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The Relationship between Ownership Structure and Overinvestment

Farzaneh Heidarpoor[1]*, Mohammad Davodi[2]

[1]*Assistant Professor of Group Accounting in Tehran Islamic Azad University, Tehran, Iran*
[2]*MA in Accounting, Tehran Islamic Azad University,Tehran, Iran*

*Corresponding author's Email: Fheidarpoor@Yahoo.com

ABSTRACT: This paper has been investigated effect of ownership structure on overinvestment of companies in Tehran Stock Exchange. Statistical society includes all companies accepted in Tehran stock exchange over the period 2007-2011. This research has been performed in three phases. In first phase, the expected investment by each company was determined and then overinvestment by the sample companies was determined too. In the next phase, the type of the ownership structures of those companies that had taken action for overinvestment was determined and in last phase, the research hypotheses were tested using regression model. This works shows that there is a positive and significant relationship between institutional ownership and overinvestment and there is a significant, reverse or negative relationship between the managerial ownership and overinvestment. It has been shown that there is no significant relationship between major ownership and overinvestment.

Key words: Ownership Structure, Overinvestment,

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INTRODUCTION

A commercial unit always faces with investment opportunities and needs to be able to make reasonable decisions with respect to an optimized investment. Investments in commercial units are made with respect to limited resources and their efficiency. In fact, for investing in a variety of projects, an economic unit considers the level and limits of the investment with respect to limited sources (Modares and Hesarzadeh 2008). Managers play significant roles in choosing investment projects and they apply current value net procedure for assessment of projects. When this investment procedure shows that the current value net is positive, the investment can be made safely, but when the current value net is negative, the investment would lead to overinvestment, thus it wouldn't be efficient (Verdi, 2006). As managers are responsible for choosing projects, their personal interests shouldn't be ignored. The researches (Jensen, 1986) show that in commercial units with high free cash flow, managers tend to invest in projects with non cash returns in order to achieve their personal interests, therefore investment develops in the commercial unit and consequently overinvestment would occur. Overinvestment leads to some problems including reduction of investment efficiency, increased inflation, and formal development in macro economy, thus it damages shareholders shares seriously. One of the factors affecting overinvestment is ownership structure (institutional ownership, managerial ownership and major shareholder ownership). Corporate strategic system includes legal, cultural, and institutional regulations and determines the method of managing the companies and their functions. The key factors include: the shareholders and ownership structure, the number and the composition of the board of directors and other beneficiaries who may influence the company's function. One of the policies the holders apply to reduce overinvestment is distribution of dividend. Distribution of dividend leads to the reduction of free cash outflow from commercial unit and consequently to the reduction of overinvestment. In other words, for reduction of agency charges and overinvestment, major shareholders and institutional owners prefer free cash outflow in the form of distribution of dividend exit from commercial unit. On the other hand, managerial ownership may be effective for convergence of managers and shareholders' interests and the reduction of free cash flow problems, and the mentioned ownership may result in more dividends, or in contrary the manager may try to increase their own interests through implementation of free cash flows in plans with negative net value, and when they prevent free cash outflows in the form of dividend, they cause overinvestment.

Therefore, this work tries to investigate the importance of various criteria of ownership structure for reduction of overinvestment, a factor leading to inefficiency of investment. These instructions give you the guidelines to prepare papers for JABFR. Use this document as a template if you are using Microsoft Word 2003 or later. Otherwise, use this document as an instruction set. The electronic file of your paper will

Theoretical fundamentals

Commercial units always face with investment opportunities and they need to be able to make reasonable decisions about an optimized investment. In fact, investments in any commercial unit should be made with respect to limited resources and its' efficiency. But the main issue is that the managers of commercial units, by considering their own interests, choose plans and make decisions for investment opportunities. In other words, asymmetry of information and conflict of interests are obstacles for making an optimized investment. Therefore, for investment in a variety of plans, commercial units should consider the level or amount of investment with respect to limited resources (Modares and Hesarzadeh 2008). This is done through the procedures for assessment of plans including current net value. By this procedure, it is justified to invest in one or several plans with positive current net value. Hence, adoption of plans with negative current net value leads to overinvestment and in turn to non-optimized investment (Verdi, 2006). One of the effective factors in making overinvestment includes free cash flow in commercial units (Saghafi and et.al 2001). Managers in commercial units with high free cash flows make investment in plans which produce non cash return and develop investment of commercial unit and consequently, lead to overinvestment (Jensen, 1986). Free cash flow is a key factor in overinvestment. Free cash flow theory predicts that the plans with negative current net value may be implemented parallel to the increment of free cash flow. Therefore, the problems with agency can lead to overinvestment (Jensen, 1986; Palina and Renbokh, 2005). Thus the conflict of interests in companies with high free cash flows is serious than that of companies with low free cash flows; and for achieving their interests, managers are more motivated to use free cash flow for adoption of overinvestment (Biddle, G & et al 2009, Yang, J & Jiang , Y 2008). One of the control mechanisms the investors use to adjust the conflict of interests is payment of a significant percentage of the companies' net interests, because distribution of dividends makes management produce sufficient cash fund for payment of dividends and it leads to the reduction of additional cash flow which is lost because management do not use that in profitable investment projects (Jahankhani and Ghorbani, 2005). This work divides shareholders (owners) into three groups: Institutional owners, managerial owners and major shareholders ownership. There are two views on the effect of managerial ownership on the policy of dividends; the first view implies that the increased distributed profits reduces the problems with agency and the conflict of interests arising from free cash flows; this is because payment of dividends causes the reduction in sources being controlled by managers and in turn weakens and reduces managers power (Jensen 1986). Internal investors (including managers) being present within company, are willing to not to distribute the dividends in order to maintain their control over distributable cash funds (Karami and Eskandar, 2008). While the second view implies that managerial ownership may be effective for convergence of interests between managers and shareholders and also for reduction of free cash flow problems, thus managerial ownership leads to the distribution of more dividend (Stouratis and Wu, 2004). On the other hand, the motivation of institutional investors (owners) for gaining something free of charge from supervising activities requires that these investors are inclined to directly monitor the situation; they make companies to increase the distributed interests rather than direct monitoring; in other words, institutional investors prefer distribution of free cash flows in the form of distributed dividends in order to reduce the agency charges related to free cash flows (Stouratis andWu, 2004).

Tobin (1969) declares that companies' investments should be increased only by using fundamental investment opportunities which are measured by Q Tobin. But due to the differences between management and shareholders motivations, the investment changes with respect to internal cash flows (Jensen and Meckling, 1976). Various investigations (Jensen Richardson 2006) show that managers have many opportunities through more free cash flows in order to take action for overinvestment. Jensen (1986) explains that managers execute projects with negative NPV for increasing the size of the company, because managers gain more cash and non cash profits in larger companies than in small companies. Overinvestment is produced by free cash flow arising from the conflict of interests between managers and shareholders, and this problem can be alleviated through supervision of shareholders on managers' performances.

Therefore, regarding the above discussion and also the influences of shareholders and major owners on the functional and financial policies and procedures, the investigation of ownership structure and overinvestment is significant.

External backgrounds

Guo and Ni (2009) have investigated the relationship between institutional ownership and the policy of profit sharing. The findings of the American industrial companies in the period 1980 to 2002 show that the rate of earning payments with institution ownership have a direct relationship. Tsai and Gu (2007) have investigated the relationship between institutional ownership and institutional performance and company performance in the period 1999 to 2003. This study showed that the institutional investment in companies may help investors to reduce agency problem result from separation of ownership and management. Seifert et al., (2005) have investigated the effects of the ownership structure (local investors, block shareholders and institutional stakeholders) on the company performance. The study took place on a sample of the United States, Germany, Britain and Japan over a period of three years 1997-1999. The results of the study didn't show the relationship between the capital owned by local stakeholders and performance in the four countries. They pointed out that the relationship between the local ownership and performance is poor, in other words the results showed that these relations depend on position of the

company and the local special rules or the method of corporate governance could identify kind of relationship. Kumar (2003) has investigated the relationship between the ownership structure and the policy of dividend distribution in the Indian companies. Research findings show that the rate of the corporate ownership and management ownership as a positive and significant and institutional ownership as the opposite, affect on the level dividend distribution. Stouratis and Wu (2004) have investigated the impact of the ownership structure on the dividend distribution of the Japanese corporate. The findings from the regression for data from 1992 to 2000 show that impact of the bank ownership and management ownership on dividend yield particularly for firms at low growth is positive.

Internal backgrounds

Heidarpor and Shahandeh (2011) have investigated the relationship between the quality of accounting information and free cash flow with overinvestment made by managers. Their findings show that the more the quality of information the less the overinvestment by managers. Khodadadi and Aghajari (2009) have investigated the relationship between the ownership structure and the policy of dividend distribution. They have classified ownership structure to two types of personal and corporation. Their findings show that there is significant and positive relation between corporation ownership and stock dividend and there is positive and significant relation between personal ownership and cash dividend. Namazi and Kermani (2008) have investigated the relationship between the ownership structure and the corporation performance. They have investigated five types of institutional structure, corporation, director, personal, and foreign. Their findings show that the there is significant relation between ownership structure and performance.

RESEARCH HYPOTHESE AND MODELS FOR HYPOTHESE TESTING

This research includes three hypotheses, and a model defined for each as following:

The first hypothesis: the institutional ownership influence overinvestment in companies. A model for testing the first hypothesis is defined as equation (1).

$$(1)\quad Yi = B0+B1\ \text{Institutional} + \varepsilon$$

The second hypothesis: managerial ownership influence overinvestment in companies. A model for testing the second hypothesis is defined as equation (2).

$$(2)\quad Yi = B0+B1\ \text{Managerial} + \varepsilon$$

The third hypothesis: majority ownership influence overinvestment in companies. A model for testing the third hypothesis is defined as equation (3).

$$(3)\quad Yi = B0+B1\ \text{Majority owner} + \varepsilon$$

MATERIAL AND METHOD

This research, regarding its aim, is considered an applied research, but regarding its nature, it is considered as a descriptive research. The aim of performing an applied research is to acquire necessary knowledge for providing a tool for meeting a specified need. In this kind of research, the aim is to find an applied knowledge which actually follows a specified application for a product or a process. A descriptive research investigates and explains the existing relationship between research data. Regarding its method and nature, this is considered as a correlation research. Correlation researches are performed for acquiring information about the existence of some potential relationships between variables, and this kind of research emphasizes on discovering the existence of a relationship between two groups of information, and if such a relationship exists, its kind and its amount should be specified.

This research has been performed in three phases. In first phase, the expected investment by each company was determined and then overinvestment by the sample companies was determined too. In the next phase, the type of the ownership structures of those companies that had taken action for overinvestment was determined and in last phase, the research hypotheses were tested using regression model.

The research variables and the measurement method

In this research, overinvestment and ownership structure have been considered as a dependent variable and an independent variable respectively.

Independent Variables

The first independent variable is institutional ownership which is equal to a percentage of retained shares from the total capital stock by governmental and public companies including insurance companies, finance institutes, banks, governmental companies and other administrations of the government. According to the mentioned definition, this variable was applied in Kumar (2003), Aren Hart and Lizal (2006), and Namazi and Kermani (2009) researches. The second variable is computed through measurement of the percentage of retained shares from total capital stock by the members of board of directors.

According to the mentioned definition, this variable was applied in Kumar (2003), Rose (2005), and Namazi and Kermani (2009). The third variable is major shareholder ownership; it constitutes the first shareholder who owns the most percentage of ownership so that he can't be included in the two previous groups (Rezaee et al., 2011). According to the definition provided by the stock exchange organization, major shareholders constitute more than 5% of the stock of a company. The present research has applied a combination of these two definitions for distinguishing major shareholders.

The dependent variable: Overinvestment

To test relation the ownership structure and overinvestment, should be a model that could determine the desired limit of investment. Examine the history of research, indicate many of researchers use relation (4) to determine the desired limit of investment; For example, Richardson (2006), Yang and Jiang (2008), Biddle et al., (2009). So, we used of Richardson model in this study, thus estimated the normal level of investment in the company, then used the difference between the level of the actual investment and the level of estimated investment (remaining regression) as a representative of overinvestment.

$$I_{i,t} = a_0 + a_1(Cashi_{i,t-1} + Grow_{i,t-1} + Lev_{i,t-1} + Size_{i,t-1}) + \varepsilon_{i,t}$$

Ii,t represent capital investment expenditure of the company i in the year t; this paper defined it as the cash paid by company i for the acquisition or construction of fixed assets, intangible assets and other long-term assets, and divided it by the total assets of the beginning period to eliminate the scale influence. Cashi,t-1 is the company's cash holdings; the paper defined it as the ratio of the sum of monetary fund and short-term investment of company i in the year t-1 to the total assets at the beginning of the year t-1; Growi,t-1 represents the investment opportunities of the company that compute with Qtobin ratio; Levi,t-1 is the rate of assets and liabilities of company i in the year t-1; Sizei,t-1 represents the logarithm of the total assets of company i in the year t-1. The residual is represented by εi,t ,positive residual represents overinvestment, negative residual represents underinvestment.

Statistical society and the sample size

Statistical society includes all companies accepted in Tehran stock exchange over the period 2007-2011 (a 5 year period). The companies were selected from this society according to the following conditions: The companies had been registered in Tehran stock exchange market up to the end of the year 1385 (21st March 2007), and their fiscal year had ended to the end of month Esfand (21st March), their fiscal year had not been changed during the period in question, the companies had continuous activities, with no more than 3 months transactional gap, and they had not involved in brokerage and holding. Due to the restrictions, only 83 companies were selected, the information about these companies has been obtained from Tehran stock exchange market site and by Sahra software and Tadbirpardaz software.

Statistical analysis

Considering the type of data and the available methods for statistical analysis, this work has applied simple linear regression. The Durbin-Watson test was used to determine whether in a regression model error statements are self-correlated or not. Determination coefficient is a criterion to explain the strength of the relationship between dependent and independent variable. Such coefficients actually determine the percentage of dependent variable changes which is defined by an independent variable. The significance of regression equation was specified by using statistic of F. Then, the significance of each coefficient was tested. The statistic T was used for testing these hypotheses.

RESULTS

Descriptive statistics

Table 1 shows data descriptive statistics of variables. The stress and strain figures of overinvestment index logarithm are -0.10 and -0.60 respectively, these show symmetry after transformation, the figure for strain variable has been changed and is near zero, thus it seems that dependent variable, after being transformed, tend to normal distribution. Distribution of two variables of managerial ownership and major ownership is normal too, though their normality is not of importance.

Findings of the first hypothesis

Table 2 show inferential statistics for the first hypothesis. As seen in this table, the significance level of F is equal to 0.000. This figure is less than 0.05, thus reliability level of 95% is significant. Determination coefficient is 11% i.e. about 11% of variation in dependent variable is explained by the independent variable. Durbin Watson statistic is equal to 1.80. The figures close to 2 implying non self-correlation for remainders in regression model are amongst the important presuppositions which exhibit the validity of estimations. The statistic of t for institutional ownership is 3.92, thus institutional ownership is

significant and its direction is positive or direct. It means that when institutional ownership increases, overinvestment index logarithm increases too and vice versa. The statistic of t for starting point is equal to -21.92 which is in the region of rejection of hypothesis zero in reliability level 95%; i.e. the starting point is significant. The estimation of model was performed by equation 5.

Equation 5: $LnY = -4.26 + 0.014X_{1i}$

Description: when one unit increase occurs in institutional ownership, the overinvestment index logarithm increases 0.014 units.

Table 1. Descriptive statistics of variable within the period of study

Variables	Number of observation	Average	Mean	Standard deviation	strain	Stress	Minimum	Maximum
Overinvestment index	193	0.06	0.02	0.07	1.92	3.38	0.00	0.33
Overinvestment index logarithm	193	-3.66	-3.71	1.32	-0.10	-0.60	-7.38	-1.11
Institutional ownership	123	45.16	47.37	32.84	0.21	-1.48	0.21	98.93
Managerial ownership	45	44.13	49.60	22.03	0.29	-0.98	0.29	96.41
Major ownership	99	46.48	46.21	17.50	0.41	0.34	9.96	91.70

Table 2. Inferential statistic for the data of the first hypothesis

The source of variations	Total squares	The degree of freedom	Mean square	The value of F	Significance level
Regression	24.63	1	24.63	0.00	-
Remainder	193.61	121	1.60	-	-
Total	218.24	122	-	-	-
Multiple correlation	**Determination coefficient**	**Justified determination coefficient**	**Standard deviation**	**Drobin-Watson**	
0.34	0.11	0.11	1.26	1.80	
Parameters	**Beta Value**	**Standard deviation**	**Standard Beta**	**T value**	**Significance level**
Fix value	-4.26	0.19	-	21.92	0.000
Institutional ownership	0.014	0.003	0.34	3.92	0.000

Findings of the second hypothesis

Table 3 show inferential statistics for the second hypothesis. As seen in this table, the significance level of F is equal to 0.000. This figure is less than 0.05, thus reliability level of 95% is significant. Determination coefficient is 19% i.e. about 19% of variation in dependent variable is explained by the independent variable. Durbin Watson statistic is equal to 1.86. The statistic of t for managerial ownership is -3.14, thus managerial ownership is significant and its direction is negative or reverse. It means that when managerial ownership increases, overinvestment index logarithm decreases and vice versa. The statistic of t for starting point is equal to -8.23 which is in the region of rejection of hypothesis zero in reliability level 95%; i.e. the starting point is significant. The estimation of model was performed by equation 6.

Equation 6: $LnY = -2.74 - 0.021X_{2i}$

Description: when one unit increase occurs in managerial ownership, the overinvestment index logarithm decreases 0.021 units.

Table 3. Inferential statistic for the data of the second hypothesis

The source of variations	Total squares	The degree of freedom	Mean square	The value of F	Significance level
Regression	9.60	1	9.60	9.85	0.000
Remainder	41.89	43	0.97		
Total	51.49	44			
Multiple correlation	**Determination coefficient**	**Justified determination coefficient**	**Standard deviation**	**Drobin-Watson**	
0.43	0.19	0.17	0.99	1.86	
Parameters	**Beta Value**	**Standard deviation**	**Standard Beta**	**T value**	**Significance level**
Fix value	-2.74	0.33	-	-8.23	0.000
Institutional ownership	-0.021	0.007	-0.43	-3.14	0.000

Findings of the third hypothesis

Table 4 show inferential statistics for the second hypothesis. As seen in this table, the significance level of F is equal to 0.22. This figure is more than 0.05, thus reliability level of 95% is not significant. Determination coefficient is 2% i.e. about 2% of variation in dependent variable is explained by the independent variable. Durbin Watson statistic is equal to 2.01. The statistic of t for managerial ownership is -1.23, thus major ownership isn't significant. The statistic of t for starting point is equal to -8.45 which is in the region of rejection of hypothesis zero in reliability level 95%; i.e. the starting point is significant.

Table 4. Inferential statistic for the data of the third hypothesis

The source of variations	Total squares	The degree of freedom	Mean square	The value of F	Significance level
Regression	2.72	1	2.72	1.52	0.22
Remainder	173.09	97	1.78		
Total	175.81	98			
Multiple correlation	**Determination coefficient**	**Justified determination coefficient**	**Standard deviation**	**Drobin-Watson**	
0.12	0.02	0.01	1.34	2.01	
Parameters	**Beta Value**	**Standard deviation**	**Standard Beta**	**T value**	**Significance level**
Fix value	-3.24	0.38	-	-8.45	0.000
Institutional ownership	-0.010	0.008	-0.12	-1.23	0.220

CONCLUSION

This works shows that there is a positive and significant relationship between institutional ownership and overinvestment, and for one unit increase in institutional ownership, overinvestment index logarithm increases 0.014 units. As it was explained in theoretical fundamentals of this research, overinvestment is a risk for agency. Managers may overinvest for their own interests. Therefore, the results of the test performed on the first hypothesis show that there is a direct relationship between the ownership structure and the risks of overinvestment in the companies with institutional ownership and with little managerial shares. The realized expectations of the first hypothesis test are consistent with the results. In addition, the results of the first hypothesis test are against Stratis and Woo (2004). They declared that institutional owners prefer free cash outflow in the format of distributed interests in order to reduce agency charges (including overinvestment). The results of the first hypothesis test indicate the need for accounting managerial performance; so that after the performance accounting are carried out, the assessment of the manager performance should be carried out and the method and sufficiency of investment made by him would be monitored.

It has been shown that there is a significant, reverse or negative relationship between the managerial ownership and overinvestment; and for one unit increase in managerial ownership, overinvestment index logarithm decreases 0.021 unit. The

results of the second hypothesis test confirm Jensen (1986) view about the effect of managerial ownership on the policy of distribution of interests. Jensen believes that increased distributed interest reduces agency's problems and the conflict of interests arising from free cash flow and it prevents the managers from misusing free cash flow in overinvestment. The results of the second hypothesis test confirm the realized expectations too. According to realized expectations, when a manager is the owner of a company, no conflict between the owner and manager of the company occurs, thus the risk of overinvestment, one of the risks of agency, is removed.

It has been shown that there is no significant relationship between major ownership and overinvestment. The results of the third hypothesis test are against the realized expectations. As the manager isn't the major owner of the company and the conflict of interests occurs in this context, the risk of overinvestment and manager's misuse to achieve his own interest increases. Consequently, as expected, the direct relationship between major ownership and overinvestment is confirmed so the results of the third hypothesis test are against the same.

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