IJSER
ISSN: 2149-5939

International Journal of Social Sciences and Education Research
Online, http://dergipark.gov.tr/ijsser
Volume: 1(4), 2015

Financial ratios effects on the companies' grouping financing preferences: An application on the BIST

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Received Date: 19 / 10 / 2015 Accepted Date: 21/ 12 / 2015

Abstract

Capital structure decisions of companies took an importance place between the decisions taken in the past and in the present for businesses. To reach the optimal capital structure of companies, efforts to maximize the market values are one of topics in which most of studies have been conducted under the finance literature. Capital structure is a concept that describes the relationship between equity and debt. The necessary funds needed by a business come from two sources: external source and equity. Debt although obtained from the outside of the company; through equity source, company can create funds (retained earnings, reserves, etc.) and also the company can obtain from outside funds (capital increase, the participation of new partners, etc.) Building a capital structure is one of the important issues faced by companies in Turkey as well as companies in different countries. In this study, from the companies operating in the manufacturing sector in Turkey, the group of financing options that can be preferred by companies will be studied in view to explain which of the financial variables effectives are. In this context, debt, profitability, growth, size and current ratio concepts were examined. Concerning financing preferences of Turkish operating companies in the BIST, the statistical analysis was used to detect and explain variables which are more affected. In the light of the results obtained, generally the path of the Turkish companies in the decisions of their capital structure has been followed and this path has been attempted to explain the affected variables.

Keywords: *Internal Financing, External Financing, Capital Structure, Discriminant Analysis*

Jel Classification: *G32, G33*

1. Introduction

Capital structure decisions of firms took an important place between their past and present decisions. Firms give their attention to resources which will meet their needs when constructing their capital structure. To achieve an optimal capital structure operation of companies, efforts to maximize the market value is one of topics in which some studies have been performed in the finance literature. The existing necessary approaches regarding to capital structure as well as new approaches have led to a diversity of opinions.

The concept of capital structure is seen as the amount of foreign resources and equity, and also included different types of funds to be used in operating activities (Marks, Robbins, Fernandez and Funkhouser, 2005, p.22). Foreign resources (debt) although obtained from the outside of the company; and trough equity source, company can create funds (retained earnings, reserves, etc.) and also can obtain from outside funds (capital increase, the participation of new partners, accumulation shares to shareholders, participation of the dividend shares sales, etc.) (Akgüç, 1998, p.481).

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ISSN: 2149-5939

Oruç Erdoğan, E., Adalessossi. K. (2015). Financial ratios effects on the companies' grouping financing preferences: An application on the BIST. *International Journal of Social Sciences and Education Research*, 1 (4), 1178-1184.

2. A General overview of capital structure approach

When composing a capital structure, companies give importance to resources which will meet their needs. Because the purpose of the finance manager is to maximize the market value of the company and to put forward the company needs in the best way to meet the capital structure.

When examined the literature, the basics of corporate finance theory began with Modigliani and Miller (M&M) in 1958 who made the capital structure with uncorrelated opinions. How Companies financed their activities and how they need to finance them? In other words, why some companies were more indebted, why some companies were looking for different ways of financing or through factors affecting financing preference explained by M&M theory' works, effectiveness of the theory staying unproductive and far from the real market conditions. The opinions put forward of this theory cause a number of questions and in line with these questions, new development ambiance approaches were prepared.

Due to the characteristics of risk of different types of debt and the structure of the firm assets, the presence of the financial pressure occurring in high debt ratio and losses experienced from representative costs' creation, it needed to establish a specific optimal capital structure for a. company. When considering different modern opinions in explaining capital structure, while some advocate an optimal capital structure, some do not believe in needs of determining optimal capital structure (Copeland and Weston, 1988, p.442-444, Watson and Wilson, 2002).

One of the modern views expressed by Myers (1984) is as follows: The building equilibrium between bankruptcy debt occurred with tax savings results and financial distress costs is a called "Trade off Theory" approach (Frank and Goyal, 2007). According to this theory put forward, this equilibrium is reflected between tax savings from the high debt ratio with associated benefits with increasing representation and financial costs pressures.

The vast majority of businesses are using debt. This is clear that companies that only use debts or do not use debt may not be able to make the preference of value maximization. The important point is to achieve the equilibrium to be established between costs with an optimal capital structure (Ghosh and Cai, 2001).

Donaldson made the first studies on the use of different sources of funding (1961). Donaldson put forward views that, first it was the need of companies to prefer internal financing, and in the external financing's situation, they had to prefer borrowing and then in the order form will be followed stocks' issuing (Saeed, 2007, p.15). Later, an approach named "Pecking Order Theory" was developed by Myers and Majluf. This approach, inside of the company for example management with investors ie between those which are located outside of the company, is a theory that emphasizes the asymmetric information. Managers of company having tangible assets and intangible assets with different informations on financial investment decisions of the company cause the effect of asymmetric information. In this case, the manager from internal financing would prefer external financing to track progress towards a financial order (Saeed, 2007, p.16).

Both traditional methods discussed how to create a capital structure, and are also aimed to create an optimal capital structure in terms of modern methods businesses. The capital structure of company towards this target may remain under the influence of some variables.

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3. Effects of some companies' variables in the disclosure of financial preferences

Companies, when making a capital structure decisions amongst their resources, encounter some factors that affect the choice to be made. These factors can be from the company self-structure as it can be from external factors.

When examined businesses borrowing through financing preferences based on the equity financing preferences in the literature, some variables that are effectives and when composing companies financial indicators, some of these variables become variables related to the company's characteristics. From variables that are thought to be effectives, some of them are profitability, business size, asset structure and liquidity indicators. Considering companies in financing preferences, when thinking about effect, different views about another variable is company size.

Also, in their study Rajan and Zingales (1995) concluded that because of the most complex structure of large companies, and therefore they faced problems of asymmetric information with costs stemming. For this reason, large companies are obliged to use less external source. Fama and French (2002) in their studies, large companies have experienced less variability and therefore are reported to have higher leverage. Large companies that have financial and operational strengths and their possibilities of going into bankruptcy are thought to be weak. This type of companies have long and strong relationship with banks. Therefore, the possibility of finding debt facilities are extensive.

Another effect variable over company financing preference is company's growth. In study of Myers (1984), due to asymmetric information problems related on companies' need of making issuance of shares, the price of these shares was predicted to be fallen and because of this situation, the new issued shares of projects with a positive net present value will not able to be financed primarily by the exhaustion's requirement of internal resources; and later on, the need of using debt financing was defended.

Company's asset structure is one another variable that has effects over companies financing preference. Company's plant and equipment (fixed asset) is as a collateral for lenders because they want to get themselves be protected. Thereby lenders stay more easily in the lending trend. Because of the collateral shown and the reduction of lenders risk, there exist a positive relationship between companies' fixed asset and leverage. Company possessing fixed assets has a high level capacity of borrowing. (Saeed, 2007). Also liquidity structure has effect over companies financing preference. In cases where a company's financial is deficit, the company is obliged to look for foreign financing. In this case debt must be the priority, then the secured securities' issuance and finally funds are provided by realizing shares issuance.

In this case, there is a positive relationship between the financial deficit and the capacity of borrowing (Shyam-Sunders and Myers, 1999).If the company, in the opposed situation to this one, has an available sufficient financial surplus , all investments with a positive net present value or financial needs can be met by this excess. Financial deficit companies while their debt ratio showing a rise up, this ratio is the opposite within the trend in companies with financial surplus.

Companies with financial surplus, with available cash and marketable securities, are also companies which have an unused debt capacity. Companies with sufficient financial surplus, according to the financial hierarchy theory, unneeded borrowing, or for finding funds they have never

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issued shares. Because financial excess brings also along with the financial flexibility (Megginson, 1997, p. 338-340).

4. Objectives of the study

In the process of capital structure forming, companies used to face with different capital structure theories. Both capital structure of enterprises operating in Turkey as well as in different countries, one of the important issues is to build their capital structure.

In this context one of the choice we face to eliminate financing needs of businesses passes through by an internal financing and another way to solve financing needs passes through by an external financing. In this study, from the companies listed in BIST 100 (excluding financial companies) operating in Turkey, the group of financing options available that can be preferred by companies will be studied in view to explain which of the financial variables most effectives are.

The data used in the study was obtained from Istanbul Stock Exchange (BIST). In the study, between 2010 and 2014 in BIST's continuously traded companies were used. In the data sets, companies that have interrupted or incomplete data were excluded from the analysis. The number of companies that took account into this study was 72.

4.1. Research method

Discriminant analysis was performed by t SPSS package to determine the most effective variables that can be applied in companies' grouping financing preference. In this context, the variables used in this research are as following:

CR = Current Assets / Current Liabilities (Liquidity Indicator) (Current Ratio)

P1 = Net Income / Total Assets (Profitability Indicator)

P2 = Net Income / Equity (Profitability Indicator)

A1 = Current Assets / Total Assets (Asset Structure Indicator)

CG 1 = Percent Change in Total Assets (Growth Indicator) (Company Growth)

CG2 = Percent Change in Sales (Growth indicator) (Company Growth)

CS1 = Natural logarithm of sales (Size Indicator) (Company Size)

CS2 = Net Sales / Total Assets (Size Indicator) (Company Size)

D = Total Debt / Equity (Borrowing ratio Indicator) (Debt Ratio)

The independent variables used in the research were CR, P1, P2, A1, CG1, CG2, CS1 and CS2. The dependent variable is Financing Preference. Financing Preference is expressed by debt ratio (D). The ratio of debt calculated to meet companies' financing needs shows the use of debt and equity ratios. When debt and equity ratios is equal to 1, it means that debt and equity ratios are equal to meet the company's financing needs. This is the fact that the grouping borrowing ratio was based on below and above 1.

Dependent Variable;

Total Debt/Equity <1 Internal Financing (lower borrowing ratio ones) = Group 1
Total Debt/ equity > 1 External Financing (high borrowing ratio ones) = Group 2

ISSN: 2149-5939

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4.2. Analysis and comments of results obtained

Discriminant analysis, when taken into account a large number of characteristic units, the natural environment of the units in accordance with these features at an optimal level is applied in order to be appointed to their real class. In addition, it is to determine which variables are mostly associated with the groups and how well these groups' membership can be predicted. Findings and interpretations regarding to discriminant analysis are as follows:

The results obtained from the study show one discriminant analysis function. Presented in Table 1, eigenvalue of 1.854 indicates how important is discriminant analysis and how much the explained variance rate is. In our case the explained variance is 100%. The canonical function correlation coefficient is 0.799. The correlation coefficient of Canonical Square of 0.63, shows and reveals that 63% of the variation in the dependent variable was with the laid down mode.

Table 1. Values obtained from discriminant analysis results

Values obtained from the discriminant analysis				
Eigenvalue, Canonical correlation, Wilk's Lambda Value				
Function	Eigenvalue	Variance%	Cumulatif %	Canonical Correlation
1	1.854	100.0	100.0	79.9
Tested Function	Wilks' Lambda	Chi-Square	Degree of Freedom	Significance
1	0.393	552.292	12	0.000

According to values given in Table 2; Pearson correlation coefficient is expressed between structural matrix and discriminant function with discriminant variables. To seek out variables that mostly contribute to a single discriminant function, having examined the structure matrix, the most important independent variables that explain the variation in the dependent variable are respectively current ratio (CR) with 0.823 , CS1 with 0647, and A1 with 0.632 variables. (Variables with values above 0.50 have been accepted as important variables.) Therefore, these three variables have effects over and discriminate the primary composed companies in their financing preferences through internal financing or external financing.

Table 2. Discriminant Function Coefficient

	Structural Matrix		**Standard Canonical Discriminant Function Coefficients**
Independent Variables	**Function**	**Independent Variables**	**Function**
CR	0.823	P2	0,165
CS1	0.647	CG2	-,141
A1	0.632	CG1	,119
P2	0,131	P1	,111
CG2	-.103	CS1	.974**
CG1	.068	A1	.867**
CS2	-.019	CS2	-,471
P1	-.011	CR	.991**
		Constant	-,161

** Variables with values above 0.50 have been regarded as important variables.

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When examined coefficient of the standard discriminant function, it is revealed that "CR" (0.991) is considerate as the most important factor that contributed most to the discriminant function model. Thus, it is followed respectively by variables "CS1" (.974) and "A1" (0.867). When based on the value of the standardized discriminant function, the equation is as following:

$$DF = 0.991CR + 0.974CS1 + 0.867A1 - 0.471CS2 + 0.165P2 - 0,141CG2 + 0.119CG1 + 0,111P1$$

Table 3. Classification table

		FT	Predicted Group Membership		
			1.00	2.00	Total
Original	**Count**	1.00	90	70	160
		2.00	25	175	200
	%	1.00	56,3	43,8	100,0
		2.00	12,5	87,5	100,0

** 73.6% of original grouped cases correctly classified.

When examined the classification Table 3, companies that prefer internal financing in other words from low borrowing ratio's companies, 90 (56.3%) took place in the accurate classified group whereas 70 of them were wrongly classified in the group of those who preferred external financing. Concerning those who prefer external financing, 175 of them (87.5%) were correctly classified. Thus, the total correct classification rate arrived at 73.6%.

5. Conclusion

While determining the financing preferences of the companies that trade on the Istanbul Stock Exchange in one hand, which variables that affects their financing preferences and in the second hand when grouping their financing preference, which variables that possess the highest important level were examined. In accordance of this purpose and according to the company borrowing rate, the effect of the company profitability indicators, liquidity indicator, assets structure, size and growth ratio were investigated on the building group. The analysis of results based on the companies financing preferences , indicated that the most discriminating influential and significant variables were liquidity indicator (current ratio), company size indicator (natural logarithm of sales) and asset structure indicator (Total asset) which has been determined when based on the amount of fixed assets .

When compared the results analysis with literature, Shyam-Sunders and Myers (1999) pointed out from liquidity indicators the current ratio to be one of the effective ratios when making preference between external financing and internal financing. Companies with high liquidity level predominantly preferred internal financing and in this context has an effect on the financing preference. Companies with financial adequacy possessing capacity to fulfill their short term obligations are expected to prefer in priority internal financing.

In addition, also company's size as mentioned in the study of Frank and Goyal (2010), is one of another variable that has an effect upon financing preference. On the basis of company sales expressed by the firm size, the financing of the company creates a difference between the preference alternatives. Another variable that has distinguishing effect over financing preference is corporate assets structure. In company with assets structure, fixed assets and current assets direct

ISSN: 2149-5939

companies' weight in to different financing alternatives. Consequently, in differentiating or discriminating companies' financing preferences, it is shown that some company's variables come into prominence.

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ISSN: 2149-5939