

THE EFFECT OF CAPITAL STRUCTURE ON THE VALUE OF PRIVATE COMPANIES BY STATE

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ABSTRACT

Capital structure is one of the most important financial management topics that have been considered by many management experts. By optimizing the capital structure we can minimize capital costs and maximize the value of shares. Capital structure has been raised as the most important factor affecting the valuation of companies and their orientation in the capital markets. Companies need capital to grow and prosper. The purpose of this study is to investigate the effect of capital structure on the value of the privatized governmental companies and the sample in this study includes all governmental companies have been privatized during the period 2007 to 2012 and are accepted in Tehran Stock Exchange and they are 103 companies and they have been studied in two time periods before and after privatization. The data were processed using Excel software and regression analysis was performed using econometric Eviwes software. The results reflect the impact of all the variables of capital structure on firm value. Some proposals have been rendered at the end of the study one of them is "to accelerate the development and confirm the capital structure principles and cooperation with Securities Exchange in monitoring the implementation of the above mentioned.

Keywords: *Capital structure, The Company's value, Privatization, Q_TOBIN.*

INTRODUCTION

Today, investors, creditors, and other persons who make decisions based on financial statement information, are tended to apply their capitals in an activity to maximize it, with regard to the fact that external factors such as opportunities for growth, interest rates, political and cultural conditions and ... and also the internal factors such as firm size, degree of risk, and the company's flexibility and ... are effective in deciding about the composition of the company's capital structure, so we can say that the choosing methods and capital structure decisions that increase firm value is important (Berger, 2002). A firm's capital structure is the composition of debt and equity, the company without any debt is a company with capital structure. There are various theories about capital structure and they suggest that the companies use three groups of resources, the first group of resources that are apparently without any costs, group II internal financing and Group III external financing. The first group includes trade creditors, Advances from Customers, payable costs. The profitability of the company is required for funding from the second group, that the accumulation of past profits and interests provides an income source for financing companies; thus instead of dividing among the shareholders, it will be used in the company's operating activities to achieve greater efficiency and in the third group, they try to finance by local bonds, bonds, loans and equity (Anderson, 2005). The companies may use these resources in short term or long term. For example, Gonzalez and colleagues studied determining the level of access to foreign funds in 2007 through studying 60,000 Spanish firms during 1992 to 2002 and it was found that Spanish companies turn to short-term non-bank finance such as foreign creditors (about 65% of total debt) and bank debt is used mostly for economic development. The main objective of capital structure decisions is establishing appropriate combination of long term cash resources in order to minimize the capital cost of economic unit and thereby maximizing the market value of the economic unit. Sponsors include investors (shareholders) and creditors and each group followed their interests, what encourages suppliers to apply their resources in certain activities, is good performance of the activity after that company value and shareholders' wealth increases as a result (Hejazi and Khadem, 2013). Given that financing costs vary, the cost of debt is less because the debt of a company is required to pay interest to creditors and in the tax

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laws perspective, such expenses are acceptable, on the other hand, uncontrolled increase in debt increases the risk of bankruptcy and reduces the value of the shares. In the other hand, excessive use of the shareholders' equity, increases the expected return and ultimately increases the cost of financing; therefore, managers should choose the capital structure that requires a lower capital cost contributing to better performance for the company, as a result, financial managers must determine the weighted average cost of capital and final cost of capital to determine the optimal capital structure. Also, managers should try to determine the borrowing capacity of the company according to the cash flows of inputs and outputs and then by considering the other conditions they can borrow (Ansari and Abbasi, 2012); So this question arises that with respect to financial ratios and financial expenses, and to have good performance and wealth creation, what proportion of shares and debt should be there that the company not to be at risk of bankruptcy and pays lower cost? In other words, which one should be high in capital structure debt or equity? In most of studied research the capital structure includes four variables of total debt to total assets, total debt to total equity, total debt to total capital and total long term debt to total asset and in this study, the influence of these variables on the value of the privatized governmental companies will be examined.

Finally this main question rises as the main question of this research that what is the relationship between capital structure and firm value?

Research Literature

Capital Structure

Cooper (1983) considers capital structure as ratio of the high ranked older long-term bond to total related investments.

Hussey (1999) considers capital structure as the balance between debt and asset, the nature of asset and composition of the company's borrowings. He believes assets can be tangible or intangible, current or long-term (debt or equity) and borrowing as long-term or short-term, fixed or floating, without the risk and light burden. Ideally, assets and debts should be matched.

Hussey considers capital structure as a combination of common stock, preferred stock and its related subsidiaries, retained earnings and long-term debt the business unit uses to finance its assets.

Belkaoui (1999) introduces capital structure as a general claim on the assets of the Company's assets. He considers capital structure including public securities issued, private investments, bank debt, commercial debt, lease agreements, tax debts, debts of pension, deferred bonus of employees and managers, performance bond deposits, guarantees and other possible debts.

Brounen *et al.*, (2006) stated that in studying the capital structure it is trying to explain composition of various resources used in financing activities and required investments.

Also it can be said that determining capital structure represents determining the composition of the firm's financial resources in order to optimize its shareholders' wealth; because since the cost of capital is a function of the capital structure, so choosing optimal capital structure reduces the cost of capital and its market value (Bagherzadeh, 2003).

According to the definitions, capital structure represents the left side of the balance sheet. Some people consider the capital structure equivalent of financial structure and some distinct them according to this view that capital structure is long-term financing sources companies. Since the current debts will be spent for the current company's debt, so they don't have a significant impact on return on equity and on the company's value. In a sense, the company's capital structure represents the company's long-term funds (Mashayekh and Ismaili, 2006).

Although the majority of empirical researches related to the capital structure have been conducted in capital markets of US and some developed countries like England and Japan but the capital structure in developing countries has its position and importance. Unfortunately, due to the following reasons the economic system of developing countries has been remained unclear.

The first is that developing economies have little importance for the economic units' role in the processes of economic development.

Second, almost until the last two decades, the economic units in most of developed countries encounter major restriction in choosing their required resources. Some of these restrictions can be State Economic

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Sovereignty and to foreclosing competition from non-governmental entities, lack of market development and limited financing sources (Bagherzadeh, 2003).

Theories of Capital Structure

1- Net Income Approach (NI)

This theory is based on the fact that the enterprise can reduce its cost of capital by using debt. This method is based on the assumption that using debt doesn't change investment sensitivity to risk. As a result, debt and discount rate of capital remain constant. So the increasing use of debt increases the stock market value and so it reduces the overall cost of capital (Nasrollahi, 2002).

2- Net Operating Income Approach (NOI)

In net operating income approach capital structure is not considered and firm can not affect the overall cost of capital. When debt increases, in order to offset the increased financial risk, shareholders increase their conversion rate so that the average cost of capital remain constant (Nasrollahi, 2002).

3- Traditional Approach

Complex form of net operating income is discussed in the traditional approach. According to this approach, the firm's cost of capital can be reduced in a good way of debt and equity. So there is an optimal capital structure for each firm. According to the traditional approach the total capital costs will be divided into three categories:

In the first stage, the rate at which the net income of the firm is adjusted by the market, that stock cost is fixed or due to increased financial risk increases slowly. But the increasing speed is not enough to deter sources of cheap debt. During this stage, the cost remains constant, because using a loan is considered a reasonable debt. In the second stage, when the firm reaches a certain level of leverage, leverage increase has a negligible effect on the value of the firm or the total cost of firm's capital. Because increasing the cost of stock, counteracts benefits of the debt. In this range, or at a certain point, the maximum value of the firm will be the minimum with the cost of capital. In the third stage or beyond the acceptable range of the lever, with increased lever, firm value decreases or the cost of capital increases, because the stock price will begin to rise rapidly, so that the benefits of cheap debt is neutral. From this we can conclude that the cost of capital is a function of leverage, it means by Leverage increasing capital will be declined and after reaching a certain point it starts to increase. The traditional view actually represents an attempt to balance financial risk and investor's expected revenue (Nasrollahi, 2002).

Validity of the traditional view considers the fact that the market value is dependant on the net operating income and its risk and how to finance doesn't affect net operating income and its risk. The financing changes net operating income distribution and risk associated with it between shareholders and creditors. Thus, firms with the same operating income and risk and different financing venture have the same values. Traditional approach will be criticized because it claims all total risk for a firm shareholders can be changed through changing the distribution of risk among different types of securities. However, it is alleged that because of acceptability of costs, there is the impact of supplied capital through debt in tax deductions and market imperfections of optimized structure. Modigliani and Miller (1963) are some of the scholars who do not agree with traditional approach. They criticize the assumption that the cost of stock does not affect debt to an acceptable level by financial leverage. They also believe there is no plausible explanation for accepting this assumption and they do not accept that to a certain level of debt, increasing debt for reputable and strong firms does not increase the stocks risk (Nasrollahi, 2002).

Research Hypothesis

The Main Hypothesis

There is a significant relationship between capital structure and the privatized governmental companies.

Sub Hypotheses

- 1- There is a significant relationship between the ratios of total debt to total valuable assets of privatized governmental companies.
- 2- There is a significant relationship between the ratios of total debt to total valuable equity of privatized governmental companies.

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3- There is a significant relationship between the ratios of total debt to total valuable capital of privatized governmental companies.

4- There is a significant relationship between the ratios of total long term debt to total valuable capital of privatized governmental companies.

MATERIALS AND METHODS

This paper empirically is among researches on the PAT and based on actual data in the company's financial statements and according to the purpose it is an applied research. The present study is a retrospective descriptive study and a correlation research. The researcher purpose of conducting this descriptive research is objective, true and regular describing of features of a situation or an issue. In other words, the researcher will try to deduce what is in fact, without any subjective interference and to obtain objective results from the position. Correlation research makes possible measurement and evaluation of some variables and the relations between them in a particular moment and in real terms. This method does not identify causal relationships, but its purpose is to determine which variable is positively or negatively sync with another variable relatively. At first for theoretical discussion and literature related to research library methods will be used (in the library section, the theoretical basis of the study of books and professional Persian and Roman journals and papers and dissertations written previously are placed on the agenda). Then sing the data collected and classified in the Excel spreadsheet by software EVIEWS, some econometric analysis and also required estimates will be done and then using conventional statistical indicators and the estimated results analysis will be done.

Prerequisite for doing any research is availability of information. According to the company's disclosure, accessing to information on companies listed on the Stock Exchange is more possible. The research population consists of all firms listed in Tehran Stock Exchange.

Present study used the screening method (FA) to investigate the sample as an appropriate representative sample of the population. To this end, the following criteria were considered and if a company has met all the criteria it has been selected as one of the sample companies. Specified criteria are as follows:

- 1- They should be listed on the Stock Exchange before 2007 and should be active by the end of 2012.
- 2- In order to compare data, companies should not have changed financial terms during the study period and their financial year end should be 29 Esfand.
- 3- To equality of information they shouldn't be among investing companies or financial intermediation including insurance and bank.
- 4- Their financial information should be available for all years of study on their site.

After considering the above criteria and doing the mentioned procedures 103 companies were eligible to be statistical sample of this research. The companies' names are visible in the Appendix.

To conduct the research and to do proper investigation and conclusions of the research, information plays a significant role. Required information and data in this study were collected using two methods:

Information related to theoretical issues and research literature have been gathered from domestic and foreign specialized books and publications, then required information and data to analyze the relationship between the data was obtained from the data contained in the Library of the Stock Exchange, Omidname, financial reports, the board activity reports to the General Assembly of Shareholders and the announcements of Companies listed on Stock Exchange.

Data for this study were obtained from the following sources:

- Numerous articles in journals or on the Internet.
- Information in the Library of the Stock Exchange, Omidname, financial reports, the board activity reports to the General Assembly of Shareholders and the announcements of Private Companies listed on Stock Exchange.

RESULTS AND DISCUSSION

Characteristics of the variables used in the study, both dependent and independent variables are listed in the following table. Information and statistical data of research variables during the period have been

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calculated using a special formula of each index. According to the research hypothesis, this study investigated four hypotheses in which four independent variables and one dependent variable are considered. Independent variables of this research include ratio of total debt to total assets, total debt to equity, total debt to total capital and long-term debt to total assets and dependent variable is the company value (Q-TOBIN Index). Statistical indices include center tendency and their dispersion were calculated including mean, median, maximum, minimum, and standard deviation. Population studied in this study includes all public companies listed in Tehran Stock Exchange.

Table1: Summary of descriptive statistics used in research

SD	Min	Max	Median	Mean	quantity	Variable
2.97	0.04	12.57	0.83	1.81	Q_TOBIN	
0.24	0.09	2.66	0.63	0.64	DEBT_ASSET	
5.55	17.89	26.31	1.64	2.14	DEBT_EQ	
6.11	0.19	7.37	3.29	4.99	DEBT_CAPI	
0.11	0.01	0.69	0.18	0.20	L_D_ASS	

Where:

- Q TOBIN indicators for assessing the value of firm i at time t;
- DEBT_ASSET: Ratio of total debt to total assets of firm i at time t,
- DEBT_EQ: Ratio of total debt to equity of firm i at time t,
- DEBT_CAPI: Ratio of total debt to capital of firm i at time t,
- L_D_ASS: Ratio of total long-term debt on total assets of firm i at time t,
- TOP: Ratio of shares owned by board members of firm i at time t.

With regard to the criteria referred to in Chapter III, data of 103 companies during the period from 2007 to 2012 were used in this study on sample selection and its impact on the total sample size. Given that we use the combination of time-series and cross-sectional data to test our hypotheses, the number of observations / company was based on the combined data, 609 observations.

The main objective of the present study is to investigate and analyze the impact of capital structure on the value of companies listed on the Stock Exchange that four main hypotheses and one dependent variable are used.

Multivariate regression models are used to test these hypotheses and to estimate regression models panel data method (combining cross-sectional and time-series data) and to appropriate estimate regression models and select one of the common effects, fixed effects and random effects Hassan and Flimer statistical tests are used.

Normalization of Variables

To check the normality of the data, normal distribution of the samples is presented using Klmograf-Smirnof test by spss software. This test is a distribution compliance test for quantitative data. Klmograf-Smirnof test for distribution compliance compares cumulative probabilities of data collection with cumulative probabilities of the values in a particular theoretical distribution.

If the difference is large enough, this test will show that the target data does not match with one of the theoretical distributions. In this case, if the decision criterion (P-Value) is less than 5%, the null hypothesis is rejected it means data is not from a specific distribution, such as normal, Poisson, exponential or uniform distribution. For this test, the following assumptions were made:

- { H₀: the distribution of data is normal.
- { H₁: the distribution of data is not normal.

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Table 2: The obtained results are presented in the following table

Significance level	Number	Value of the test statistic	Variable
0.625	103	6.801	Q_TOBIN
0.2	103	2.083	DEBT_ASSET
0.670	103	8.112	DEBT_EQ
0.586	103	5.468	DEBT_CAPI
0.32	103	1.815	L_D_ASS

Due to the significance levels higher than 0.50 so the normality of all variables at confidence level of 95% will be accepted.

Correlation Test

In the second phase to evaluate mentioned research hypotheses, a significant relationship between the variables must be ensured. Since all variables are normal, the Pearson correlation analysis will be used. The results of the correlations are presented in the table below. Correlation analysis indicated that there is a significant relationship between the research variables and it can be argued that at confidence level of 99% all research variables have significant relationships with each other.

Table 3: Pearson correlation test results table

L_D_ASS	DEBT_CAPI	DEBT_EQ	DEBT_ASSET	Q_TOBIN	Variable
0.542	0.605	0.441	0.129	1	Correlation coefficient
0.000	0.000	0.000	0.010	0.000	Significance level
0.423	0.319	0.230	1	0.129	Correlation coefficient
0.000	0.000	0.000	0.000	0.010	Significance level
0.355	0.544	1	0.230	0.441	Correlation coefficient
0.000	0.000	0.000	0.000	0.000	Significance level
0.237	1	0.544	0.319	0.605	Correlation coefficient
0.000	0.000	0.000	0.000	0.000	Significance level
1	0.237	0.355	0.423	0.542	Correlation coefficient
0.000	0.000	0.000	0.000	0.000	Significance level

Research Hypotheses

The Main Hypothesis

- {H₀= capital structure has no significant effect on firms' value
- {H₁= capital structure has a significant effect on firms' value

Research hypothesis test is done using regression model presented in the third chapter.

$$(Qtobin_{it}) = \alpha + \beta_1 \text{debt/asset}_{it} + \beta_2 \text{debt/equity}_{it} + \beta_3 \text{debt/capital}_{it} + \beta_4 \text{l.d/asset}_{it} + e_{it}$$

Homogeneity Test

We choose one model for hypothesis analysis from the econometric literature on the patterns of joint comparison between common effect patterns and constant coefficients that the first is a joint- intercept method and the latter is called the variable-intercept method. To select either of these equations likelihood

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of the F statistics will be used and if the significance level (p- value) of F-statistic is greater than 0.05 joint-intercept method is selected and if the F statistic is smaller than 0.05 Hausman test will be used to select one of the models for fixed and random effects. To select one of the Selection procedures for the joint effects (data fusion method) and constant effects (using panel data) Limer F-test was used. Given the following table, in the statistical samples of the first model the significance level of Limer F-statistics is 0.000 indicating the panel data method is verified. As a result the Hausman test is used to check whether the model estimation is better with constant effects or random effects. Given that the Hausman test error is greater than 5%, As a result, the most appropriate method for estimating the regression model is random effects method.

Table 4: Research model statistical tests

Test result	The significance level	Degrees of freedom	The test statistic	Type of test
Panel data method	0.000	102.502	3.81	F Limer
Random effects method	0.484	4	3.45	Hussman

The Results of Testing Hypotheses

Test hypotheses related to the research hypotheses using random effects conducted on statistical research samples are provided in the table below.

Table 5: Research model test results

Method: panel EGLS			Independent variables
Probability	T-statistics	Coefficient	
0.000	9.14	4.94	constant
0.000	-9.91	-6.69	Total debt to total assets
0.0004	-3.57	-0.008	Total debt to total equity
0.016	2.39	0.029	Total debt to total capital
0.003	2.94	5.17	Total long term debt to total assets of the firm
0.000	13.91	0.62	AR (1)
0.4296			Adjusted R2
212.69			F statistics
0.000			probability
1.71			Durbin-Watson

According to the results of the above table, the adjusted coefficient of determination is equal to 0.4296 this suggests that the 42.96% of changes in firm value is explained by the independent variables. Significant level of F statistics is 0.000 which reflects the significance of the model. Also, the Durbin-Watson statistic equals value is 1.71 which indicates lack of correlation between wastes of the model.

Discussion, Conclusions and Recommendations

The main objective of capital structure decisions is establishing the appropriate mix of long-term sources of cash In order to minimize the economic cost of economic unit and thereby maximizing the market value of the economic unit. Sponsors include investors, shareholders and creditors and each group follows its own interests, what encourages suppliers to apply their resources in a specific activity, is desirable practice of the activity, that the value of the company and thereby shareholder wealth increases. Since the cost of financing is different, in the company perspective the cost of debt is less because the debt requires interest payments to creditors and in terms of tax law this is an acceptable cost and on the other hand, it increases uncontrolled increase in debt and bankruptcy risk and reduces the value of the company's shares. In the other hand, excessive use of the equity increases the expected return of shareholders', and ultimately increase the cost of financing; therefore, managers should choose the capital structure that requires less capital cost to have better performance for the company and as a result, financial managers

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must determine the weighted average cost of capital and final cost of capital and the optimal capital structure. Also, managers should determine the borrowing capacity of the company according to the cash flows of inputs and outputs and then considering the other terms and conditions apply to borrow.

On the other hand determining the value of the company is a very important factor in the investment process. The value of any company is determined according to the value of its shares. Therefore, according to the company's value, the investor determines his priorities in the investment. Financial decisions (capital structure) are one of the factors affecting shareholder value. In recent decades, the importance and impact of financial decisions on company value, has been one of the major issues in academic research. Companies need capital to grow and develop. A part of the capital has been provided through earnings in the company as a result of company's profitability that has not been divided between the shareholders, and the rest can be financed through borrowing or capital markets. A company that does not have any debt, its capital structure is consisted by equity and since most of the company's capital structure is with debt and capital, financial managers are highly sensitive and accurate to get a loan, and its effects and maximizing shareholder wealth, and given that the investors based on several criteria, by comparing a variety of stocks, invest in a particular stock Company's stock price is one of the most prominent investment criteria which represents the company's credibility to investors.

Research Proposals

1. According to the results of research based on the impact of capital structure on valuable profitability of the company, it is recommended to the users and financial analysts to consider the growth opportunities in assessing the company.
- 2- It is recommended to researchers to repeat this study with regard to information of companies out of stock exchange and for a longer to have a greater ability to generalize the results.
- 3- Finally, the use of other mentioned measures to assess the firm value and capital structure is recommended for the same research and future studies.
- 4- Due to differences in companies' access in the use of the facilities and the results of previous studies, in studying the relationship between capital structure and value for decision it is better that the analysis performed according to the type of industry or company size.
- 5-Based on the discussions of the factors influencing capital structure it can be concluded that in our country the legal restrictions on the issuance of debt and high interest rates of banks can also affect capital structure.
- 6- Managers' risk aversion is also an important determinant of capital structure, because having a sense of risk aversion leads to a lack of debt and use of long term credit and this reduces performance.
7. Creditors should try to analyze capital structure and determine the optimal structure of the company to determine repayment of loans to grant credit to companies.

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