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Original Article

Study of Relationship between Agency Theory and Management Ownership in Tehran Stock Exchange during 2006-2010 Years

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ABSTRACT

In this study the relationship between ownership as independent variables and agency costs and the costs of independent audit as a dependent variable was examined. The measure of management property, the property of member ownership and the measure of agency costs to sale cost, general costs to total sale were considered ،with respect to the determine, characteristics ،the statistic sample in this study included 195 accepted firms in Tehran Stock Exchange and 5 years old for research 1385 to 1389. For doing this study, two assumptions were designed, examined by statistic tests. The results show that between management ownership and agency costs and Audi, there is a significant correlation.
Keywords: Agency Theory, Agency Costs, Management Ownership, Conflict of Interest.

INTRODUCTION

The agency theory is a type of contract under which one or several owners assign another person (agent or principal) to carry out an operation. To this end, they are delegated the authority to make certain decisions [1]. Once the agency relationship is established, both parties would strive to maximize their interests. Since the utility function of principals and that of owners differ, there is conflict of interests between them. Due to this conflict of interests, principals will be necessary looking for maximizing the interests of owner(s) [2].

As the agency relationship is built through conflict of interests between the parties, costs of agency appears. Jensen et al. [3] have enumerated such costs in several categories as below:

1. Costs of control and monitoring over the principal by the owner: these costs include the efforts made by the owners so as to control the behavior of agent through budget constraint, reward schemes, the use of independent Audit Service, stock option plans, the cost of dismissing principals etc.

2. Bonding costs: the costs concerning organizational structure so that undesirable behavior of the principal can be limited.

3. Residual loss: This is the difference between actual performance of the principal and his expected performance which deals with seeking personal interests. The agency costs has a negative effect on the value of a company i.e. if the market expects to encounter such costs, the value of the company would decrease.

In this situation, it is essential to have a control mechanism which can relatively ensure the transparency of the information reported in financial statements. In a free economy like that governing throughout Iran, such mechanism is offered by independent auditor in the form of financial auditing. From the viewpoint of agency theory, the major reason behind the profession of independent auditing is the task of attestation [4].

This article aims to study the possible effect of principal ownership on the costs of agency, which would lead to cutting of independent auditing costs in case of positive effectiveness.

Research background

Using a sample comprising 1528 companies listed on the U.S. Stock Exchange during 1992-1994 Singh ET al. [5] studied the relationship between the structure of ownership and the costs of agency. They considered the asset turnover ratio and the operating expenses to sales ratio as two measures of agency costs. The result of their research indicated that using the asset turnover ratio as a measure of agency costs leads to increase in principal ownership which in turn brings about a convergence between the interests of principals and owners and ultimately curbs the costs of agency. Furthermore, there was not found any significant relationship between the external major shareholders ownership and the costs of agency.

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Using a sample of 3800 small to medium-sized companies based in Australia during the years 1996-1997 and 1997-1998, Fleming et al. [6] studied the effect of ownership structure on costs of agency. They considered the ratio of natural logarithm of two, the asset turnover ratio and the operating expenses to sales ratio the as three measures of agency costs. The result of their research showed that there was a significantly negative relationship between principal ownership and agency costs. Moreover, they found out that agency costs drop as the family ownership rises.

Truong [7] 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.

Jelinek et al. [8] examined the non-linear relationship between agency costs and principal ownership. The sample under study involved 15186 observations of American companies during 1992-2004. In their research, the agency costs were calculated using two measures of asset turnover ratio and operating expenses to sales ratio. The return on assets was also taken into account as a measure of profitability. The obtained results indicated that there was a significantly positive non-linear relationship between the return on assets/assets turnover ratio and principal ownership. Furthermore, there was a significantly negative non-linear relationship between operating costs to sales ratio and principal ownership.

Mostafa et al. [4] examined the relationship between principal ownership and agency costs in 867 companies listed on the stock exchange excluding intermediary companies. The required information was collected through financial statements and questionnaire. Then, the relationship among variables was analyzed using the multivariate regression. In this research, the operating cost ratios and assets utilization were regarded as two measures of agency costs, and the number of bound principal shares was regarded as the indicator of principal ownership. The control variables under study were complexity, performance, risk and growth. The results showed that there was a negative relationship principal ownership and agency costs i.e. the agency costs are slashed as the percentage of principal ownership in a company rises. Additionally, the information asymmetry in such companies is rare. Moreover, the expectation of shareholders outside the company regarding the increase of corporate value is aligned with expectation of shareholders inside the company. Consequently, conflict of interests among shareholders is less. In the present article, the model suggested by Mostafa et al. has been employed.

In another research, Garmaroudi [9] considered the number of shareholders, collateral assets and free cash flows as three independent variables, and then tested their relationship with stock dividend. The statistical population of this study was the entire companies listed on Tehran Stock Exchange prior to 1996 and active in the marketplace until 2001. Therefore, the samples added up to 189 companies. The required information was collected from financial statements of these companies during a 5-year period (1996-2002), and their relationship between them was analyzed through multivariate regression. The obtained results indicated that all the three independent variables had a positive relationship with the paid stock dividend.

Noravesh et al. [2] examined the relationship between mechanisms of corporate strategic system and the agency costs of companies listed on Tehran Stock Exchange. They considered the agency costs as an outcome of interaction among growth opportunities and free cash flows. The Tobin's Q ratio was also presented as a measure for calculation of growth opportunities. The results obtained from a case study on 88 companies during 2003-2006 indicated that there was a significantly negative relationship between the percentage of non-bound members at the board of directors/the ownership percentage of institutional investors and agency costs. On the other hand, the results were not consistent with the assumption that there was a relationship between corporate debt ratio and agency costs.

MATERIALS AND METHODS

The present research is a qualitative study conducted through descriptive-correlational method. In terms of time span, the years 2006-2010 were observed. The companies listed on Tehran Stock Exchange were studied. The statistical population included 456 companies listed on TSE during a 5-year period from 2006 to 2010. The sample member companies were then selected taking into account the following characteristics:

1. The company's name listed on TSE by end of 2005.
2. The fiscal year closing by the end of March (i.e. Esfand, the last month in the Persian solar calendar).
3. During the research, no change or removal of activity or fiscal year takes place.
4. Excluded from investment companies, financial intermediaries, handling, and banks and leasing.
5. The information required by the study is available.

Regarding the mentioned characteristics, a total of 195 member companies were selected as sample group.

The independent variable of principal ownership and the dependent variable of agency costs is the practice of auditing. The principal ownership was estimated by ownership of the members at the board of directors [10]. The agency costs were calculated through dividing general, administrative and sales costs by the sales[4].

In order to analyze the relationship between principal ownership and the dependent variables, the regression model was employed as below:

1) MONITORi = αi- b1MGROWNi +b2RECINV +b4SIZEi+b5DEBTSTRC –b6RISKi –b7ROAi +b8 GROWTH €+

2) AUDIT= αi + b1MGROWNi + b2RECINV + b3SIZEi + b4DEBTSTRC + b5RISKi + b6ROAi + b7GROWTH + €i

Where the dependent variables are:

MONITOR: the agency costs calculated through dividing general, administrative and sales costs by the sales.

AUDIT: the practice of auditing carried out by auditing companies, otherwise, the zero value has been taken into account.

αi: x-intercept

Independent variable:

MGROWN: principal ownership

Control variables:

RECINV: Inventories + receivables/total value of assets

DEBTSTRC: Long-term debts/market value of the firm

RISK: the company would take 1 if it undergoes loss, otherwise, it would take zero value.

ROA: Earnings before interest and taxes/Book value of total assets

GROWTH: Market value of the firm/ Book value of total assets

€I: Coefficient of error

For testing the hypotheses after calculation of descriptive statistics, the Pearson's Correlation method is employed so as to measure the degree of relationship among various variables involved in this research. At the next stage, analysis of variance and regression coefficients table and significance level of the model coefficients are studied using p-value and determining the error level α. Finally, the test results shall be accepted if the hypotheses are proved correct after examination. These tests include multi-collinearity of the independent variables (using Variance Inflation Factor or VIF), significance level of the regression model, and normality of dependent variables and lack of auto-correlation (using the Durbin-Watson statistic).

The hypothesis tests were done annually i.e. yearly cross-sectional data was used rather than pool data. Hence, if we choose a period of 5 years, the results should be first analyzed and only then decide whether a hypothesis is rejected or proved over a year. We cannot judge a 5-year period combined. In other words, two hypotheses have been tests for each year. Therefore, the result of hypothesis tests has been offered regarding each year. Similarly, the assumptions from tests in different years should be derived separately.

RESULTS

Generally, there are two types of statistical method employed for data analysis as follows:

1. Descriptive statistics; 2. Inferential statistics

Table 1. Descriptive statistics of variables

Years	Index	PO	RA	CR	CG	MV	CS	TA	SC
2006	Mean	48.17	0.13	0.16	0.02	154	5.51	0.39	0.07
	SD	32.71	0.18	0.37	0.41	737	0.67	0.25	0.06
2007	Mean	44.78	0.16	0.16	0.07	202	5.01	0.37	0.05
	SD	31.76	0.19	0.37	0.44	273	0.81	0.2	0.07
2008	Mean	46.59	0.14	0.16	0.08	178	5.11	0.81	0.19
	SD	31.6	0.22	0.37	0.37	588	0.83	0.29	0.08
2009	Mean	48.9	0.15	0.27	0.16	226	5.09	0.32	0.17
	SD	31.91	0.23	0.44	0.38	438	0.83	0.61	0.09
2010	Mean	48.71	0.13	0.26	0.11	178	5.11	0.36	0.18
	SD	31.35	0.23	0.44	0.39	333	0.83	0.28	0.08

PO= principal ownership, RA= return on assets, CR= company's risk, CG= company's growth, MV= market value, CS= company's size, TA=total assets, SC= sale costs

Table 1 illustrates the descriptive statistics including mean and standard deviation of the data during 2006-2010. According to the above mentioned data in 2006, the principal ownership scored a mean of 78.17%, standard deviation of 32.71, return on assets of 0.13%, standard deviation of 0.18,. The company's risk scored a mean of 0.16, standard deviation of 0.37. The company's growth scored a mean of 0.02, standard deviation of

0.41. The market value of firm to long-term debts ratio scored a mean of 154%, standard deviation of 737. The company's size scored a mean of 5.51, standard deviation of 0.67. The value of total assets to the total receivables ratio plus inventories scored a mean of 0.39, standard deviation of 0.25. The sale costs to sales ratio scored a mean of 0.07, standard deviation of 0.06.

As for 2007, the principal ownership scored a mean of 44.78%, standard deviation of 31.76 returns on assets of 0.16%, standard deviation of 0.19. The company's risk scored a mean of 0.16, standard deviation of 0.37. The company's growth scored a mean of 0.07, standard deviation of 0.44. The market value of firm to long-term debts ratio scored a mean of 202%, standard deviation of 273. The company's size scored a mean of 5.01, standard deviation of 0.81. The value of total assets to the total receivables ratio plus inventories scored a mean of 0.379, standard deviation of 0.37. The sale costs to sales ratio scored a mean of 0.05, standard deviation of 0.07.

As for 2008, the principal ownership scored a mean of 46.59%, standard deviation of 31.6, return on assets of 0.14%, standard deviation of 0.22. The company's risk scored a mean of 0.16, standard deviation of 0.37. The company's growth scored a mean of 0.08, standard deviation of 0.37. The market value of firm to long-term debts ratio scored a mean of 178%, standard deviation of 588. The company's size scored a mean of 5.11, standard deviation of 0.83. The value of total assets to the total receivables ratio plus inventories scored a mean of 0.81, standard deviation of 0.29. The sale costs to sales ratio scored a mean of 0.19, standard deviation of 0.08.

As for 2009, the principal ownership scored a mean of 48.9%, standard deviation of 31.91, return on assets of 0.15%, standard deviation of 0.23. The company's risk scored a mean of 0.27, standard deviation of 0.44. The company's growth scored a mean of 0.16, standard deviation of 0.38. The market value of firm to long-term debts ratio scored a mean of 226%, standard deviation of 438. The company's size scored a mean of 5.09, standard deviation of 0.83. The value of total assets to the total receivables ratio plus inventories scored a mean of 0.32, standard deviation of 0.61. The sale costs to sales ratio scored a mean of 0.17, standard deviation of 0.09.

As for 2010, the principal ownership scored a mean of 48.71%, standard deviation of 31.35, return on assets of 0.13%, standard deviation of 0.23. The company's risk scored a mean of 0.26, standard deviation of 0.44. The company's growth scored a mean of 0.11, standard deviation of 0.39. The market value of firm to long-term debts ratio scored a mean of 178%, standard deviation of 333. The company's size scored a mean of 5.11, standard deviation of 0.83. The value of total assets to the total receivables ratio plus inventories scored a mean of 0.36, standard deviation of 0.28. The sale costs to sales ratio scored a mean of 0.18, standard deviation of 0.08.

Result of hypothesis one:

Table 2. Ordinary least squares regression of the ratio of cost of sales related to the sale of the independent variables

Years	Regression	RA	CR	CG	MV	CS	TA	SC	A
2006	Beta	-0.24	0.37	-11.29	37.65	-0.001	5.85	-0.11	-6.32
	SD error	0.12	0.17	11.1	8.22	0.005	5.86	0.11	33.61
	T	2.02	2.17	-1.01	4.57	-0.23	2.99	-1	-0.18
	P	0.04	0.03	0.31	0.0	0.81	0.009	0.31	0.85
2007	Beta	0.29	0.07	-14.46	1.6	0.0	17.89	-0.02	-50.11
	SD error	0.15	0.23	13.72	12.23	0.002	6.31	0.02	33.77
	T	2.92	0.3	1.05	-0.13	-0.77	2.83	0.8	1.48
	P	0.0	0.75	1.29	0.89	0.44	0.005	0.42	0.13
2008	Beta	-0.12	-0.06	-8.64	-3.29	0.0	9.29	-0.008	20.19
	SD error	0.03	0.05	3.36	3.68	0.001	1.5	0.004	8.18
	T	-3.25	-1.07	-2.57	-0.89	-0.22	6.17	-1.75	-2.46
	P	0.001	0.28	0.01	0.37	0.81	0.0	0.06	0.01
2009	Beta	-0.6	-0.011	-7.39	1.42	-0.001	0.58	-0.001	22.25
	SD error	0.02	0.039	1.97	2.26	0.0008	1.13	0.0005	5.86
	T	-4.06	-0.29	-3.73	0.62	-1.49	0.52	2.8	3.79
	P	0.0001	0.77	0.0002	0.53	0.13	0.6	0.005	0.0002
2010	Beta	0.17	0.023	-6.57	-4.29	-0.0004	5.72	0.0007	-1.45
	SD error	0.03	0.051	2.67	2.95	0.0003	1.31	0.005	7.33
	T	-4.88	0.46	-2.45	-1.45	-1.03	4.34	0.039	-0.19
	P	0.0	0.64	0.01	0.14	0.3	0.0	0.96	0.84

PO= principal ownership, RA= return on assets, CR= company's risk, CG= company's growth, MV= market value, CS= company's size, TA=total assets, SC= sale costs

According to the results obtained from analysis done based on statistical indicators and parameters placed in Tables 2 and 3, it was observed that correlation coefficients of the first hypothesis model for years 2006, 2007, 2008, 2009 and 2010 were 0.19, 0.07, 0.26, 0.183 and 0.26 respectively. Furthermore, the adjusted correlation coefficients were 0.16, 0.04, 0.23, 0.15 and .023 which shows the changes caused by regression model in years 2006, 2007, 2008, 2009 and 2010 made up 16%, 4%, 23%, 15%, and 23% of the total changes respectively.

Table 3. Results of Durbin-Watson and Anova tests

Years	Durbin-Watson	R	Adjusted R Square	f	P
2006	1.99	0.19	0.16	6.50	0.001
2007	1.98	0.07	0.04	2.22	0.03
2008	1.89	0.26	0.23	9.43	0.001
2009	1.85	0.183	0.15	6	0.001
2010	1.92	0.26	0.23	9.4	0.001

The Durbin-Watson Statistic values for years 2006, 2007, 2008, 2009 and 2010 were 1.99, 1.98, 1.89, 1.85 and 1.92 respectively, which points to independency of errors over the 5-year period. The F statistic values for years 2006, 2007, 2008, 2009 and 2010 were 6.5, 2.22, 9.43, 6 and 9.4 respectively. Consequently, there was a significant relationship between the variable of principal ownership and agency costs at 95% level in the years 2006, 2007, 2008, 2009 and 2010, which together made the time span of this research. Therefore, the first hypothesis faces no rejection.

Result of hypothesis two:

Table 4. Ordinary least squares test of the independent variables related to access account

Years	Regression	RA	CR	CG	MV	CS	TA	SC	A
2006	Beta	-0.001	0.0	-0.012	0.05	4.78	-0.004	0.0	1.19
	SD error	0.0	0.0	0.06	0.04	3.15	0.032	0.0	0.18
	t	-2.25	0.97	-0.019	1.21	1.51	-0.13	0.44	6.4
	p	0.0	0.02	0.33	0.22	0.13	0.89	0.65	0.85
2007	beta	-0.004	-0.008	-0.13	0.01	-8.34	0.09	9.77	0.96
	SD error	0.0	0.001	0.06	0.06	1.14	0.03	0.0	0.16
	t	-5.92	-1.98	-1.97	0.25	-0.72	3.01	0.07	5.75
	p	0.0	0.04	0.04	0.8	0.46	0.002	0.93	0.0
2008	beta	-0.002	-0.0001	-0.098	0.007	-2.83	0.095	8.64	0.88
	SD error	0.0	0.001	0.081	0.089	3.62	0.036	0.0001	0.19
	t	-2.66	-0.081	-1.21	0.079	-0.78	2.63	0.75	4.43
	p	0.008	0.93	0.22	0.0	0.43	0.009	0.45	0.0
2009	beta	-0.003	-0.002	-0.007	0.086	-3.1	0.011	1.39	1.47
	SD error	0.003	0.001	0.07	0.089	3.43	0.044	2.22	0.232
	t	-2.92	-1.56	-0.09	0.95	-0.9	0.25	0.062	6.35
	p	0.003	0.11	0.92	0.34	0.36	0.79	0.95	0.0
2010	beta	-0.002	-7.6	0.073	-0.15	7.14	0.096	-9.01	0.739
	SD error	0.0007	0.001	0.052	0.05	7.79	0.025	0.0001	0.144
	t	-3.52	0.07	1.4	1.4	-0.91	3.73	-0.8	5.12
	p	0.0005	0.94	0.16	0.16	0.36	0.0003	0.41	0.0

According to the experimental results obtained from Tables 4 and 5, the correlation coefficients of the second hypothesis model for years 2006, 2007, 2008, 2009 and 2010 were 0.06, 0.24, 0.105, 0.065 and 0.171 respectively. Furthermore, the adjusted correlation coefficients were 0.02, 0.21, 0.07, 0.03 and .014 which shows the changes caused by regression model in years 2006, 2007, 2008, 2009 and 2010 made up 2%, 21%, 7%, 3%, and 14% of the total changes respectively.

The Durbin-Watson Statistic values for years 2006, 2007, 2008, 2009 and 2010 were 1.19, 1.95, 1.87, 1.96 and 1.93 respectively, which points to independency of errors over the 5-year period. The F statistic values for years 2006, 2007, 2008, 2009 and 2010 3.74, 8.75, 3.15, 2.88 and 5.52 respectively. Consequently, there was a significant relationship between the variable of principal ownership and auditing at 95% level in the years 2006,

2007, 2008, 2009 and 2010, which together made the time span of this research. Therefore, the first hypothesis faces no rejection.

Table 5. Results of Durbin-Watson and anova tests

Years	Durbin-Watson	R	Adjusted R Square	f	P
2006	1.19	0.06	0.02	3.74	0.001
2007	1.95	0.24	0.21	8.75	0.001
2008	1.87	0.105	0.07	3.15	0.003
2009	1.96	0.065	0.03	2.88	0.01
2010	1.93	0.171	0.14	5.52	0.001

DISCUSSION

In sum, the findings of hypothesis testing indicate that there is a correlation between principal ownership and agency costs regarding the companies listed on Tehran Stock Exchange. Such finding is consistent with approaches taken in similar works done by Fleming et al. [6], Jelinek et al. [8]. The reason is the fact that most of the Iranian companies became privatized leading to great steps taken for the benefit of shareholders.

Since the transparency of corporate information is the major mechanism of thriving investment market and in turn, economic boom in every nation, it is recommended that the Iranian stock exchange require the listed companies to disclose information about their auditing costs, so that the corporate strategy system shall be established. In addition, the domestic auditing and formation of auditing committees in the listed companies can be launched by measures taken by the Iranian stock exchange. Moreover, efforts can be made to establish an institution for financial analysts. When realized, it would tackle some of the problems hindering research projects regarding the insufficiency of financial information and analyses. Finally, it is suggested that authorities involved in formulating the guidelines and standards to reconsider the issue of financial information disclosure.

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