The Determinants Affecting Capital Structure of Firms: Evidence from Borsa Istanbul*

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ABSTRACT

This study aims to determine the factors that affect capital structures of firms. To this end, among the ones listed active in IMKB manufacturing industry index, 123 firms data of which, between the years 2000-2010, can uninterruptedly be reached have been applied panel data analysis. Bound and independent variables have been determined in the application abiding by the literature. Three models have been generated by means of bound and independent variables. As a result of the study, it has been found that there is a relationship between gearing ratio and growth, positive relationship with BDVK, and negative relationship with asset structure. A meaningless relationship has come out between tax and growth. According to the results obtained, it has been concluded that firms are not in search of optimum capital structure.

Anahtar Kelimeler: *IMKB Manufacturing Index, Capital Structure, Capital Structure Theories, Panel Data Analysis.*

JEL Sınıflandırması: *G00, G30, G32.*

Firmaların Sermaye Yapısını Etkileyen Faktörler ve Borsa İstanbul Örneği

ÖZET

Bu çalışmanın amacı, firmaların sermaye yapılarını etkileyen faktörleri saptamaktır. Bu *amaç doğrultusunda, İMKB imalat sanayi endeksinde faaliyet gösteren firmalardan, 2000-2010 yılları arasında bilgilerine kesintisiz ulaşılan 123 firma ile panel veri analizi uygulanmıştır. Uygulamada literatüre bağlı kalınarak, bağımlı ve bağımsız değişkenler belirlenmiştir. Bağımlı ve bağımsız değişkenler kullanılarak üç tane model oluşturulmuştur. Çalışma sonucunda, kaldıraç oranları ile büyüme, BDVK ile pozitif ilişki, varlık yapısı ile negatif ilişki bulunmuştur. Vergi ve büyüklük ile anlamsız ilişki çıkmıştır. Elde edilen sonuçlara göre firmaların optimum sermaye yapısı arayışı içinde olmadıkları, sonucuna ulaşılmıştır.*

Keywords: *İMKB İmalat Endeksi Endeksi, Sermaye Yapısı, Sermaye Yapısı Teorileri, Panel Veri Analizi.*

Jel Classification*: G00, G30, G32.*

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1. INTRODUCTION

Capital needs emerge when business firms conduct their activities. The concept of capital structure is related to resource of firm. These resources are divided by as equity and debt. But the main problem is to find an answer to question of how the structure of resources should be. Capital structure decisions are highly significant for firms. Capital structure decisions are deeply influential on market values. The main point is primarily to increase the market values of firms and accordingly to minimize the weighted average cost of capital. When it comes to capital structure, financial structure, that is the debit side of the balance sheet, comes to mind. These are liabilities and equity. Optimum capital structure can be defined as the capital structure that minimize the risk for the union of resources in terms of firms and maximize the proceeds.

The study was done with 123 firms of 179 which acted on ISE and whose data could be continuously reached between the years of 2000-2010. In the study, the method of panel data analysis was used. The data were obtained from the website of ISE and from FINNET program.

2. REVIEW OF RELATED LITERATURE

The studies on the structure of capital dates back to the Indifference Theory established by Modigliani and Miller in 1958. Cost of capital, financial leverage and cost of equity were tested in these studies. It was found out that the firms' average costs of capitals and the market values are independent from the structure of capital. The aim of capital structure decisions is to finance assets by building an optimum capital structure and without ruining this optimum structure (Büker, Aşıkoğlu and Sevil, 2010: 511).

In 1969, Gupta carried out a study on the manufacturing firms acting in the USA between the years of 1961-1962. He tested the relationship between size and financial leverage ratios and activity ratios, also, the relationship between growth and industry, financial leverage and acting ratios by using cross section analysis. He determined that acting and financial ratios decrease as companies grow. In addition, he pointed out that as companies grow, their liquidity ratios increase, and liquidity ratios decrease, as growth ratios increase.

Through the technique of face to face meeting with the finance managers of 48 firms whose shares were traded on the stock exchange in Australia, Allen (1991) carried out a study to determine the factors affecting the capital structure decisions and the financial policies they adopted. At the end of the study, a negative relationship was detected between the debt level of the firms involved in the survey and their profitability´s.

In 1997, Durukan did a research by studying on 68 firms traded on ISE between 1990-1995. In his study in which he did a regression analysis in, he tested the relationship between average (debt/equity) and average (debt/total assets) and the relationship among risk,

profitability, tax shield out of debt, taxes and growth. It was determined that the relationship between profitability and tax shield out of debt was negative, while the relationship between tax rates and growth was positive.

Kula performed his study by searching 80 firms acting in Afyon in 2001 and having 10-100 employees. He conducted a survey by face to face meeting in 1999. In the study, it was understood that taxes don't affect firms' debts.

Gaud conducted his study by using the data of 104 firms listing on Swedish exchange in 2005 between the years of 1991-2000. He tested the relationship between the book values of total debt/total assets and the market values of total debt/total assets and the relationship among size, growth, profitability, asset structure, risk and cost of bankruptcy by panel data analysis. He determined that the relationship between profitability and growth is negative, while the relationship between size and asset structure is positive.

In 2006, Sayılgan, Karabacak, Küçükkocaoğlu tested the relationship between leverage ratio and profitability, the relationship among growth rate, size, asset structure and tax shield out of debt by using panel data analysis on the data belonging to 123 manufacturing firms listing on ISE and acquired between the years of 1993-2002. He found that the relationship between size and the growth chance of total assets is positive, but the relationship among size and profitability, asset structure, tax shield out of debt, land machinery equipment growth ratio is negative.

Bouallegei conducted his study with 99 companies acting in technology field and listed on German exchange between 1998-2002. In the study in which he used panel data analysis, he tested the relationship among debt ratio, growth, size, profitability, asset structure, tax shield out of debt and risk. As a result, he found a positive relationship among asset structure, tax shield out of debt and size and a negative relationship among profitability, risk and growth.

In 2008, Şen and Oruç did a panel data analysis on 75 firms traded continuously on ISE between the years of 1993-2007.They tested the relationship among leverage ratio and profitability, liquidity, asset structure and size. At the end of the analysis, it was seen that the relationship among leverage ratio and profitability, liquidity and asset structure is negative.

In 2008, Ezeoha conducted his study with 71 firms listed on Nigerian exchange between 1990-2006. He tested the relationship among leverage ratios and asset structure, profitability, the age of a firm, size through panel data analysis. It was found that the relationship between the size of a firm and financial leverage is negative as in the relationship between profitability and financial leverage, but the relationship between the age of a firm and financial leverage as in the relationship between asset structure and long term leverage ratio.

In their study in 2009, Teker, Taşseven ve Tukel did panel data analysis with the data of the 42 firms which entered ISE 100 index between 2000-2007. The relationship among leverage ratio and asset structure, return on asset ratio, size, growth, profitability, tax shield

out of debt ratios was tested in the study. As a conclusion of the study, it was found that leverage ratio has a negative relationship with asset structure or return on asset ratio, while it has a positive relationship with profitability and tax shield out of debt.

Terim and Kayalı tried to find the factors determining the capital structures of firms through the regression analysis method in the study that they did with 134 publicly-traded firms on Borsa Istanbul whose data could be reached between the years of 2000-2007. As a conclusion of the study, between the years 200-2007 mostly positive relationships were determined between size and growth, and positive relationships were found among asset structure, profitability and tax shield out of debt.

Demirhan tried to determine the factors affecting the capital structures of firms by using the data between the years of 2003-2006 belonging to 20 firms traded on Borsa Istanbul in the national service sector through panel data analysis. As a result, a positive relationship with size, a negative relationship with liquidity, profitability and with asset structure and a meaningless relationship with growth opportunities, taxes, tax shield out of debt and with loan costs were found.

In Saudi Arabia in 2009, Al Ajimi tested the relationship among leverage ratios and profitability, growth opportunity, size, asset structure, state ownership, family ownership, institutional ownership, risk, liquidity and bonus payment through panel data analysis method on the data of 53 companies between the years of 2003-2007. The relationship with profitability, size, growth opportunity and with institutional ownership is positive, while the relationship with liquidity, public ownership, family ownership, asset structure, business risk and with bonus payment is negative.

In 2010, Ata and Ağ tested the relationship between loan and size, growth rate, interest coverage ratio, liquidity ratio by employing panel data analysis in his study in which he used the data, between 2003-2007, of 42 firms listed on Borsa Istanbul and acting in main metal industry and in manufacturing metal goods, machines and equipment sectors. The relationship between borrowing rate and size of a firm is positive, while the relationship between borrowing rates and liquidity is negative as in its relationship with growth rate.

In 2010, Guler searched the factors affecting the capital structures of firms by using the data between 1996-2007 belonging to 24 SMEs listed on Borsa Istanbul through panel data analysis method. As a result of the study, a positive relationship with tax shield out of debt and a negative relationship with liquidity ratios were determined.

In 2011, Sayılgan and Uysal tried to determine the factors affecting the capital structures of firms through panel data analysis by using the central bank of the Turkish Republic sector balance sheets between the years of 1996-2008. A negative relationship with tax shield out of debt and a positive relationship among growth opportunities, asset structure and size were found.

In 2011, Yakar tested the capital structure theories in his study which he did with the firms within Borsa Istanbul 100 index between 2000-2009 through panel data analysis method. While the relationship with growth and size was found positive, the relationship with leverage ratios, profitability and asset structure was found negative, and the relationship with taxes and tax shield out of loan was found meaningless statistically.

Kouki examined the data between 1997-2007 of 244 firms treaded on French stock in 2012. In his study, he tested the relationship between size and asset structure, growth, profitability, tax shield out of debt, risk and loss variables through panel data analysis. The relationship with leverage ratios, tax shield out of debt, growth and profitability was found positive while the relationship with size, asset structure and loss was found negative.

3. IMPLEMENTATION

The aim of the study is to test the determinants affecting capital structures of the firms traded within ISE manufacture index. By this study, the factors considered while firms take decisions about capital structure are tried to be determined.

This issue which is frequently argued in literature is one of the major problems of financial environments. Selection costs occuring in source selection process can consequently affect profitability and firm values in conclusion.

During the implementation of the study, the firms acting within Borsa Istanbul manufacture index were determined and the ones continuously acting between 2000-2010 were highlighted. Then, the variables frequently used in literature studies were determined. The data were taken from FINNET program and the website of ISE, and a panel data set was made by arranging them in an excel program, then panel data analysis was applied in Eviews 6.0 program.

The study was done with 123 firms of 179 firms acting in ISE manufacture sector whose data between 2000-2010 were reached. Panel data analysis application is to be used in four phases. While doing panel data analysis, firstly, F_{OLS} test is to be done for every three models to see if the model is one way or dual (Greene, 2003: 289).

After that, whether there is a random dual effect is going to be seen through LM test (Breusch, Pagan, 1980: 239). In the third phase, in random effects model, the efficient estimator going to be tried to be chosen through Hausman test (Hausman ve Taylor, 1981: 1260). Lagrange Multiplier test is to be applied to see whether there is any heteroscedasticity problem (Breusch ve Pagan, 1979: 1288). In regression models, the deviations from fixed variance assumptions are called changing variance (heteroscedasticity). In the case of heteroscedasticty, the variance of each error term is different and changes with independent variables. Heteroscedasticity problem will be solved through White (1980) correction.

Table 1: Table of Variables

Variables	Abbreviation List	Formulation
Total Leverage Ratio	TKO	Total Debt / Equity Capital
Long term Leverage Ratio	UKO	Long Term Debts / Equity Capital
Short Term Leverage Ratio	KKO	Short Term Debts / Equity Capital
Tax Shield out of Loan	BDVK	Depreciation Expenses / Total Assets
Size	LNTA	Natural Logarithm of Total Assets
Profitability	NKTA	Net Profit / Total Assets
Growth	AB	(Total Assets – Total Assets of Previous Period) / Total Assets of Previous Period
Tax Level	VDO	Tax to Pay and Legal Responsibilities / Pretax Profit
Asset Structure	VY	Tangible Fixed Assets / Total Assets

MODEL 1: Total Leverage Ratio: Total Debt / Equity Capital

$TKO_{it} = c + b_1 (BDVK)_{it} + b_2 (LNTA)_{it} + b_3 (NKTA)_{it} + b_4(AB)_{it} + b_5 (VDO)_{it} + b_6 (VY)_{it} + \varepsilon_{it}$

MODEL 2: Long Term Leverage Ratio: Long Term Debts / Equity Capital

$UKO_{it} = c + b_1 (BDVK)_{it} + b_2 (LNTA)_{it} + b_3(NKTA)_{it} + b_4 (AB)_{it} + b_5 (VDO)_{it} + b_6 (VY)_{it} + \varepsilon_{it}$

MODEL 3: Short Term Leverage Ratio: Long Term Debts / Equity Capital

$KKO_{it} = c + b_1 (BDVK)_{it} + b_2(LNTA)_{it} + b_3 (NKTA)_{it} + b_4 (AB)_{it} + b_5 (VDO)_{it} + b_6 (VY)_{it} + \varepsilon_{it}$

Table 2. Table of Descriptive Statistics Belonging to Variables

	Average	Maximum	Minimum	S.E	Skewness	Kurtosis
TKO	1,228448	38,45000	-31,74	2,832692	1,422874	62,36029
UKO	0,316194	18,11000	-18,77	1,157217	2,035724	139,3046
KKO	0,912306	20,34000	-26,18	1,972594	0,788247	51,23358
AB	0,296120	35,50	0,76	1,044713	28,58789	955,4353
BDVK	0,081123	26,01000	0,000000	0,779134	29,93325	948,5694
LNTA	18,85298	23,36000	13,26000	1,481574	0,296134	3,228309
NK/TA	0,039653	0,580000	-0,9	0,120528	-1,45601	12,49779
VDO	0,318352	82,39000	-6,75	3,194457	23,23069	575,2529
VY	0,376253	0,910000	0,000000	0,174696	0,116399	2,467650

When the descriptive statistics table is examined, it is seen that the highest standard deviation is in Tax Variable Rate (3,194457). The averages of the dependent variables are

TKO (1, 23), UKO (0, 31), KKO (0, 91). The average of the independent variables are AB (0, 29), BDVK (0, 08), LNTA (18, 95), NK/TA (0, 03), VDO (0, 32), VYO (0, 37).

Of the leverage ratios, the one having the highest average is Total Leverage Ratio (1,228448). This ratio indicates that equity capitals of firms are lower than their debts. That KKO rate is higher than UKO rate is remarkable, and that short term debt ratios are high makes us think firms will have difficulty in repayment.

Since firms are manufacturing firms, fixed assets / total assets ratio is expected to be high. However, when summary statistics are examined, it is seen that the average of fixed assets/total assets ratio is 0,376253. This means the assets of firms are generally weighted current assets. The average of the profitability value has been calculated as 0, 03953. The average of growth rate in assets has been found 0, 296120.

This shows that manufacturing firms have grown approximately 3%; yet, if fixed assets / total assets ratio is thought to be low, the growth is substantially derived from current assets. BDVK average was found as 0,081123. This ratio indicates that depreciation expenses / total assets ratio is approximately 8%.

Table 3. Debt Ratios By Years

Ratios / Years	**TKO**	**UKO**	**KKO**
2000	2,075203	0,428537	1,646829
2001	2,123984	0,589512	1,534715
2002	1,174553	0,294472	0,879593
2003	1,09374	0,332358	0,762195
2004	0,598618	0,190976	0,407724
2005	0,873984	0,232195	0,642276
2006	0,843008	0,237398	0,605447
2007	0,767967	0,162033	0,606179
2008	1,771148	0,54082	1,230164
2009	1,119593	0,289512	0,829268
2010	1,068943	0,184065	0,885122

When the debt ratios by years are examined, it is seen that the highest debt ratios, in terms of TKO and UKO, emerged in 2001 and in 2000 in terms of KKO. The decrease in debt ratios continued until 2004. This case shows that firms reduced the debt ratios after the crisis and resorted to strengthen their equity capitals by keeping their profits within the company. After 2004, it is seen that debt ratios started to increase again. This rise continued until 2008. As for 2009 and 2010, it started to go down again. As in 2004, it was seen that firms started to

reduce the debt ratios after the crisis in 2008. When Table 4 is looked through, H0 hypothesis was rejected because p values of all the variables were less than 0,05. That is, it was determined that the series didn't include unit root and they were static.

Table 4. Unit Root Test Table

Variables	Methods					
	LLC		IPS		ADF	
	Statistics Values	Probablity Values	Statistics Values	Probablity Values	Statistics Values	Probablity Values
TKO	-62,9894	0	-18,3765	0	691,583	0
UKO	-81,526	0	-23,3222	0	660,807	0
KKO	-57,4114	0	-17,2041	0	676,801	0
LNTA	-22,1568	0	-7,03046	0	447,47	0
NK/TA	-26,8047	0	10,8326	0	559,205	0
BDVK	-24,2027	0	-6,64981	0	383,474	0
AB	-23,8588	0	-8,18207	0	471,115	0
VDO	-18,2414	0	-7,36252	0	415,237	0
VYO	-9,52341	0	-2,60627	0	296,103	0
The results obtained are evaluated at 5% significance level.						

3.1. F Test

H01, H02 ve H03 hypotheses were developed for FOLS test done in order to determine if there is a two-way fixed effect.

H01: There is not a time effect and a specific action in the model.

H02: Time has no effect on the model.

H03: There is not a specific action in the model.

Table 5. F Test for Fixed Effects Table

MODEL(1): Total Leverage Ratio			
	H01	H02	H03
P- Value	3,0132	2,938766	3,007509
F- Value	0,0000*	0,0012*	0,0000*
MODEL(2): Long Term Leverage Ratio			
	H01	H02	H03
P- Value	4,0286	2,014324	3,903854
F- Value	0,0000*	0,0288**	0,0000*
MODEL(3): Short Term Leverage Ratio			

	H01	H02	H03
P- Value	2,406593	3,056122	2,436472
F- Value	0,0000*	0,0008*	0,0000*
*Coefficient is significant at 1% significance level. **Coefficient is significant at 5% significance level.			

When Table 5 is looked through, it is seen that H01, H02 ve H03 hypotheses was rejected for Model 1, Model 2 and Model 3. But Model 2 is rejected at 5%significance level, and the others are rejected at 1% significance level. That is, it can be said that there is a two-way fixed effect in Model 1, Model 2 and Model 3.

3.2. Random Effects for LM Test

Here are the hypotheses developed for this test done to see if there is any random effect.

H04: There isn't a specific action(μ) and a time effect (λ) in the model.

H05: There isn't a specific action(μ) in the model.

H06: There isn't a time effect (λ) in the model.

H04, H05 ve H06 hypotheses developed for Model 1, Model 2 and Model 3 test two-way random effect. With regard to the results of Table 6, H4 hypothesis in Model 1 and Model 2 is rejected at 5% significance level, and the hypothesis of the other models are rejected at 1% significance level. There is a two-way random effect in each model.

Table 6. LM Test for Random Effects Table

MODEL(1): Total Leverage Ratio			
	H04	H05	H06
Chi-Square Value	132,0991	6,143757	138,2428
F- Value	0,0000*	0,013188**	0,0000*
MODEL(2): Long Term Leverage Ratio			
	H04	H05	H06
Chi- Suare Value	278,5204	1,457855	279,9782
F- Value	0,0000*	0,227272**	0,0000*
MODEL(3): Short Term Leverage Ratio			
	H04	H05	H06
Chi- Suare Value	64,60369	6,647733	71,25143
F- Value	0,0000*	0,009928*	0,0000*
*Coefficient is significant at 1% significance level. **Coefficient is significant at 5% significance level.			

3.3. Hausman Testi

Two hypotheses have been developed for Hausman Test.

H0= There is a random effect.

H1= There is not a random effect.

Tablo 7. Hausman Test Table

MODEL(1): Total Leverage Ratio			
	Chi- Square	df	P Value
Cross-section Random	31,648054	6	0,0000*
Time Random	18,946997	6	0,0043*
Cross section-Time Random	65,436799	6	0,0000*
MODEL(2): Long Term Leverage Ratio			
	Chi- Square	df	P Value
Cross section Random	39,698981	6	0,0000*
Time Random	16,591193	6	0,0109*
Cross section-Time Random	262,393958	6	0,0000*
MODEL(3): Short Term Leverage Ratio			
	Chi- Square	df	P Value
Cross section Random	27,879712	6	0,0001*
Time Random	15,195999	6	0,0188**
Cross section-Time Random	42,855249	6	0,0000*
*Coefficient is significant at 1% significance level **Coefficient is significant at 5% significance level			

H0 and H01 hypotheses have been developed for Model 1, Model 2 and for Model 3. As to Table 7, H0 hypothesis has been rejected for each model. The fixed effects estimator is consistent, but the random effects estimator is inconsistent.

3.4. Heteroscedasticity for LM Test

Two hypotheses have been developed for the test.

H0: The variances are constant.

H1: The variances are variational.

Table 8. Lagrange Multiplier Test Table for Heteroscedasticity

	Model 1	Model 2	Model 3
$\chi 2$	13629,59	13629,59	6193,76
F- Value	0.0000*	0.0000*	0.0000*
*The coefficient is significant at 1% significance level.			

H0 and H1 hypotheses have been developed for Model 1, Model 2 and Model 3. When Table 8 is looked through, there is a heteroscedasticity problem according to LM test results. The heteroscedasticity problem has been resolved by using White's (1980) covariance matrix estimator congruent with the heteroscedasticity.

3.5. Panel Data Analysis Results

As a result of the specification tests, a two-way fixed effect has been determined. The model has been estimated by the method of fixed effects model. In this model which has been set, the heteroscedasticity problem has been detected, so White (diagonal) correction has been made. These three models have been summarized in Table 9 through the fixed effects model.

The independent variables have 0,288912 explanatory power for Model 1, 0,320349 for Model 2 and 0,2748280 for Model 3. Consequently, the firms examined in the study consider different determinants rather than the factors used as a base while taking capital structure decisions. In the literature research done, it is seen that this value is low in other studies, as well. A positive relation has been determined between BDVK and Model 1 and Model 2. No relation has been detected between BDVK and Model 2. Durukan(1997), Sayılgan(2006), Şen ve Oruç(2008), Teker, Taşseven ve Tukel(2009) found a negative relationship with BDVK in their studies. This result is inconsistent with the previous studies. It points out that as the depreciation expenses of firms increase, their debt ratios increase, too. The growth variable and tax variable have found meaningless for each model. This case shows the growth isn't significant in their loan decisions.

Ata ve Ağ(2010), Sayılgan(2006), Şen and Oruç(2008), Durukan(1997), Yıldız, Yalama and Sevil(2009) found a positive relationship. While a negative relationship was found between the profitability variable and Model 2, any relationship wasn't detected with Model 1 and Model 3. This result which was found congruent with the pecking order theory is the same as the results of Durukan (1997), Yıldız, Yalama and Sevil(2009), Sayılgan vd.(2006), Şen and Oruç(2008), Teker, Taşseven and Tukel(2009), Çağlayan(2006) ve Korkmaz vd.(2007).

According to this result, it can be said that the firms, particularly the ones in Turkey, use the profits which aren't primarily distributed in their long term financial needs. According to the analysis results, the growth variable is in a positive relationship with Model 1 and Model 3, but it is in a meaningless relationship with Model 2. Yıldız, Yalama and Sevil(2009), Sayılgan(2006), Şen and Oruç(2008) detected a positive relationship, while Ata ve Ağ (2010) detected a negative one. This result is congruent with the pecking order theory. According to this theory, as the speed of the growth rises, equities begin not to meet the financial needs, and the debt ratio goes up. No relation was determined between the tax variable and Model 1, Model 2 and Model 3.

Table 9. Table of Panel Regression Analysis Results for Model 1, Model 2, Model 3

Term	**2000-2010**		
Period	**11**		
Number of Cross-section	**123**		
Number of Total Observations	**1353**		
Variables	**MODEL 1**	**MODEL 2**	**MODEL 3**
	TKO	**UKO**	**KKO**
C	-4,997713	-2,703097	-2,299805
	-6,292503	-1,986508	-5,11106
	-0,4272	-0,1739	-0,6528
AB	**0,332453**	0,004337	**0,328115**
	-0,069248	-0,017766	**-0,059653**
	***(0,000000)**	-0,8072	***(0,0000000)**
BDVK	**0,084867**	-0,002786	**0,08745**
	-0,033993	-0,004907	**-0,034452**
	***(0,012700)**	-0,5703	***(0,0113000)**
LNTA	0,366757	0,169823	0,197236
	-0,330728	-0,103402	-0,269518
	-0,2677	-0,1008	-0,4644
NK_TA	-2,185151	**-1,225265**	-0,95899
	-1,508734	**-0,538873**	-1,109613
	-0,1478	****(0,023200)**	-0,3876
VDO	0,00531	0,002292	0,003035
	-0,021577	-0,011815	-0,013001
	-0,8056	-0,8462	-0,8154
VYO	**-1,883504**	-0,360372	**-1,524449**
	-1,048406	-0,403504	**-0,739576**
	*****(0,072700)**	-0,372	****(0,0395000)**
R^2	0,288912	0,320349	0,274828
Adjusted R^2	0,20808	0,24309	0,192395
SSR	2,520809	1,006785	1,772708

*Coefficient is significant at 1% significance level.
**Coefficient is significant at 5% significance level.
***Coefficient is significant at 10% significance level.

Durukan(1997) found a positive relationship with the tax variable; on the other hand, he found a meaningless relationship in almost all of the other studies. This result indicates that the tax advantage that the loan will cause isn't cared by firms. A negative relationship has been detected between the asset structure variable and Model 1 and Model 2, but no relationship has been detected with Model 2.

Yıldız, Yalama and Sevil (2009), Şen and Oruç (2008) reached a negative relationship, while Teker, Taşseven ve Tukel(2009) reached a positive one. According to the balancing theory, this relation is expected to be positive.

As the assets of firms increase, its borrowing gets easier because the assets can be provided as a guarantee while borrowing. According to the balancing theory, although the relationship between asset structure and leverage ratio is expected to be positive, it has been found negative in our study. Similar results have been obtained in previous studies carried out in Turkey.

4. RESULT

The relation between BDVK and Model 1 and Model 3 was found positive, but any relation with Model 3 couldn't be detected. The growth variable and the tax variable were found meaningless for each model. While a negative relationship between the profitability variable and Model 2 was determined, any relationship with Model 1 and Model 3 couldn't be detected.

According to the analysis results, the growth variable is positively related to Model 1 and Model 3, but its relationship with Model 2 is meaningless. Any relationship between the tax variable and Model 1, Model2 and Model 3 couldn't be detected. The relationship between the asset structure variable and Model 1 or Model 3 was determined as negative, but any relationship with Model 2 couldn't be determined. When the results are examined, it is seen that firms primarily employ their own profits as resource.

That the size variable was found meaningless is an unexpected relationship. This case shows that there is not a relationship between the size of a firm and debt ratios. The positive relationship with BDVK is an unexpected relationship. According to the study in which the tax ratio was found meaningless, this result can be expected, or it can be said that the liability needs of firms will increase as BDVK increases. In accordance with the determined negative relationship with asset structure, it can be thought that asset structure ratios are high, while the capital needs of firms low. That the relationship with the growth variable is positive and that the capital needs of firms are much are expected cases.

Since the tax variable is meaningless, it can be said that tax effects of debt are not cared by firms. To conclude, according to this study, in keeping with the previous studies, it can be said that the manufacturing firms operating on ISE aren't in search of an optimum capital structure, and they follow a particular sequence in resource procurement.

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