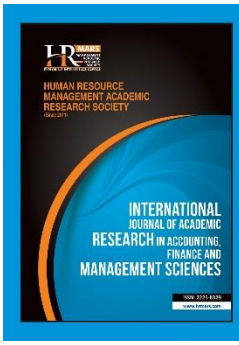

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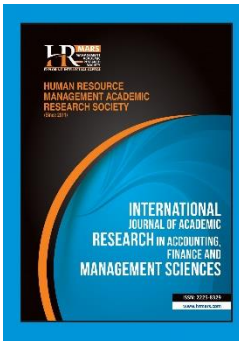
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An Investigation of Relationship between Audit Quality and Investment Opportunities in Tehran Stock Exchange (TSE)

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Abstract
Numerous studies have been done to obtain a written pattern in order to determine auditing quality since 1981 following documentation of auditing quality according to company size by Linda De Angelo. Multiple factors such as auditing company size, tenure period of auditor and report type were applied in various investigations to determine quality. Recently, the tendency to evaluate factors affecting auditing quality has been increased among researchers due to the change of demands of auditor services. Pattern of internal studies have indicated that a company's size (organization as big and society as small) and tenure period of an auditor are the main factors in studies. Divergent findings have been obtained. In this paper a company's size is considered as auditing quality scale. We examined the two proposed hypothesis using statistical logistic regression and multivariate regression. Tests were conducted using real data related to 155 companies chosen from those companies accepted in Tehran stock exchange during (2004-2009), in these tests the known software SPSS and LISREL were used. Findings have shown that companies with high-investment opportunities have greater discretionary accrual and companies with high-quality accounting have fewer opportunities for investment. It is obvious that companies with higher discretionary accrual and are subjected to profit manipulation have more investment opportunities. Companies that choose organization as independent auditor (this selection as independent auditor is parallel with having higher auditing quality) have less opportunity for investment and as a result have lower profit manipulation. In general, it is obvious that companies with less investment opportunity and less discretionary accrual and lower profit manipulation choose organization as independent auditor. These findings show that although managers of companies with higher investment opportunities are expected to manipulate discretionary accrual and have better auditing quality and organization is chosen as an independent auditor but the mentioned possibility is reduced.

Keywords: Auditing Quality, Auditor Size, Accrual Items, Investment Opportunities

Introduction

The most important studies conducted on auditing trend are evaluating the effects of auditing organization size on auditing quality. Most of the mentioned researches support positive relation between auditing organization size and auditing quality (DeAngelo, 1981) believes that bigger auditing organizations have more powerful motifs to offer high-quality auditing because they are eager to gain better marketing reputation. With regard to this fact that the number of customers is high, these organizations are not worried about losing customers. It is believed that such organizations offer higher-quality auditing due to better access to resources and equipment for educating their own auditors and conducting various auditing services (Davidson and Neu, 1993), have indicated that bigger auditing organizations have bigger customers therefore, market expectation of auditors for exploring distortion in financial statement increases. Additionally, experimental evidences have shown that bigger auditing organizations have higher quality auditing because they have better resources and equipment for educating auditors in compared to small organizations (Clive Leenox, 1999) showed that bigger auditing organizations have greater motifs to issue truly reports compared to small auditing organizations. His investigation indicated that higher financial profits in measures being audited increase the importance of auditors' independence.

There are 5 big auditors in USA who are the main executors of auditing services in USA and Canada and the other countries. These auditors offer high-quality auditing. We replace the 5 big auditors to auditing organization in Iran to balance the results of the research. In the most previous researches high quality of the organization was documented (Jalily and Abasabadi, 2010)

This paper suggests two reasons to show the importance of this association.

At first, firms with high investment opportunities have higher control and audit risk (Tsui *et al*., 2001). Hence, they are more likely to demand higher quality audit than firms with low investment opportunities (proxied by Big 5 (now Big 4) auditors). Second, if firms with high investment opportunities present a higher independence threat to auditors because they have a higher audit risk, then Big5 auditors in USA or audit organization in Iran are more likely to provide a higher quality audit, measured in this paper as a lower level of discretionary accruals, for firms with high investment opportunities than for firms with low investment opportunities.

Profit management as informed by managerial proceedings to eliminate profit fluctuations are measured in various studies using different ways. (Defond and Jiambalvo, 1993); (Subramanyam, 1996); (Bartov, Ferdinand and Judy, 2000); and (Dechow, Sloan and Sweeny, 1995) applied accrual items to measure profit management in their studies, because this group of researchers believed that the mentioned items are subjected to managerial manipulation and these items are considered as reliable part of profit management.

(Ebrahimikordlor *et al*., 2008) stated that profit is composed of two parts: accrual and cash. Accrual also is composed of two parts: discretionary accruals and non-discretionary accruals. Discretionary accruals are more subjected to managerial manipulation. So far six models of discretionary accruals items have been represented by researchers among which Jones adjusted model is more acceptable.

Importance of Research

At first the applications of each research are theoretical aspect and the development of under-study field which provide required area to develop theories of the mentioned field and to lead to more efficient and compatible systems.

According to Myers (1977), the value of a firm consists of assets-in-place and investment opportunities. A higher proportion of firm value that is represented by investment opportunities (assets-in place) means higher (lower) investment opportunities in the firm. Many studies (e.g., Gaver and Gaver, 1993; Skinner, 1993; Gul and Tsui, 1998) use the market value of the firm to capture total firm's value which comprises both investment opportunities and assets-in-place. Thus, investment opportunities have an important role in determining the value of the company. Also, investors consider the company's audited financial statement to invest on their stocks. So, if companies have high audit quality, they will have more ability to absorb investments, and investors can invest with more confidence in these companies. Therefore, in this paper investigate relationship between audit quality and investment opportunities that are factors consider by investors.

Purposes

The general purpose of this paper is to evaluate relation between auditing quality and investment opportunities. To satisfy this aim two questions are presented and their answers are searched during the evaluation.

Questions are:

To what extent do companies with higher investment opportunities focus on high-quality auditing in compare to companies with lower investment opportunities?

What is the effect of higher-quality auditing on determination of discretionary accrual items in companies with higher investment opportunities?

Description

The investigation in this paper is important in two aspects. First, investment opportunities continue to be an important area in finance research (see, e.g. McConnell and Servaes, 1995; Harveyet al., 2004). However, the solution to the monitoring problem that arises from investment opportunities has only been discussed by reference to non-accounting means in the finance literature. Some of these means are not readily available (e.g., debt) while others may be costly (e.g. takeover). In this paper, the researcher explores whether auditing, which is readily available and less costly than some measures, say, takeover, could provide some means of monitoring for firms with high investment opportunities.

Second, building on prior auditing studies that show that Big 5 auditors constrain the provision of discretionary accruals of their clients, the researcher examines whether audit organization in Iran with high investment opportunities constrain the provision of discretionary accruals more for firms with high investment opportunities than for firms with low investment opportunities.

Hypothesis

Hypotheses of this paper are outlined according to research questions as follow:

H1: companies which choose organization as independent auditor have higher investment opportunity compared with companies which select private organizations as independent auditors.

$$AUUDITQ = b_0 + b_1 CYCLE + b_2 AUDITQ + b_3 SIZESALE + b_4 LDEBTAT + b_5 PISSUE + b_6 PLOSS + b_7 LARGENI + b_8 FACTOR \quad (1)$$

Where:

CYCLE = length of operating cycle (months in inventory and accounts receivable);

CAPINT = ratio of gross property, plant and equipment to sales;

SIZESAL = natural logarithm of sales;

LDEBTAT= ratio of book value of long-term debt to total assets;

ISSUE = 1 if change in equity of the firm in year t _ 1 > 10%, or 0 otherwise;

PLOSS = 1 if net income in year t _ 1 < 0, or 0 otherwise;

LARGENI = 1 if absolute change in net income > 10%, or 0 otherwise.

H2: companies with higher investment opportunity have identical discretionary accrual items neglecting employing auditing organization as independent auditor

$$ABSDA = c_0 + c_1 FACTOR + c_2 AUDITQ + c_3 FACTOR \times AUDITQ + c_4 LEVERAGE + c_5 MHOLD + c_6 SIZE + c_7 CFLOW + c_8 ROA \quad (2)$$

ABSDA= absolute value of discretionary accruals7 estimated by the cross-sectional versions of the Jones' (1991) model and the modified Jones' (1991) model by(Dechow *et al*., 1995);

FACTOR = As defined in Eq. (1);

AUIDITQ = As defined in Eq. (1);

LEVERAGE= ratio of book value of long-term debt to book value of equity in percentage;

SIZE= natural logarithm of total assets;

MHOLD= the percentage of the number of ordinary shares held by insiders over the number of outstanding ordinary shares of the firm;

CFLOW= ratio of cash flow from operation to total assets;

ROA= ratio of net income before extraordinary items and discontinued operation to total assets.

Methodology of Research

The way of measuring variables

The way of measuring some variables of study includes auditing quality, investment opportunities and fixed value of discretionary accruals.

The way of measuring independent variable "investment opportunity"

The factor is representative of investment opportunities which is obtained from factor analysis on three measures of investment opportunities. To analyze factors, the LISREL software is applied.

Factor analysis is firstly run on three measures of investment opportunities and then the factor obtained is used for testing hypotheses. Factor analysis is a data reduction technique that simplifies complex and diverse relationships that exist among a set of variables by generating new variables, the factors, which extract the main sources of variation among the original variables (Dillon and Goldstein, 1984).

In this way, parsimony is achieved without sacrificing much of the information in the original variables. In addition, it lessens the problem of multicollinearity among the original variables because the factors are uncorrelated with each other (Stevens, 1996).

Many studies use factor analysis to derive a composite measure of investment opportunities from various variables (Gaver and Gaver, 1993; Baber *et al*., 1996; Gul and Tsui, 1998). The measures of investment opportunities that were used in factor analysis in this study follow Gul and Tsui (1998) and are (1) market-to-book asset (FIRMASS), (2) market-to-book equity (MKTBKEQ) and (3) gross property, plant and equipment ratio (PPEGT). These three are by no means the only available variables but they are more frequently used in prior researches and impose less restriction on data. FIRMASS is the ratio of the sum of market value of equity and book value of long-term debt to the total assets of the firm. This measure is used by (Lang and Litzenberger, 1989). MKTBKEQ is the ratio of market value of equity to book value of equity. This measure is used in studies by Gaver and Gaver (1993) and Gul and Tsui (1998).

PPEGT is the ratio of gross property, plant and equipment to the sum of market value of equity and long-term debt of the firm. This measure is used by Skinner (1993) and Gul and Tsui (1998).

The way of measuring dependent variable "auditing quality"

If auditor of company is a member of auditing organization it equals to one and otherwise it is zero.

We replace 5 big organizations to auditing organization to adjust results in Iran. In most previous studies high-quality affairs of organization were also documented. (Jalily and Abasabadi, 2010).

The way of measuring dependent variable "discretionary accruals"

Jons adjusted model is used to compute discretionary accrual items. In the mentioned model Jon firstly computed total accrual items:

TA: total accrual items of company i in year t

- $\Delta CA_{t,i}$: current assets changes of company i from year t-1 to year t
- $\Delta CL_{t,i}$: current debt changes of company i from year t-1 to year t
- $\Delta CASH_{t,i}$: cash changes of company i from year t-1 to year t
- $\Delta STD_{t,i}$: debt changes of company i from year t-1 to year t

$DEP_{t,i}$: depreciation cost of company i in year t

After computing total accrual items, parameters α_1, α_2 and α_3 are estimated in order to determine non-discretionary accrual items using below formula:

Where:

$TA_{t,i}$: total accrual items of company i in year t

- $\Delta REV_{t,i}$: changes of sale income of company i from year t-1 to year t

$PPE_{t,i}$: gross property, plants and equipment of company i in year t

$A_{i,t-1}$: total book asset of company i in year t-1

ε_{it}: unknown effects of random factors

α_1, α_2 and α_3 : estimated parameters of company

After computing α_1, α_2 and α_3 least-square according to below formula, total accrual items are calculated as below:

Where:

$NDA_{t,i}$: non-discretionary accrual items of company i in year t

Δ $REV_{t,i}$: changes of sale income of company i from year t-1 to year t

Δ REC: changes of receivable accounts of company i from year t-1 to year t

$PPE_{t,i}$: gross property, plants and equipment of company i in year t

$A_{i,t-1}$: total book asset of company i in year t-1

And finally discretionary items (IT) are determined after calculating NDA as below:

Statistical Population

In the current study, the sampling method is systematic elimination. In this way, at first conditions of sampling are presented and inappropriate cases are eliminated. These conditions are determined with regard to hypothesis and variable test model. Reasons to use the mentioned method and introduce such conditions are to accommodate statistical population with whole population and to generalize results obtained from test in statistical population.

Under-study statistical sample must be selected in such a way that presents a desirable representative of statistical population and matches with main variables. Statistical population of this paper is selected according to below criteria:

1) It must not be among investors or banks;
2) The end of financial year of it must be March;
3) Transactional symbol of company has to be active and their stock must be marketed at least once a year;
4) Financial information of the company must be available during study.

Determining the most suitable number of sample depends on cost and benefit. It is better to choose the biggest sample with regard to the equipment. The bigger sample leads to the better and more significant results statistically. Sample has to be determined at such a level that required tests are able to be conducted with regard to research question.

The table 1 gives the sampling method, extracting suitable statistical sample with regard to sampling methods, consideration and conditions, data and information about Tehran stock exchange.

Table 1. The sampling method, extracting suitable statistical sample

Number of the firms in stock exchange during 2004-2009	**422 firms**
Number of the firms except banks and Investment firms	**243 firms**
Number of the firms The end of financial year of it must be March	**179 firms**
Number of the firms their stock must be marketed at least once a year	**161 firms**
Number of the firms with available data during study work	**155 firms**
Final sample	**155 firms**

In conclusion, conditions and consideration are executed in systematic elimination sampling of 155 companies belong to statistical population in order to conduct hypothesis test. Study period was 6continuous years. Therefore, final numbers of observations of selective samples for hypothesis were 6 years and 930 observations, respectively.

Statistical Hypothesis Test

Statistical hypothesis test is aimed at determining this subject that whether it is confirming considering information obtained from conjectural sample about a feature of population.

Because this claim may be true or false, therefore two complementary hypotheses are formed:

H0: this claim is false

H1: this claim is true

Selecting one of the mentioned decisions is called statistical hypothesis test. Suitable method for this test includes logic phases. The most significant phase of statistical hypothesis test is to convert research hypothesis to statistical hypothesis.

This study is aimed at evaluating relation between auditing quality and investment opportunity of those companies accepted in Tehran stock exchange. Therefore, it is possible to present statistical hypotheses of the study in the form of statistical hypotheses.

First Hypothesis

H0: companies which choose organization as independent auditor do not have more investment opportunity

H1: companies which choose organization as independent auditor have more investment opportunity

Second Hypothesis

H0: companies with more investment opportunities do not have same discretionary accrual items compared with companies with less investment opportunities

H1: companies with more investment opportunities have same discretionary accrual items compared with companies with less investment opportunities

After defining statistical hypotheses, the next phase is to determine a degree for significant differences (α). Method is to reject H0 in favor of H1 with regard to the condition that a value must be obtained from statistical test in such a way that its occurrence possibility considering H0 is equal or less than a miniature possibility which is presented with α. This miniature occurrence possibility is called the significant level. Common values for α are between 0.01 and 0.05. Significant level which is selected to determine α by auditor is referred to importance or applicability level of results. In financial and accounting studies this value is considered 0.05. (Azar, and Momeni, 2003)

Results and Discussion

At first results from factor analysis are investigated using LISREL for the years 2004 to 2009. As the table2, shows Eigen value of the variable FIRMASS is more than Eigen value of the variable MKTBKEQ and Eigen value of PPEGT in a 6-year period from 2004 to 2009, therefore it is selected as the variable FACTOR and representative of investment opportunities for all studied years. Additionally it is applied to test hypothesis.

Descriptive Statistics of Research Data

Descriptive factor analysis of research is given in table3. One of the main research variables is discretionary accrual which minimum and maximum values are -0.86 and 4.81 respectively. Its mean is 0.364. Another main variable is investment opportunities which minimum, maximum and mean are 0.08, 8.36 and 0.984 respectively.

Table 2. Analysis of the factors to determine variables of investment opportunities

PPEGT	**MKTBKEQ**	**FIRMASS**	
0.47	0.32	1.06	Eigen value in 2004
0.10	0.27	1.63	Eigen value in 2005
0.14	0.35	1.17	Eigen value in 2006
0.12	0.34	1.52	Eigen value in 2007
0.08	0.18	1.19	Eigen value in 2008
0.11	0.28	1.84	Eigen value in 2009

Market-to-book asset: FIRMASS
MKTBKEQ: market-to-book equity
PPEGT: gross property, plant and equipment ratio

Table 3. Descriptive research variables

Variance	Standard deviation	Average	Maximum	Minimum	Observations	Variable
0.009	0.097	0.0874	0.68	0	924	LDEBTAT
2.248	1.499	0.572	25.83	0	924	CAPINT
1.663	1.290	12.671	17.61	9.16	924	SIZESALE
169713.92	411.963	182.21	9286	0	924	CYCLE
0.777	0.881	0.984	8.36	0.08	924	FACTOR
0.153	0.391	0.364	4.81	86-	924	ABSAD
2983.766	54.624	32.606	650.86	-180.62	924	LEVRAGE
1.763	1.328	13.034	17.64	9.78	924	SIZE
368.581	19.168	27.227	100	3	924	MHOLD
0.019	0.138	0.133	0.81	-0.34	924	CFLOW
0.019	0.137	0.140	-2.22	-0.25	924	ROA

Investigating frequency distribution of dependent variable "auditing quality"

Dependent variable in the first equation is auditing quality. The way of the estimation and calculation of the mentioned variable is explained. Table 4, shows that 680 observations are audited during study by private companies and therefore they score zero. Also, 244 observations have the value 1 which indicates that 26.4 percent of observations are audited by auditing organization.

Table 4. Variable distribution frequency AUDITQ

Classification measure	Number of observations	percent of observations
0	680	73.6
1	244	26.4
Sum	924	100

Analysis of Research Hypothesis

With regard to this fact that dependent variable "auditing quality" of current research includes only the values zero and one, to test the hypothesis firstly logistic regression is used.

To examine total significant level, the model and coefficients of independent variables of chi-square test are used. Investigating clearness degree of independent variables is conducted using Naglekerke R square. To study the accordance between observed and expected cases, the Hosmer test is applied.

In this paper, to estimate significant level of independent variables and type and intensity of the relation between these variables with dependent ones, Wald test is exploited.

Results of the First Hypothesis Test

In the first hypothesis, it is predicted that companies which select organization as independent auditor have.

AUDITQ	FACTOR	CYCLE	SIZESALE	CAPINT	LDEBTAT	LARGENI	PLOSS	PISSUE		
1	0.139	0.196	0.234	0.161	0.012	-0.033	0.176	0.121	Pearson coefficient	AUDITQ
	0.000	0.000	0.000	0.000	0.713	0.316	0.000	0.000	significant level (Sig)	

Higher investment opportunity compared with companies which choose private companies as independent auditors. To evaluate relation between dependent variable AUDITQ and any other independent variables, Pearson correlation test is used.

Hypotheses of this test are:

H0: there is no relation

H1: there is a relation

As table 5 shows significant level (Sig) of all independent variables except LARGENI and LDEBTAT with dependent variable AUDITQ is lower than test error level ($\alpha = 0.05$). In conclusion H0 is rejected and therefore there is a relation. About variables LARGENI and LDEBTAT with regard to the fact that significant levels are 0.316 and 0.713 (they are more than 0.05) H0 is not rejected indicating that there is no relation. Also, from Pearson correlation coefficient it is obvious that there is a positive relation between auditing quality and all other variable but relation between auditing quality and absolute value (modulus) of proceeds change is negative.

Chi-square is a measure to determine significance level of independent variable coefficients in processed model. It is used to estimate significance level of relation between variables. This statistic shows suitableness of logistic regression and linearity of relation between variables. Hypotheses of chi-square are:

Table 5. Pearson correlation test to evaluate relation between dependent variable AUDITQ and any other independent variables

H0: this model is not significant

H1: this model is significant

Table 6. Results obtained from statistical analysis for regressive pattern of the first hypothesis test

Number of independent variables	Naglekerke coefficient R^2(	Chi-square statistics	significant level of Chi-square	Chi-square **(**Hosmer test)	significant level of Chi-square **(**Hosmer test)
1	0.077	50.257	0.000	11.616	0.169
2	0.161	57.334	0.000	21.036	0.007
3	0.205	32.483	0.000	25.221	0.001
4	0.229	17.706	0.000	27.529	0.001
5	0.247	13.589	0.000	21.392	0.006
6	0.259	8.813	0.003	9.405	0.309

Results given in table 6, indicates that significance level of Chi-square in all states with up to 6 independent variables is lower than test error therefore H0 is rejected. These results show that processed model is significant according to 6 independent variables and therefore relation between these variables is linear. With regard to table 6, Naglekerke coefficient with 6 independent variables is more than the other stated ones and therefore the model having 6 independent variables is the most proper state to test the first hypothesis. As table 7 shows significant level of Chi-square of variables LARGENI and LDEBTAT in the model with 6 independent variables is higher than the test error level ($\alpha = 0.05$). In conclusion, variables are eliminated and the model having 6 independent variables becomes statistically significant.

Table 7. Significant level of Chi-square of variables LARGENI and LDEBTAT

Number of independent variables	significant level of Chi-square **LARGENI**	significant level of Chi-square **LDEBTAT**
6	0.509	0.596

Hosmer test is a test indicating the accordance between observed and expected cases. This test includes Chi-square statistics and significance level which are given in table 5 for the first model.

Statistical hypotheses of Hosmer test are as below:

H0: there is accordance between data

H1: there is no accordance between data

As table 6, shows Significance level of Chi-square of Hosmer test for the model having 6 independent variables is 0.309, and because this value is more than test error level ($\alpha = 0.05$). Therefore H0 is accepted and the accordance between observed and expected cases is confirmed.

In the table8, results obtained from statistical analysis for regressive pattern of the first hypothesis test are presented. Test whose results are given in the mentioned table are processed to

evaluate suitableness and credibility of regressive model. Model with 6 variables is used due to its higher determination coefficient.

Table 8, on the next page presents the results statistical analysis for independent variable coefficients of regressive pattern of the first hypothesis test. Estimation of the mentioned coefficients and their significance level is conducted using parent test. In this test type and intensity of relation between independent and dependent variables of model are determined. Proposed statistical hypotheses about coefficients of independent variables of the first hypothesis test are as below:

$$\begin{cases} H_0 : b_i = 0 \\ H_1 : b_i \neq 0 \end{cases}$$

H0: variable coefficient is not significant
H1: variable coefficient is significant

Table 8. The results of statistical analysis for independent variable coefficients of regressive pattern of the first hypothesis test.

Significance level of Wald statistic	Wald statistic	Coefficient	**variable**
0.000	89.838	-8.468	**Constant value**
0.003	8.644	0.517	PISSUE
0.000	13.060	1.560	PLOSS
0.000	12.433	0.459	CAPINT
0.000	49.655	0.461	SIZESALE
0.000	32.630	0.004	CYCLE
0.000	12.250	0.311	FACTOR

According to the results presented in the table8, it is obvious that H0 is rejected because significance level of Wald statistic is lower than test error level ($\alpha = 0.05$). For all variables therefore all b_i have values other than zero. As table shows it is concluded that there is a positive relation between these 6 variables and the variable related to auditing quality because values of all 6 mentioned variables are positive. With regard to table 5 coefficients of variable PLOSS is higher than the other independent variables indicating that there is a powerful relation between this independent variable and dependent variable "auditing quality".

Comparison of auditing quality of selected sample in research

To compare companies which choose organization as independent auditor and companies which select private companies as independent auditor T-test and Chi-square are used. T-test is used to compare the mentioned companies with regard to the independent variables which have numerical values. Chi-square is used to compare these companies with regard to the independent variables which only have values of zero and one.

Also, in T-test mean is the comparison measure but in Chi-square quantity is considered as the comparison scale.

Comparative T-test:

Hypotheses of the mentioned test are as below:

$$\begin{cases} H_0 : \mu_1 = \mu_2 \\ H_1 : \mu_1 \neq \mu_2 \end{cases}$$

H0: means of the both groups are identical

H1: means of the both groups are different

Table 9. Comparative T-test for independent variable FACTOR

Average deviation	Significant level of statistics'T Sig	Standard deviation	Average	Numbers	Audit quality	
-0.2946	0.000	0.71671	0.9290	680	Firms with organization auditor	FACTOR
		1.34046	1.2236	244	Firms with private companies auditor	

Results presented in the table9, have shown that significance level of T-test related to independent variable FACTOR is lower than test error level (α = 0.05). Therefore H0 is rejected. It means that in view of independent variable FACTOR, the mean of companies which select organization as independent auditor is not the same as the mean of companies which choose private companies as independent auditor.

Outcomes of the first hypothesis

As the table9 shows, in view of independent variable FACTOR the mean of companies which choose organization as independent auditor is not the same as the mean of companies which choose private companies as independent auditor. It is (-0.2946).

Because this difference is negative, companies which choose private companies as independent auditor have more investment opportunities and therefore the first hypothesis is rejected.

Outcomes of the second hypothesis

In the second hypothesis it is predicted that companies with higher investment opportunities have identical discretionary accruals neglecting employment of auditing organization as independent auditor.

Kolmogorov Smirnov test

At first, this test is used to determine normality of information. Table 10, shows this test. Statistical hypotheses of the mentioned test are as below:

H0: data are normal
H1: data are not normal

Table 10. Determine normality of information by the kolmogorov smirnov test

ABSDA	
924	Numbers
0.165	Significant level of statistics Kolmogorov Smirnov Sig

As table 10, shows the significance level is 0.165 which is more than test error therefore H0 is accepted and it is concluded that data are normal. To estimate relation between independent variable ABSDA and any other independent variables, Pearson correlation coefficient is used. Hypotheses of this test are as below:

H0: there is no relation
H1: there is a relation

As table 11, shows significance level of all variables except ROA with dependent variable ABSDA is lower than test error therefore H0 is rejected and it is concluded that there is no relation. About variable ROA H0 is not rejected because significance level is 0.535 which is more than 0.05 indicating that there is no relation. Also, from Pearson correlation coefficient it is obvious that there is a positive relation between discretionary accruals and all variables but relation between auditing quality and operational cash currents and relation between auditing quality and investment opportunity are negative.

Table 11. Pearson correlation test to evaluate relation between dependent variable ABSDA and any other independent variables

FACTOR*	FACTOR	ROA	CFLOW	MHOLD	SIZE	LEVERAGE	AUDITQ	ABSDA		
-0.174	0.205	0.020	-0.247	0.203	0.068	0.192	-0.260	1	Pearson coefficient	ABSDA
0.000	0.000	0.535	0.000	0.000	0.038	0.000	0.000		significant level (Sig)	

Significance test of regression equation (F-test):

In this phase, significance of regression equation is discussed. Variance analysis breakdowns data changeability into two groups: inter-group changeability and intra-group changeability. After that, intra-group variance is divided by inter-group variance in order to observe the value of F. Finally, to decide about rejecting H0, observed F is compared to critical F from table and if the observed F is more than critical F then it is concluded that the difference between coefficients is not haphazard. But with regard to the fact that in SPSS, significance level of correlation coefficient is determined using function Sig, therefore there is no need to do the mentioned test. It means that if the value of

Sig is lower or equal to significant level then H0 is rejected and correlation is confirmed, otherwise H1 is rejected.

Hypotheses of this test are as below:
H0: regression model is not significant
H1: regression model is significant

Table 12. Obtained from statistical analysis for regressive pattern of the second hypothesis test

Number of independent variables	Nagelkerke coefficient(R^2)	Fisher statistic	Significant level of Fisher statistic
1	0.077	66.892	0.000
2	0.161	62.194	0.000
3	0.205	87.776	0.000
4	0.229	73.294	0.000
5	0.247	64.268	0.000
6	0.259	55.416	0.003

With regard to table 12, results have shown that significance level of Fisher statistic in all conditions with up to 6 independent variables is lower than test error and therefore H0 is rejected. These results show that processed model with up to 6 independent variables is statistically significant and the relation between these variables is linear. As it is shown in table 13, significance level of T-test of ROA, AUDITQ and FACTOR in the model with 6 independent variables is more than test error and therefore these variables are eliminated and the mentioned model having 6 independent variables is statistically significant.

Table 13. significant level of statistics T, variables FACTOR*AUDITQ and ROA

Number of independent variables	Significant level of statistics T Sig **ROA**	Significant level of statistics T Sig **FACTOR*AUDITQ**
6	0.228	0.260

Table of coefficients:

After evaluating significance level of regression model, now this is investigated that the coefficient of variables is zero and opponent and then value of this coefficient is calculated using table 14. Proposed statistical hypotheses related to coefficient of independent variables of second hypothesis pattern are as below:

$$\begin{cases} H_0 : b_i = 0 \\ H_1 : b_i \neq 0 \end{cases}$$

H0: coefficient of variable s not significant
H1: coefficient of variable is significant

Table 14. The results of statistical analysis for independent variable coefficients of regressive pattern of the second hypothesis test.

Significant level of statistics T Sig	Statistics T	Coefficient	Variable
0.740	-0.332	-0.037	**Constant value**
0.000	-6.745	-0.173	**AUDITQ**
0.000	-10.904	-0.993	**CFLOW**
0.000	11.168	0.157	**FACTOR**
0.000	4.201	0.001	**LEVRAGE**
0.000	4.636	0.003	**MHOLD**
0.004	2.920	0.025	**SIZE**

According to the results given in table14, it is obvious that H0 is rejected for all variables except for fixed value of C_0 because significance level of T-statistic is lower than test error for all variables except for fixed value of C_0. Therefore, all C_i s, have values other than zero. As shown in the mentioned table, it is concluded that there is a positive correlation between these independent variables and dependent variable "discretionary accruals" because size of coefficient of four independent variables FACTOR indicating percent of internal stockholders and variable SIZE indicating company size is positive. With regard to this table, coefficient of variable AUDITQ which is representative of auditing quality and variable CFLOW indicating operational flows is negative and therefore relation between the two mentioned independent variables and dependent variable "discretionary accrual" is negative.

Outcomes of the second hypothesis

To conclude the second hypothesis T-test is used.

Comparative T-test

Statistical hypotheses of this test are as below:

$$\begin{cases} H_0 : \mu_1 = \mu_2 \\ H_1 : \mu_1 \neq \mu_2 \end{cases}$$

H0: means of both groups are identical

H1: means of the both groups are different

To conduct the mentioned test, a table of independent variable "investment opportunity" and dependent variable "discretionary accruals" is planned as below:

Table 15. Comparative T-test for independent variable "investment opportunity" and dependent variable "discretionary accruals"

Average deviation	Significant level of statistics T Sig	Standard deviation	Average	Numbers	Audit quality	
-0.1256	0.000	0.29819	0.3028	470	Firms with low investment opportunities	ABSDA
		0.45984	0.4283	454	Firms with high investment opportunities	

Results given in table15, indicate that significance level of T-statistic for discretionary accruals (ABSDA) is zero which is lower than test error level ($\alpha = 0.05$). And consequently H0 is rejected. In view of dependent variable (ABSDA), mean of companies with higher investment opportunities is not the same as mean of companies with lower investment opportunities. Due to this negative difference, companies with higher investment opportunities have higher discretionary accruals and therefore second hypothesis is rejected.

Auditing organization as independent auditor. Result of this investigation is in a good agreement with evidence obtained by Kam-Wah-Lai. He reported that companies with higher investment opportunity incline to have higher discretionary accrual although these relations are weaker when companies have 5 big auditors.

Conclusions

General conclusion of hypotheses proposed in this paper

With regard to mentioned discussion, two hypotheses were investigated and results of these hypotheses are given in table 16 briefly:

Results have shown that companies with higher investment opportunity have higher discretionary accrual and companies with higher-quality auditing have higher investment opportunities. It is concluded that companies which have higher discretionary accrual and are more subjected to profit manipulation are those companies with higher investment opportunities. Companies which select organization as independent auditor (the scale of having high-quality auditing) have lower investment opportunities and consequently profit manipulation is poor in such companies. Generally, it is concluded that companies with lower investment opportunities and poor discretionary accruals and less profit manipulation are among companies which select organization as independent auditor. These results show that although managers of companies with higher investment opportunities are expected to manipulate discretionary accruals but this possibility may be reduced by gaining high-quality auditing and choosing organization as independent auditor.

Table 16. Results of hypotheses briefly

Hypotheses	**Sign of** independent variable coefficient	Significant level of independent variable	**Result**
H0= Firms with organization auditor have higher investment opportunities.	+	0.000	incorrect
H0= Firms with high investment opportunities in comparison with Firms with low investment opportunities have same ABSDA.	+	0.000	incorrect

Recommendations according to results

With regard to experimental and theoretical results of hypotheses tests, some recommendations are presented in application and research fields.

In application field auditors of theoretical basics of financial statements and accounting standards should consider the results of this paper and similar internal researches and then determine the place of theoretical basics and qualitative features of auditing quality along with investment opportunities with regard to accounting approaches and conditions in asset market.

In addition to use figures given in financial statements, stockholders and analysts should consider auditing quality and investment opportunities of companies and selected scale for measuring them in order to make long-time and short-time investment decisions.

Some recommendations for future projects

To:

1) design, identify, and offer the best scales for measuring auditing quality and investment opportunities of companies accepted in Tehran stock exchange;

2) conduct current research according to industry categorization on companies accepted in Tehran stock exchange;

3) conduct current research using other measures to investigate auditing quality such as tenure period of auditor;

4) conduct current research using other models for measuring discretionary accrual items;

5) conduct current research using other measures for evaluating auditing quality such as auditor's payment;

6) investigate investment opportunities in various industries and factors affecting it.

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