

## Examining the relationship between audit committee and managers' reward with audit costs of the listed companies in Tehran stock exchange

Zahra Dehghan <sup>1,\*</sup>, Hossein Fakhari <sup>2</sup>

<sup>1</sup>*Department of Accounting, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran*

<sup>2</sup>*Department of Accounting, University of Mazandaran, Babolsar, Iran*

**Abstract:** The aim of the study is to examine the relation between audit committee and managers' reward with audit costs of the listed companies in Tehran stock exchange. To do so, there hypotheses were formulated. All listed companies in Tehran stock exchange were selected as statistical population of the research during 2009 to 2012. Also, audit committee size, audit committee session numbers and expertise level of audit committee members, and audit cost were considered as independent and dependent variables of the study, respectively. EViews 7 software has been used to analyze the research data. The results indicated that there is a significant relation between audit committee and audit cost of the listed companies in Tehran stock exchange. The findings also suggested that there is a significant correlation among audit committee session numbers and audit cost of those companies. As well, there is a relationship between expertise level of audit committee members and audit cost of the companies. Finally, the results showed there is no significant relation between managers' reward and audit cost of the listed companies in Tehran stock exchange.

**Key words:** Audit committee; Managers' reward; Audit cost

### 1. Introduction

Pricing of audit services is one of the interesting subjects for many researches and have already been performed several studies in this field. It is necessary for both employers and auditors to inform on these factors. Audit cost is an incredible amount for most employers. Audit fee is determined based on the cost of services in an audit process as well as estimation of future loss due to auditor accountability against issued report (Dorber, 2004). Despite of full investigation about income accounts and percent fee, auditors' fee for tax audit report is less than audit fee of financial statements.

On the other hand, audit committee is a committee composing of board members and three to five non-executive managers. Lack of executive managers in audit committee may cause auditors to frankly bring up some issues such as weak points of internal controls, disagreement with management about accounting principles and methods, possible signs of management misuse and other illegal actions of firms' authorities to audit committee. Communications of audit committee with auditors would deliver on time information about current financial condition and required information for measuring efficiency and honesty of management to firms' board of directors (Hassas Yeganeh and Hosseini Bheheshtian, 2002).

Generally, there are various factors impacting on firms but we looking for, in this research, the impact

of those factors on audit cost. What we investigate in this research is to examine the relation between audit committee and reward of executive managers with audit costs of the listed companies in Tehran stock exchange. Clearly, we try to know whether audit committee independence, audit committee session numbers, audit committee size, expertise level of audit committee members and managers' reward impact on firms' audit costs. Do these factors can play preventive role in increased firms' audit costs? Due to the vital role of audit committee in controlling internal control weakness, possible signs of management misuse and other illegal actions of firms' authorities, do these factors can minimize audit costs? And does paid reward to executive managers can impact on audit costs?

### 2- Research background

Alavi Tabar et al, (2011) examined the relation between governance system and independent audit fee of firms. Their findings suggested that ten mentioned factors, two factors of percent of governmental and quasi-governmental institutional ownership and type of auditor has direct and significant relation with audit fee.

Khodadadi & Haji Zadeh (2012) dealt with the impacting factors on firms' audit fee. The results generally showed that there is a positive and significant relation between agency costs due to free cash flow of firms and audit fee.

Moutinho et al, (2013) examined the relation among audit fee and firm performance. The sample

\* Corresponding Author.

of the study includes American non-financial firms during 2000 to 2008. The results demonstrated a firm's operational profit has significant relation with audit costs.

Rostam et al, (2013) investigated the relation between audit committee, managers' rewards and audit fee in Pakistan. The research's results suggested that audit committee activities and independent audit committee members have significant relation between audit fee. Also, the results of control variables indicated that there is a significant relation between non-audit costs, board meetings, return on assets and sale with audit fee of Pakistani firms.

Naser Ahmad et al, (2013) examined the correlation among audit committee quality and stock return of Egyptian firms during 2003 to 2012. They examined 328 firms and their findings showed that there is a significant relation among audit committee quality and stock returns of Egyptian firms.

Stephen et al, (2014) investigated the impacting factor on audit fee of American firms. The obtained

results indicated that firm size, firm age, variety of products, and type of audit institution have significant relationship with audit fee, but the variables of free cash flow, financial leverage and audit risk has not significant relation with audit fee.

**3. Research's method**

**3.1. The research's hypotheses**

- There is a significant relation between audit committee size and audit cost of the listed companies in Tehran stock exchange.
- There is a significant relation between audit committee session numbers and audit cost of the listed companies in Tehran stock exchange.
- There is a significant relation between expertise level of audit committee members and audit cost of the listed companies in Tehran stock exchange.

**3.2. The research's variables way of measuring**

**Table 1:** operational definition of the research's variable

Variable	Symbol	Way of measuring
<b>Dependent</b>	Audit Fees	It is calculated based on payment amount for auditing of financial statements per year
	Committee size	Number of existing committee members
<b>Independent</b>	Committee activity	Number of held sessions of audit committee per year
	Committee expertise	Financial members of audit committee to non-financial members ratio
<b>Control</b>	Reward	Payment reward to managers based on explanatory notes
	ROA	Based on net profit to book value ratio
	Board size	Number of existing members in board of directors
	Sales	Natural logarithm of total sale
	Age	Based on the number of listing in Tehran stock exchange

**3.3. The research's statistical population**

All listed companies in Tehran stock exchanged were selected as statistical population of the research based on systematic method during 2008 to 2012.

1. Their fiscal year ends in 19/3/
2. They should have been listed in Tehran stock exchange before 2008.

3. They should not be part of investment and financial companies.

4. Their information should be available.

331 firms were selected between 421 listed companies in Tehran stock exchange based on systematic method and 83 firms were finally picked up as the research's sample through simple random sampling.

**3.4. The research's model**

- **The first hypothesis**

$$\text{Audit Fees}_{it} = \beta_0 + \beta_1 \text{Committee size}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{Board size}_{it} + \beta_4 \text{Sales}_{it} + \beta_5 \text{Age}_{it} + \epsilon_{it}$$

- **The second hypothesis**

$$\text{Audit Fees}_{it} = \beta_0 + \beta_1 \text{Committee independence}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{Board size}_{it} + \beta_4 \text{Sales}_{it} + \beta_5 \text{Age}_{it} + \epsilon_{it}$$

- **The third hypothesis**

$$\text{Audit Fees}_{it} = \beta_0 + \beta_1 \text{Committee expertise}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{Board size}_{it} + \beta_4 \text{Sales}_{it} + \beta_5 \text{Age}_{it} + \epsilon_{it}$$

- **The fourth hypothesis**

$$\text{Reward}_{it} = \beta_0 + \beta_1 \text{Committee expertise}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{Board size}_{it} + \beta_4 \text{Sales}_{it} + \beta_5 \text{Age}_{it} + \epsilon_{it}$$

### 3.5. Data analysis method

In this research, modified Wald test is used to examine group heteroscedasticity between the remaining of fixed effects regression model. Also, F and Hausman 2 test is used to determine either fixed effects method or random effect. To describe the explanatory power of explanatory variables, adjusted coefficient of determination (Adjusted R<sup>2</sup>) is used, and F-fisher test is applied in order to examine the significance of variables and overall adequacy of the model. Statistical analyses are also made using EXCEL and EVIEWS software.

## 4. Results

### 4.1. Examination of heteroskedasticity

**Table 2:** The results of heteroskedasticity through modified Wald test

Description	Chi-square	Probability
Modified Wald test	-8142.58	0.1602

Regarding table 1-1, due to the significance level of Chi-square is not significant in 5% error level, homogeneity of variance is rejected and heteroskedasticity of error terms are confirmed.

### 4.2. Significance test of fixed effects method

#### 4.2.1. F-statistics and Hausman test

**Table 3:** The results of F-statistic test

Description	Statistic amount	Freedom degree	Probability
Cross-section F	2.158745	82	*0.032
Cross-section Chi-square	126.028725	82	*0.014

#### 4.2.2. Hausman test

**Table 4:** The results of Hausman test

Description	Statistic amount	Freedom degree	Probability
Cross-section F	8.162475	16	*0.035

Regarding the results of both tests (F & Hausman), the obtained probability are less than 5%, hence fixed effects method is used for corresponding regression model.

### 4.3. The first hypothesis test

Regarding the table 1-4, impact factor of audit committee on audit cost is -0.2036, indicating negative and inverse impact of audit committee on audit cost. On the other hand, regarding significance level of t-statistics of audit committee on audit cost (0.015), H<sub>0</sub> is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that there is a positive relation between audit committee and audit cost of the listed companies in Tehran stock exchange.

**Table 5:** The regression test of the first hypothesis

Variable	Impact factor	Deviation of estimation	t-statistics	Significance level
Fixed	0.527	0.132	3.994	*0.029
Audit committee size	-2.036	0.415	-4.906	*0.015
ROA	-0.442	0.396	-1.127	0.081
Board size	-0.762	0.697	-1.095	0.083
Firm sale	1.527	0.963	1.585	0.074
Firm age	0.786	0.154	5.103	*0.004

\* 5% error level

**Table 6:** Explanation and significance ability of whole model

Coefficient of determination	R		DW	ANOVA	
	Adjusted coefficient of determination			F	Sig.
0.589	0.574		2.014	82.662	**0.000

\*\* 1% error level

The empirical model of the research is:

$$\text{Audit Fees}_{it} = 0.527 - 2.036 \text{ Committee size}_{it} - 0.442 \text{ ROA}_{it} - 0.762 \text{ Board size}_{it} + 0.282 \text{ Sales}_{it} - 0.786 \text{ Age}_{it} + \epsilon_{it}$$

### 4.4. The second hypothesis test

Regarding the table 1-6, impact factor of audit committee session numbers on audit cost is -3.269, indicating negative and inverse impact of audit

committee session numbers on audit cost. On the other hand, regarding significance level of t-statistics of audit committee session numbers on audit cost (0.000), H<sub>0</sub> is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that there is a positive relation between audit committee

session numbers and audit cost of the listed companies in Tehran stock exchange.

**Table 7:** The regression test of the second hypothesis

Variable	Impact factor	Deviation of estimation	t-statistics	Significance level
Fixed	0.302	0.075	4.028	*0.019
Audit committee session numbers	-3.629	0.567	-5.765	*0.000
ROA	-0.334	0.301	-1.111	0.084
Board size	-0.589	0.551	-1.069	0.086
Firm sale	1.382	0.862	1.605	0.073
Firm age	0.214	0.049	4.368	*0.015

\*5% error level

**Table 8:** Explanation and significance ability of whole model

Coefficient of determination	R Adjusted coefficient of determination	DW	ANOVA	
			F	Sig.
0.529	0.517	1.748	95.337	**0.000

\*\*1% error level

The empirical model of the research is:

$$\text{Audit Fees}_{it} = 0.302 - 3.629 \text{ Committee independence}_{it} - 0.334 \text{ ROA}_{it} - 0.589 \text{ Board size}_{it} + 1.382 \text{ Sales}_{it} - 0.214 \text{ Age}_{it} + \varepsilon_{it}$$

#### 4.5. The third hypothesis test

**Table 9:** The regression test of the third hypothesis

Variable	Impact factor	Deviation of estimation	t-statistics	Significance level
Fixed	0.369	0.142	4.512	*0.014
Expertise level of audit committee	-1.224	0.213	-5.747	*0.001
ROA	-0.573	0.536	-1.069	0.086
Board size	0.482	0.427	-1.128	0.081
Firm sale	2.284	0.934	2.445	0.052
Firm age	0.529	0.121	4.371	*0.017

\*5% error level

**Table 10:** Explanation and significance ability of whole model

Coefficient of determination	R Adjusted coefficient of determination	DW	ANOVA	
			F	Sig.
0.486	0.472	2.268	72.361	**0.000

\*\*1% error level

Regarding the table 1-8, impact factor of expertise level of audit committee on audit cost is -1.224, indicating negative and inverse impact of expertise level of audit committee on audit cost. On the other hand, regarding significance level of t-statistics of expertise level of audit committee on

audit cost (0.001),  $H_0$  is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that there is a positive relation between expertise level of audit committee and audit cost of the listed companies in Tehran stock exchange. The empirical model of the research is:

$$\text{Audit Fees}_{it} = 0.639 - 1.224 \text{ Committee expertise}_{it} - 0.573 \text{ ROA}_{it} - 0.482 \text{ Board size}_{it} + 2.284 \text{ Sales}_{it} + 0.529 \text{ Age}_{it} + \varepsilon_{it}$$

#### 4.6. The fourth hypothesis test

Regarding the table 1-10, impact factor of managers' reward on audit cost is -2.062, indicating negative and inverse impact of managers' reward on audit cost. On the other hand, regarding significance

level of t-statistics of expertise level of audit committee on audit cost (0.063),  $H_0$  is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that there is a positive relation between managers' reward and audit cost of the listed companies in Tehran stock exchange.

**Table 11:** The fourth regression test

Variable	Impact factor	Deviation of estimation	t-statistics	Significance level
Fixed	0.715	0.126	5.675	*0.000
Managers' reward	2.062	0.976	2.112	0.063
ROA	-0.528	0.496	-1.064	0.087
Board size	-0.687	0.624	-1.101	0.081
Firm sale	2.003	0.928	2.158	0.059
Firm age	0.558	0.105	5.314	*0.004

\*5% error level

**Table 12:** Explanation and significance ability of whole model

Coefficient of determination	R		DW	ANOVA	
		Adjusted coefficient of determination		F	Sig.
0.349		0.337	1.926	81.221	**0.000

\*\* 1% error level

## 5. Conclusion and recommendations

The aim of the study is to examine the relation between audit committee and managers' reward with audit costs of the listed companies in Tehran stock exchange. To do so, three hypotheses were formulated. All listed companies in Tehran stock exchange were selected as statistical population of the research during 2009 to 2012. The results indicated that there is a significant relation between audit committee and audit cost of the listed companies in Tehran stock exchange. The findings also suggested that there is a significant correlation among audit committee session numbers and audit cost of those companies. As well, there is a relationship between expertise level of audit committee members and audit cost of the companies. Finally, the results showed there is no significant relation between managers' reward and audit cost of the listed companies in Tehran stock exchange.

Regarding the results of the research, it is recommended to managers to provide the number of audit committee sessions and expertise level of audit committee to decrease audit costs through increasing the number of audit committee. Using experts in audit field can increasingly help to perform financial statement auditing and prevent future auditing and decrease audit cost. It is also recommended to potential and actual investors and other stakeholders to highlight audit committee members and expertise level of audit committee members during investment, because the results indicated that there is a negative and reverse relation between these factors and audit cost, consequently leads to increased financial statement quality and decreased investment risk.

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