Studying the Effect of Debt Ratio on Market Value of Stock Firms by Using the Liquidity

Somayeh Hosseini Aghdaei[1], Khadije Ghasemi[2]

[1]Department of Social and Economic Science Payamenure Zavare,PO Box19395_3697tehran,Iran

[2]Islamic Azad University,Zarandie Branch,Department of Accounting,Markazi,Iran

Abstract. With the increase of competition and technological advances, organizations have concluded that their chief objective should be to raise the interests of shareholders in order to survive in the competitive world. One of the vital issues in the investment literature is to maximize shareholders' wealth as the main priority of financial and investment managers, and making use of an appropriate capital structure is one of the effective factors in the maximization. One way of financing is the use of debts, though it has its own disadvantages as well as the advantages. The main goal of the study is to realize the nature of the relationship between the debt ratio and market value of the firms. The study was to examine three hypotheses, with the firms listed on the Stock Exchange as the statistical population. Nonetheless, some criteria have been considered for the selection of the firms. In terms of the objectives, the present piece of research is considered as an applied study, and in terms of data collection it is a descriptive one of survey type.
The results of the study reveals that:
There exists a significant negative relationship between the two variables of debt ratio and current ratio of the firms, i.e., these two are not independent.
There is an insignificant, though positive, relationship between the two variables of debt ratio of the firms and ROE.

Keywords: Debt Ratio, Current Ratio, Rates of Return on Equity, Firm Value, The Liquidity of the Stock Companies

1. Introduction

With the increasing competition and technological advances, organizations have concluded that their main objective should be raising the shareholders' interests in order to survive in the competitive world[1]. One of the vital concerns in the investment literature is maximizing shareholders' wealth, as the top priority of financial and investment managers. As it is defined, shareholders' wealth can be obtained by adding up cash dividends approved by Ordinary Shareholders' Meeting and capital gains resulting from price fluctuations [2] Accordingly, financial and investment managers deciding on finance and capital budgeting ought to proceed towards the maximization of the shareholders' wealth regarding the two aforementioned variables. Anyhow, because of the higher risk-taking and motivational nature, capital gains are generally more significant, compared with the dividends. Optimal allocation of financial resources for all real and legal persons, including banks, insurance and investment firms (and any other individuals who are active in investment decisions) is considered as a vital need. What is clear in the capital budgeting is that the balance between risk and return, is central to any and decision making and analysis, so that the expected return increases when the risk does. Risk-averse and rational investors accept the risk when higher returns are expected to acquire. In other words, the risk-averse investor is one who accepts the risk in exchange to receive a higher return expected [3]. What adds to the importance of the present study is its particular approach in the field of financial risk. The researcher is trying to verify that the increase in the debt ratio in capital structure could increase the financial risk only when it affects the firm's liquidity. In other words, the study hypothesizes that, as long as the debt ratio in the firm's capital structure does not negatively affect the

+98 9132617279, po box19395_3697tehran,iran
zohre.hoseyni@yahoo.com

firm's current ratio, the financial risk does not increase. In short, in the assessment of financial risk or bankruptcy, the debt ratio cannot merely be used as the criteria for evaluation, and what is considered as the cornerstone of financial risk is impairment of the liquidity. This new approach to identification of financial risk can considerably solve the puzzle of capital structure and can take a major step toward optimal capital structure. So, instead of only evaluating the capital market, the investors should take assets management and the current ratio into consideration.[4]

2. Literature Review

Extensive studies have been done in this area, the most important of which has perhaps been conducted by Myers (1984). In his research paper, Capital Structure Puzzle, He introduces two competing theories concerning capital structure, The Static Tradeoff theory and Old-Fashioned Pecking Order theory. Myers stated that, according to the observations on firms' finance, heavy reliance on internal finance and debt is clear, and, for all non-financial corporations over the decade 1973-1982, internally generated cash covered, on average, 62 percent of capital expenditures, including investment in inventory and other current assets, and the bulk of required external financing came from borrowing.[5] A different study was earlier conducted in 1958 by the couple Modigliani and Miller (often simply known as MM). They proposed their basic assumptions with respect to the effect of corporate income tax of the correction. In their first study, they were looking to test the question whether the leverage yields tax benefits. Regarding to their studies, MM (1958) confirmed the assumption that the leverage factor is significant only because of the tax benefits, though they examined their assumptions by the profit variable, as well. Their second study suffers from some deficiencies, as well as the first one. According to Gordon (1994), the MM's formula used for public utilities is unsuitable. Moreover, two-stage least squares method, used by them, is not efficient. Besides, as a further disadvantage, a large number of observations fall into a narrow range of debt to equity ratio.[6] Rao and Hanvmnta (1969) tested the MM's assumptions. Confirming the traditional view, they concluded that the cost of capital, apart from tax benefits, is affected by debt. Another notable investigation was carried out by Weston (1965). Improving the cost of capital model is his salient contribution. He took firm size and growth into the model as explanatory variables. Weston concluded that apparent lack of effect of leverage on the cost of capital, which was observed by MM (1958), is derived from the negative correlation of financial leverage with income growth. If the effect is purely measured, a significant negative relationship between cost of capital and the variables of financial leverage and growth will be detected. MM found no relationship between cost of capital and leverage, only for the reason that the leverage correlates with the factors affecting the net relationship between cost of capital and the leverage.[5] Ghanbari (1990) estimated the cost of capital for the Indian Industry and analyzed the relationship between capital structure and cost of capital. He used the CAPM model for estimating the expected return rate of stocks of 150 firms, considering it as the proxy for equity cost of capital. He made use of this proxy in calculating the weighted average cost of capital (WACC) before and after tax. The result showed that there exists a significant negative relationship between the before-tax WACC and firm's capital structure. Therefore, MM's irrelevance theorem does not apply to Indian industries.[7]

3. Research Hypothesis

- There is a significant inverse relationship between the company's current ratio and debt ratio.

- There is a significant inverse relationship between the company's debt ratio and return on equity (ROE).

- There is a significant inverse relationship between firm's market value and debt.

4. Sampling and Data Collection

The sampling criteria used in the study are as follows:
- Financial information of the companies (in any industry) for the period 2003 to 2008 ought to be present and accessible.

- The balance sheet of every firm is required to take account of March 20th of year T-1. That is, companies that their fiscal years have ended before March 20th, and/or the ones whose financial information was defective are not included in the sample.
- Firms are required to have been being traded at least once each year during the period of March 20th of 2003 to March 19th 2008. That is, companies whose brands have been closed for a year (in the mentioned period) are not included in the sample.

The data collected for the present study consists of numbers and details needed as the basis upon which any proposal or move is to be made. The required data was obtained in two ways. Some were collected by referring to Tehran Stock Exchange and its website, library, and newsletters. The other part of the data was extracted from the existing stock softwares in Iran, Tadbir-Pardaz and Rahavard-e-Novin. The relationships between variables were investigated using the statistical software SPSS. In some cases, the data were tested in accordance with multiple sources

5. Methodology

In this study, the following methods and statistical techniques were employed in order to examine the research models and analyze the relationships between the variables.

1 - Pearson Product-Moment Correlation

2 - The Multiple Correlation

3 - The Partial Correlatio

6. Result of Data Analysis

6.1. Testing the First Null Hypothesis

The first null hypothesis: There is no inverse relationship between the company's current ratio and debt ratio.

The alternate hypothesis: There is an inverse relationship between the company's current ratio and debt ratio.

The following table shows the output of the hypothesis test is performed.

Table 1 . Chi-square tests

	Value	df	Asymptotic significance
Pearson chi-square	61.728	25	.00 0

The calculated significance value (or P-value) is zero, far less than significance level α (0.05), therefore, there the null hypothesis (H0) is rejected.

Table 2 . Correlations

		Financial leverage	liquidity
Financial leverage	Pearson correlation	1.87	-.464**
	Significance(2-tailed)		.00 0
	N		87
liquidity	Pearson correlation	-.464**	1.87
	Significance(2-tailed)	.00 0	
	N	87	

**. Correlation at 0.01(2-tailed) ... .

The result of the correlation, as indicated by the significance value, is not supporting the first H0.

Table3 . Model summery

Model	R	R square	Adjusted R Square	Std.Error of the Estimate
1	.584 [a]	.341	.333	.611347376

The results shown in next table are in line with the previous one.

Table4 . coefficients [a]

Model	Unstandardized coefficients		standardized coefficients	t	Significance
	B	Std.Error	Beta		
1 (constant)	5.416	.240	-.584	22.545	.00 0
liquidity	-.208	.031		-6.627	.00 0

a.Dependent Variable: Financial leverage

6.2. Testing the Second Hypothesis

The second null hypothesis: There is no inverse relationship between the debt ratio and ROE.

The second alternate hypothesis: There is an inverse relationship between the company's debt ratio and ROE.

Table5 . Chi-square Tests

	Value	df	Asymptotic significance
Pearson Chi-square	26.809	15	.030

Table6 . Correlations

		Financial leverage	ROE
Financial leverage	Pearson correlation Significance(2-tailed) N	1.87	.176 .103 87
ROE	Pearson correlation Significance(2-tailed) N	.176 .103 87	1.87

Table 7 . Model summery

Model	R	R square	Adjusted R Square	Std.Error of the Estimate
1	.176 [a]	.031	.020	.741153739

a. Predictors: (constant) ROE

Table 8 . coefficients [a]

Model	Unstandardized coefficients		standardized coefficients	t	Significance
	B	Std.Error	Beta		
1 (constant)	3.920	.082	.176	47.626	.00 0
ROE	.010	.006		1.649	.103

a.Dependent Variable: Financial leverage

The above tables show the tests' results concerning the second hypothesis of the study. As the significance value is more than 0.05, and the correlation coefficient between the debt ratio and ROE turned out to be neither significant nor negative, the second H0 is supported (with the confidence level of 95%).

That is, it can be generally claimed that, in Tehran Stock Exchange transactions, there is no considerable relationship between the debt ratio (as one of the main factors forming capital structure) and ROE.

6.3. Testing the Third Hypothesis

The third null hypothesis: There is no significant inverse relationship between firm's market value and debt.

The third alternate hypothesis: There is a significant inverse relationship between firm's market value and debt.

The third null hypothesis is, in fact, asserting that the average market value of companies with high debt ratio ($\mu1$) is equal to the average market value of companies with low debt ratio ($\mu2$).

Table9. Chi-square Tests

	Value	df	Asymptotic significance
Pearson Chi-square	19.698	20	.477

Table10. Correlations

		Financial leverage	market value
Financial leverage	Pearson correlation Significance(2-tailed) N	1.87	-.066 .541 87
market value	Pearson correlation Significance(2-tailed) N	-.066 .541 87	1.87

As the above tables signify, the results are strongly supporting the third H0.

Table11. Model summery

Model	R	R square	Adjusted R Square	Std.Error of the Estimate
1	.140[a]	.020	.008	.745507826

a. Predictors: (constant) ROE...

Table12. coefficients [a]

Model	Unstandardized coefficients		standardized coefficients	t	Significance
	B	Std.Error	Beta		
1 (constant) ROE	3.944 -1.42E-14	.092 .000	-.140	42.798 -1.302	.00 0 .196

a.Dependent Variable: Financial leverage

7. Acknowledgment

In light of the results of the study, it can be deduced that in Iranian capital market, a company's the future market value cannot be estimated only by means of the debt ratio. In addition, it seems that the frequent inefficiency of Tehran Stock Exchange market provides the background for price fluctuations not to originate normatively from companies' true market values. Variables like political and economic risk and basic volume have far more significant role in price fluctuations.

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