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A Study on effect of ownership structure and Management Control on agency costs in Companies listed on the Tehran Stock Exchange

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ABSTRACT: Agency theory refers to conflict of interest between owners and directors, which this conflict originates from duality and conflict between the goals of directors and shareholders. Yet, the main purpose of shareholders is to maximize their wealth through maximizing value of company, where achieving this aim is generally neglected by directors, and as the result there will be doubt on optimal use of shareholders' capital and wealth by directors. The present study intends to recognize the relationship between ownership structure and agency costs in companies listed on the Tehran stock exchange. In this regard, variables of institutional ownership, management ownership, debt ratio, and executive reward, and percentage of non executive director or board were considered as independent variables. This study has been fulfilled using data from financial statements at the end of audit period of Companies listed on the Tehran Stock Exchange during 2007-2012, using multivariate linear regression models. Evidences indicate that there is a significant relationship between institutional ownership, management ownership and percentage of non executive director or board. Yet, there is no significant relationship between institutional ownership, debt ratio, and executive reward, and agency const.

***Keywords*:** agency costs, management ownership, ownership structure, multivariate linear regression models.

INTRODUCTION

Ownership structure has been regarded as one of the important issues of corporate governance which affects directors' motivation, whereby it can affect efficiency of any company. In the past, economists assumed that all the groups affiliated to a joint-stock company strive for one common aim, but numerous cases of conflict of interests between groups and how these companies treat with such conflicts have been represented by economists during 3 recent decades. These cases are expressed as "agency theory". The major question in this regard can be: has an optimal combination been introduced for ownership of companies?, if yes which of various combinations of ownership affects improving performance and increasing value of company and wealth of shareholders?

Importance of research

By set of agency relationship, each of parties seeks to maximize their personal interests. As desirability function of directors is not the same as the one for shareholder, there exists conflict of interests between them. Due to conflict of interests, directors accordingly will not seek to acquire maximum interests for owners. Agency problem implies persuading the agent to adopt decisions which cause maximizing welfare of owners (Noroush et al., 2009). Formation of agency relationship is raised by means of conflict of interest between parties and agency costs. Agency costs have an inverse effect on value of market, i.e. if the market expects such costs the value of company will decrease. According to agency theory, dividing responsibilities at high-level corporate must be specified clearly so as to entrust to balance of power and limits of duties and authorities of board of directors. According to reports by Cadbury (2002) and Higgs(2003), it has been suggested that there must exist balance of power between board of directors in order that no one enables to control decision making process of company. This results in redistribution of power of decision making from directors to board of directors. Rechner & Dalton (1991) and Dili(1994) in their studies refers to role of separation of duties of high positions of company. Board of directors, in the traditional structure, has been an organization to which total authority to control affair of enterprise and allocation of resources have been devolved, and all the power generally has been granted to one person(Setayesh et al., 2009). In modern strategic structure of enterprise, duties of board of directors have been defined based on certain principles which have focused on ensuring interests of all interest groups, and division of job has been considered to do responsibilities. A group of directors adhere to control company and conduct executive directors, and another group of directors adhere to control the enterprise, and this group has a dominant role in combination of board of directors. The basis for this job division is separation of executive duties from monitoring and control duties(Mokaremi, 2006). According to view of agency theory, it can assume that non executive directors undertake monitoring other members of directors of board.

Theoretical background of research

Today, investment in different ways especially investment in stock of various companies throughout the society has been widely drawn into attention by real and legal entities. Further, to invest, the individuals seek to acquire information from various sources in different ways (Izadi nia & Rasaeian, 2010). Generally, majority of investors and shareholders aim to invest in stock of companies in order to increase their wealth and acquire more interest. Hence, information on performance of company and agency cost can play a major role in investors' decisions and evaluation of company. On the other hand, the possibility for notification about company can help the directors in attracting more shareholders (Ardakani & Mahmoudain, 2010). Advancement of technology, industrial revolution, establishment of factories and various manufacturing units have been followed by increasing expansion of stock exchange's markets throughout the world. In this regard, this has gone true in third world countries including Iran, considering the fact that in addition to establishment of stock exchange's markets, increasing growth of stock exchange's markets in recent years has been drawn into attention by investors, scholars, experts and financial analysts (Jahankhani & Parsaeian, 1996).

Fundamental pattern of agency theory

Agency theory is based on various assumptions including certain behavioral assumptions between shareholder and director, and they can be characterized as follows:

Assumptions relating to owner (shareholder)

a-the owner (shareholder) seeks to achieve his maximum personal interest and expected desirability (interest).
b-the shareholder shares in risk of company with other shareholders by purchase of stock, and thus creates diversity in risk (Namazi, 2005).

c-the shareholder has the power for calculation, predicting future and receiving information from the agent and agency system or accounting system. The shareholder signs contract with agent based on significant information, and then pays to agent based on this information.

The assumptions relating to agent (director)

1-the director seeks to achieve his personal interest, i.e. achieving the highest expected desirability. Director's personal interests not only include financial interest, but also include non-financial factors such as the opportunity entertainment, beautiful office, membership in credible organizations and etc.
2-personal director follows risk aversion mechanism, i.e. he prefers more wealth to less wealth; but when the wealth increases, his expected desirability decreases.
3-director is accordingly a rationalist; on one hand he knows his efforts result in increasing value of company, thus he must do his best; on the other hand, he intends to apply risk-aversion mechanism by working hard, where this tendency is called " lying down on the job".
4-director is a rationalist, i.e. it is expected from the director to make decision concerning shareholder's interests.
5-the director, the same as shareholder, has the power for calculation and prediction of future, and also he can process the existing information which include accounting information, and then use them in favor of agency(Namazi, 2006).

Agency problems

The conflict of interests between shareholder and director is the first problem over agency, i.e. the shareholder seeks to reach the highest level of value of investment, and director firstly seeks to increase his wealth. Hence, it is more likely the director takes step in line with shareholder's interests. Embezzlement and financial corruption of director and removal of shareholder's interests from company are excessive samples from this conflict of interests. Inability of shareholder is the second agency problem concerning director's actions (Namazi, 2004). The shareholder cannot follow the director's actions everyday to ensure whether director's decisions are in favor of shareholder's interests or not; thus the shareholder lacks necessary information on director's actions, whereby this state is called information asymmetry concerning agency theory. In this regard, if no mechanism is developed by the shareholder to control director's actions, then the director only knows whether he has taken step in favor of shareholder's interests or not; on the other hand, the director has more executive information than shareholder on the actions which must be fulfilled in the organization. This further information available to managers in agency theory is called private information. Notably, private information increases information asymmetry between shareholder and owner.

The term "effects of unfavorable selection" has been regarded as the third agency problem(Namazi, 2004). This occurs when the individuals intend to sign a contract with opponent by having private information on what can give them the benefit. For instance, when a person is ill, he/she might sign a life insurance contract with insurance company, and finally follow his personal interest and damage to insurance company. This problem in the framework of the relationship between director and shareholder might rise, where the director might behave in a way to transfer improper or incomplete information to the shareholder (Etemadi et al., 2010).

The term "moral hazard" has been regarded as the fourth agency problem. This problem occurs when the agent motivates to disregard the conditions in contract and do as he wishes, because the owner has no necessary information on how to perform the contract and fulfill necessary actions by agent. For instance, considering the case when the person insures his automobile and an accident occurs, the accident might only damage to shields of automobile, but the person states that accident has also damaged to the automobile body. This hazard emerges in the framework of the relationship between director and shareholder when the shareholder cannot consider director's actions.

The fifth problem which relates to agency implies that the contract between shareholder and director is signed under conditions of uncertainty than ordinary conditions, i.e. the contract is generally organized in performing some actions, but the ultimate result which might be the product or interest requires passing a financial period. Numerous events might occur during first and second financial periods, which affect final product or interest; in the context of agency theory, these events are classified into two groups of "uncontrollable factors" and "controllable factors", thus access to final product or interest will be always based on probability, and notable the basis of contract lies on the expected value of interest not the absolute interest. With retrospect to the fact that the director follows risk aversion mechanism, he intends to transfer a part of risk relating to uncontrollable factors to the owner, i.e. companionship must emerge in risk.

Corporate governance

Over the years, economists assume that all the groups affiliated to a joint-stock company follow up their activities to achieve the same aim. Yet, numerous cases of conflict of interests between groups and how these companies treat with such conflicts have been represented by economists during 3 recent decades; these cases are generally expressed in management accounting. According to the definition by Jensen & Meckling, agency relationship is a contract through which the owner devolves decision making upon agent (Mehrani et al., 2009). In agency relationship, owners aim to maximize their wealth, for which they monitor agent's actions and evaluate his performance. generally speaking, corporate governance implies legal, cultural and institutional orders which determine companies' movement and performance. The elements which involve in corporate governance include shareholders and their ownership structure, board of directors, company's management which is conducted by executive director or senior director of the company and other beneficiaries who can affect movement of company. In this regard, what drawn into attention highly is the increasing presence by institutional and legal investors among owners of joint-stock companies and the effect which active presence of this group can have on how to govern organizations and their performance. The most fundamental pillar around topic of corporate governance is entrusting to shareholders' correction governance actions on conducting company. Nevertheless, particular cases cause actions of corporate governance especially for shareholders face some barriers. Hence, one of the important issues concerning corporate governance is awareness from ownership structure and grading it in standard scales in order to formulate necessary strategies in implementation of corporate governance by using them.

Separation of ownership and control in the organizations emerges information asymmetry between directors and shareholders. As the result, the shareholders face agency risk. Development of big companies and as the result the problems relating to separation of ownership from management anad its favorable and unfavorable outcomes were proposed at the late of 19th and at the early of 20th centuries.

Yet, issue of corporate governance was firstly proposed in the 1990s in U.K, U.S and Canada in order to resolve the problems relating to efficiency of board of directors in big companies. Thereafter, financial crises in recent years led to set of corporate mechanisms in these countries and other countries around the world (Hasas Yegane et al., 2006). Corporate governance can be followed by decreasing risk derived from financial crisis. This problem will be of importance when such a risk leads to rise of high costs. Further, corporate governance leads to decreasing investment costs and increasing value of market. Without doubt, corporate governance of joint-stock companies which has started since 18th century is regarded as one of the greatest economic developments. Separation of ownership from management, difference in desirability function for directors and shareholders and as the result conflict of interests among directors and shareholders followed by rise of the owner-agent relationship and agency theory are the outcomes of corporate governance. Issue of corporate governance has started since the 1990s in U.K, U.S and Canada in order to resolve the problems derived from lack of effectiveness of board of directors in performance of big companies. The early origins of corporate governance were developed by Cadbury's reports in U.K, and regulations of board of directors in U.S's general motors' (Feli, 2008).

Corporate governance refers to a set of mechanisms which focus on reduction of agency risk through increasing supervision on directors' actions, threatening directors' biased behavior and improving quality of companies' information.

The early basis of corporate governance was focused on issue of strategy of companies and shareholder's rights, and then the attention was paid to rights of all beneficiaries and society by emergence of newer attitudes. In recent years, numerous advancements in the context of corporate governance have been fulfilled around the world, and the leading countries sustain on strengthening their corporate governance strategies; in this regard, a particular attention has been paid to participants in corporate governance and the issues such as shareholders and their relationship, responsibility taking, improvement of performance of board of directors, auditors and accounting systems and internal control. On the other hand, auditors, accountants and investors are well-informed of the existential philosophy and necessity of improvement of corporate governance (Hassas Yegane & Baghoomian, 2006).

Literature review

Doukas, John A.(2013) This paper assesses the monitoring power of security analysts from the manager-shareholder conflict perspective. Using a sample of UK firms tracked by security analysts, our evidence supports the view that security analysis acts as a monitoring mechanism in reducing agency costs. We also find that security analysts are more effective in reducing agency costs for smaller and more focused firms rather than larger and more diversified firms suggesting that for larger and more complex firm's security analysis is less effective. The UK findings suggest that the monitoring role of security analysts is not restricted to the U.S. capital market environment.

Ang et al. (2000) examined the relationship between agency costs and ownership structure in 1708 of small American companies. In their study, agency cost is calculated in two ways: Asset turnover ratio and operational expenses to the measured sales. They found that agency cost has an inverse relationship with internal ownership ratio.

Singh, M. and Davidson conducted a study entitled "Agency costs, ownership structure and corporate governance mechanisms". In this paper, we extend the work of Ang et al. [J. Finance 55 (1999) 81] to large firms. We find that managerial ownership is positively related to asset utilization but does not serve as a significant deterrent to excessive discretionary expenses. Outside block ownership may only have a limited effect on reducing agency costs. Furthermore, smaller boards serve the same role, but independent outsiders on a board do not appear to protect the firm from agency costs. Thus, this paper reports complementary evidence to Ang, Cole and Lin. In large publicly traded corporations, managerial ownership significantly alleviates principal–agent conflicts even in the presence of other agency deterrent mechanisms.

Truong (2006) examined the relationship between the combination of board of directors/ownership structure and the costs of agency in Australian companies. In his research, the costs of agency were calculated using two measures of asset turnover ratio and operating expenses to sales ratio. The results obtained from a case study on 500 companies over 2004 indicated that there was a significantly positive relationship between principal ownership and asset turnover ratio. However, there was no significant relationship between the number of major shareholders (ownership concentration), the percentage of shares held by major shareholders and the combination of board of directors/measures of agency costs.

Mac night and Weir (2009) scrutinized the effects of corporate governance on agency costs. Their study sample included 534 observations of 128 large English companies during the years of 1996-2000. Regression analyses and Panel data approach are used in their study. Also, assets turnover ratio and interactions between growth opportunities and free cash flows, and the numbers of companies acquired by the company were considered as measurement for agency costs. The results of their study suggested that increase in manager ownership leads to decrease in agency costs. By using the interactions between growth opportunities and free cash flows as an index of agency costs, institutional ownership causes decrease in agency costs. Also, there is a negative and significant relationship between liabilities ratio and agency ratio by calculating agency costs as assets turnover ratio.

Paul A. Gompers et al. (2003) Corporate-governance provisions related to takeover defenses and shareholder rights vary substantially across firms. In this paper, we use the incidence of 24 different provisions to build a 'Governance Index' for about 1,500 firms per year, and then we study the relationship between this index and several forward-looking performance measures during the 1990s. We find a striking relationship between corporate governance and stock returns. An investment strategy that bought the firms in the lowest decile of the index (strongest shareholder rights) and sold the firms in the highest decile of the index (weakest shareholder rights) would have earned abnormal returns of 8.5 percent per year during the sample period. Furthermore, the Governance Index is highly correlated with firm value. In 1990, a one-point increase in the index is associated with a 2.4 percentage-point lower value for Tobin's Q. By 1999, this difference had increased significantly, with a one-point increase in the index associated with an 8.9 percentage-point lower value for Tobin's Q. Finally, we find that weaker shareholder rights are associated with lower profits, lower sales growth, higher capital expenditures, and a higher amount of corporate acquisitions. We conclude with a discussion of several causal interpretations.

Ghanbari et al.(2007) The phenomena such as privatization and the development and spread of corporate governance concepts and also the importance of issues such as institutional investors make doing researches and surveys about the importance of ownership concentration inevitable. More importantly, gaining the knowledge about the elements of economic system and the relationships between some related variables is deemed to be necessary in devising the laws related to corporate governance. In the present research, we have tested the relationship between financial performance indexes and the ownership percentage of institutional stockholders as the bases for corporate governance in firms accepted in Tehran Stock Exchange during the years between 2006 and 2010 and we have used regression test, data panel method to study the relationships. The experimental evidences show that there is a meaningful relationship between the existence of institutional stockholders and financial performance indexes such as return of sales, return of assets, and operational profit to assets, and return of owners' equity.

Feli (2007): She studied the relationship between corporate governance and firm value. In this research, the roles of institutional shareholders and percent of not duty-bond directors on firm value were studied. So, four – year information of 97 firms during 1381-1384 was studied and for operational dependent variable of research, ratio of Q-Tobin and ROA was used. The findings of research indicated that institutional shareholders and not duty-bound directors have meaningful relationship with firm value.

The obtained results in a study by Nikbakht and Tanani (2010) states that there is a meaningful and direct relation between the size of the audited firm and received audit fees. It was also stated that the complexity of the firm being audited and the type of ownership in the auditing institutes are two factors which have a meaningful relation with audit fees. However, the education and experience of accounting staff in the firm being audited have no role in calculating audit fees.

In another study by Rajabi and Khoshuei (2008), it was found that there is a positive and meaningful relationship between institutional ownership in state and semi-state firms and audit fees. This finding is in line with the finding of the present study.

Research questions

-is there a significant relationship between percentage of institutional ownership and agency cost?
- is there a significant relationship between percentage of directors' stock ownership and agency cost?
- is there a significant relationship between percentage of non executive director or board and agency cost?
- is there a significant relationship between percentage of debt ratio and agency cost?
- is there a significant relationship between percentage of executive reward and agency cost?
- is there a significant relationship between percentage of executive reward and agency cost?
- is there a significant relationship between existence or lack of existence of auditing organization as an independent auditor and agency cost?

Research hypotheses

With retrospect to the research questions which were represented in previous section, the research hypotheses have been formulated in form of a primary hypothesis and five secondary hypotheses:

The primary hypothesis of research: there is a significant relationship between ownership structure and agency costs in companies listed on the Tehran Stock Exchange?

According to this hypothesis, the secondary hypotheses can be proposed as follows:

The first secondary hypothesis: there is a significant relationship between percentage of institutional ownership and agency cost.

The second secondary hypothesis: there is a significant relationship between percentage of directors' stock ownership and agency cost.

The third secondary hypothesis: there is a significant relationship between percentage of non executive director or board and agency cost.

The fourth secondary hypothesis: there is a significant relationship between percentage of percentage of debt ratio and agency cost.

The fifth secondary hypothesis: there is a significant relationship between percentage of percentage of executive reward and agency cost.

The fifth secondary hypothesis: there is a significant relationship between percentage of executive reward and agency cost.

The sixth secondary hypothesis: there is a significant relationship between existence or lack of existence of auditing organization as an independent auditor and agency cost.

Statistical population

Statistical population consists of all the Companies listed on the Tehran Stock Exchange. The sample has been selected among companies listed on the Tehran Stock Exchange qualified in the characteristics as follows:

-their last financial month must be at the last month of the year.

-their membership experience in stock exchange must be started in 2007.

-they must involve in stock exchange during 2007-2012.

-no change in their activity or their financial year must be seen during 2007-2012.

-they must not be of financial institutions and banks(Investment firms, financial intermediation, holding and leasing companies).

-they are required representing necessary financial information to conduct this study.

With regard to the limitations and investigations, 91 companies among companies listed on the Tehran Stock Exchange were selected, which sampling has not been fulfilled due to limited statistical population.

MATERIALS AND METHODS

The present study is of an applied research type, categorized as descriptive correlation survey, in which multivariable regression has been used to analyze data. To collect data, observation, analysis, charts and databases including Tehran Stock Exchange as well as other documents, records and audited financial statements have been used.

Data analysis method

In this study, after collecting data, the data were analyzed, classified and calculated using software SPSS18. To test hypothesis, multiple regression model has been used, for which the model below has been used:

$$\text{Agency} = \beta_0 + \beta_1 INOWN_{it} + \beta_2 SHARE_{it} + \beta_3 OUT_{it} + \beta_4 BONUS_{it} + \beta_4 DEBT_{it} + \beta_5 AUDIT_{it} + \varepsilon_{it}$$

Where Agency, INOWN, Bonus, Shares, DEBT, AUDIT and OUT represents agency cost, company's institutional ownership, percentage of executive reward, percentage of directors' ownership, debt ratio, independent auditor and percentage of non executive director or board, respectively.

Research variables:

Percentage of investors' institutional ownership: it refers to percentage of company's stock which is hold by major investment institutions. In other words, it equals to the stock available to major investors such as banks, insurance companies, pension funds, investment companies and other public companies (Bushee, 1998).

Percentage of directors' stock ownership:it refers to percentage of company's stock available to board of directors(Nikbakht & Peikani, 2009).

Percentage of non executive director or board: it refers to percentage of non executive director or board among all members in board of directors (Mashayekh & Esmaeili, 2006).

Debt ratio: it refers to dividing sum of company's debts to sum of all assets of company. Agency cost: ratio of operating expenses to net sales has been used to measure agency cost concerning the research by Ang et al. (2000). This ratio which used as direct criterion for agency cost measures how operating cost of company can be controlled by director. In other words, the more this ratio increases, the agency cost will increase.

RESULTS AND DISCUSSION

Analysis of research hypotheses

In this section, data analysis has been fulfilled using central indices such as mean, median and mode, and standard deviation dispersion index, and relative indexes including skewness and elongation. The results of descriptive statistics for research variables have been represented in table 1.

Table 1. Descriptive statistics for research variables

Variable	Agency cost	Institutional ownership	executive reward	Directors' ownership	Debt ratio	Independent auditor	non executive director
No	546	546	546	546	546	546	546
Mean	7.492	0.4605	3.6753	1.4081	0.4773	0.5311	0.4428
Standard deviaiton	1.639	0.00986	0.11524	0.08263	0.00974	0.02138	0.00829
skewness	1.252	-0.204	-0.321	1.777	0.020	-0.125	0.213
elongation	1.724	-0.558	-1.773	1.536	-0.452	-1.992	-1.291
Minimum	18.74	0.00	0.06	0.00	0.05	0.00	0.20
Maximum	2177.88	0.90	7.51	6.95	1.26	1.00	0.75

Source: research findings

According to the results from descriptive statistics of research variables, it can state that all the variables enjoy a suitable distribution.

Studying the assumptions of regression model

The researcher can use linear regression, if the mean equals to zero, variance of errors be fixed, and there does not exist a correlation between errors of model and independent variables, and dependant variables follow a normal distribution (Momeni & Faal Ghayoumi, 2010).

Assumptions of zero mean and fixed variance of errors imply that the errors must have a normal distribution with zero mean. For this, values of standard errors were calculated and diagram of data distribution and their normal diagram were depicted, and then it was observed that distribution of errors is relatively normal, thus it can use regression. Further, value of mean is very small close to zero, and the standard deviation is close to one, whereby these two values indicate normality of residual errors of regression model. Independence of errors from each other is the second assumption in regression model. To examine independence of errors from each other, Durbin-Watson test is used. According to value of Durbin-Watson in research hypotheses, it is observed that this value ranges from 1.5 to 2.5. Hence, the hypothesis for independence of errors in regression model is confirmed, indicating lack of a correlation between errors of independent variables of research hypotheses. For the hypothesis on lack of colinearlity between independent variables, eigenvalues and index of status were used. If eigenvalues be close to zero, internal correlation will increase, and small changes in values of data will result in big changes in estimation of coefficients of regression equation. Index of status with value greater than 15 indicates colinearlity between independent variables, and the value greater than 30 indicates a serious problem in use of regression in existing status.

Table 2. Lack of colinearlity between independent variables of research

Variable	Tolerance	Variance inflation factor	Eigenvalues	Index of status
Institutional ownership	0.986	1.014	0.674	2.792
Directors' ownership	0.837	1.194	0.416	3.552
non executive director or board	0.983	1.017	0.044	10.964
Debt ratio	0.961	1.040	0.169	5.275
Executive reward	0.848	1.179	0.178	5.435
Independent auditor	0.987	1.013	0.265	4.456

To examine normality of variables affiliated to research, Kolmogorov-Smirnov test (KS-test) was used. After testing, it was observed that the hypothesis on normal distribution of data is accepted at 95% confidence level, and dependant variable of research has normal distribution.

Testing research hypotheses

Data analysis refers to a process in which the data which have been obtained through applying data collection instruments are encoded, summarized and described and finally analyzed. In this process, the data are processed by applying statistical methods in terms of conceptual and empirical aspects. It is obvious that attention to conceptual dimensions of research hypothesis plays a major role in achieving this aim. In this section, inferential analysis of research hypotheses is proposed.

It can characterize statistical hypotheses as follows:

H_0:there does not exist a significant relationship between variables.

H_1: there exists a significant relationship between variables.

If p-value be greater than standard error (5%), the obtained coefficient will not be significant and hypothesis (H_0) cannot be rejected. Similarly, if p-value be smaller than standard error, the obtained coefficient will be significant; thereby hypothesis (H_0) is rejected.

Table 3. Interpretation of results of regression analysis using table 3 is as follows

Calculated coefficients		t-statistics	Significance level	Adjusted R^2	f-statistics	Significance level	Durbin-Watson
				0.524	50.167	0.000	2.098
β_0	846.234	12.488	0.000				
β_1	41.172	0.587	0.557				
β_2	-18.04	-1.986	0.048				
β_3	-273.117	-3.268	0.01				
β_4	-3.546	0.548	0.584				
β_5	-98.487	-1.370	0.171				
β_6	121.183	3.748	0.000				

With regard to adjusted determination coefficient (R^2), it can state that about 52% of changes of dependant variable have been defined via independent variables. Significant level of the variable of percentage of institutional ownership is greater than error level (sig>0.05). Hence, it can say that there is not a significant relationship between percentage of institutional ownership and agency cost at 95% confidence level. Hence, the first hypothesis is rejected. Significance level of variable of directors' stock ownership is less than error level ($sig < 0.05$). Hence, there exists a significant relationship between directors' stock ownership and agency cost at 95% confidence level. Hence, the second research hypothesis is confirmed, and negative coefficient in table 3 indicates an indirect relationship between directors' stock ownership and agency cost in companies listed on the Tehran Stock Exchange. Significance level of the variable percentage of non executive director or board is less than error level ($sig < 0.05$). Hence, there is a significant relationship between percentage of non executive director or board and agency cost at confidence level (95%). Thereby, the third research hypothesis is confirmed and negative coefficient represented in table 3 indicates an indirect relationship between percentage of non executive director or board and agency cost in companies listed on the Tehran Stock Exchange. Significance level of the variable "debt ratio" is greater than error level (sig>0.05). Hence, it can say that there is not a significant relationship between percentage of debt ratio and agency cost at 95% confidence level. Thereby, the fourth hypothesis is rejected. Significance level of the variable "executive reward" is greater than error level (sig>0.05). Hence, it can say that there is not a significant relationship between percentage of executive reward and agency cost at 95% confidence level. Thereby, the fifth hypothesis is rejected.

Significance level of the variable independent auditor is less than error level ($sig < 0.05$). Hence, there is a significant relationship between existence or lack of existence of auditing organization as an independent auditor and agency cost at confidence level (95%). Thereby, the sixth research hypothesis is confirmed. Durbin-Watson statistics indicates lack of correlation in components of standard error in regression.

Discussion and conclusion

With regard to the findings of research, there is a significant relationship between percentage of directors' stock ownership, percentage of non executive director or board and agency cost. This is in a way that there is not a significant relationship between institutional ownership, debt ratio, executive reward and agency cost. In this regard, retrospect to the fact that institutional investors play a major role in transfer of information and affect value of company, thereby directors' ownership, percentage of non executive director or board, and independent auditor cause reduction of agency costs. Agency costs emerge as the result of conflict of interests between owners and directors, and it will have an inverse effect on value of company. One of mechanisms of control over agency costs can be strategy of corporate governance of company. The results of this study indicate active attendance by institutional investors in decision makings and reduction of conflict of interests between directors and owners. On the other hand, with regard to findings of research, it can state that the more percentage of directors' stock ownership and percentage of non executive director or board increase, shareholders' and directors' interests increase, thereby reduction of agency costs will come to realize. Furthermore, the results indicated that short-term debt ratio to total debt cannot be introduced as mechanism to reduce agency cost. The results from this research indicate effectiveness of increasing corporate governance strategies in reducing agency costs and as the result increasing value of company. With regard to the results of research, directors in their planning must focus on better control over corporate governance and percentage of directors' ownership to achieve their aims. With respect to the results of research, the practitioners and planners must pay attention to the factors which affect agency cost.

Suggestion for future research

The suggestions as follows are proposed to conduct research in future:

further factors such as ownership and so forth can be taken into consideration in order to increase efficiency of research

it can compare this model with other models such as the models based on fuzzy theories on decision making

use of statistical methods such as factor analysis in order to select the criteria for evaluation of performance

use of multi-objective planning methods to optimize aims of investors and decision makers

examination of factors affecting agency for the variables including financial constraints, agency costs, capital expenditures, research and development expenditures

it is suggested conducting the same research on investment funds with further statistical sample in order that the way is paved to use parametric models which enable to provide a more accurate analysis

Research constraints

Conducting any research will be followed by some constraints. This has gone true for this research, in which some constraints have been appeared. In this study, access to information of some of companies has not been easily possible, yet the researcher resolved this problem by referral to various centers and information archives of stock exchange and data processing companies. Referral to various centers has caused more trust on accuracy of data.

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