



The Impact of Institutional Ownership on The Relationship between Tax and Capital Structure

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ABSTRACT

One of the reasons that companies avoid paying their taxes is that they choose to use debts for their funding. In other words, tax saving, an activity of companies to avoid taxpaying, can be used to finance corporate projects. Furthermore, since institutional owners are more inclined to supervise, they may shrink managerial behaviors to avoid taxpaying. In this study, institutional owners' supervisory role about tax efficiency on corporate capital structure was investigated. For this purpose, a sample of 98 companies from 2005 to 2014 was selected from companies listed on Tehran Stock Exchange (TSE). Following the research conducted by Kramer, multiple linear regression based on panel data and the econometric software Eviews were used for testing the research hypotheses. The results show that tax has a negative and significant impact and institutional ownership has a positive and significant impact on capital structure. In addition, the institutional ownership in corporate companies impacts and adjusts the relationship between tax and capital structure.

1 Introduction

There are various theories about corporate capital structure. Some of these theories consider that debt in corporate capital structure is a factor that increases the corporate value, and some others suggest that it decreases this value. Also theoretically it seems that managers will have grounds to change capital structure. Therefore, it is particularly important to investigate the factors affecting the role of capital structure in wealth creation for companies. Various literatures have introduced several factors influencing the corporate capital structure, the most important of which is tax.

Tax is known as the most principle revenue earning tool for governments to achieve their economic and social goals. Extension and variety of economic activities, the growing role of governments in creating and expanding public services, social security and development of governmental obligations in economic and social arenas, and making efforts to realize economic growth and fair distribution of revenue are all factors which have made tax payment and tax collection an important and effective issue. In any country, tax plays a very important role as a major instrument for governments in economy; so that today in industrial countries, improvement and development of efficiency and effectiveness of tax payers' financial statement, and its claim by tax experts, subject to the principle of tax justice, are of outmost importance [12].

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In this study, in addition to measuring the impact of tax on capital structure, institutional ownership was also used as an effective variable in this relation. Because of having a substantial percentage of stocks as well as professionalism in the investment, institutional owners have the necessary ability and incentive to monitor companies. Generally, it is believed that the presence of institutional owners may lead to a change in the behavior and performance of companies. This is derived from monitoring activities that investors perform. Therefore, the main purpose of this paper was to investigate the impact of institutional ownership on the relationship between tax and capital structure in the companies listed on the TSE. It is expected that the results of the study could have a scientific achievement and added value as follows:

First, the results of this research could develop the theoretical foundations of the literature related to capital structure and corporate governance. Second, these results could provide, as a scientific achievement, useful information to investors, creditors and managers to reach their goals. And third, they can give new ideas for research on the subject of the proposed research.

2 Conceptual Frameworks and the Literature Review

One of the most important components of any economic activity is to provide the required financial resources. These can be secured out of equity or debt. The main question is which of these resources should be used over the life of an enterprise? The combination of debt and equity in financing represents the capital structure. Capital policy establishes a balance between risk and return. The use of more debt increases the risk of profitability of the company, on one side, and leads more likely to the expected rate of return, on the other side. The risk related to the use of debt reduces the stock price and, on the other hand, the rate of return greater than expected increases the stock price. Therefore, an optimized capital structure creates a desired balance between risk and return and, as a result, leads to the increase of stock price [14].

Selection between the debt and capital used in the company should be made by comparing the main features of each type of securities influenced by internal factors related to the company's operations and/or other external factors.

After determining the amount of capital required by the management, the question is that which resources should be used and which method be selected to supply the required funding. In other words, what amount of debt should be used by the company for funding and how many shares should be issued through its capital? The purpose of corporations and their managers is to maximize the value of equity and/or the company's value and its stock price [5].

Maximizing the value of the company also requires the optimal use of financial resources, increase of returns, and selection of proper risk by the company. In this framework, managers can now maximize their value in two ways: increasing the efficiency of the company, and then minimizing the cost of capital (after tax deduction) and risk of the company. With the right combination of funds used by the company, its value will peak. Consequently, a combination of resources is created which is called the optimal capital structure in which the total cost of capital of the company will be minimized [4]. Thus, given the importance of achieving an optimal or desirable capital structure, it remains to be seen hand in what way economic units can achieve this important goal. Taxes are among the important factors affecting the company's capital structure [14]. On the other side, since the general features of the company's ownership structure may affect management decisions on financing and the capital struc-

ture of the company, this issue should be considered so much. Different companies have different composition of shareholders [1]. Part of the corporate ownership is in the hands of minority shareholders and natural entities. To monitor the performance of company executives, this group mainly relies on publicly available information such as financial statements published. This is while another part of the corporate ownership is in the hands of stakeholders.

Unlike the first category of shareholders, valuable internal information about future prospects and the company's business strategy and long-term investments is made available to them through direct contact with company executives. Institutional owners are large investors such as banks, insurance companies and investment firms. Institutional owners play a key role in the control of corporations. Generally, it is believed that the presence of institutional owners may lead to change in corporate behavior. This is derived from monitoring activities that investors perform. The influence of institutional owners on management decisions concerning financing the company is of great importance. In this study, this monitoring role of institutional owners on the impact of tax on capital structure of companies was investigated.

According to the static trade-off theory, tax benefits arising from creating debt increase the value of the indebted company. Meanwhile, the costs of financial crisis and possible bankruptcy due to lack of timely fulfillment of obligations significantly reduce the value of the indebted company. So the company's capital structure can be considered as a balance between debt tax benefits and costs of financial crisis and possible bankruptcy due to debt. Thus, these two factors neutralizing each other (the balance of benefits and costs of debt) lead to optimal use of debt in the capital structure [15]. Since tax expense reduces corporate profit, many companies avoid paying tax through a lot of activities with the aim of reducing their taxable income. As a result, tax avoidance is becoming a government's main concern. One of the reasons that companies avoid paying their tax is that it is the substitution of debt. In other words, companies' tax savings, achieved from the activities of tax avoidance, may be used to finance corporate projects. Since institutional owners have incentives to provide more oversight, they can reduce managerial practices in order to avoid paying taxes [9].

Regarding the impact of tax on capital structure, [3], showed that the desired capital structure can be determined depending on the balance between tax benefits derived from debt creation and related financial consequences. Companies whose tax benefits, resulting from the creation of debt, are less than the cost of financial risk caused by debt are less involved in financing through debt creation. Plesko [13] focused on tax savings derived from increased leverage and investigated the impact of tax rate changes on the capital structure of American companies. Reform of the tax structure in America in 1986 provided practical conditions to test the impact of tax on leverage corporate decisions. The main part of the reform of the tax structure was the reduction in the highest regulated tax rate from 46% to 34% together with extensive changes in the corporate tax base. The results show that the reform of the tax structure in 1986 reduces the tax rate for an average of 5%, lowers tax distribution between different industries, and affects companies' financing decisions. Evidence suggests there is a positive relationship between tax rate and leverage. That is, the reform of tax structure has led to the reduction in corporate leverage rate. In a study entitled "Factors affecting capital structure", Mashayekh and Shahrokhi [11], obtained results indicating that methods of financing for the continuation of activities and implementation of profitable projects are very effective in the growth process of companies and ensure their survival in today's competitive world. Financing is performed in various short-term and long-term ways and companies can find their financial resources from inside (for example, retained earnings) or outside (through the issue of shares or bonds). The main goal of compa-

nies is to increase the return on equity and for this purpose they use methods to help them reach this great. Izadi Nia and Rassaiyan [7], analyzed the relationship between capital structure and corporate income tax in Iran. The results obtained from testing the data related to 48 stock companies during 13 years from 1995 to 2007, indicate the lack of a significant relationship between capital structure and tax of the companies listed on TSE. Mara and Xu [10], using different types of data sources related to changes in the statutory rate of corporate income tax and the legal rate of individual income tax from 1981 to 2009 in the Faroe Islands, investigated the impact of tax on corporate capital structure. The results of their research show that corporate and individual taxes are statistically significant and determinant of capital structure options. Chavoshi and Ahmadi [2], studied the impact of changes in Article 105 of the Direct Taxation Act on capital structure and dividend of the companies listed on TSE (selected industries). Under the old Act, the corporate income tax rate was 10%, but after the amendment to Article 105 of the Direct Taxation Act, corporate tax rate, including stock companies, was changed from 10% to 25% and after that, cash dividend (whether real or legal) was no longer taxable. They concluded that these changes in tax laws have a significant relationship with dividend and that there is not relationship between changes in tax law and capital structure. This means that by raising taxes, corporate capital structure does not change.

Hemmelgarn and Teichmann [6], measured the impact of changes in tax rate on leverage, dividend policy, and management of banks' profits. The results of their research show that tax affects all three variables. Financial leverage increases in accordance with the corporate income tax rate in the first three years after these changes. In the event when interest payments are deductible from the income tax, a higher tax rate increases motivation for financing through debt.

Kramer [8], examined how ownership structure could affect the relationship between tax and capital structure. He concluded that the increased corporate tax rate influences positively the debt to asset ratio, and this influence is stronger in companies with concentrated ownership. They assured that ownership plays an important role even when controlling other factors which potentially affects the relationship between corporate tax and capital structure.

3 Research Hypotheses

Considering the theoretical foundations and literature, the hypotheses of the research were as follows:

H1: Tax has a significant impact on corporate capital structure.

H2: Institutional ownership has a significant impact on corporate capital structure.

H3: Institutional ownership has a significant impact on the relationship between tax and corporate capital structure.

4 Methodologies

4.1 Research method

This was an applied research in terms of goal, and a correlative one in terms of nature. It had a deductive-inductive approach and it was considered a regression analysis among various correlation researches. Also, considering that the data used in the research were real and historical, it can be classified Expost Facto.

4.2 Research Period and population

The population of the study was all listed companies on TSE from 2005 to 2015. Systematic elimination method was used to determine statistical sample. Therefore, all companies which were member of the population and fulfilled the following conditions were selected as statistical sample, and those having not at least one of these conditions were eliminated from the sample:

- Their fiscal year must be ended 20 March each year.
- Their trading interruptions must be less than 6 months.
- Their required information must be available.
- There must be listed on Stock Exchange by 2005.

Applying conditions mentioned above, 98 companies (980 year-firm) were selected to estimate models and test hypotheses.

In this study, data collection was done in two phases. In the first phase, library method (referring to theses and papers in Persian and English through relevant websites) was used to develop theoretical foundations, and in the second phase, audited financial statements of the companies listed on TSE, databanks, software such as Rahavard Novin, report of the board of directors, internal audit reports, and the official website of the TSE were used.

4.3 Research variables and Model

Dependent variable:

Capital structure (DR) = the sum of debts divided by total assets

Independent variables:

Tax = the amount of tax paid by firm

Institutional ownership (INSOWN) = the number of shares held by institutional investors divided by total number of shares outstanding

Control variables:

Size = natural logarithm of total assets

Acid-Test Ratio(LIQ) = (Current assets – Inventory) / Current Liabilities

Growth = annual percentage change in sales

Return on Assets (ROA) = the natural logarithm net income scaled by the book value of assets.

The following regression model was used to test the hypotheses:

$$DR_{it} = \beta_0 + \beta_1 TAX_{it} + \beta_2 INSOWN_{it} + \beta_3 TAX_{it}INSOWN_{it} + \beta_4 Size_{it} + \beta_5 LIQ_{it} + \beta_6 GROWTH_{it} + \beta_7 ROA_{it} + \varepsilon_{it}$$

where:

DR: Capital structure, TAX: Tax, INSOWN: Percentage of institutional ownership, Size: Company size, LIQ: Liquidity, GROWTH: Company growth, ROA: Return on assets

5 Findings

5.1 Descriptive statistics

In this section and prior to testing the hypotheses, descriptive statistics for the variables are given in Table 1. The above statistics provide an overview of the distribution of research data.

Table 1: Descriptive statistics of research variables

Variables	Ave.	Max.	Min.	SD	Coefficient of variation	Number of observations
Capital Structure	0.66	3.06	0.103	0.217	0.328	980
Company growth	-0.17	60.82	-97.3	4.738	27.8	980
Institutional ownership	0.67	84	0	2.678	3.99	980
Liquidity	0.78	5.83	0.071	0.45	0.57	980
Return on assets	0.22	61.63	-7.81	2.004	9.109	980
Company size	5.64	7.56	3.99	0.668	0.118	980
Tax	30371	1058963	0	78439	2.58	980

According to the values obtained, it can be said that the company size variable had the lowest coefficient of variation and, hence, the highest stability during the research period. The company growth variable showed the highest coefficient of variation and, hence, the lowest stability during this period among other variables.

5.2 Correlation coefficient between variables

To review the presence and direction of a linear correlation between variables, the correlation coefficient test was conducted and the results were as depicted in Table 2. These results show that there is no serious correlation between the research independent variables.

Table 2: Correlation coefficients

		Company growth	Institutional ownership	Growth * institutional ownership	Liquidity	Return on assets	Company size	Tax
Company growth	Correlation	1.0000						
	Probability	----						
Institutional ownership	Correlation	0.025	1.0000					
	Probability	0.43	----					
Growth * institutional ownership	Correlation	0.054	-0.406	1.0000				
	Probability	0.09	0.000	----				

Liquidity	Correlation	0.082	-0.032	0.047	1.0000			
	Probability	0.009	0.31	0.13	----			
Return on assets	Correlation	0.137	0.079	0.256	0.250	1.0000		
	Probability	0.00	0.01	0.00	0.00	----		
Company size	Correlation	0.095	0.183	0.422	0.037	0.375	1.0000	
	Probability	0.00	0.00	0.00	0.24	0.00	----	
Tax	Correlation	0.103	0.158	0.381	0.035	0.372	0.382	1.0000
	Probability	0.00	0.00	0.00	0.26	0.00	0.00	----

5.3 Stationary test of research variables

Levin, Lin and Choi and Phillips-Perron tests (Fisher type) were used to assess the stationary of the research data. Test results are as illustrated in Table 3.

Table 3: Stationary test of research variables

Variables	Levin, Lin and Choi		Phillips-Perron	
	F	P-Value	F	P-Value
Capital structure	3.70	0.000	268.6	0.000
Company growth	21.28	0.000	662.3	0.000
Institutional ownership	361.4	0.000	737.3	0.000
Liquidity	12.38	0.000	346.9	0.000
Return on assets	10.41	0.000	277.8	0.000
Company size	2.92	0.038	130.7	0.009
Tax	2.02	0.021	232.6	0.037

The results of panel-data unit-root tests indicate that the variables had not a unit root at 1% and were reliable. This shows that the estimation of the regression model was accurate in order to test the hypotheses by the use of the above variables.

5.4 Heteroscedasticity and autocorrelation tests

In order to test heteroscedasticity, the likelihood ratio test (LR) was used. Also, the results of the autocorrelation using vooldrige test, were studied. The results of these tests in Tables 4 and 5 heteroscedasticity and autocorrelation for the research original model confirmed. To solve these problems, the generalized least squares regression (EGLS) and the first-order autoregressive scheme, as AR (1) was used, respectively.

Table 4 : Results of Heteroscedasticity test

	Heteroscedasticity		Cross – section
	F	P-Value	
Main model	893.62	0.000	the existence of a Heteroscedasticity

Table 5 : Results of autocorrelation test

	autocorrelation		Cross – section
	F	P-Value	
Main model	1.482	0.026	the existence of an autocorrelation

5.5 Results of testing to choose the suitable estimation model

In order to choose the preferred model (the approach of panel or pooled data) to test the hypotheses, F (Limer) test was performed and the results are as shown in Table 6. P-value column related to F (Limer) test indicates that the research model was of panel nature.

Table 6: Results of F (Limer) test

	F (Limer)		Cross – section
	F	P-Value	
Main model	5.07	0.000	Panel

Then Hausman test was used to determine and select one of the two fixed effects or random effects models, and the results can be seen in Table 7.

Table 7: Results of Hausman test

	Hausman		Cross – section
	Chi-square	P-Value	
Main model	7.42	0.006	FIX

So, to test the hypotheses, the results of estimating the model with fixed effects model were emphasized.

5.6 The model estimation results

The model estimation results are as depicted in Table 8. The Durbin-Watson statistic (1.87) showed no first-order serial autocorrelation problem in the estimated model's disturbing elements. In addition, the results relating to F-statistic with a probability of (0.000) indicates that, in general, the above model is statistically significant. Adjusted coefficient of determination shows that independent variables explain about 77 percent of changes in the dependent variable.

$$DR_{it} = \beta_0 + \beta_1 TAX_{it} + \beta_2 INSOWN_{it} + \beta_3 TAX_{it}INSOWN_{it} + \beta_4 Size_{it} + \beta_5 LIQ_{it} + \beta_6 GROWTH_{it} + \beta_7 ROA_{it} + \varepsilon_{it}$$

Table 8: Results of model estimation

Fixed effects model		Dependent variable: Capital Structure	
Variable	Coefficients	t-statistic	Probability
Institutional ownership* Taxes	0.021	2.646	0.008
Tax	-0.011	-3.989	0.000
Institutional ownership	0.003	3.277	0.001
Company growth	0.0004	0.939	0.347
Liquidity	-0.235	-25.54	0.000
Return on assets	-0.002	-2.472	0.013
Company size	0.002	0.175	0.860
Fixed variable	0.827	9.863	0.000
AR (1)	0.317	4.181	0.000
Coefficient of determination	0.79	F-statistic	29.49
Adjusted R ²	0.77		
Durbin-Watson statistic	1.87	F-probability	0.000

The results show that taxes based on a regression coefficient of -0.011 and a probability of 0.000 has a negative significant impact on capital structure, while institutional ownership based on a regression coefficient of 0.003 and a probability of 0.001 has a positive significant impact on capital structure. So given that the probability of the two variables was less than 0.05, both the first and second hypotheses are confirmed. Also, the effect of liquidity control variables and return on assets on capital structure was negative and significant while company growth and size were insignificant.

As the results in the table above show, variable "institutional ownership * Taxes" has a significant positive impact on the capital structure; however, we need to run another test called Wald test to check whether or not institutional ownership is able to adjust the relationship between tax and capital structure.

5.7 Wald test

Table 9: Results of Wald test

	F	P-Value
Wald Test	10.30	0.0014

As the obtained results in Table 9 indicate, the probability of the Wald test is 0.001 and it is less than 0.05, the effect of institutional ownership on the relationship between tax and capital structure and, hence, the third hypothesis are then confirmed.

6 Conclusion & Discussion

This study dealt with the review of the relationship between tax and corporate capital structure and the adjusting role of institutional ownership in this respect. In this regard, financial leverage was used as a criterion to measure capital structure and to assess separately the impact of tax and institutional ownership thereon.

The results of the first hypothesis of this study suggest a negative relationship between tax and structural capital. In other words, debt ratio is reduced by increasing tax. To justify this conclusion, it can be stated that tax increases when profitability, sales and, as a result, net income are increased. With the increase in net profit, financial resources are increased as well; in other words, part of the problems of companies for providing necessary financial resources are resolved. When companies are provided with necessary resources, they will need less external financing, i.e. their debts are decreased. Therefore, we see an inverse relationship between the amount of taxes and capital structure.

The research results were consistent in terms of significance with the findings of Kramer [8], Deangelo and Mazilous [3], but inconsistent with the results found by Mara Faccio and Jin Xu [10], Izadi Nia and Rassaiyan [7] and Chavoshi and Ahmadi [2]. The second hypothesis test results show that institutional ownership has a positive and significant effect on capital structure. With the increasing institutional ownership, company management decisions are properly ruled out and suitable measures are adopted to create confidence in the effectiveness and efficiency of resource use. However, the use of debt in capital structure leads to a tax advantage. In other words, interest expense is considered as a tax shield which is also accepted from the perspective of tax laws. Therefore, companies attempt to increase their funding through debt in an aim to make maximum use of the tax shield, cut taxes, and maintain cash resources within the company. In the companies where institutional ownership is higher, corporate governance tasks and decisions are carried out more efficiently to increase the company's resources.

Finally, it can be stated that institutional owners ensure that financing decisions guide the company in correct way thanks to their high monitoring power and knowledge of the capital market. So we witness a shift in the relationship between tax and capital structure with the presence of institutional owners. To put it another way, the latter have caused that a proper balance has been established between the tax benefits due to debt and the resulting risk of bankruptcy.

According to the third hypothesis, institutional ownership adjusts the relationship between tax and

capital structure. After running the tests, we reached to the conclusion that institutional ownership in stock companies affects and adjusts the relationship between tax and capital structure. Therefore, the third hypothesis of the research was also confirmed and consistent with the results found by Kramer [8].

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