(*)
	Sig. (2-tailed)	.001		.000	.010
	N	675	675	675	675
LogS	Pearson Correlation	-.002	.190(**)	1	-.097(*)
	Sig. (2-tailed)	.951	.000		.012
	N	675	675	675	675
DER	Pearson Correlation	-.169(**)	.099(*)	-.097(*)	1
	Sig. (2-tailed)	.000	.010	.012	
	N	675	675	675	675

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

According to the Pearson Correlations tested above in the table no 03, a weak negative insignificant relationships can be obtained among Return on Equity and LogS. Further, strong positive significant relationships can be obtained among Return on Assets and LogS, Return on Assets and Debt/Equity. In fact those relationships are significant under 1% and 5% respectively. Finally, a strong negative significant relationship is in line with Debt/Equity and Return on Equity. This is statistically, significant under 1% level of significance.

## **6. Conclusion and Discussion of Findings**

Basically, this research was undertaken with the objective of asserting two fundamental objectives. Once more, those are to empirically examine the relationship between capital structures and firm's performance in South Asian microfinance institutions and to find out the significant leverage elements which determining the firm performance of microfinance institutions. Thus the researcher intends to postulate that a very high positive relationship is exists towards performance from Size of the firm and Debt/Equity of microfinance institutions in South Asian region. Perhaps most notably, this relationship is evident from the trade-off theory and the finding was in line with the findings of Taub, 1975; Roden et al, 1995; and Ghosh et al, 2000. Adding to that, very high negative relationship is exists among performance of the institution and the Debt/Equity of the firm. This is in term of return on equity performance indicator. This is also confirmed with empirical investigations such as Kester, 1986; Friend et al, 1988; and Titman et al, 1988 findings. Further, significant leverage elements of performance are size of the firm and gearing of the firm. Gearing level of the firm does not imply causality for return on equity as a performance indicator in South Asian microfinance institutions.

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