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Capital Structure and Firms Performance in Tehran Stock Exchange

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Abstract

This study investigated the relationship between capital structure and firm performance in firms operating on the Tehran Stock Exchange (TSE). Capital structure was measured by debt leverage. Firm performance was measured using the Tobin's Q. The sample size was 100 companies operating on the exchange during 2008-2013. The results showed a significant positive relationship between capital structure and firm performance.

Keywords: Capital structure, Debt leverage, Tobin's Q, Firm performance

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Introduction

The environment in which our companies are operating is in progress and highly competitive and they are obliged to compete national and international factors and expand their activities through new investments for survival. They need financial resources for investment. Decisions for financing in an institute are the most important decisions made by financial managers as far as they are considered as strategic decisions due to their effects on financial structure of companies and investors' resources. In the current world, proper financing for increasing the profitability of companies and their survival is essential regarding the competitive market conditions.

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Investors also analyze the firm performance and capital structure for proper investment regarding the separation of ownership from management, need for financing in companies and the interest of owners of financial resources. Thus, the current research aims to investigate the relationship between capital structure and performance in firms and find an answer to the question whether there is a significant relationship between capital structure and performance in the companies listed in Tehran Stock Exchange.

Literature Review

Fosberg and Ghosh (2006) indicated that there is a significant and negative relationship between capital structure and return on assets (ROA). Zeitun and Tian (2007) concluded that there is a significant relationship between the short term debt to total asset, total debt to total asset, long term debt to total asset and total debt to total shareholders' equity ratios with ROA. Naser and Mazhar (2005) showed that there is a significant and negative relationship between capital structure and return on shareholders' equity. Pao (2008), in an investigation of the relationship between capital structure and performance in Taiwanese companies, found that there is a significant relationship between capital structure and gross profit margin. Onaolapo and Kajola (2010) figured out that there is a significant and negative relationship between capital structure and ROA and ROE as performance indicators. Fosu (2013) investigated the relationship between capital structure, competition in production market and firm performance in 257 firms listed in South African Stock Exchange in the period of 1998-2008. He came to the conclusion that financial leverage has a significant and positive effect on firm performance. According to these findings we can express the following assumption:

H: capital structure has a significant and positive effect on firm performance.

Research Methodology

This is an applied and priori research. Since there was no possibility of controlling all variables, it can not be a pure experimental study. But it is classified as semi-experimental researches regarding the previous information analysis. SPSS and E-Views software packages were applied to analyze the research data.

Population

The statistical population of the current research is all firms listed in Tehran Stock Exchange since 2008 to 2013. The sample size equals 100 firms collected through random stratified sampling considering each industry as a stratum.

Data analysis

$$Ln(Tobin\ Q)_{i,t} = \alpha + \beta_1\, Ln(TDL)_{i,t} + \beta_2\, Sales\text{-}GR_{i,t} + \beta_3\, Size_{i,t} + \varepsilon_{i,t} \qquad (1)$$

In which:

Ln (Tobin's Q) $_{i,t}$ (Natural Logarithm of Tobin's Q) equals to the relative market value divided by substitution value of assets. Market value is equal to total value of common and premium stock market value plus book value of total Debts. The substitution value of assets is also equal to their book value.

Ln (TDL) $_{i,t}$ (Natural Logarithm of Total Debts Leverage) equals to total debts divided by book value of assets.

Sales-GR (Growth Rate of Sale) which is equal to (current year sale- last year sale) divided by last year sale.

Size which is equal to natural logarithm of total assets.

Results

The co-linearity of independent variables investigated by SPSS before testing hypotheses. Results showed that all condition index values are less than 15; implying that there is no co-linearity between variables. Then, F-Limer test was used by applying E-Views 7 software. As it can be observed in table 1, its value is equal to 0.096 indicating that data are pool. Durbin-Watson statistic is also 1.6 showing no autocorrelation. Totally, by investigating the T value of debt leverage, it was observed that there is a significant and positive relationship between capital structure and firms performance at 5% error level.

Table 1 Results of F-LImer test

Model	$Ln\ (Tobin\ Q)_{i,t} = \alpha + \beta_1\ Ln(TDL)_{\ i,t} + \beta_2\ Sales\text{-}GR_{\ i,t} + \beta_3\ Size_{\ i,t} + \varepsilon_{i,t}$		
Test Type	Statistic	df	Prob.
F-limer	1.873	-5.633	0.096

Table 2 Pool data regression model

Variables	Coefficient	t	Prob.
Fixed value	0.088	0.858	0.391
Debt leverage	0.113	3.682	0.000
Sale growth	0.027	1.235	0.216
Firm size	0.007	0.947	0.344
R^2	Adjusted R^2	F	Durbin-Watson statistic
0. 31	0.30	0.001	1.6

Conclusion and discussion

The purpose of current research was investigation of the relationship between capital structure and performance of firms listed in Tehran Stock Exchange. Tobin's Q index was used to measure the firm performance and debt leverage was applied to measure the capital structure. Also, testing the hypothesis, 100 firms listed in Tehran Stock Exchange were investigated since 2008 to 2013.

Analyzing the regression model of the research, the co-linearity of variables was tested using SPSS Software Package showing no co-linearity. Then, F-Limer statistic was calculated applying E-Views 7 Software Package which was less than the error level of 0.05 indicating that data are panel. Thus, it can be concluded that capital structure has a significant and positive effect on firms performance confirming Fosu (2013)' research results.

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