FACTORS OF INFLUENCE OF THE COST OF DEBT – ROMANIAN LISTED COMPANIES EXAMPLE

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ABSTRACT

This article aims to highlight some of the main factors influencing the cost of debt for a sample of companies listed on Bucharest Stock Exchange between 2012 and 2016. Empirical analysis revealed that the cost of debt of Romanian non-financial companies is higher for more indebted firms and for those for which its stock volatility coefficient is higher, making them riskier. On the other hand, the existence of growth opportunities lowers the cost of debt a company must carry. In addition, larger companies are more attractive to creditors because the risk is considered smaller. Industry sector in which a company operates was also found as having a influence on the cost of debt of Romanian listed companies. Older firms with a longer period since incorporation carry a lower cost of debt because they capitalize on a lower perception of risk among investors.

Keywords: cost of debt, factors of influence, Granger causality, listed companies

Classificiation JEL:G32

1.INTRODUCTION

According to past studies, companies prefer to finance themselves from external sources only after using reinvested past profits (Myers şi Majluf, 1984; Titman şi Wessels, 1988). Cost of debt is a cost carried by a company for the external financing and it is being related to borrowed funds and issued corporate bonds. When referring to loans, both credits from financial institutions and intragroup loans are considered. The most important gain for a company when borrowing is the tax deductibility for interest expenses.

The cost of debt is primarily determined by its maturity and the level of risk associated with that particular company. In addition, the literature highlighted a number of factors that can also influence the cost of debt, one of these factors being the capital structure of that company. The way a company structures its capital can have impact on its borrowing costs. According to Francis et al. (2005), companies with higher leverage rates are more exposed to risk of experiencing insolvency. Under these circumstances, lenders request higher rates of interest in order to compensate for that risk.

Another element taken into consideration in determining the cost of borrowed funds for a company is the level of assets which can be constituted as collateral. This type of assets can be put forward when the company goes bankrupt. This means that a higher level of tangible assets implies a lower risk for the creditors.

Literature noted a negative dependency between the cost of debt and the value of assets that can be brought as collateral, decreasing the cost of debts as the the value of collateral increases (Binsbergen et. al., 2010).

Information asymmetry is another factor that has an influence on the overall cost of financing for one company. In case of large firms, where a significant amount of information are publicly available to investors and creditors, the cost of debt is lower (Francis et. al., 2005).

Other factors that may cast influence over the cost of debt are related to the age of company, geographic location (Arena and Dewally, 2012; Derouiche et al., 2016) and the industry in which the company operates.

There are also a number of factors that do not depend on the financial situation of each company, such as the general economic environment, phase of the economic cycle, supply and demand equilibrium on the financial market, different market strategy of financial institutions which may target a certain segment of borrowers (natural persons or non-financial entities, government entities etc.).

2. METHODOLOGY

This article aims to test the influence of the capital structure, volatility, time since incorporation, presence of growth opportunities, size and the industry in which a company operates, on the cost of debts (indicators are presented in Table no. 1 and are based on the sample of 70 listed companies on the Bucharest Stock Exchange's main stock market). Only companies whose shares were traded in the last day of 2016 were selected, with the exception of those operating in financial and insurance intermediation sector and those with offshore registration.

The analysis did not take into account the way the debt is structured on maturities. The cost of debt for the companies in the sample was determined according to formula [1], as a ratio between the total expenses on interests and total debts of the company.

$$kd_{it} = \frac{InterestExp_{it}}{Debt_{it}}$$

where: $<u>InterestExp_{it} = interest total expenses</u>$ $<u>Debt_{it} = total debt at book value</u>$

VariableFormulaTable no. 1VariableFormulaExpected relationshipCapital structureLeverage = $\frac{Debt_c}{Equity_c}$ +Volatility coefficient
of an undebted company $\beta_U = \frac{\beta_L}{1 + (1 - \tau_t) * \frac{Debt_c}{Equity_c}}$ +Growth opportunitiesOpGrowth = $\frac{Equity_c}{Equity_p}$ -Age
SizeAge = ln(age)-SizeSize = ln(TA_c)-

Explanatory variables used in the analysis

Source: author selection

<u>Note</u>: $Debt_c$ = total debt at book value, $Equity_c$ = shareholder's funds at book value, $\beta_L = \frac{\text{cov}(R_i, R_M)}{\sigma^2(R_M)}$ = volatility coefficient of an indebted company, age = number of years since incorporation, TA_c =book value of total assets, $Equity_p$ = No.shares. Pclose = market value of equity, Pclose. = closing price of company stock in the last trading day, on each analysed year;

Publicly available information found in companies' financial statements were used in this study. Financial statements were consulted on Bucharest Stock Exchange's website.

Volatility coefficient was determined based on the last 36 monthly yields of the stocks selected in the sample and of the BET index. This is considered to be representative for the market portofolio (where this number of observations was not available, the condition of availability for at least 18 monthly returns was imposed).

Monthly yields were calculated based on closing prices in the last trading day of each month. Quotations of stocks and closing prices of BET Index were collected from KTD Invest S.A. website. Information regarding the incorporation date of each company were obtained from their official websites, as presented in the "Issuer" sections on the BSE's website.

[1]

In addition to variables identified in Table no. 1 a dummy variabile was introduced in order to capture a possible influence of the industry in which each company operates. The grouping of companies by industry was done according to the information presented on BSE's site.

Subsequent to the determination of the independent variables, the samples was adjusted by removing the observations of companies for which all the required variables could not be calculated for a given year.

As a result, in the final sample there are 221 annual estimates for each set of observations (dependent variable and the explanatory variable).

3. RESULTS

In this empirical analysis an unbalanced panel data model was estimated. Cost of debt was considered the dependent variable, while the five indicators presented in Table no. 1 and the dummy variable that captures the influence of business sector were considered as independent variables.

The estimated model is illustrated în equation [2]:

$$kd_{t} = \beta_{1t} \cdot leverage + \beta_{2t} \cdot betaU + \beta_{3t} \cdot opgrowth + \beta_{4t} \cdot age + \beta_{5t} \cdot size +$$
$$+ \sum_{i=6}^{n} \beta_{it} * sector_{it} + \varepsilon_{t}$$
[2]

where n=8, correspondent of the number of industry sectors of companies in the sample

The results obtained for the dependencies between the explanatory variables and the cost of debt's variable are presented in Table no. 2. Except for the intercept, all coefficients of the regression were statistically significant.

Positive correlation was found between the indicator that proxies the risk associated with a company's stock – determined for comparability reasons for an undebted company and also considering that the model is separately highlighting the impact of capital structure – and the cost of debt. An increase of 1 percentage point for the volatility ratio of a company's stock will determine an increase în the cost of debt of 0,0063 percentage points. This may indicate that banks look at a company in a similar way other investors do. Volatility is a signal of uncertainty given by the stock market and the similar information can be disseminated by credit institutions.

The same conclusion can be drawn in case the capital structure regression's coefficient is analysed. The more indebted will a company be, the higher the lender's charged cost will be in order to offset for the greater bankruptcy risk. This finding contradicts the hipothessis that Romanian listed companies with higher leverage rates are more performant and manage to borrow easier.

Negative correlations were obtained for the indicators estimating growth opportunities, company size, and age. As for the companies expected to grow, the cost of debt decreases as a result of a lower company's perceived associated risk. This may be caused by the relation between the variation in the cost of debt and the company's associated risk and by the fact that larger companies manage to borrow at lower costs.

When a company is expected to improve its financial indicators by increasing its turnover or profit margin this may be caused by an overall growing market or by an increase in its market share. This lowers the leverage, enhances debt repayment's capacity and demonstrates the economically viability of the business model. All these makes the credit institutions look at the company in a more positive way and its credit eligibility rises.

			Table no. 2
	Variable	Coefficient	t-Statistic
	leverage	0.0041***	5.3380
	age	-0.0043*	-1.7794
	opgrowth	-0.0074	-1.7980
	betaU	0.0063*	1.7449
	size	-0.0016*	-1.6145
	Industry effect:	4.4	
0	professional, scientific and technical activities	0.0581**	2.1582
0	wholesale and retail trade, repair of motor vehicles and motorcycles	0.0604**	2.8985
0	contruction	0.0692^{***}	3.4517
0	hotel and restaurants	0.0739^{***}	3.6744
0	extractive and mining industry	0.0969^{***}	3.9406
0	manufacturing	0.0651***	3.0834
0	production and supply of electric and thermal energy,	0.0652***	2.6021
0	transport and storage	0.0570^{**}	2.4894
R-squared		0.2623	
Adjusted R-squared		0.2197	
Durbin-Watson stat		1.1672	
	N	2.2	21

Regression results

Source: own calculations

***, **, * = significance level at 1%, 5%, 10% respectively;

Moreover, when a company operates in the market for a longer period, then the borrowers look at that company more confidently and are more inclined to analyse the financial situation and future scenarios in a more optimistic manner. Because of this reluctance of credit institutions to lend startups and young companies at bearable costs governments often provide special funding schemes for these type of firms. Taking into account high starting expenses like amortizations and market penetration costs young companies frequently record low or negative profit margins in first years of activity. This makes them less atractive for credit institutions and rises its borrowing costs.

Regarding the dummy variable included in the model in order to highlight the impact of the business sector in which a company operates on the cost of debt a borrower is asking, all eight coefficients are statistically significant. The highest value of the dummy variable coefficient was determined for companies activating in extractive and mining industry, while the lowest was recorded for transport and storage industry. High cost of debt may be caused by high amortization periods which are specific to some industries. Another explanation for a higher cost of debt for mining industry may stand in its superior associated risk generated by high variations in commodities prices. Energy related commodities, like oil, gas or coal, have very volatile prices which can inflict damage on mining companies margins. Exploring and extraction activities also bear a risk of finding economically non-viable reserves after investing large amounts.

As the R-squared (Table no. 2) indicates, the factors considered in the econometric analysis together account for approximately 26% of the cost of debt's variation.

In order to highlight the ability of the capital structure to efficiently predict the evolution of the cost of debt, Granger causality test between leverage and the cost of debt was used. Table no. 3 displays the results of this test.

Granger causality test

Table no. 3

Null hypothesis	Obs	F-Statistic	Prob.
Leverage does not Granger cause the cost of debt	110	0.7161	0.4908
Cost of debt does not Granger cause the leverage	118	0.0746	0.9281

Source: own calculations

As identified in the literature (Dragotă et al., 2008) also regarding the relationship between leverage and profitability for Romanian listed companies, the results of the causality test illustrated in Tabel no. 3 indicates that leverage does not Granger-cause the cost of debt and the cost of debt does not Granger-cause the leverage (the associated probability with the null hypothesis is greater than the significance thresholds).

Therefore, neither the historical values of leverage nor the ones of the cost of debt are relevant in estimation the trend of the other variables. However, according to results presented in Table no. 2, an increase of leverage by percentage point determines an increase in the cost of debts by 0,0043 percentage points.

4. CONCLUSIONS

This analysis intended to identify a series of factors that impact the cost of debt for a sample of Romanian listed companies. Moreover, where an dependence was found, the nature and direction of this influence was studied. Results of the empirical analysis are în line with those expected and highlighted în the literature. In Romania, the cost of debt of non-financial companies is positively influenced by the capital structure and volatility coefficient of the companies's shares. Negative relationship was found between the cost of debt and the growth opportunities, size and age of the company în the market. Industry effect was empirically confirmed as an factor of influence on cost of debt.

For future research purposes, the variation of cost of debt can be analysed also from the perspective of the development region where the company's head office is located, which could influence the lending strategy of credit institutions. In addition, as reported by Rajan and Zingales (1995), using a sample of large companies in the analysis is not necessarily representative for the whole country's situation. Therefore, the sample should be extended to include a larger number of companies which should be classified based on different size categories.

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