

The Relationship Between Financial Distress and Ownership Structure: A Research in İstanbul Stock Exchange

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Extensive Summary

Introduction

The Altman Z Score is used for measuring the firms' financial distress probability (bankruptcy or failure). Financial distress is an indicator that shows the firms' financial performance has been weakened or in failure. When the firms come face to face with financial distress that may not lead to bankruptcy instantly. Therefore, it is expected that firms has to get through various phases. These can be aligned as encountering financial distress or problem, failure to pay short term liabilities and bankruptcy.

Method

The aim of this research is to investigate the relationship between financial distress and ownership structure. In this study, 112 firms' data were used for the time period of 2005-2009 which are operating in the İstanbul Stock Exchange (BİST) Industrial Index. In the scope of analysis, the financial data of firms' were obtained from the Finnet financial analysis programme. The data of ownership structure were obtained from Central Registration Institution.

Altman (2000) calculated the Altman Z Score by updating X_4 variable in his study. After this study some researchers such as White (2005), Chang (2011), Bonna (2012) also figured out the Altman Z Score in similar form.

$Z \text{ Score} = X_1 = +0,717 (\text{Working Capital} / \text{Total Assets})$

$X_2 = +0,847 (\text{Retained Earnings} / \text{Assets})$

$X_3 = +3,107$ (Earnings Before Interest and Tax / Total Assets)

$X_4 = +0,420$ (Book Value of Share Certificates / Book Value of Debt)

$X_5 = +0,998$ (Sales Revenue / Total Assets)

Independent variables which are used in our study has shown at table 1.

Table.1 Independent Variables

Ownership Concentration (CONCENTRATION)	<i>The Five Largest Owners' shares have been divided to total capital.</i>
Institutional Investor Ownership (INSTITUTIONAL)	<i>Whole shares owned by Institutional Investors have been divided to total capital.</i>
Foreign Investor Ownership (FOREIGN)	<i>Foreign Investors' shares have been divided to total capital.</i>
Debt structure (LEVERAGE)	<i>Total debt in total assets.</i>
Firm size (ASSET)	<i>Natural Logarithm of total assets.</i>
Free Float Rate (FFR)	<i>Free Float Ratio of firms.</i>

Fisher ADF root test has been used for the unit root analysis of the variables. In this study, because of varying variance is robust to autocorrelation and correlation between units, robust estimator which was developed by Beck-Katz (1995) was preferred and also robust estimator can be applied to $T < N$ situation.

Table 2. Result of Robust Estimator

Variables	Coef.	Std. Dev.	Z Value	P>z
Ownership Concentration	-3.808	1.6221	-2.35	0.019
Institutional Investors' Ownership	-3.234	.74522	4.34	0.000
Foreign Investors' Ownership	1.0813	3.1651	0.34	0.733
Debt Structure	-13.828	-13.828	-10.49	0.000
Firm Size	.39702	.12739	3.12	0.002
Free Float Ratio	-4.1984	1.5972	-2.63	0.009
Constant	3.7927	2.5985	1.46	0.144
Wald chi2	324.01			
Prob > chi2	0.0000			
R-squared	0.4102			

Findings and Discussion

In the table 2, the results of robust estimator has been shown which explicates the relationship between financial distress (Altman Score) and ownership structure. %41 percent of financial distress change has been explained by ownership structure and control variables. When we examine the results of variables of ownership structure, it is seen that capital share of the five largest owner, institutional investors' ownership and free float rate affects Altman Z Score that measures the firms' bankruptcy risk (financial distress) or financial failure risk which operates Istanbul Stock Exchange Industrial Index. There is a negative and statistically significant relationship between the five largest owner and financial distress. Thus, if the capital share of five largest owner

increases in total capital also probability of financial distress increases. A positive and statistically quite significant relationship between institutional investors' ownership and financial distress also has been detected. In case of increasing capital share of institutional investors in total capital, firms are positively affected and probability of financial distress decreases. Furthermore, it has been found that there is a negative and statistically significant at %1 relation between free float ratio and financial distress. In other words, if free float ratio increases than also financial distress risk increases. Additionally, foreign investors's capital share doesn't affect probability of financial distress or bankruptcy risk.

According to the results of control variables, firm size and financial leverage are effective on firms' financial distress risks. A positive relation between firm size and financial distress has been observed, in contrast a negative and statistically quite significant relation has been observed between financial leverage and financial distress. In another expression, increasing the total assets as an indicator of size, makes lower of firms' financial distress risk but financial distress risk increases when the financial leverage up.

This study which investigates the relationship between ownership structure and financial distress has some limitations. Firstly, the results of research must be evaluated in terms of Istanbul Stock Exchange (BIST) Industrial Index. In future studies, another model can be used to measure financial distress risk instead of Z Altman.