The Effect of Audit Quality on Management Mechanisms

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Abstract

This study aims to investigate the effect of audit quality on management mechanisms. In order to assess management mechanisms (discretionary accruals) Kasznic model was used. This study has applied objectives and it is considered a descriptive-regression research as it investigates the relationship between independent and dependent variable using regression method. Audit quality is a dummy variable, in which the Audit Organization has the value of 1 and other audit institutions have the value of 0. The period under study is four years, (2008-2011). Each year was tested by using cross-sectional regression method and the study's hypothesis was tested using panel data. The results gained from this study indicated that there is a negative significant relationship between audit quality and management mechanisms. Therefore, it should be said that the better the audit quality, fewer will be the opportunities for management mechanisms.

Key words: Audit Quality, Management Mechanisms, Discretionary Accruals.

1. Introduction

One of the objectives of financial reporting is provision of data that will benefit for the investors, creditors, and other current or potential users in the decision-makings related to investment, giving credit as well as other decisions. Current and past incomes are important criteria for assessing the profitability prediction of future incomes and management performance in companies.

Income itself consists of cash and accrual items. Accruals are to a great extent controlled by management. A manager could make changes in the accruals of income in order to demonstrate a better corporation performance and to increase the capability of forecasting future income, in other words manager can manage income. It could be said that managers attempt to create predictable results through allowed accounting methods. This is due to the fact that most investors and managers are of the conviction that the corporations that have good income trend and whose income do not undertake major changes have more value predictability and comparative power in comparison to similar firms. On the other hand, according to Agency Theory, managers might have enough motivation to maximize by manipulating income to their own interests. One of the best and most logical methods for ensuring good quality of financial statements is using large and great quality audit institutions to audit financial statements. Studies have shown that large audit institutions, because of having experienced staff, could provide better quality services in comparison to other audit institutions. Audit quality has been studied by many researchers.

De Angelo has defined audit quality as "market's assessment" of the likelihood that an auditor (1) finds out the significant deviation in financial statements or discovers accounting system of the employer (2) and reports the significant discovered deviation. The likelihood for an auditor to discover the important deviations depends on his capabilities and the likelihood for the auditor to actually report these important deviations depends on his independency. Chen (2005) states that audit quality reduce the agency problems between managers and stockholders. Therefore, it is expected that investors use the services provided by large and high quality auditors in order to have more certainty about the quality of financial reporting and the performance of management.

Janin and Piot (2005) believe that auditing could be used as one of the ways to prevent and reduce management mechanisms. It is believed that the income of the corporations that present audited financial statements has more informational value and quality. Accruals depend on the managers' judgments and auditing the corporations with higher accruals is more difficult. A more qualified auditor discovered the suspicious accounting activities with higher probability. This is due to the fact that high quality auditing institutions have more expertise, resources and motivations to discover frauds or mistakes. This study aims to investigate whether professional auditing institutions, with better quality services in comparison to others, could limit management mechanisms or not.

2. Theoretical Literature and Background of the Study

Numerous studies have investigated the relationship between audit quality and management mechanisms. Baker (1998), Francis (1999), Defand and Jiombalvo (1991, 1993), and Gore (2001) concluded in their studies that audit quality reduces the likelihood of occurrence of management mechanisms. Baker, Defand, and Jiombalvo (1998), Beatly and Harris (1998), Beatly and Petroni (2002), Coppens and Peek (2005), Burgstahler et al. (2004) investigated the effect of audit quality on management mechanisms in private firms and concluded that audit quality has reverse relationship with management mechanisms in private firms.

Davis, Soo and Trompeter (2002) concluded in their studies that there is a negative significant relationship between audit quality and management mechanisms. Tendeloo and Vanstraelen (2005) concluded in their studies that audit quality has negative relationship with abnormal accruals. Finding of the study by Hogan and Jeter (1999) indicated that audit quality reduces income smoothing. The result of the study by Zhou and Elder (2002) demonstrated that the corporations that were audited by five large audit institutions have lower management mechanisms. Bannister and Weist (2001) concluded that audit quality limits income smoothing.

Cameron, Prencipe and Trombetta (2008) concluded that the number of hours spent on auditing employers has negative relationship with abnormal accruals and management mechanisms.

The results of the study by Gore, Pope, and Singh (2001) confirm the negative relationship between audit quality and management mechanisms in the process of the initial stock offering. Elder and Zhou (2001) concluded the existence of auditing committee and its size reduces management mechanisms. Fairuzana and Rashidah (2006) investigated the effect of auditing institution's extent (5 large firms) and the existence of an active auditing committee on accruals. The results showed that the size of audit institution does not reduce the discretionary accruals. However, the existence of an active auditing committee in the firm reduced their amount. Francis (1999) concluded in his study that the corporations that have more tendencies to create accruals are more likely to use services of the six large auditing institutions in order to credit their income.

Azibi and Rajhi (2008) concluded that auditing the five large enterprises does not affect accruals. The results of the study by Thoopsamut and Jaikengkit (2008) indicate that the existence of an audit committee, the number of its meetings, and the size of the audit institutions does not affect management mechanisms. Chen (2005) concluded in his studies that continuous auditing increases the use of accruals and management mechanisms.

Smith et al. (2008) investigated the relationship between quality of internal auditing and management mechanisms. In order to test their hypotheses, they investigated 528 corporations in the period between 2000-2005. The results gained from their study indicated that high quality of internal auditing leads to reduction of management mechanisms.

Kordlar and Seyedi (2008) examined 71 accepted campanines in the Tehran Stock Exchange and study the effect of audit institution's type (Audit Organization and other institutions) and audit comment in the auditing report on the abnormal accruals and concluded that the only type of audit institution is related to discretionary accruals.

3. Research Hypothesis

Based on the theoretical literature and the conducted studies, research hypotheses were developed as follows. The present study has one main hypothesis.

Main hypothesis: "There is a significant relationship between audit quality and management mechanisms".

4. Methodology

This study has applied objectives and it is considered a descriptive-regression research as it investigates the relationship between independent and dependent variable using regression method.

4.1. Population and Statistical Sample

This study has a four-year period between 2008 and 2011. The statistical population includes all the companies have accepted on the Tehran Stock Exchange. The reason for the selection of those companies is that the financial information belongs to them is more accessible. In addition, according to the existence of the rules and standards of the Tehran Stock Exchange, the information related to financial reports in these companies is more homogeneous.

In order to select the sample, this study uses all the available data. First, all the corporations that could take part in the sampling were selected. Then, among all the available companies, those that did not meet the following criteria were removed and the rest were chosen for this test.

1. Fiscal year of the company under study that ends to the end of March.
2. The company did not change the fiscal year in the period under study.
3. The company was actively present in the Stock Exchange in the period under study.
4. The related data is accessible in order to extract the data.
5. The company is not an investment company or financial mediator.

After application of those criteria, 80 companies were selected to test the research's hypotheses.

Table 1. Number of Corporations under Study

Name of Industry	Number of Corporations
stcudorP lateM	4
stcudorP dooF	14
Non- metallic Mineral Products	18
lacimehC	18
Production	18
slateM cisaB	6
srehtO	2
latoT	80

4.2. Data Collection and Analysis

In order to gather data, this study first uses a library method. In the library study, the theoretical foundations of the study were collected from English books and journals and then the related data was collected from the selected corporations by referring to their financial statements, description notes, and through the use of Denasahm and Tadbirpardaz software (Iranian software's) and also CDs of financial terms in stock exchange corporations. In order to analyze the data and to test the hypotheses, cross-sectional method for each year and then cross-sectional regression with panel data and Eviews7 software were used.

4.3 Variables and Research Model

Management mechanisms: discretionary accruals have been used in different studies as the index of management mechanisms. This study thus uses the discretionary accruals well. In order to measure management mechanisms, three models have been utilized and then modified R^2, was selected as the best one. In order to assess management mechanisms, we first need to obtain the sum of accruals. Accruals are gained through the difference between operating - cash flow and net income.

$$ACC= EARN- CFO \quad \text{Formula (1)}$$

The model used to assess discretionary accruals (index of management mechanisms) includes the following:

Jones Model (1991):

$$ACC_{it}=\alpha_0+\alpha_1 \Delta REV_{it}+\alpha_2 PPE_{it}+ \varepsilon \quad \text{Formula (2)}$$

Here, ACC is the total of accruals; Δ REV is the changes in earnings between current year and previous year; PPE is the properties, machinery and equipment. All variables are divided into the total assets of the beginning period.

The Model by Dichew et al. (1995):

$$ACC_{it}=\alpha_0+\alpha_1[\Delta REV_{it}- \Delta REC_{it}]+\alpha_2 PPE_{it}+ \varepsilon \quad \text{Formula (3)}$$

ΔREC is the changes in the receivable accounts between current and previous year.

Kaznik Model (1999):

$$ACC_{it}=\alpha_0+\alpha_1[\Delta REV_{it}- \Delta REC_{it}] + \alpha_2 PPE_{it}+\alpha 3 \Delta CFO_{it+} \varepsilon \quad \text{Formula (4)}$$

ΔCFO is the changes in operating cash flows.

In order to investigate the effect of audit quality on management mechanisms, the following model has been used (Piot and Janin, 2005).

Formula (5)

$$\text{Abnormal Accruals}= \beta_0+\beta_1 AUD+\beta_2 LnAssets+\beta_3 DA+\beta_4 ROA+ \beta_5 Current+ \varepsilon$$

Abnormal accruals absolute value of discretionary accruals and management mechanisms indicator.

Discretionary accruals have been calculated using Kasznic model.

AUD is auditing quality. This variable has been defined as a dummy variable, i.e. if an independent auditor belongs to an auditing organization, it equals to 1; otherwise it is 0.

LNASSET is logarithm of the total assets.

ROA: Rate of assets output, which is obtained by dividing net income by total assets.

DA: Total Debts to Total Assets Ratio.

Current: Current ratio and is equivalent to current assets divided by current debts.

In order to choose the best model to assess discretionary accruals, modified R^2 has been used. Therefore, after assessing each model, the model which has the highest R^2 will be chosen. The results gained in Table 2, indicate modified R^2 in Kasznic model is higher than the other models and it has just been used to assess the discretionary accruals.

Table 2. Choosing the Model of Management mechanisms

ircseDnoitp	Modified R^2
ledoM senoJ	. 044
ledoM .la te wehcsiD	. 11

5. Testing the Hypothesis

5.1. Descriptive Statistics

Some redundant data was removed firstly, in this part. First a column was drawn in excel for each variable and then the data that was significantly different from others was identified and removed.

Descriptive statistics includes median, mean, standard deviation, maximum, and minimum of all research variables. Table 3 Demonstrates this descriptive statistics. The results indicate that only a quarter of the firms use the services provided by independent auditors with high quality. In order to obtain the discretionary accruals, all model's variables have been divided by the sum of assets. Therefore, it could be said that discretionary accruals form about 9% of the total assets. The average liabilities indicate that most corporations have a lot of liabilities in their capital structure, in a way that liabilities form 67% of total assets on average.

Current correlation on average is higher than 1 for all companies. Among the variables, the highest standard deviation belongs to the ratio of current and lowest amount for voluntary accruals.

Table 3. Descriptive Statistics for Research Variables

Description	Mean	Median	giHtseh	tsewoL	Standard deviation
DA	0.675	0.675	1.767	0.23	0.195
LNASSET	5.639	5.607	6.899	058.4	0.335
ROA	0.121	0.109	0.575	-0.166	0.115
Abnormal accrual	0.085	0.069	0.484	0	0.075
AUD	0.27	0	1	0	0.446
CURRENT	1.167	1.145	3.743	0.093	0.477

5.2 Significance Test of Regression Line Equation (Test F)

In multivariate line regression equation, if there is no relationship between dependent and independent variables, all coefficients of independent variables in the equation is equal 0. With multivariate regression model, the decision-making rule is defined as follows:

H_0: $B_1=B_2=B_3= \ldots B_k=0$
$H_1=B_i\neq 0$ $i=1.2,\ldots,m$
(at least one of them is not 0)

If at 95% confidence level, F statistics calculated by the regression equation is higher than F obtained in the Table, H_0 hypothesis is rejected, otherwise H_0 will be accepted.

5.3. Durbin-Watson Test

Durbin-Watson is used to test the serial correlation in error sentences, Durbin-Watson test, which is based on the first autocorrelated error model. This model could be stated as:

$t = P\varepsilon_{t-1} + V_t\varepsilon$

In above equation, P is the autocorrelation parameter with the value of $1\leq P \leq+1$ and V_t is the independent variable with assumption of $V_t \approx N(0, \sigma^2)$. In this model, when P is positive, autocorrelation is positive and when P is negative, autocorrelation is negative as well. When P=0, there is no autocorrelation. In order to do Durbin-Watson Test, the following hypothesis has been used:

H_0: $p = 0$
H_1: $p \neq 0$

When p=0, it means there is not a serial correlation and the alternative assumption $P \neq 0$, thus there is a serial correlation.

In the first step, different regression models for each of test time periods have been estimated separately. In the second step, the regression coefficients are assessed with panel data in the four years.

5.4. Correlation coefficient between variables

Table 4 Indicates that there is a negative correlation between audit quality and discretionary accruals. In addition, there is a positive relationship between current ratio and the discretionary accruals. There is a negative correlation between current ratio and rate of return on assets and liabilities. The more the liabilities, the more would the cost of interest and this will lead to reduction of net income. Therefore, it was expected that there will be a negative correlation between rate of return on assets and the liabilities. There is a positive correlation between rate of return on assets and discretionary accruals. Some scholars as Krishnan et al. (2003) demonstrated in their studies that management mechanisms an increase informing the incomes and thus it is expected that there is a positive relationship between abnormal accruals and rate of return on assets.

Table 4. Correlation coefficient between variables

DESCRIPTION	AA	AUD	LNASSET	DA	CURRENT	ROA
AA	1					
AUD	-0.041	1				
LNASSET	-0.034	*0.291	1			
DA	-0.006	-0.074	**0.1182	1		
CURRENT	*0.204	-0.011	*-0.266	*-0.594	1	
ROA	*0.257	**-0.127	**0.127	*-0.486	*0.464	1

*significance at 1% error level
** Significance at 5% error level

6. Results of Testing Hypothesis

6.1. Results of testing hypothesis in the cross-section for 2008

The study's hypothesis investigated whether there is a significant relationship between independent audit quality and management mechanisms or not. The results obtained from testing this hypothesis in 2008 presented at Table 5. F-statistics and significance's level are indicative of the meaningful model for testing the hypotheses. The results obtained from Durbin-Watson test indicate lack of self-correlation between observations. There is a negative insignificant correlation between audit quality and discretionary accruals. There is a positive significant relationship between liabilities ratio and discretionary accruals. There is a positive significant relationship between liabilities ratio and discretionary accruals as the management mechanisms. There is also a positive significant correlation between rate of return on assets and discretionary accruals. Some scholars such as Krishnan et al. (2003), and Longe et al. (2000) have demonstrated in their studies that management mechanisms increases the predictability of income and thus a positive correlation is expected between discretionary accruals and rate of return on assets.

Table 5. Testing the hypothesis for 2008

Description	Coefficient	ecnacifingis
C	0.102	0.473
AUD	-0.016	0.481
LNASSET	-0.037	**0.041
DA	0.229	*0.001
ROA	0.18	***0.077
CURRENT	0.005	0.87
Adjusted R-squared	0.122	
F-statistics	3.186	
Probe(F-statistic)	0.011	
D.W	1.805	

*Significance at 1% error level
** Significance at 5% error level
***Significance at 10% error level

6.2. Results of testing the hypothesis in the cross-section for 2009

The result of the test for 2009 has been presented in Table 6. F-statistics and the level of significance showed there is a meaningful model for testing the hypotheses. The results obtained from Durbin-Watson test indicate lack of self-correlation between observations. There is a negative insignificant correlation between audit quality and discretionary accruals (representative of management mechanisms). There is a positive correlation between liabilities ratio and discretionary accruals. In addition, there is a positive significant correlation between rate of return on assets and management mechanisms.

Table 6. Testing the hypothesis for 2009

Description	tneiciffeoc	ecnacifingis
C	0.378	*0.001
AUD	-0.019	0.513
LNASSET	-0.045	**0.061
DA	-0.031	0.675
ROA	0.337	*0.001
CURRENT	-0.032	0.28
Adjusted R-squared	0.122	
F-statistics	3.195	
Prob (F-statistic)	0.011	
D.W	1.91	

* Significance at 1% error level
** Significance at 10% error level

6.3 Results of testing the hypothesis in the cross-section for 2010

The result of the test for 2010 has been presented in Table 7. F-statistics and the level of significance indicate that the model for testing the hypotheses is meaningful. The results obtained from Durbin-Watson test indicate lack of self-correlation between observations. There is a negative insignificant correlation between audit quality and discretionary accruals (agency of management mechanisms). There is a positive correlation between liabilities ratio and discretionary accruals. In addition, there is a positive significant correlation between rate of return on assets and management mechanisms.

Table 7. Testing the hypothesis in 2010

noitpircsed	tneiciffeoc	ecnacifingis
C	-0.05	0.691
AUD	-0.017	0.391
LNASSET	-0.003	0.87
DA	0.105	***0.054
ROA	0.224	**0.018
CURRENT	-0.025	0.31
Adjusted R-squared	0.057	
F-statistics	1.96	
Probe(F-statistic)	0.003	
D.W	1.83	

**significance at 5% error level
*** Significance at 10% error level

6.4 Results of testing the hypothesis in the cross-section for 2011

The result of the test for 2010 has been presented in Table 8. F-statistics and the level of significance are indicative of the meaningful model for testing the hypotheses. The results obtained from Durbin-Watson test indicate lack of self-correlation between observations. There is a negative significant correlation between audit quality and discretionary accruals (representative of management mechanisms). The results obtained for this year indicate that quality of independent auditing can limit the management mechanisms activities and thus limit them. There is a positive correlation between liabilities ratio and discretionary accruals. In addition, there is a positive significant correlation between rate of return on assets and management mechanisms. There is a positive significant correlation between current ratio and management mechanisms. Moreover, there is a positive meaningful relationship between the size of the corporation and management mechanisms. Theoretical literature of accounting has also indicated that the bigger the size of the firm, the greater the tendency of managers in using the management mechanisms activities for smoothing.

Table 8. Testing the hypothesis in 2011

noitpircsed	tneiciffeoc	ecnacifingis
C	-0.307	*0.019
AUD	-0.032	***0.097
LNASSET	0.142	**0.029
DA	0.105	*0.005
ROA	0.226	**0.013
CURRENT	0.04	**0.029
Adjusted R-squared	0.112	
F-statistics	2.99	
Probe(F-statistic)	0.016	
D.W	2.33	

* Significance at 1% error level
**significance at 5% error level
*** Significance at 10% error level

6-5. Result of testing the hypothesis at the level of panel data

The result of the test at the level of panel data has been presented in Table 9. F-statistic and the level of significance are indicative of the meaningful model for testing the hypotheses. The results obtained from Durbin-Watson test indicate lack of self-correlation between observations. There is a negative significant correlation between audit quality and abnormal accruals (representative of management mechanisms). The results obtained at the level of panel data indicate that quality of independent auditing can limit the management mechanisms activities and thus constrain them. There is a positive correlation between liabilities ratio and discretionary accruals. In other words, the company with high liabilities, managers will have more tendencies to use discretionary accruals for increasing the income. In addition, there is a positive significant correlation between return of assets and management mechanisms. There is a positive significant correlation between current and management mechanisms. The results obtained in this study are consistent with those obtained by Smith et al. (2008).

Table 9. Testing hypothesis at the level of panel data

noitpircsed	tneiciffeoc	ecnacifingis
C	-0.101	***0.068
AUD	.-0.018	***0.054
LNASSET	0.01	0.22
DA	0.103	*0.001
ROA	0.203	*0.000
CURRENT	0.037	*0.000
Adjusted R-squared	0.115	
F-statistics	9.32	
Probe(F-statistic)	0.000	
D.W	1.73	

* significance at 1% error level
*** significance at 10% error level

7. Discussion and Conclusion

This study investigated the correlation between audit quality and management mechanisms. In order to estimate management mechanisms, three models were used, and then using the modified R^2, the best model for assessing the discretionary accruals was selected. The time period of the study was 4 years, between 2008 and 2011. Audit quality is a double-valued variable, in which the Auditing Organization has the value of 1 and other auditing institutions have the value of 0. The study's hypothesis was tested using the panel data and through cross-sectional regression method for each year. The result of the study in the cross-section of each year was significant at the error level of 10% in 2009. The result obtained at the level of panel data using the cross-sectional regression method is indicates the meaningful correlation between audit quality and management mechanisms.

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