

The Effect of Performance on Liability Ratios in Tehran Stock Exchange

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ABSTRACT: This study tries to answer the question of whether the companies' performance is effective on liability ratios or not. In this research we will study three dependent variables, i.e. long – term debts to total assets, debts to shareholders' equity, total debts to total assets and the Tobin Q Ratio as an independent variable. This research is based on annual observations in 2007–2011. Results show that if long – term debts to total assets is used as the capital structure benchmark, then there would be a direct and significant relation between Tobin Q and capital structure but the relation is weak. When debts to shareholders equity are used as the capital structure benchmark then there would be a direct and significant relation between Tobin Q and capital structure which is strong one. When total debts to total assets are used as the capital structure benchmark then there would be a positive and significant relation between Tobin Q and capital structure which is strong too. Hence after controlling the effects of quantitative variables, ROA and company growth results show that the effect of the Tobin Q Ratio on capital is intense and direct

Keywords: Companies' Performance, Capital Structure, Long – Term Debts to Total Assets, Debts to Shareholders' Equity, Total Debts to Total Assets.

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INTRODUCTION

Financial and investment decisions by companies are two examples of decisions based on provident bases. Regarding financial decision, a firm uses its financial resources to meet its liabilities to credit providers at due date. For investment decision, a firm tradeoff current benefits for higher benefits in future (Namazi & Shirzadeh, 2005).

One the features of markets is the role of capital and effective solutions to keep and generate value and risk management by the firms. This entails with comprehensive knowledge of position of the company in finance market and the effective environment on performance of businesses in different industries. In fact, the basis of manufacturing and provision of services depends on supply and expenditure of capital (Khajevandi & Hosseini, 2000).

Concerning capital structure, one of the paramount goals is to achieve optimum combination of capital elements toward maximizing wealth of stockholders. The problem of optimum capital elements is of the dominant issues in financial management; even some believe that it is more complicated than the problem of dividing profit. One explanation is limited knowledge of the managers regarding structure of capital and it is not clear yet, on what basis stocks certificate and bond are issued.

Accounting and financial reporting objectives are requirement of the company information. The main objective of the reports for the users out of the organization is to express economic effect of financial operations and events, which are also effective on performance of economic units and helps the users in their decision making.

In spite of different methods for performance appraisal, recent decades are featured with a trend toward the methods, which are combination of accounting and market information. Theoretically, tobin Q is a measure of business performance based on market value and accounting information. Considering limitations of accounting, financial and economic information for performance measurement, combinational data is one of the best methods for performance measurement, and it is a combination of accounting information (background) and market values (Bigdeli, 2007).

Capital structure is the main effective paradigm on companies' evaluation and status in capital market. Dynamic environment and current variables make credit level of business a dependent to capital structures (Khajavi Hosseini, 2010).

Literature Review

This study deals with the effect of tobin Q on capital structure of the firms in TSE. The study is comprised of 3 dependent variables (long-term debts to total assets ratio, total debts to stockholders rights ratio, and total debts to total assets)



and an independent variable (tobin Q). Explaining the subject and the variables, the present work is aimed to survey the effect of tobin Q on capital structure of the firms in TSE. In other words, is there any relation between tobin Q (as a measure of performance) of the companies and to what extent, direction, and significance if “yes”.

Guney and others (2011) conducted a study titled “relation between competition in production market and structure of capital on the firms in China Stock Market” and adopted tobin Q ratio – measure of competitive advantage- as independent variable and capital structure as dependent variable. Their results showed correlation between type, size and growth opportunities, and linear relation between financial leverage of firms and competition in the market. Dybvig and Warachka (2010) ascertained decency of tobin Q ratio to be taken as performance measurement standard. They concluded a strong relation between firms’ performance and tobin Q ratio and found that it is more effective for larger businesses. In addition, they found that the higher tobin Q ratio the better the performance of business. Aggarwal and Kyaw (2010) investigated capital structure, dividend policy, and multinationality: theory versus empirical evidence. Radziah and others (2009) researched about earnings quality attributes and performance of Malaysian public listed firms. Antonio and others (2008) focused on determinants of debt maturity of capital structure (capital market oriented versus bank oriented institutions). Arbabian and Safari Grayeli (2009) surveyed the role of capital structure on profitability of the firms in TSE. Heidarpoor and Mostoufi (2009) searched the relation between tobin Q ratio and regulated economic value added in TSE. Heidarpoor and Ghayomi (2010) showed the relation between qualitative features of profit and performance of firms in TSE. Nikbakht and Peykani (2009) surveyed the relation between capital structure and account standard for performance appraisal. Khajavi and Hosseini (2010) studied the relation between ownership of firms and structure of capital over a period of 10 years. In addition, other independent variables such as size of firm, investment opportunities, and growth of fixed tangible assets to total assets ratio were taken into account. The results showed positive and direct relation between capital structure and political support.

MATERIALS AND METHODS

This study uses multi-variable regression. Considering close relation between regression and correlation coefficient, the regression needs correlation coefficient, which means the research type is correlative. The objective of this research is to identify the effect and correlation between tobin Q and structure of capital. In addition, the present study is a post-event work (historical data is used), and experimental therefore, and uses statistical tests (normal data test and, if required, significance test). To this end, statistical society is tested before confirming specification of statistical society through sampling. Moreover, computer-aided methods were used for data analyzing.

Hypotheses

Hypothesis 1: tobin Q ratio is effective on long-term debts to total assets ratio.

Hypothesis 2: tobin Q ratio is effective on debts to stockholders’ right ratio.

Hypothesis 3: tobin Q ratio is effective on total debts to total assets ratio.

Statistic Population

In this study, data of the firms was gleaned for period of 2007 to 2011 population was elected based on the following criteria:

Availability of the data.

Listed in TSE before 2005.

Not a investing and credit company.

No absence of data for more than 6 months.

Variables

To measure dependent variables, long-term debts to total assets ratio was obtained.

$$A_{i,t} = \frac{\text{long - term debts}}{\text{total assets}}$$

Where, $A_{i,t}$ is capital structure for the year “t” and firm “i”.

$$B_{i,t} = \frac{\text{debts}}{\text{equity}}$$

Moreover, the third dependent variable was obtained as follows:

Where $C_{i,t}$ is capital structure of company “i” in year “t”.

$$C_{i,t} = \frac{\text{total debts}}{\text{total assets}}$$

Q tobin ration is considered as independent variables in the study. (Dybvig, 2010, 8)

$$Q_s = \frac{COMVAL+SBOND+STDEBT}{SR_c}$$

Where, COMVAL is market value of ordinary stocks of the company at the end of the year, SBOND is book value of long-term debts at the end of fiscal year, STDEBT is book value of the company at the end of the fiscal year with shorter than one year maturity date and SRa is book value of assets of the firm at the end of fiscal year.

Regarding the effect of Q tobin ratio on capital structure following equation was employed:

$$DR_{it} = \alpha + B_1 Q_{it} + B_2 ROA_{it} + B_3 Size_{it} + B_4 Growth_{it} + \epsilon_{it}$$

Where, DRit is structure of capital for firm “i” in year “t”, Qit is tobin Q for firmt “i” , ROAit is assets revenue obtained from net profit dividing by assets for firm ‘i’ in year ‘t’, SIZE it is size of firm obtained from natural logarithm of total assets, Growthit is firm’s growth for firm “i” in year “t”.

RESULTS

One of the main assumptions in the regression is that the variable must be normal. The research used Colmogrove-Smirnov’s test to survey normality of the dependent variables. In addition, regression analysis was used in correlation analysis on the variables and “t test” was used for estimating coefficient and correlation between the variables. Colmogrove- Smirnov’s test on the dependent variables showed that dependent variable long-term debts is not dependent to total assets and liabilities of the stockholders and, therefore, it was normalized using logarithm conversion method. Conclusion regarding hypotheses is based on significance level of the test. Therefore, for significance level lower than 0.05, H0 is at 95% level and at 90% for less than 0.1; otherwise, H0 is rejected. Noticeable is that all calculation and tables were conducted and prepared in SPSS.

Table 1: Significance of the Model Along with Determinate Coefficient of the variables

Period	Test	Level of freedom	F	Significance	Determinant coefficient
2007-2011	First hypothesis test: Q tubin ratio is effective on long-term debts to total assets ratio	4	9.568	0.000	0.097
	Q tubin ratio is effective on debts to stockholders’ right ratio.	4	367.938	0.000	0.806
	W tubin ratio is effective on total debts to total assets ratio.	4	13862.430	0.000	0.994

As the table above shows, all hypotheses of the study are rejected at 95% of confidence level and significant and the intensity of the variables is not considerable for the first test. The intensity for the first hypothesis is 10% and for the second and third hypotheses are 80% and 99% respectively (highly considerable). The figures show to what extent the changes of the dependent variable are subject to change in dependent variable. For estimating the coefficients, “t” was employed.

Table 2: Coefficients and Significance of Research Variables in Hypotheses’ Test

Hypotheses	Independent and control variables	Dependent variables	Coefficient	T	Sig.
Hypothesis one	Q tubin ratio	Ratio of long-term debts to total assets	1.409	4.286	0.000
	Size of company		-0.215	-2.174	0.000
	ROA		-1.026	-3.278	0.001
	Growth of company		-0.040	0.342	0.733
Hypothesis two	Q tubin ratio	Debts to stockholders rights	3.664	32.949	0.025
	Size of company		0.207	6.136	0.000
	ROA		-0.795	-7.546	0.000
	Growth of company		0.009	0.219	0.826
Hypothesis three	Q tubin ratio	Debts to total assets	0.990	224.779	0.000
	Size of company		0.014	11.111	0.001
	ROA		-0.021	-5.248	0.033
	Growth of company		-0.001	-0.702	0.483

As tabulated in table 2, regarding the hypothesis one, there is significant and positive relation tobin Q ratio and long-term debts to total assets ratio. So that one unit increase in tobin Q eventuates in 1.409 unit increase in the dependent variable. In addition, the test revealed negative and significant relation between control variable “size of company” and dependent variable “ROA”. As the table above represents, there is no significant relation between growth of firm and dependent variable.

Because of this, the variable is removed from the model and the model is retested, though no considerable change was observed in the result. Therefore, hypothesis one is confirmed.

Concerning the second hypothesis, a significant and positive relation was found between tobin Q ratio and stockholders debt, so that one unit increase in tobin Q ratio results in 3.664-unit increase in the dependent variable. Size of company, moreover, was in significant and positive relation with the dependent variable and ROA was negatively and significantly related to the dependent variable. It is also noticeable that by removing insignificant variables from the test no considerable change is observed in the coefficients of the variables. The hypothesis two is confirmed.

Regarding hypothesis three, significant and positive relation was observed between tobin Q ration and debts to total assets debts. In this way, one unit increase in the dependent variable results in 0.990 unit increase. Positive and significant relation was found in the test between size of company and the dependent variable and ROA is negatively and significantly related to the dependent variable. It is noticeable that removal of the insignificant relation does not result in considerable change in significance of the variables and, therefore, the hypothesis three is confirmed.

CONCLUSION

The results of this study showed that the three hypotheses are confirmed and there is a positive and significant relation between tobin Q ratio and structure of capital. In the same way, there was a positive and significant relation between tobin Q ratio and long-term debts to total assets ratio (though not much considerable). Moreover, the same relation was observed between tobin Q ratio and debts to stockholder's rights ratio and as well as between tobin Q ratio and total debts to total assets ratio.

Our results, therefore, showed considerable effect of tobin Q ratio on structure of capital and investors (especially out of the business) may use the ratio in their decisions regarding structure of capital. The structure helps the investors in their analysis of the performance and it can be used as one of the main indices in the analyses.

It is recommended to the managers to set the structure of their capital in way that higher portion of the capital is debts.

Moreover, based on the direct relation between tobin Q and capital structure of firm, the higher the performance of a firm, the ratio of debts is higher in the capital structure (capital structure is debt-oriented). Considering the inconsistency of the results with that of other works, further study on the reasons of such direct relation and causes is recommended for future works.

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