

Audit Quality and Earning Management in Tehran Stock Exchange Listed Companies

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Abstract *Audit quality and earning management are some of the important indicators of governance and managers apply them to achieve some purposes. If auditor finds and reports a misstatement of the financial statements, can be a preventive factor in the earnings management. In this study, we examined these relationships by measuring variables such as audit fees, auditor's experience, the rotation of auditors and audit institute. We use unit root test, Jargva test, heteroscedasticity Badraschr (2011). The results shows there are relationship between auditor's experience and abnormal operating cash, abnormal production cost and discretionary accruals items but abnormal discretionary expenses does not effect on auditor's experience and abnormal operating cash. Finally, we found that audit quality could affect earning management.*

Key words Audit quality, earning management, discretionary accrual, corporate governance

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1. Introduction

Researchers believe that weak corporate governance caused famous companies' bankruptcy (Hasasyeganeh, 2010). Corporate governance includes procedures or actions which firms have managed by it, and are responder for shareholders, employers and society. Corporate governance will caused to improve financial reporting quality. All of the corporate governance definitions show that there is a specified and common features named "responsibility". Employing of well-known and celebrated audit institutions is one of the most popular and reasonable ways for assurance of financial statements quality.

Investigation of the relationship and influence of audit quality criteria (as the best and most rational corporate governance mechanisms) include audit fee, specialty auditor, audit institution type and auditor rotation on the earning management in the companies listed in Tehran stock exchange is the purpose of this study. Managers have several methods for earning management:

1. By controlling accruals items: in this way managers tries to show a stable and fixed image of corporation by using accounting accepted methods and accounting standard flexibility because reported earning fluctuations of company in the continuous periods has negative impact on the stock price and will caused to decrease the investors trust to the perspective of the company (Kirschenheiter and Melumad, 2002).

2. By changing in accounting procedures, in this technique all changes in accounting procedures should disclosed in the annual reports. This is so obvious in earning management.

3. By managing and controlling the cash portion of profit, which is the worst tool of earning management.

We can divide accrual items in two subgroups. First, discretionary components, which are the accruals items, that management can control them. Second, nondiscretionary components, which are the accruals things, that management cannot control them.

2. Audit quality

One of the most common and accepted definitions about audit quality is given by DeAngelo. He explained audit quality as the market-assessed joint probability that a given auditor will both (1) find important misstatements in the client's financial statements and (2) report the detected main misstatements. The probability of finding material falsification depends on auditor merit, and probability of reporting the discovered important misstatement depends on the auditor's independence. The factors, which lead to improvement in auditor's decision quality and then audit quality, are as follows:

(1) Auditor experience (2) litigation on auditor (3) auditor's supervision (4) auditor institute size (5) take repute and (6) specialization

Used firms in this study are accepted firms in Tehran stock exchange. Statistical population in this paper is firms that accepted in Tehran stock exchange from 2006.

3. Literature review

Many papers argued the relationship between audit quality and earning management. Gore (2001) in a study in governmental companies showed that audit quality decrease the probability of earning management. Coppens and Peek (2005) also displayed that audit quality have a negative relation with earning management in private firms.

Tendeloo and van Straelen (2005) similarly closed that audit quality has a negative relationship with abnormal accrual items. The Zhou and Elder study outcomes showed that companies that audited by five biggest audit institutes have less earning management than the other too.

Dennis J. Chambers (2008) in a paper titled audit quality and abnormal accrual items concluded that operational return level related to abnormal accrual items has a negative relationship with audit quality. Also Smith et al (2008) showed that high internal audit quality leads to decreasing in earning management. Lai k, (2009) also showed that companies that audited by big audit institutions present less accrual items than others.

Saleh and Ismail (2009) in a study titled the role of the audit quality and corporate governance mechanisms in decrease earning management found that there is a relationship between audit quality and earning management. Marianne (2009) discussed the effects of independent auditor in corporate governance mechanisms. Their results showed that there is a positive relationship among choose of independent auditors and Non-executive member of the Board of Directors.

Baxter and Cooter (2009) in a similar paper examined the role of the auditing committee in earning quality among the Australian companies and they derived that auditing committee seated in the firms will cause to decline in earning management and subsequently improvement in earning quality. Koh *et al.* (2007) in a comparable investigation found that being of auditing committee would make to betterment in reported earning quality. Hassas Yeganeh and Azinfar (2011) in a survey about the relationship between audit quality and auditing institute size have some results that there is a negative relationship between these two variables.

4. Fictitious earning management

We use from Jones modified model for earning management measurement in this study. For estimating earning management, first we should get the sum of the accrual items. The operational cash minus operational net profit derives accrual items.

Calculated discretionary accrual items using Jones modified model is presented in equation (1):

$$\frac{TAC_t}{TA_{t-1}} = \alpha_{0i} \left(\frac{1}{TA_{t-1}} \right) + \alpha_{1i} \left(\frac{\Delta REV_t - \Delta REC_t}{TA_{t-1}} \right) + \alpha_{2i} \left(\frac{PPE_t}{TA_{t-1}} \right) + \varepsilon_t \quad (1)$$

In which:

TA: total assets at first of the period;

ΔREV : changes in sales from t to t-1;

ΔREC changes in receivable accounts between t and t-1 and

PPE: book value of equipment and facilities as of end of period.

5. Real earning management

Due to Cohen et al (2008), it is expected that operational cash amount in the current period decreases by sales manipulation. We have used equation (2) for approximating operational cash normal level

$$CFO_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(\Delta S_t/A_{t-1}) + \varepsilon \quad (2)$$

In which:

CFO: operational cash flow at the end of the year;

A: total assets and;

S: net sales.

Afterward of estimating this model, residuals are known as unusual operational cash, an index for real earning management.

6. Variables

The variables that employed in this paper included these items:

1. audit fee for financial statement auditing and investigating;
2. Specialty auditor. (Use the market share approach).

It means that whatever the market portion of auditor to be more, it is expected that specialty industry and auditor experience to be more than the other competitors, also market percentage be calculated as the total assets of all of the auditor institution clients in a specific industry divided by total assets of all clients in this industry.

3. Audit institution type, which is a dummy variable. If audit institution is governmental type equals by 1, otherwise 0.

4. Auditor change: which is the natural logarithm of the years, in which the auditors were as independent auditor in the company?

5. Debt ratio.

6. Firm size, which is equals by the natural logarithm of the market value of the equity.

7. Market value divided by book value ratio of equity as of the end of the year.

8. Net profit changes divided by total assets as of the first of the period

9. Return on assets

10. Board of director Bonus divided by net profit as of the end of the period.

7. Hypotheses test

We have been employed multi regression model for the test of hypotheses in this study as below:

$$REM_t = a_0 + a_1 SPEC_AUD_t + a_2 BigN_t + a_3 Tenure_t + a_4 Lev_{t-1} + a_5 LMVE_{t-1} + a_6 MTB_{t-1} + a_7 \Delta E_{t-1} + a_8 ROA_{t-1} + a_9 Bonus_t + a_{10} Year\ Dummies + e_t \quad (3)$$

In which:

REM: is the real earning management, which includes abnormal operating cash, abnormal producing costs and abnormal or unusual optional costs;

SPEC_AUD: specialty auditor in the industry;

Big N: type of audit institution;

Tenure: number of years in which the auditor have been independent auditor;

Lev_t: Leverage ratio;

LMVE: natural logarithm of market value equity;

MTB: the ratio of market to book value of equity;

ΔE: changes in net profit divided by total assets as of the first of the period;

ROA: return on assets;

Bonus: management or board bonus.

7.1. Descriptive statistical

Description statistic of variables that employed in this paper is shown in the table 1.

Table 1. Descriptive statistical of variables

Description	Symbol	Average	Median	Max	Min	Standard deviation
Absolute value of discretionary accrual items (Fictitious earnings management index)	DIS	0.09	0.08	1.84	-0.99	0.19
Abnormal operational cash flow (real earning management index)	AB- CFO	0.03	-0.01	0.79	-1.05	0.17
Abnormal production costs (real earning management index)	AB- PROD	-0.04	-0.04	4.05	-3.11	0.38
Abnormal discretionary expenses (real earning management index)	AB- DISEXP	0.01	-0.002	0.07	-0.004	0.005
type of audit institution	BIG-N	0.27	0	1	0	0.44
Natural logarithm of auditing fee	LN FEE	2.47	2.39	5.87	1.07	0.53
Specialty	SPEC	0.48	0.44	0.99	0	0.14
Auditor rotation	TENURE	0.61	0.69	0.95	0	0.27
Leverage ratio	LEV	0.71	0.69	4.38	-0.001	0.11
Natural logarithm market value of equity	MVE	5.35	5.28	7.39	3.87	0.62
Market to book value of equity ratio	MTB	2.82	1.92	48.29	-21.09	4.31
Return on assets	ROA	0.11	0.10	1.07	-0.93	0.15
Changes of net profit divided by total assets as of the first of the period	ΔE	0.01	0.009	1.21	-0.98	0.13
Board bonus	BONUS	0.01	0	0.88	0	0.06

7.2. Test the normal distribution of data

As the study results show, the variables in this paper are not normal. The results of normal distribution of the variables are shown in table 2 and 3.

Table 2. Jarqre-Bera test

Des.	Jarqre-Bera test	Sig
DIS	11879.67	0.000
AB- CFO	400.61	0.000
AB- PROD	23988.28	0.000
AB- DISEXP	88929.33	0.000
BIG-N	145.89	0.000
LN FEE	11339.67	0.000
SPEC	707.59	0.000
TENURE	115.76	0.000
LEV	2202.43	0.000
MV	17.33	0.000
MTB	57537.89	0.000
ROA	2247.56	0.000
ΔE	23564.29	0.000
BONUS	668968.7	0.000

7.3. Unit root test

The results show that the probability of all variables are less than 5% and are reliable.

Table 3. Unit root test

Phillips-Perron Test		Im, Pesaran and Shin		augmented Dicky Fuller		Dicky Fuller		Desc.
Sig.	Statistics	Sig.	Statistics	Sig.	Statistics	Sig.	Statistics	
0.000	-28.52	0.000	-28.52	0.000	-28.12	0.000	-28.52	DIS
0.000	-27.57	0.000	-17.27	0.000	-3.09	0.000	-17.27	AB- CFO
0.000	-28.24	0.000	-28.25	0.000	-27.94	0.000	-28.25	AB- PROD
0.000	-28.45	0.000	-28.43	0.000	-1.67	0.000	-28.43	AB- DISEXP
0.000	-28.22	0.000	-28.22	0.000	-28.21	0.000	-28.22	BIG-N
0.000	-24.32	0.000	-6.59	0.000	-6.57	0.000	-6.58	LN FEE
0.000	-23.87	0.000	-23.88	0.000	-22.45	0.000	-23.88	SPEC
0.000	-28.21	0.000	-27.79	0.000	-27.74	0.000	-27.79	TENURE
0.000	-28.21	0.000	-10.21	0.000	-9.33	0.000	-10.21	LEV
0.000	-23.32	0.000	-23.11	0.000	-8.36	0.000	-23.11	MV
0.000	-25.19	0.000	-11.18	0.000	-9.47	0.000	-11.17	MTB
0.000	-24.69	0.000	-24.61	0.000	-3.82	0.000	-24.61	ROA
0.000	-27.21	0.000	-27.21	0.000	-6.36	0.000	-27.21	ΔE
0.000	-27.39	0.000	-27.37	0.000	-26.67	0.000	-27.37	BONUS

7.4. Heteroscedasticity test

We have used ARCH test for heteroscedasticity estimation, which the results are shown in table 4. In the first model, we investigate the relationship between audit quality and abnormal operational cash flow, and in the second model, we discuss the relationship between audit quality and abnormal production cost, and finally in the third model, we examine the relationship between audit quality and abnormal optional expenditures. As the outputs show, we can declare that study models are homoscedasticity for hypothesis test and are suitable and appropriate to hypothesis tests.

Table 3. Heteroscedasticity test

Desc.	Statistics	Sig.
First model	0.47	0.49
Second model	0.008	0.92
Third model	0.06	0.81

7.5. Multicollinearity test

The results taken from the test show that as for F statistics test and significant level outputs, these models have no correlation of residuals for hypotheses test and so the results of the hypothesis is efficient for model.

Table 4. Multicollinearity test

Desc.	Stat	Sig
First model	3.08	0.06
Second model	0.05	0.95
Third model	0.04	0.96

8. Hypothesis test results

First model: The outputs of hypothesis for the first model are shown in table 6. F statistics and significant level display that our model is statistically meaningful. Therefore, we can say that specialty auditor and audit institution have relationship with unusual operational cash flow (real earning management).

Table 5. Test results of the first model

Desc.	Prob.	t-Statistic	Coefficient
C	*0.002	-3.02	-0.16
SPEC_AUD	*0.000	4.07	0.003
BIGN	*0.000	-3.46	-0.05
TENURE	0.97	-0.04	-0.0007
LEV	0.14	1.47	0.07
LMVE	0.08	1.71	0.01
MTB	0.38	0.87	0.001
ΔE	*0.000	-4.09	-0.18
ROA	*0.000	13.55	0.61
BONUS	0.75	0.31	0.03
Adjusted R-squared	0.26		
F-statistic	21.26		
Prob(F-statistic)	0.000		
D.W	1.99		

* Denote that the corresponding null hypothesis can be rejected at the 5 percent significant level.

Second model:

Results for the second model are shown in table 7. F statistic and significant level imply that the model is statistically significant for hypothesis test. The results show that specialty auditor and rotation of auditor and auditor institution has a relationship with abnormal production costs (real earning management index) too.

Table 6. Second model test output

Desc.	Prob.	t-Statistic	Coefficient
C	*0.000	9.15	0.44
SPEC_AUD	*0.001	2.71	0.07
BIGN	0.000	3.12	0.03
TENURE	*0.005	-2.81	-0.04
LEV	0.000	-9.33	-0.41
LMVE	0.000	-8.81	-0.08
MTB	0.000	-3.49	-0.005
ΔE	0.42	-0.81	-0.04
ROA	0.000	-4.54	-0.23
BONUS	0.14	1.47	0.12
Adjusted R-squared	0.34		
F-statistic	46.64		
Prob(F-statistic)	0.000		
D.W	1.66		

* Denote that the corresponding null hypothesis can be rejected at the 5 percent significant level.

Third model: the output results are displayed in the table 8. F statistic and significant level indicate that this model is statistically meaningful too. The outputs show that audit quality included specialty auditor, audit rotation and auditor institution kind has no relationship with abnormal optional expenditures (real earning management index).

Table 8. Third model outputs

Desc.	Prob.	t-Statistic	Coefficient
C	*0.008	2.63	0.001
SPEC_AUD	0.59	-0.54	-0.0002
BIGN	0.19	1.31	-0.0001
TENURE	0.55	-0.60	-0.0001

Desc.	Prob.	t-Statistic	Coefficient
LEV	*0.000	-5.15	-0.001
LMVE	*0.000	-4.42	-0.0003
MTB	0.22	1.21	0.001
ΔE	0.77	-0.29	-0.0001
ROA	0.87	-0.16	-0.008
BONUS	0.09	-1.67	-0.002
Adjusted R-squared	0.09		
F-statistic	9.91		
Prob(F-statistic)	0.000		
D.W	1.71		

* Denote that the corresponding null hypothesis can be rejected at the 5 percent significant level.

9. Conclusions

The output data of model tests showed that specialty auditor and audit institution has a relationship with unusual operational cash flow, abnormal production costs and discretionary accrual items, and has no relationship with abnormal discretionary costs. Audit rotation has a significant relationship with unusual production cost and has no relationship with abnormal operational cash flow, unusual discretionary costs and discretionary accrual items. In addition, audit fee has a relationship with abnormal operational cash flow and has no relationship with unusual production costs and abnormal discretionary costs. We can say that audit quality has a significant relationship with earning management.

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