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CAPITAL STRUCTURE AND PROFITABILITY: THE MACEDONIAN CASE

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Abstract

The determination of a company's capital structure constitutes a difficult decision, one that involves several and antagonistic factors, such as risk and profitability. That decision becomes even more difficult, in times when the economic environment in which the company operates presents a high degree of instability. Therefore, the choice among the ideal proportion of debt and equity can affect the value of the company, as much as the return rates can. In the present study, the authors tried to examine the influence of the capital structure of Macedonian companies regarding the factor profitability. The necessary data, which are used in this work are the financial reports provided by the 150 respective firms collected in the past ten years. The Ordinary Least Squares (OLS) method was employed in the estimation of a function relating the return on the equity (ROE) with the indexes of long and short-run debts, and also with the total of owner's equity. The results indicate that the return rates present a positive correlation with short-term debt and equity, and an inverse correlation with long-term debt.

Keywords: SME profitability, financial risk, debt

Introduction

This paper will examine the impact of the financial structure of enterprise in the profitability of small and medium enterprise in the republic of Macedonia. Given that Macedonia is a small country with an economy not quite developed, small enterprises and

medium enterprises play a decisive role in economic development of this country. In the Republic of Macedonia by the statistical state office are identified 75.497 business entities, of which 97% are small and medium enterprise who employing about 70% of the total number of employees in the country. For this reason the role of these enterprises is very important for economic development. Financial structure plays an important role in the profitability of enterprises, because how will ménages financial leverage, we will see the business results. An enterprise can avoid the financial risk if it concerns gold`s ability to maintain its contractual obligations to meet interest and principal payments. A bad debt ratio is not necessary bad. Debt has strengths and weaknesses of infections. Saves tax debt to be paid to the state because the interest is calculated as a deductible expense and at the same tame, debt can cause financial distress in the undertaking. If you can manage successful enterprise with high debt without any risk, it will increased shareholder wealth. On the other hand, low debt of the ratio of the enterprise may be too heavy for undertaking which has its liquidity problem. The stability of cash flows and reduces the risk of bankruptcy increases the capacity of servicing the subject with high debt. An important factor of financing small and medium enterprises is accumulated profit. In the republic of Macedonia, the states in order to prod enterprises do not distribute profits, reduced income tax to 0%.[1]

Because of the importance role have SME in the Macedonian economy, we have tried to do an impact analysis of the structure of financing SME. As a subject of research data were taken for 150 SME operating in the pollog region for last ten years. The data used in empirical analysis are obtained from annual reports of business development. From the results of the paper is expected to conclude whose determinants have more impact on the profitability of enterprises.

The paper is divided into 3 parts, where in the first part we review the literature; in the second part of the paper we analyze empirically the impact of capital structure on the profitability of enterprises. In the third section we present results and recommendations regarding the capital structure and other factors affecting the profitability of SME.

[1] Enterprises which do not distribute profits are not obliged to pay tax. According to the profit tax law of 2009, enterprises pay income tax if they make a profit allocation and related expenses if the year is unacceptable (as unacceptable costs accounted representation expenses, penalties, interest, etc.)

1.Literature review

Which the relationship between capital structure and profitability? Does the fiscal benefit makes debt more attractive than the issue of new stocks by public offerings? Does the risk associated to the increase of the debt can, or should, be taken by the firm? Should the financing decisions of the firm follow a single pattern, irrespective of the country where it operates? Those are frequently asked questions that are significantly present in the derisory processes related to funds' capitation.

Decisions of that type tend to become even more difficult when the economic conditions of the country where the firm operates already are (typically) more uncertain. In the Macedonian case, specifically, the presence of two aggravating factors is observed: in first place, the high interest rates practiced in the financial market, and, in second, the instability of the economy before the international conjuncture. Those two factors play distinct roles; however, they produce similar effects under the scope of uncertainty.

A capital structure concerns the composition of the liability of the company, or more specifically, which is the relative participation of the several financing sources in the composition of the total obligations **(**Brealey and Myers, 1992; Gitman, 1997 and Weston & Brigham, 2000). Therefore, it is studied which is the volume of common share (stock) and preferred share (stock) and which is the financing amount the company possesses. This analysis is important because it shows several internal aspects of the company, mainly, which the participation of its equities and, consequently, which is the degree of financial leverage, besides the respective expiration periods. As each source has a specific cost, the return rate can be influenced in a significant way by that composition.

Modigliani & Miller (1958) affirm that, in if treating of perfect markets; the capital structure doesn't have influence on the market value of the company, which will be settled by the composition of its assets. This is a model with several presuppositions - unreal for the current context - in which perfect markets are those without brokerage costs, and individual taxes and where it is possible to investors to obtain financing at the same rates practiced to companies. There is not an information asymmetry, and the company's debt of is free of risk

Liquidity is a very important economic category, even if we examine the macro or micro economic. If may be said that liquidity is fat, which facilitates the smooth functioning of financial markets (in the macro sense) and the mechanism of the existence of long-term stage companies in the micro sense, hence the lack of liquidity is a form of friction in the system (Stoll, 2000). Thus, the negative effects of lack of liquidity can be harmful, especially

the value of assets, demonstrated by Amihud and Mendelson (1986).Also, in the period leading cause of lack of liquidity was the presentation of the crisis in financial markets. J Alan Taub, investigated the relationship between variables that explain the influence of various factors in business decision making regarding financing activity. For this purpose, the author considered the sample of 89 firms for 10 years, from year 1960 to 1969. For empirical treatment was used to model two types of tests: the test of probability and t - test. Empirical results show that the differences between the returns of the firm and the interest rate on long term and firm size that have shown positive influence on the debt to equity ratio. The uncertainty of the firm's income is shown to have negative impact on the debt to equity ratio. Results for the remaining variables were contrary to expectations.

FakherBuferna, KenbataBangassa and Lynn Hodgkinson (2005), provided empirical evidence for theories of capital structure that firms of developed countries. Independent variables were financial leverage report and explanatory variables were firm size, firm growth opportunities, and debt ratio of firm assets and profitability of the firm. The sample of this research was based on 5 years by treating the data from 1995 to 1999 for 55 companies. Selection of sample companies included in the framework of public and private companies. The sample included 32 public companies and 22 private companies. To test the relationship between debt level explanatory variables to those used econometric methods to the amount of small squares. Results showed that private companies have tended to rate the highest average growth and more assets than public companies. On the other hand, the results showed that private companies have higher levels of short-term debt than public companies, which means that private companies had the highest rate debt than the average public company.

The level of long-term debt is shown to be similar for both private companies to public companies. Variables and asset growth have shown a positive correlation with short-term debt and negative correlation with long-term debt. Profitability and firm size is shown to have negative correlation with long-term debt. This implies that growing companies and companies with higher levels of fixed assets tend to use more debt than long-term debt and the large and profitable companies tend to use debt in general.

2.Methodology of research

This research paper investigates the determinants of capital structure for the small and medium enterprises that operate in the region of Polog. In this study we treated 150 firms of

various activities in last ten year, classified as small and medium enterprises according to law in force that defines the activity of firms in the real sector of economy. The necessary data, which are used in this work are the financial reports provided by the respective firms. We define these research important determinants of decisions related to capital structure. The methodology used in the paper is built on the basis of the methodology that the small amount of squares, using data to cross. This methodology enables that through multivariable regression analysis, to analyze the effects of different variables that affect business decision, on the basis that the capital structure and liquidity. So the main purpose of the methodology that the small amount of squares to be applied through regression analysis that multivariable change is forecast to average depended variables (profitability), as a result of unit change in explanatory variables.

To test the relationship between debt and profitability, the following function was considered:

$$\mathbf{ROE} = f\,\mathbf{(ECP, PL, LP/PL,)}$$

Where:

ROE is the return rate, and it corresponds to the net profit divided by the equity;

ECP corresponds to the short-run debt divided by the total liability;

PL is the equity on total liability;

LP/PL corresponds to the reason between the long-term debt and equity,

ROE indicates the rate of return proportional to the equity, ECP, ELP and PL shows the capital structure of the company, representing the total debt, of short and long run, and the total of equity in relation to the total liability, respectively. The index LP/PL shows the proportion of debts of long term in relation to the equity.

2.1Empirical Analysis

For our quantitative analysis we used the correlation between variables and regression analysis. Correlation between variables will help us to measure the association between explanatory variables and their association with pendant variable. Correlation is calculated for all explanatory variables. Regression analysis is used to accurately measure the individual effect of explanatory variables in the relation between variable and their hangers.

2.1.1.Analysis of descriptive data

Determinants of capital structure than small firms and medium to Polog region are studied individually, through the calculation of the maximum, minimum, average, standard deviation and standard error. Descriptive analysis was conducted in order to assistant and empirical analysis to support the findings of empirical analysis. Table 1 shows that there are negative values for minimum values, for e.g. observe any of the firms has operated at a loss during the fiscal year.

Profitability	**Observation**	**Average**	**Standard deviation**	**Minimum**	**Maximum**	**Standard error**
ROE	150	0.10386	1.2545	-9.3378	11.5773	1.2545
ECP debt/liabilities	150	1.10476	2.4481	0	23.3478	2.4481
LP/PL debt/equity	150	0.75094	12.05423	-78.833	158.904	12.0542
PL equity/liability	150	-0.1048	2.3331	-22.3478	2.6882	2.33312

Correlation

PROFITABILITY	**ROE**	**ECP**	**LP/PL**	**PL**
ROE	1			
ECP	-0.02560	1		
LP/PL	0.323621	-0.0285	1	
PL	0.027120	-0.9194	0.04210	1

Correlation analysis was built in order to assess the individual association level of explanatory variables with pendant variable and to test the linear relationship between the explanatory variables. Correlation explains dependence of an explanatory variable to another variable. In cases where there is perfect correlation between explanatory variables, this means

two or more variables, among whom there have correlation, show the same information. Such result leads to the conclusion that the model descriptive power is low and the statistical implication of individual coefficients decrease. This undermines the relevance of explanatory variables included in the model. Overall, the explanatory variables that have correlation behavior above 0.7 should not be included in the regression analysis model **(Dougherty, 2007)**. Table 2 shows that the highest correlation is marked between coefficient of financing (obligation/capital) and the coefficient of financing (capital/assets). This means that correlation is not be a problem in our empirical analysis.

Regression analysis

	Coefficient	Standard deviation	t	F test	P		
Intercept	0.09258	0.04437	2.08649	0.1023	0.03710	0.00554	0.17961
ECP debt/liabilities	-0.01317	0.03190	-0.41283	0.2625	0.67979	-0.07575	0.04941
LP/PL debt/equity	0.03365	0.00255	13.20238	0.0101	0.00000	0.02865	0.03865
PL equity/liability	-0.00545	0.03349	-0.16262	0.2893	0.87084	-0.07115	0.06025
Multiple R= 0.324	***R Square =0.105***		***Adjusted R Square=0.103***				

Conclusions and recommendations

The adjusted determination coefficient (R2) shows that 10.3% of the variations of the return rate (ROE) were explained in conjunct by the independent variables, which, allied to the level of significance of the test F (1%), indicates a good adjustment degree.

The index LP/PL has a larger explanation power in the model, and its positive sign indicates an inverse relationship. The result indicates that the return rates are inversely proportional to the debt, in other words: the larger the debt, the lower is the profitability. Those results are in conformity with the conclusions of **Booth et al (2001), Fama& French (1998), Graham (2000)**, **and Miller (1977).** On the other hand, the inicial propositions of Modigliani and Miller (1958 and 1963) don't find back up for in the results now discussed.

The short-term debt (ECP) presented negative sign and level of significance of 2%, showing to be an important variable in the model. The explanation for such fact can resite in the low relative participation of that type of debt, and can also suggest that ECP is a common practice among the most profitable companies, considered the instability of the Macedonia economy, which arises the need of short run funds to provide the necessary working capital – which are the type of resources supposedly offered with relative abundance and easiness by financial institutions.

The relative participation of the equity in the capital structure of the company, represented by the index equity divided by the total liability, was significant at the level of 2% and its sign indicates positive relationship with profitability. This fact is in unison with the above mentioned works and shows to main financing option chosen by the Macedonian companies.

The theoretical models on capital structure don't indicate to be an optimum composition, one that would be the ideal for the company to adopt as seeking to maximize the value of its shares. However several studies relate high return rates with low debt level, contradicting the works of Modigliani and Miller (1958 and 1963), which affirm that the value of the company does not depend on the capital composition, also indicating the existence of taxes benefits of the debt.

The results of the work show a great dispersion among the several capital sources used by the Macedonian companies, exception to the equity, the main component, and the one that presents smaller variability.

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