Effect of Complex Ownership Structure and Ownership Control Ratio on Financial Leverage in Companies Listed on Tehran Stock Exchange

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Abstract

The aim of the present study is to examine the effect of complex ownership structure and ownership control ratio on financial leverage of companies listed on Tehran Stock Exchange. Statistical research population of the present study is consisted of all the companies listed on Tehran Stock Exchange during the timeframe of 2006 - 2011 and sample volume was determined by using screening method which is equal to 110 companies after the elimination of outlaying observations (660 year-firm). In this study, the variables of ratio of institutional investor ownership, ratio of managerial ownership, ratio of non-managerial ownership and ratio of ownership control were considered as independent variables to study their effect on the dependent variable of financial leverage in companies. In this study, in which panel data with fixed effects were used, results obtained from analyzing 110 firms (660 year-firm) during the timeframe of 2006 - 2011 by using multivariate regression at 95% confidence level indicated that the variables of ratio of institutional investor ownership and ratio of managerial ownership have positive (direct) effect on financial leverage in companies. Also, it was indicated that the variables of ratio of non-managerial ownership and ratio of ownership control don't have any effect on financial leverage in companies.

Keywords: Complex ownership structure, financial leverage, ratio of institutional investor ownership, ratio of managerial ownership, ratio of non-managerial ownership, ratio of ownership control

Introduction

Various definitions have been presented for capital structure. Each of these definitions of capital structure refer an aspect of financing methods to capital structure. Belkaoui (2004) introduces capital structure as a general claim for a company's assets. He states that capital structure is consisted of publicly issued securities, private investment, bank debt, commercial debt, Leases, tax debts, Pension liabilities, deferred bonuses for management and employees, Deposit for good performance, goods guarantee and other possible debts (Ahmadvand, 2006). Considering the previous definitions, capital structure refer to the left side of a balance sheet. Some believe that capital structure is equal to the financial structure (Osta, 2011). Efforts for finding optimized capital began at late 1950s in the world, however, no model has been so far proposed for it. Capital structure is long-term financing of financial resources for companies. Since, current debts are used for current needs of a company, hence, they don't have a significant effect on return on equity and in turn, on a company value. In other words, capital structure of a company represents the long-term cash used by it (Beck et al., 2006).

Also, ownership structure of a company in various dimensions is significant and first, is defined based on two variables of insider holdings and outsider holdings. On this basis, the stock hold by institutional holders (intuitional holding) and the government is considered as the main

outside ownership of companies (Desender & Garcia-Cestona, 2006). Stock hold by insiders indicate to the percentage of outstanding shares which is owned by managers and employees in a company. Institutional shares refer to the percentage of a company's shares which are owned by institutional and legal investors, hence, ownership composition of a company in addition to insider and outsider can be studied from other dimensions such as centralization or decentralization of ownership, institutional or natural and managerial or non-managerial shareholders (Godfred et al., 2009).

In this study, the effect of ownership complex structure (institutional investor ownership, managerial ownership and non-managerial ownership) and ratio of ownership control on financial leverage was studied. Therefore, the variable of financial leverage ratio was considered as dependent variable and the variables of institutional investors ownership, managerial ownership and non-managerial ownership and ownership control ratio were considered as independent variables. Also, for determining a proper and correct relationship between dependent and independent variables a series of control variables such as profitability ratio, tangible assets ratio, growth opportunities and net sales of company which have an indirect effect on independent variables, were used. In the following, considering the above arguments, it was studied that considering the various classification of ownership structure to what extent it has the ability to change financial leverage ratio and whether this factor can be considered as a motivation for creating investment growth opportunities or not. Considering the previous studies on ownership structure and capital structure of a company which is referred to as complex structure ratio (institutional investor ownership, managerial ownership and non-managerial ownership) of a company in this study, it can be predicted that financial leverage ratio indirectly can have a considerable effect on increasing (reducing) ownership structure ratio, therefore, in this study, we seek to study this relationship with considered research moderating variables. The main goal of the present study is to explain the effect of controlling policies of complex ownership structure such as institutional, managerial and non-managerial structures on financial leverage of a company which indicates to the usage of appropriate investment opportunities. Finally, the main problem of this study is that whether ownership complex structure (institutional investors ownership, managerial ownership and non-managerial ownership) and ownership control ratio are effective on financial leverage ratio of companies or not. Therefore, the main goal of the present study is to examine the effect of ownership complex structure (institutional investors ownership, managerial ownership and non-managerial ownership) and ownership control ratio on financial leverage of companies and to this end, in the following section research method, findings and conclusions are presented.

Methodology

Research method used in this study in terms of nature and content is a correlation one which analyzes the correlation relationship by using secondary data extracted from financial statements of companies listed on Tehran Stock Exchange. This study has been conducted in a deductive - inductive reasoning framework. The reason for using correlation method is to discover the correlation relationships between research variables . On the other hand, the present study is an Ex-Post Facto study (semi-empirical), which means that it has been conducted on the basis of historical data analysis (financial statements of firms). In addition, it is a bibliographical and analytical- causal study. This study in terms of goal is an applied study and in terms of method is a descriptive - correlation study. In this study, the existence of a relationship between complex ownership structure and ownership control ratio on financial leverage is tested by correlation test. On this basis, this study is considered to be one of the types of applied studies. Applied study are those studies that are conducted by the aim of societies using the results of fundamental studies for improving and

perfecting behaviors, methods, instruments, devices, productions, structures and patterns. Also, applied studies are those studies that make use of the theories, rules, principles and techniques developed in other studies for solving practical problems.

Research model and variables

Hypothesis 1: There is a significant relationship between institutional investors ownership and financial leverage of a company.

First model:

$$Leverage_{i,t} = \beta_0 + \beta_1 IOw_{i,t} + \beta_5 \Pr ofitability_{i,t} + \beta_6 Tangibility_{i,t} + \beta_7 M / B_{i,t}$$
$$+ \beta_8 Log(Sales)_{i,t} + \varepsilon_{i,t}$$

Hypothesis 2: There is a significant relationship between managerial ownership and financial leverage of companies.

Second model:

$$Leverage_{i,t} = \beta_0 + \beta_2 MOw_{i,t} + \beta_5 \Pr ofitability_{i,t} + \beta_6 Tangibility_{i,t} + \beta_7 M / B_{i,t}$$
$$+ \beta_8 Log(Sales)_{i,t} + \varepsilon_{i,t}$$

Hypothesis 3: There is a significant relationship between non-managerial ownership ratio and financial leverage of companies.

Third model:

$$Leverage_{i,t} = \beta_0 + \beta_2 NMOw_{i,t} + \beta_5 \Pr ofitability_{i,t} + \beta_6 Tangibility_{i,t} + \beta_7 M / B_{i,t}$$
$$+ \beta_8 Log(Sales)_{i,t} + \varepsilon_{i,t}$$

Hypothesis 4: There is a significant relationship between ownership control ratio and financial leverage of companies.

Fourth model:

$$Leverage_{i,t} = \beta_0 + \beta_2 O / C_{i,t} + \beta_5 \Pr ofitability_{i,t} + \beta_6 Tangibility_{i,t} + \beta_7 M / B_{i,t}$$
$$+ \beta_8 Log(Sales)_{i,t} + \varepsilon_{i,t}$$

Definition of research variables

Research variables in this study are categorized in three groups:

Independent variables
Ratio of institutional investors ownership of company i in year t.
Ratio of managerial ownership of company i in year t.
Ratio of non-managerial ownership of company i in years t.
Ratio of ownership control of company 1 in year t.
Dependent variables
Financial leverage of company i in year t.
Control variables
Profitability ratio of company i in year t.
Ratio of tangible assets in company i in year t.
Growth opportunities of company i in year t.
Net sales of company i in year t.

Data collection method and instrument

For collecting the required data for calculating research variables, databases of "RahAvardNovin" and "TadbirPardaz" were used. In cases in which the existing data in these databases were incomplete and missing, manual archives in the library of the organization of stock

exchange organization and online website of research management, development and Islamic studies - stock exchange organization (www.rdis.ir website) were used.

Information related to research theoretical background o also were collected by using bibliographical method and by using books and articles in Farsi and English languages. Also, for testing research hypotheses and finally for data analysis, Excel software as well as SPSS19 and EVIEWS7 were used.

Research population and sample

Actual data required for this study have been collected from actual firm data in Tehran Stock Exchange. In this study, by using Cochran's formula, according to the following criteria sample volume was determined:

- For increasing the comparability power, fiscal period of companies should be ended at March 19th.

- During the time frame of this study (2006 - 20110) their fiscal years shouldn't have been changed.

- Financial data for these companies should be available.

- They should not be among financial company (such as banks and financial institutions) or investment companies or financial intermediation companies.

- For them the required information mentioned in the section of variables definition should be available.

Industries studied in this research include: automotive and parts manufacturing, medicine, metal products manufacturing other non-metallic mineral products, cement - lime - plaster, petroleum coke and nuclear fuel, basic metals, sugar and sugar cube, tile and ceramic, rubber & plastics, machinery and equipment, chemical products, food and beverages except sugar and sugar cube, textile and other industries.

Research findings

Table 1 presents descriptive statistics for research variables during the timeframe of this study. Total observations after modifying companies that lack the necessary conditions and also the elimination of outlaying data are equal to 110 firms. Descriptive statistics of dependent and independent variables measured by using 110 firm data during the timeframe of this study (2006 - 2011) include average, mean, standard deviation, min., max.,which are presented in table 1.

Table 1: Descriptive statistics of research variables

Variables	Average	Mean	Standard deviation	Min.	Max.
Financial leverage (Leverage)	0.6810	0.6836	0.1688	0.1048	1.3620
Ratio of institutional investors ownership (Iow)	0.5042	0.5135	0.1837	0.1879	0.8320
Ratio of managerial ownership (Mow)	0.3933	0.3939	0.1886	0.0768	0.7319
Ratio of non-managerial ownership (NMow)	0.2544	0.2555	0.0961	0.0881	0.4237
Ratio of ownership control (o/c)	0.5081	0.5072	0.1874	0.1877	0.8323
Profitability (Profitability)	0.5057	0.0927	12.7305	-0.3127	420.5916
Ratio of tangible assets (Tangibility)	0.2412	0.2081	0.1603	0.0002	0.6743
Growth opportunities (M/B)	11.0719	11.1069	3.3174	5.3461	16.8691
Sales log (Log(Sales))	5.1215	5.0272	0.5818	3.8900	7.5187

Regarding the financial leverage of companies, average, mean, standard deviation, min. and max. are equal to 0.6810, 0.6836, 0.1688, 0.1048 and 1.3620, respectively. Since the value of

average is a little bit smaller than that of the mean, it can be said that distribution of financial leverage of companies among the statistical research sample is slightly skewed to left. Regarding the ratio of institutional investors ownership of companies, average, mean, standard deviation, min., and max. are equal to 0.5042, 0.5135, 0.1837, 0.1879 and 0.8320, respectively. Since the value of average is a little bit smaller than mean and it can be said that the distribution of ratio of institutional investors ownership of companies in statistical research sample is slightly skewed to left.

In the following, inferential results of research hypotheses are discussed:

Hypothesis 1: There is a significant relationship between ratio of institutional investors ownership and financial leverage of companies.

After testing regression assumptions and ensuring that they are met, results obtained from the above regression equation fit are presented in table 2 below. F-value (11.198) indicated that the whole model is significant. The coefficient of determination and adjusted coefficient of determination of the above model are equal to 50.5% and 47.2%, respectively. Therefore, it can be concluded that in the mentioned regression equation, about 47.2% of the changes in financial leverage of companies in this study are explained by independent and control variables. In this table, positive (negative) values mentioned in the column of coefficient value, indicate the extent each of the variables directly (reversely) affect financial leverage in the companies considered in this study.

Table 2: Results obtained from regression equation fit

Variable	Coefficient of the variable	Coefficient value	T-value	Sig.
Constant	B0	1.522	2.873	0.004
Ratio of institutional investors ownership (Iow)	B1	2.342	2.847	0.0046
Profitability (profitability)	B2	0.671	6.273	.000
Ratio of tangible assets (Tangibility)	B3	0.271	2.218	0.0293
Growth opportunities (M/B)	B4	2.013	2.231	0.0261
Sales log (Log(sales))	B5	-0.311	-2.987	0.0037
Coefficient of determination	0.505	F-value		11.198
Adjusted Coefficient of determination	0.472	Significance (P-value)		0.0007
		Durbin-Watson value		1.709

According to the results of table 2, significance level of the variable of institutional investors ownership percentage is equal to 0.0046, which is smaller than the assumed significance level in this study (5%); therefore, at 95% confidence level, the obtained coefficient for the above mentioned variable in the above regression model is significant, and hence, the first research hypothesis is confirmed.

Hypothesis 2: There is a significant relationship between managerial ownership ratio and financial leverage of companies.

Results obtained from the above regression equation fit are presented in table 3 below. F-value (8.386) indicates that the whole model is significant. The coefficient of determination and adjusted coefficient of determination of the above model are equal to 56.2% and 52.7%, respectively. Therefore, it can be concluded that in the mentioned regression equation, about 52.7% of the changes in financial leverage of companies in this study are explained by independent and control variables.

According to the results of table 3, significance level of the variable of the ratio managerial ownership is equal to 0.005, which is smaller than the assumed significance level in this study (5%).

Table 3: Results obtained from regression equation fit

Variable	Coefficient of the variable	Coefficient value	T-value	Sig. Level
Constant	B0	3.457	5.507	.000
Ratio of managerial ownership (Mow)	B1	4.981	2.841	0.005
Profitability (Profitability)	B2	1.067	2.871	0.004
Ratio of tangible assets (Tangibility)	B3	2.6327	1.81	0.059
Growth opportunities (M/B)	B4	0.365	1.108	0.086
Sales log (Log(sales))	B5	-0.801	-2.845	0.005
Coefficient of determination	0.562	F-value		8.386
Adjusted Coefficient of determination	0.527	Significance (P-value)		0.0017
		Durbin-Watson value		1.994

Therefore, at 95% confidence level, the obtained coefficient for the above mentioned variable in the above regression model is significant, and hence, the second research hypothesis is also confirmed.

Hypothesis 3: There is a significant relationship between non-managerial ownership ratio and financial leverage in companies.

Results obtained from the above regression equation fit are presented in table 4 below. F-value (21.231) indicate that the whole model is significant. The coefficient of determination and adjusted coefficient of determination of the above model are equal to 46.7% and 42.9%, respectively. Therefore, it can be concluded that in the mentioned regression equation, about 42.9% of the changes in financial leverage of companies in this study are explained by independent and control variables.

Table 4: Results obtained from regression equation fit

Variable	Coefficient of the variable	Coefficient value	T-value	Sig. Level
Constant	B0	11.45	6.1032	.000
Ratio of non-managerial ownership (NMow)	B1	1.561	1.687	0.209
Profitability (profitability)	B2	5.421	2.381	0.018
Ratio of tangible assets (Tangibility)	B3	6.527	2.619	0.009
Growth opportunities (M/B)	B4	4/076	-2.002	0.046
Sales log (Log(sales))	B5	-3.651	-0.223	0.823
Coefficient of determination	0.467	F-value		21.231
Adjusted Coefficient of determination	0.429	Significance (P-value)		.000
		Durbin-Watson value		2.121

According to the results of table 4, significance level of the variable of the ratio non-managerial ownership is equal to 0.209, which is larger than the assumed significance level in this study (5%); therefore, at 95% confidence level, the obtained coefficient for the above mentioned variable in the above regression model is not significant, and hence, the third research hypothesis is rejected.

Hypothesis 4: There is a significant relationship between ratio of ownership control and financial leverage of companies.

Results obtained from the above regression equation fit are presented in table 5 below. F-value (16.001) indicates that the whole model is significant. The coefficient of determination and adjusted coefficient of determination of the above model are equal to 40.9% and 37.6%,

respectively. Therefore, it can be concluded that in the mentioned regression equation, about 37.6% of the changes in financial leverage of companies in this study are explained by independent and control variables.

Table 5: Results of regression equation fit

Variable	Coefficient of the variable	Coefficient value	T-value	Sig. Level
Constant	B0	11.45	6.1032	.000
Ratio of ownership control (o/c)	B1	1.561	031/1	0/452
Profitability (profitability)	B2	5.421	2.381	0.018
Ratio of tangible assets (Tangibility)	B3	6.527	2.619	0.009
Growth opportunities (M/B)	B4	-4.076	-2.003	0.046
Sales log (Log(sales))	B5	-3.651	-0.223	0.823
Coefficient of determination	0.409	F-value		16.001
Adjusted Coefficient of determination	0.376	Significance (P-value)		0.0001
		Durbin-Watson value		2.357

According to the results of table 5, significance level of the variable of ratio of ownership control is equal to 0.452, which is larger than the assumed significance level in this study (5%); therefore, at 95% confidence level, the obtained coefficient for the above mentioned variable in the above regression model is not significant, and hence, the fourth research hypothesis is rejected.

Conclusion

In the present study, it was tried to study the effect of complex ownership structure and ratio of ownership control on financial leverage of companies listed on Tehran Stock Exchange. Ever since, ownership has been separated from management in companies, supervision on managers have become so much difficulty (Lary, 2010). Therefore, several regulatory mechanisms have been recommended for reducing agency costs. Appropriate establishment of Corporate governance mechanisms, are a fundamental measure that can be taken for making optimized use of resources, enhancement of accountability, transparency, maintaining justice and the rights of all the stakeholders in a company. For reducing agency costs, corporate governance makes use of different regulatory systems with the mechanisms including external mechanisms, internal mechanisms, government regulations (Maquieira et al., 2012).

Considering the different and Heterogeneous ownership structure in various countries, which is due to dissimilar social, economic and legal conditions of these countries, the relationship between ownership structure with performance and company value in financial markets in developed and developing countries vary. Considering the process of privatization and downsizing of the government which is one of the economic debates on our country today, studying the effects of ownership structure mechanisms on the performance of companies in capital market of Iran is of great importance (Sadeghi & Rahimi, 2012).

Here, determining the optimized capital structure of a company is one of the most controversial issues in the field of corporate financial affairs. Capital structure of accompany is a combination of its Total liabilities and equities. Financial experts with presenting various theories have always sought to found an optimized structured which has the minimum capital cost on a company and that creates the most value for that company in capital market. Here, financial leverage as one of the most important leverage concepts, has a special place in the management of capital structure (Sinaee & Nisi, 2003). Financial leverage, represents the inclination of accompany to finance it through Creating debt - borrowing - against increasing capital. Leverage ratios have

always been considered as tools for determining the possibility of company default and inability in performing its liabilities related to its debts and the uncontrollable increase of which intensifies the danger of financial crisis occurrence and bankruptcy for a company (Nourosh & Yazdani, 2012). Hence, most of the mangers emphasize on the leverage role of debt in The composition of the capital structure. Based on the theory of Modigliani and Miller (1958), capital structure doesn't have any relationship with determining the company value. Later on, Modigliani and Miller revised their theory and other researchers made several criticisms on this theory (Kimiagary & Einali, 2008). From that time till present day, the theory of capital structure has been studied extensively.

Jensen and Meckling (1976), in opposition to the "theory of irrelevance" have stated that the level of the applied financial leverage in capital structure of a company is effective on the selection of operational activities of managers. This in turn, affects company performance or its current market value. With confirmation of the possible effect of financial leverage on performance by Jensen and Meckling (1976), researchers have conducted several studies with the aim of explaining this relationship. However, results of these study have not managers to present an accurate expression of the advantages or disadvantages of financing through debt. Researchers such as O'brien (2003), Barton and Gordon (2001), Robinson and Mcdougall (2001), believe that ambiguous results and sometimes contradictory results of some previous studies, can be resulted from different method applied in explaining this relationship, because, in most of these studies, only the direct effect of financial leverage on performance has been tests and other aspects of this relationship haven't been studied by researchers. In other words, the relationship between financial leverage and performance is influenced by other moderating variables as well.

Considering the above arguments and the potential relationship between ownership structure, financial leverage and performance of companies, this question is raised that, whether complex ownership structure and ratio of ownership control have significant effect on financial leverage in companies listed on Tehran Stock Exchange or no? Therefore, with raising this main question, the required context for performing a research work was provided and research hypotheses were developed. After determining research variables, efforts for searching a method for conducting research was followed and multiple variable regression method, with considering the relevant models, was used and results indicated that variables of institutional investors ownership ratio and managerial ownership ratio have a positive (direct) effect on financial leverage in companies. It was also indicated that the variables of non-managerial ownership ratio and ownership control ratio do not have any effect on financial leverage in companies. Considering the results of this study, the following recommendations are presented for using these results as following:

Considering the significant relationship between ratio of institutional investors ownership and financial leverage in companies and considering the high level of earnings management in companies with large ratio of institutional ownerships, investors specially small investors are recommended to deliberate more on stock purchase decisions of these companies and study their earnings smoothing indicators more profoundly . Also, since, institutional investors cause an increase in earnings management in companies, it is recommended to heed more care in offering public companies in stock exchange in terms of privatization (which leads to their take over the ownership of these companies by institutional investors).

Considering the existence of a significant relationship between ratio of managerial ownership and financial leverage of companies, stock exchange organization is recommended to pay sufficient and necessary attention in establishment of internal corporate governance mechanisms to accurate separation of the duties of bounded and non-bounded board members and an emphasis on the regulatory role of bounded managers on financial reporting.

Considering that there is no significant relationship between ratio of non-managerial ownership and financial leverage of companies minor shareholders are recommended to considered profitability margin, management efficiency and ratio of managerial ownership as positive effective factor on quality of financial reports in their economic decisions.

Considering that there is no significant relationship between ownership control ratio and financial leverage in companies, it is recommended for creating commonality among equity investors with new investors, Issuance of common stock should be used so that limitation of financing through creating debt can be reduced.

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