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Structure of second page until the end of manuscript is as follow:

- *Introduction* Some paragraphs contain explaining the problem, literature review, object (purpose), importance and necessity of it.
- *Literature review* A review of the literature investigates only related researches chronologically and the results exploit at the end of the section theory matrix or conceptual model that document research variables and Formulate research hypotheses.
- *Methodology* including Methods, data collection tools, population, sample size and sampling methods, analysis and model testing hypothesis, definition of study variables and operational definition of them can be in presented the same section that model testing is represented and there is no need to repeat.
- *Results* including the findings compare it with the findings of previous and interpretation of compliance or inconsistency of findings with research findings and theories.
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Editor's Note

I am pleased to announce that the Ferdowsi University of Mashhad is publishing Iranian Journal of Accounting, Auditing & Finance (IJAAF). On behalf of the board of the IJAAF and my co-editors, I am glad to present the Volume 1, Issue 1 of the journal in December 2017; the journal will publish four issues in a year. The board includes experts in the fields of accounting, finance and auditing, all of whom have proven track records of achievement in their respective disciplines. Covering various fields of accounting, *IJAAF* publishes research papers, review papers and practitioner oriented articles that address significant issues as well as those that focus on Asia in particular. Coverage includes but is not limited to:

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Yours faithfully,

Mahdi Moradi

Editor in Chief

Content

IRANIAN JOURNAL OF ACCOUNTING, AUDITING & FINANCE

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Research Article

The Impact of Audit Report on Earnings Quality Emphasizing the Moderating Role of Corporate Governance Quality

Fatemeh Leici*

Department of Management, Payame Noor University, Tehran, Iran

Zeynab Leici

Department of Industrial Engineering, Algadir Institute of Higher Education, Tabriz, Iran

Abstract

The purpose is investigating the manipulation effect and relationship and earning smoothing in companies with independent auditors' report, investigating the impact and relationship of corporate governance components with corporates independent auditor's report, and also examining the simultaneous impact of these two variables, auditor's characteristics and financial traits of addressing corporates and auditor's problems on auditor's report. The spatial scope of the research includes corporates listed on the Tehran Stock Exchange. The spatial realm of research includes the period between 2012 and 2018. The examination consists of two independent variables (audit report), the dependent variable (earnings quality), and moderating variables (corporate governance). The results show that the type of audit report affects earnings quality. Corporate governance quality does not modify the interaction between audit statement type and earnings quality. The type of audit statement is different in firms with strong and weak corporate governance. It also shows that it is endorsed in firms with strong corporate governance and not in firms with weak ones.

Keywords: Audit Report, Earnings Quality, Corporate Governance Quality

***Corresponding Author**: MSc of Management, Email: fatemehleyci@yahoo.com

1. Introduction

With the ever-expanding of world financial markets since the 20th century, management, earnings smoothing, and corporate governance in the accounting world, management, economics, and other sciences have been seriously considered. Each scholar and researcher has examined and interpreted their findings from their own sciences point of view. Given these, earnings management and corporate governance can individually affect corporate financial statements. On the other hand, the users of financial statements are directly or indirectly affected by these financial statements. They prefer to use financial statement information that independent auditors have reviewed and commented on their utility. So, the question may arise here in the minds of corporate financial statements' users, whether the type of auditor's opinion is influenced by corporates' earnings management and probable corporate governance or not? Therefore, in the present study, the impact of audit reporting on earnings quality is examined, emphasizing the moderating role of corporate governance quality in the research model.

According to Iranian auditing standards, the purpose of financial statements auditing is that the auditor can comment on whether the financial statements have been prepared from all critical aspects by accounting standards or not. Therefore, the audit report is a valid indicator to measure the quality of information and compliance of the reports rendered with accepted accounting practices (Auditing Standards, 2007).

Therefore, auditors play an important role in overseeing managerial performance and limiting opportunistic management behaviors to the extent that academic and professional assemblies view the audit task as validating and reassuring financial reporting and ultimately enhancing accounting information (Chen et al., 2010).

Based on the information quality hypothesis, the auditor's task is to improve accounting information quality, ultimately enhancing the information's usefulness for investors' decision-making, creditors, and other stakeholders. According to this hypothesis, the higher the quality of information through the audit process, the lower the capital, information asymmetry, and agency cost. According to these hypotheses, investors believe they provide useful information for their decision- making models. It means that the audit process increases the financial statements' value to investors, ultimately enhancing the audit profession's dignity and value (Wallace, 2004).

On the other hand, earnings sustainability is one of the qualitative characteristics of accounting earning based on accounting information. It is an index that helps investors evaluate future earnings and corporate cash flows (Khajavi et al., 2011). It also means the repeatability of current earnings. The higher the earnings sustainability, the greater the corporate ability to maintain current earnings, and the higher the corporate quality of earnings are assumed. Accounting earnings consist of two components: cash and accrual. The accrual component is less sustainable because of its subjectivity and estimation, but sustainable earnings are part of existing earnings that persist, and their stability continues. Changes in earnings current components are transferred to future ones and reflect earnings sustainability and earnings quality (Kormendi & Lipe, 1987). Managing efficiency is in the use of resources provided to it, and earnings sustainability can demonstrate it. The more earnings gained are through operating assets, the greater the earnings sustainability (Khajavi et al., 2015).

According to research, investors are more confident in investing stocks of corporates with a more stable earnings sustainability trend. Corporates with more sustainable earnings and higher cash flows have higher earnings sustainability that can be useful for earnings evaluation. The reported earnings can help users assess performance and measure corporate and stakeholders' profitability power, and investors estimate their expected returns based on earnings information; the quality of information must be. So that evaluates past performance possible and is effective in assessing profitability power

and predicting future activities. Although the reported earnings figure is important to investors and affects their decisions, the quality of earnings quality is also considered one of the earnings information dimensions, especially considered by investors. Therefore, simply focusing on earnings figures may mislead its users, so financial analysts and investors do not consider accounting earnings as the sole determinant in determining future cash flows. Still, reported earnings' repeatability and sustainability are very important (Khajavi and Ghadriyan, 2016).

Given these discussions, it can be argued that investors in the decision-making process choose corporates whose earnings are in higher sustainability and, in fact, higher quality. Also, managers in the context of economic fluctuations and pressures try directly or indirectly to regulate the corporate situation to influence reflected earnings figures in financial statements and make the users of financial statements, especially investors, look positively. So, in many cases, financial information providers' purpose is not the same as their users, and this is due to the interest conflict between the stakeholders. In such circumstances, strategies and tools by which the conflict of interest can somehow be mitigated and the agency problems minimized are of particular importance. Among these tools, corporate governance and its mechanisms have become widespread in society and attracted various financial and economic decision-makers. An intelligent and effective mechanism to strengthen independent audit objectives to moderate this conflict of interest among these groups is required. Therefore, it is theoretically claimed that there is a relationship between earnings quality and audit report, but accepting this claim empirically concerning Iran requires some research tests.

2. Theoretical literature

Managers, financial analysts, and investors have mostly focused on corporates' reported earnings. Managers are benefited by maintaining earnings growing trend, so their remuneration depends on the amount of corporate earnings. Earnings quality assessment helps financial statement users to judge and correctly evaluate the current period and future earnings. There is no single definition of earnings quality, but it is a rather relative concept that depends on views and attitudes.

Profit and loss reporting of entity is one of the essential information that accountants provide. The users can have a perspective on entity performance and its prospects based on the reported earnings figure.

On the other hand, given that estimations and evaluations have a significant place in accounting, this factor can be used as a tool for bias calculations and allow earnings manipulation by management. Given the importance of earnings from the users' perspective, accountants and investment management practitioners have considered earnings quality issues. Evaluating the earnings quality will help users correctly judge and evaluate current and future earnings (Seyyed Ali Khani, 2012).

According to Iranian auditing standards, the purpose of audit financial statements is that the auditor can comment on whether the financial statements have been prepared in all important aspects by accounting standards or not. Therefore, the audit report is a valid indicator to measure the quality of information and compliance of the reports rendered with accepted accounting practices (Auditing Standards, 2007).

In recent years, corporate governance has been suggested as an effective strategy in increasing financial reporting quality. Various empirical research results also indicate that a favorable corporate governance system leads to earnings quality increase. However, identifying the mechanisms that can enhance earnings quality and reduce current interest conflict between stakeholders is of particular importance. A good corporate governance

system can meet these.

Earnings, in accounting terms, equal income and costs; in economics, it has different meanings. It is directly related to income and inversely to loss, following broader concepts of earnings, accounting earnings, earnings reporting objectives, accounting earnings strengths and weaknesses, the concept of earnings quality, and the importance of earnings quality.

2.1. Earnings concepts:

Hendrixen and Van Breda (1992) propose earnings at three theoretical levels:

A. The concept of earnings at the structural level

B. The concept of earnings at the behavioral or practical level

C. The concept of earnings at the interpretive level

2.2. Accounting earnings

Capital market activities need an accurate understanding of the entity to allocate its financial resources optimally. So, they are always looking for entity-related information to make an accurate decision according to it.

"Financial reporting is one of the information resources of those who take economic decisions about the entity. People using financial information must combine the information provided by financial reporting with relevant information from other resources to be able to make appropriate decisions (FASB, 1978, paragraph 22)."

Generally speaking, the purpose of measuring earnings in determining an entity's status as a result of operations performed over a given period and to what extent it has improved. The comprehensive definition of earnings provided by the Accounting Standards Board (1999) is as follows: "Earnings are derived from changes in equity or changes in the net assets of a business over a financial period. To be more precise, earnings are the result of all changes in equity's right over a period, exceptions to the changes arising from capital owners' investing and distributing interests among them."

2.3. Definition of audit

The audit is a systematic and regulates process to impartially collect and evaluate the evidence related to economic activities and events to determine the compliance degree of claims (statements) with the predetermined criteria and reporting the results to the stakeholders (Accountants Committee of America, 1973, quoted by Hassas Yeganeh and Maghsoudi, 2011). This definition is deliberately presented comprehensively to encompass different types of audits. Some terms of this definition need further explanation. A regular and systematic process indicates that the audit is based on accurate planning. Accurate planning involves impartially collecting and evaluating evidence.

The word "assertion" in auditing has a particular meaning and refers to explicit or implicit management opinions embodied in financial statements, documents, or systems. The purpose of auditors in comparing the evidence collected with claims related to economic activities and events determines the extent to which these claims comply with predetermined criteria.

The last important phrase, i.e., reporting the results to the stakeholders, indicates the type of report that auditors prepare for the stakeholders. Stakeholders can include shareholders, creditors, employees, suppliers of materials and goods, government agencies, stock exchanges, and other groups (American Accountants Association Committee, 1973).

2.4. Corporate governance

This word has been defined in various ways by organizations or committees per their

ideological interests (Abutpanje, 2009: 158). The International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development in 2001 stated corporate governance as follows: The structure of relationships and responsibilities in determining a core group including stakeholders, board members, and CEOs to better promote of competitive performance needed to achieve the primary goals of the partnership (Hassas Yeghane, 2007).

Corporate governance in Iran is the laws, regulations, structures, processes, cultures, and systems that achieve accountability, transparency, justice, and stakeholders' rights.

Hope et al., 1998, write about research did in Oxford about corporate governance explanation as follows: Corporate governance outlines the internal organization, the structure of corporate power, how to perform the board's duties, corporate ownership structure, and the mutual relationships between shareholders and other stakeholders, especially corporate workforce and its creditors. Robert Mangez and Nell Mino defined corporate governance in 1995 as to how every society determines the direction of corporate movement or, in other words, it is the relationship between different groups in determining the orientation and the performance of corporate. The main groups include shareholders, CEOs, the board, and other groups, including employees, customers, salespeople, creditors, and the community (Hassas Yeganeh, 2007).

Corporate governance is essential for the following reasons:

* It provides a framework for building a long-term trust between corporates and foreign capital providers.

*Bringing strategic thinking to corporate by appointing managers who share new experiences and ideas.

*Managing and overseeing global risk facing that makes corporate logical.

*By dividing the decision-making process, it limits the reliance on senior managers and their responsibility (Sina Qods, 2009).

3. Theoretical and empirical background of research

Dechow and Dichev (2002) examined the relationship between earnings accruals quality and its continence. It is based on the fact that although commitment accounting recognizes incomes and costs in the courses of realization and tolerance, regardless of the time of receive and cash payment, it causes the entity's exact measurement. Using accruals needs measurement and estimation and if there is a mistake in these estimates, accruals quality and then earnings quality decreases. For example, by identifying earnings through sales, the receivable amount is estimated and registered. The amount will likely be received in the future is not equal to the amount recorded. Their research has been based on a theory that the profitability amount of accruals decreases based on different restrictions, like a mistake in estimations. Palpoet al. (2000) refers to a mistake in estimation as a factor that decreases commitment accounting quality and discusses that accuracy in estimations is based on corporate characteristics, like complexities of trading and environmental predictability where corporate activates in it. Researchers in this study chose the number of 1,725 corporates from 1987 to 1999, including 15234 corporates. We used residual estimation of capital changing regression inflows based on cash flows from past, current, and future periods to determine earnings quality index:

$$\Delta WC_t = b_0 + b_1 CFO_{t-1} + b_2 CFO_t + b_3 CFO_{t+1} + e$$

Then, the standard deviation of residual amounts was computed and used as the earnings quality index. It means that high deviation showed low earnings quality. The results showed that there was a positive relationship between earnings accruals and their continuity. This research is necessary because it shows that the amount of mistake in estimating accruals is systematically related to corporate characteristics like the length of the activity cycle and the range of corporate activities. It also indicates that accruals

quality and then earnings quality has a converse relationship with accruals amount, corporate activity cycle length, the incidence of loss incorporate, sale standard deviation, and cash flow. Also, accruals have a positive relationship with corporate size. The main point is that these characteristics can be easily seen or used to determine earnings accruals quality.

Kevin and Wiki (2008) showed that corporates with low earnings quality allocate their resources less to capital assets. Also, the results suggest that corporates with low earnings quality have a low output rate.

Tsipouridou and Spathis (2014) divided the auditor's opinion into two parts based on the activity's continuity and financial characteristics. The first part observed that the auditor's opinion is not related to earnings management. In the second part, they concluded that this year's opinion is done based on the auditor's opinion in the previous year. Regarding this, the manager can make earnings management and, therefore, significantly impact the auditor's opinion in the current year.

Miko &Kamardin (2015) found that the audit committee and quality would help to reduce earnings management.

Janakiraman and Radhakrishnan (2015) found that improving corporate governance quality and competition in the product market reduces earnings prediction mistake amount significantly by management.

Vichitsarawong and Pornupatham (2015) showed that audit opinion's impact on corporates' profitability is different, and corporates with contingent audit reports have less profitability than corporates with unqualified audits reports.

Anthony and George (2016) found a positive and significant relationship between investors' conservatism and earnings management in financial crisis conditions.

Lennox, Wu, and Zhang (2016) showed a direct relationship between the number of contingent audit report clauses and earnings quality, which means that as the number of contingent audit report clauses increases, earnings quality also increases.

Ricarta (2016) showed that audit reports from the managers and experts in state-owned corporates" assembly affairs viewpoint are effective on prepared information value through accounting and the information quality offered in state-owned corporates' financial statements.

Moosavi (2017) showed that creditors, stakeholders, and investors in financial decisions rely on audit reports, and these have increased the quality of financial statements. But they were not successful in increasing some qualitative traits, like financial statements of caution, completeness of information, timeliness information, understandability of information, and recognizing trade contents.

Molkyan (2018) showed that audit reports actual information and the analysis of information gathered from questionnaires. It can be seen that most of the audit clauses are repeatedly included in the audit reports within five years, and general assemblies of shareholders as it deserves do not pay attention to the audit reports. They also do not execute the board of directors to eliminate the problematic cases and decide regardless of the audit report.

Alipoor (2018) showed that the impact of service and the independent audit report on strengthening social relations between government and people, establishing justice, improving the behavioral culture of the society, tax, improving the system, reducing the cost of financing, strengthening the culture of investment and increasing national saving rate and preventing main fluctuations of the stock price. There is no significant disagreement between the independent government and private audits of different groups. Still, there is a significant relationship between audit information system establishment, internal audit, and accounting principles.

4. Research Methodology

Accounting researchers fall into the positivist research group; because accounting researchers usually assume that concepts and facts exist objectively in the outside world. They research with a variety of measurable statistical and observational methods. They consciously or unconsciously believe in examiner and tester independence of each other, although this technique has often been increasingly criticized in accounting researches (Aghaii et al., 2010). Regardless of the pathology of these researches, the present study falls into the category of positivist approaches. It is practical in terms of the correlation method and purpose. The present study is also among accounting descriptive research since this paper describes what is or describes current conditions without interference (and not with specific requirements and recommendations) and since the value judgments in it are pale.

In this research, the sample was selected through the systematic elimination method of a statistical population. As such, the sample consists of all companies existed in the statistical population that meets the following criteria:

1.It has been listed in stock prior to the 2011 fiscal year. Although the research period is from 2012 to 2018, information is needed a year before calculating the earnings quality variable.

2. They have not been released from the stock until 2018.

3. Required information about the corporation is available from 2012 to 2018.

4. During the fiscal years of 2012-2018, the financial year has not been changed.

5. They are not included in investment corporations, banks, insurances, and financial intermediation.

6. Their financial year ends at the end of March.

Table 1: The number of exemplary corporates

Numbers	Selection Description
460	Corporates listed on the Tehran Stock Exchange by the end of 2018
71	Corporates are listed in stock during the research period
92	Corporates their fiscal year does not end in March during the temporal research domain.
97	Corporates changed in the temporal research domain of the fiscal year.
65	Corporates engaged in investment and financial intermediation during the temporal research domain.
49	Corporates went out of stock during the temporal research domain.
86	Selected corporates

This study has four main hypotheses:

Hypothesis 1: The type of audit opinion affects earnings quality.

Hypothesis 2: Corporate governance quality affects the interaction between audit opinion and earnings quality.

Hypothesis 3: The type of audit opinion varies in corporations with strong and weak corporate governance.

Hypothesis 4: Earnings quality varies in corporations with strong and weak corporate governance.

The classical regression method and the joint effects model and its assumptions have been used to test the hypotheses. Its required data have been collected through the sample corporate financial statements. Eviews9 statistical software was used to analyze research model data. Using these statistical soft wares and to test the research hypotheses, basic assumptions of the multivariate regression model, binary logistic regression, testing the significance of the research model, the significance of independent variables, and the

correlation coefficient of the model was also investigated.

Before testing the research hypotheses, the research variables are summarized in tables (2) and (3). These tables contain indicators to describe the research variables. These indices include central indices, dispersion indices, and distribution shape indices.

Table 2: Descriptive indices of quantitative research variables

Variable	Mean	Standard deviation	Minimum	Maximum
earnings quality (EQ)	-0.063	0.091	-1.092	-4.150
Quality corporate governance (QCG)	2.987	1.129	0.000	6.000
Corporate size (SIZE)	13.134	1.493	9.454	18.453
Financial leverage (LEV)	0.636	0.271	0.017	0.960
Growth chance (GROWTH)	2.430	5.926	0.089	10.696
Accruals (ACC)	0.019	0.153	4.756	0.653

The results of Table (2) show that the dependent variable mean of earnings quality and the independent variable of corporate governance quality were -0.063 and 2.987, respectively. Control variables mean corporate size, financial leverage, growth chance, accruals were 13/134, 0/636, 2/430, and 0/019, respectively. The difference between the largest and smallest data and the mean and standard deviation of variables indicates that data distribution is logical.

Table 3: Indicators describing research nominal variables

Variable		Symbol	Number	Measuring	Percent
Audit Report	Depended	AR	816	Unqualified Report (1)	66.54
				Qualified Report (0)	33.46
Controlled	Corporate	LOSS	816	corporates at a loss(1)	14.83
					85.17
				corporates at a profit (0)	

The results of Table (3) show that 66.54% of sample corporates have an Unqualified report, 33.46% a qualified report, and 14.83% have reported a loss.

4.1. Testing research hypotheses

Hypothesis 1: The type of audit report affects earnings quality.

This hypothesis is confirmed if the independent variable coefficient is at the 95% level of confidence and significance. According to the classical regression statistical assumptions test results, the above models are estimated using the multivariate linear regression method. The model estimation results are shown in Table (4).

The F-Limer test was used to select the data analysis model and the use of Pooled or Panel data. After confirming the research variables' reliability, the type of model was selected by the F-Limer test. The F-Limer test determines whether the model used is Panel or Pooled. If the Cross-Section F- statistic is less than the 5% level of significance, the selected model type is Panel, and if it is more than the 5% level of significance, the type of model chosen will be pooled. If the Pooled model is selected, the work is complete, and we will continue with it. Still, if the Panel model is selected, then the appropriate model, namely the fixed effects (FEM) or random effects (REM), should be selected in the next step through the Hausman test. If, in the previous step, the F-Limer test results

indicate the use of the Panel model, the appropriate method should be selected through the Hausman test. If the Cross-Section Random statistic is less than the 5% level of significance, the effects method is fixed (FEM), and if it is more than the 5% level of significance, then the random-effects method (REM) is selected. Therefore, bounded data have been used to test the model of this hypothesis. The results of the Watson camera test indicate that the model of this hypothesis has no autocorrelation problem. In examining coefficients significant according to the effects of Table (4), since the probability of t-statistic for the independent variable coefficient of audit report type is less than the 5%, then the significant effect of audit report type on earnings quality at 95% level of confidence is confirmed. Therefore, this hypothesis's model based on the audit report type on earnings quality at the 95% confidence level is confirmed. Thus, based on the analysis of the first research hypothesis model, it can be concluded that the type of audit report has a significant effect on earnings quality. Also, the control variable's significant effect to be lost was observed on the earnings quality of the dependent variable.

Table 4: Test results of the first hypothesis

Variables	coefficient	t- statistics	t- probability
Constant coefficient	-0.035	-3.227	3640010
Audit report type	0.008	4.200	0.000
The size of corporate	-0.002	-0.367	0.714
Return on equity	7.840	0.079	0.937
To be loser	-0.035	-4.504	0.000
Financial Leverage	-0.003	-0.973	0.331
Sales growth	0.002	1.318	0.187
Accruals	0.032	1.426	0.154
Statistics-F Limer	0.525 (Pooled)		
Statistics – Hausman	- -		
D-W statistics	1.880		
Determination coefficient	0.100		
The adjusted coefficient of determination	0.092		
F- statistics	12.852		
The significance of the model	0.000		

Hypothesis 2: Corporate governance quality modifies the interaction between audit opinion type and earnings quality. Testing this hypothesis is confirmed if the confidence level's moderating coefficient variable is 95% and significant. According to the classical regression statistical assumptions test results, the above models are estimated using the multivariate linear regression method. The model estimation results are shown in table (5).

In examining the models' significance, given that the probability amount of F-statistic in the model is less than 1% (0.000), the whole model's significance is confirmed with 99% confidence. The model determination coefficient also shows that the model's variables explain 16.1% of dependent variable variations of earnings quality. The F-Limer test was conducted to select the data analysis model and use Panel or Pooled data. After confirming the reliability of the research variables, the model type was selected through the F-Limer test. The F-Limer test determines whether the model used is Panel or Pooled. If the Cross-Section of F-statistic is less than the 5% level of significance, the type of selected model is Panel, and if it is more than the 5% level of significance, the kind of model selected will be Pooled. If the Pooled model is selected, the work is complete, and we continue with it. But if the Panel model is selected, then in the next step

through the Hausman test, the appropriate model, namely the fixed effects (FEM) or random effects (REM) should be chosen. If, in the previous step, the F-Limer test results indicate the use of the Panel model, the appropriate model should be selected through the Hausman test. If the Cross-Section Random statistic is less than a 5% level of significance, fixed effects of the method (FEM), and if it is more than a 5% level of significance, the random effect method (REM) is selected. Therefore, bounded data have been used to test the model of this hypothesis. The results of the Watson camera test indicate that the model of this hypothesis has no autocorrelation problem.

Table 5: Test results of the second hypothesis

Variables	Coefficient	t- statistics	t- probability
fixed coefficient	-0.033	-0.908	0.364
Audit report type	-0.005	-0.504	0.613
corporate governance quality	-0.007	-1.663	0.096
Interaction between audit report type and corporate governance quality	0.006	0.491	0.623
The size of corporate	-0.006	-0.234	0.814
Equity Returns	-0.002	-0.088	0.929
To be lost	-0.052	-4.641	0.000
Financial Leverage	0.007	2.413	0.015
Sales growth	0.004	2.765	0.009
Accruals	0.012	1.666	0.095
F-Limer statistics	0.518 (Pooled)		
Hausman- Statistics	- -		
D-W statistics	2.178		
Determination coefficient	0.161		
The adjusted coefficient of determination	0.129		
F- statistics	2.178		
The significance of the model	0.000		

According to the results of Table (5), in examining the significance of coefficients, since the probability of t-statistic for moderating variable coefficient, the interaction of audit report type and corporate governance quality is greater than 5%. The significant effect of corporate governance quality is not confirmed on the interaction between audit report type and earnings quality at a 95% level of confidence. Therefore, this hypothesis's model based on the effect of corporate governance quality is rejected on the interaction between audit report type and earnings quality at the 95% level of confidence. According to the analysis related to the second research hypothesis model, it can be concluded that corporate governance quality has no significant effect on the interaction between audit report type and earnings quality. The significant effect of controlling variables such as loss, financial leverage, sales growth, and accruals was observed on the earnings quality dependent variable.

Hypothesis 3: The type of audit opinion is different incorporated with strong and weak corporate governance.

This hypothesis is confirmed if the coefficient of independent variables is significant at 99%, 95%, and 90% confidence levels. According to the classical regression statistical assumptions test results, the above models are estimated using the multivariate linear regression method. The model results are shown in Table (6).

Table 6: Test results of the third hypothesis

Hypotheses	**Corporates with strong corporate governance**			**Corporates with weak corporate governance**
variables	**coefficient**	**t- probability**	**coefficient**	**t- probability**
Fixed variables	0.154	0.558	-0.040	0.892
Corporate governance quality	0.143	0.000***	0.297	0.000***
Corporate size	-0.005	0.757	-0.007	0.970
Equity Returns	0.056	0.130	-0. 025	0.527
To be loss	0.147	0.079*	-0.100	0.282
Financial leverage	0.227	0.049**	-0.003	0.973
Sale growth	0.004	0.950	0.006	0.189
Accruals	0.355	0.085*	-0.315	0.153
F- Limer statistics Hausman statistics	0.678 (Pooled) - (-)			0.024 (Panel) 0.306 (REM)
D-W statistics	2.052			1.761
Determination coefficient	0.128			0.129
The adjusted coefficient of determination	0.104			0.107
F- statistics	5.493			5.609
The significance of the model	0.000			0.000

***Significance level with 99% confidence **Significance level with 95% confidence
*Significance level with 90% confidence

In examining the significance of models given that the probability amount of F-statistic in both models is less than 1% (0.000), then the significance of all models is confirmed with 99% confidence. The coefficient determination of the model also indicates that respectively 10.4% and 10.7% of dependent variables changes of the audit report type are explained by the model's variables.

In this study, the F-Limer test has been used to select the data analysis model and use Panel or Pooled data. After confirming the study variables' reliability in the previous steps, the model was selected through the F-Limer test. The F-Limer test determines whether the model used is Panel or Pooled. If the Cross-Section F- statistic is less than a 5% level of significance, the selected model type is Panel, and if it is more than a 5% level of significance, the type selected model will be pooled. If the Pooled model is selected, the work is complete, and we continue with it. Still, if the Panel model is selected, then the appropriate model, namely the fixed effect (FEM) or random effect (REM), should be selected through the Hausman test in the next step. If, in the previous step, the F-Limer test results indicate the use of the Panel model, the appropriate method should be selected through the Hausman test. If the Cross-Section random statistic is less than a 5% level of significance, the effective method is fixed (FEM). Suppose it is more than a 5% level of significance. Therefore, to test the first model of this hypothesis. Table (6) results in examining the significant coefficients since the probability of t-statistic for the independent variable coefficient of corporate governance quality in corporations with strong and weak corporate governance is less than 5%. This variable's significant effect on the audit report type variable is confirmed at a 95% confidence level. Therefore, the third hypothesis regarding audit opinion incorporates different strong and weak corporate governance is rejected. Thus, based on the third hypothesis's analysis, it can be concluded that the type of audit opinion incorporated with strong and weak corporate governance is

not different.

Hypothesis 4: Earnings quality varies in corporations with strong and weak corporate governance.

Testing this hypothesis is confirmed if the coefficients of independent variables are significant at 99%, 95%, and 90% confidence level. According to the classical regression statistical assumptions test results, the above models are estimated using the multivariate linear regression method. The model estimation results are shown in Table (7).

Table 7: Test results of the fourth hypothesis

Hypotheses		**Corporates with strong corporate governance**		**Corporates with weak corporate governance**
variables	**Coefficient**	**Probability- t**	**coefficient**	**Probability- t**
Fixed coefficient	-0.014	0.809	0.039	0.443
Corporate governance quality	-0.016	0.016**	-0.012	0.184
Corporate size	0.001	0.782	-0.005	0.130
Equity Returns	-0.042	0.024**	-0.031	0.050**
To be loss	-0.002	0.784	0.004	0.543
Financial leverage	0.004	0.865	-0.009	0.593
Sale growth	0.004	0.814	0.001	0.836
Accruals	0.106	0.019**	0.086	0.024***
F Limer – statistics Hausman- statistics			0.816 (Pooled) - (-)	0.458 (Pooled) - (-)
D-W statistics			1.964	2.004
Determination coefficient			0.100	0.077
The adjusted coefficient of determination			0.076	0.052
F- statistics			4.158	3.118
The significance of the model			0.000	0.003

***Significance level with 99% confidence **Significance level with 95% confidence
*Significance level with 90% confidence

In examining the models' significance, the probability value of F- statistic in both models is less than 1% (000.). All models' significance is confirmed with 99% confidence. The model's coefficient determination also indicates that respectively 7.6% and 7.7% of changes independent variables of earnings quality are explained by the model's variables.

F-Limer test has been conducted to select a data analysis model and use Panel or Pooled data. After confirming the research variables' reliability in the previous steps, the type of model was selected through the F-Limer test. The F-Limer test determines whether the model used is Panel or Pooled. If the Cross-Section F- statistic is less than a 5% level of significance, the selected model type is Panel, and if it is more than a 5% level of significance, it is Pooled. If the Pooled model is selected, the work is complete, and we will continue with it, but if the Panel model is selected, then the appropriate model, namely FEM or FEM effects, should be selected through the Husman test. If, in the

previous step, the F-Limer test results indicate the use of the Panel model, the appropriate model should be selected through the Hausman test. If the Cross-Section Random statistic is less than a 5% level of significance, the effects method is fixed (FEM), and if it is more than a 5% level of significance, the random effects method (REM) is selected.

According to the results of Table (7) in examining the significant coefficients, since the probability of t-statistic for the independent variable of corporate governance quality in corporations with strong corporate governance is less than 5% and in corporations with weak corporate governance is greater than 5%. This variable's significant effect is confirmed on earnings quality variable at a 95% level of confidence in corporate with strong corporate governance. It is not confirmed in corporations with weak corporate governance. Therefore, the fourth hypothesis is confirmed based on earnings quality that is different incorporated with strong and weak corporate governance. Thus, based on the fourth research hypothesis's analysis, it can be concluded that earnings quality in corporations with strong and weak corporate governance is different.

5. Conclusion

Based on the effect of audit report type on earnings quality. So, according to the analysis of the first research hypothesis model, it can be concluded that the audit report type has a significant effect on earnings quality. Therefore, this hypothesis's results are in line with Vichitsarawong and Pornupatham (2015) findings.

According to the analysis of the first research hypothesis model, it can be concluded that corporate governance quality has no significant effect on the interaction between audit report type and earnings quality. So, this hypothesis's results are not in line with Habib and Jiang's (2015) findings and Vichitsarawong and Pornupatham (2015). Since no research has been conducted in Iran on the relationship between variables, comparing the country's research results is impossible.

According to the analysis of the third research hypothesis, it can be concluded that the type of audit statement incorporates strong and weak corporate governance is not different. This hypothesis's results are not in line with Habib and Jiang's (2015) findings and Vichitsarawong and Pornupatham (2015). Since no research has been conducted in Iran on the relationship between variables, the research results' comparison is not possible.

According to the analysis of the fourth research hypothesis, it can be concluded that earnings quality in corporations with strong and weak corporate governance is different.

This hypothesis's results align with Habib and Jiang's (2015) findings and Vichitsarawong and Pornupatham (2015). Since no research has been conducted in Iran on the relationship between variables, comparing Iran's research results is impossible.

In general, it is suggested to creditors, investors, and other stakeholders to pay more attention to corporate governance quality and notice it in their decision- making models. Based on the research's theoretical foundations, corporate shareholders are advised not to be indifferent to corporate governance and audit opinion type because it can influence audit opinion type.

References

Anthony, P. and George, E.I. (2016). Audit quality, investor protection and earnings management during the financial crisis of 2008: An international perspective. *Cover image Journal of International Financial,* 41, 73-101. https://doi.org/10.1016/j.intfin.2015.12.006

Abu-Tapajeh, A.M. (2009). Corporate Governance from the Islamic Perspective: A Comparative Analysis with OECD Principles. *Critical Perspectives on Accounting,*

20 (5), 556-567. https://doi.org/10.1016/j.cpa.2007.12.004

Auditing Standards Committee, Auditing Standards, Audit Organization, (2006).

Aghaii, M. Nezafat, A. Nazemi Ardakani, M. and Javan, A.A. (2010). Investigating Factors Affecting Cash Flow Maintenance in Corporates Listed in Tehran Stock Exchange. *Tehran Financial Accounting Research*, 1(1-2), 53-70. https://www.sid.ir/fa/journal/ViewPaper.aspx?id=105162 [In Persion]

Chen Charles J.P. Xijia, S. and Xi, W. (2010). Auditor Changes Following a Big Merger with Local Chinese Firm. *A Case Study, Auditing*, 29 (1), 32-41. Doi: 10.2308/aud.2010.29.1.41

Committee on basic auditing concepts, a statement of basic auditing concepts, American accounting association, (1973).

Dechow, P. and Dichev, I. (2002). The quality of accruals and earnings: "The role of accrual estimation errors. *The Accounting Review*. 77, 35-59. https://www.jstor.org/stable/3203324.

Hassas Yeganeh, Y. (2007). Corporate Governance in Iran. *Auditor*, 32, 32- 39. http://ensani.ir/file/download/article/20101111152600-p0145200320321-XUM1TN.pdf[In Persion]

Janakiraman, S. and Radhakrishnan, S. (2015). Discussion of the Effects of Corporate Governance and Product Market Competition on Analysts' Forecasts: Evidence from the Brazilian Capital Market, *The International Journal of Accounting*, 50(3), 340-346. https://doi.org/10.1016/j.intacc.2015.07.006

Jiang, H. Habib, A. and Zhou, D. (2015). Accounting restatement and audit quality in China. *Advances in Accounting*, 31 (1), 125-135. https://doi.org/10.1016/j.adiac.2015.03.014

Khajavi, Shokrollah and Ghadirian Arani, Mohammad Hossein. (2015). Investigating Earnings Quality on the Revised Corporates of Financial Statement. *Empirical Accounting Researches*, 3, 147-129. http://ensani.ir/file/download/article/20160528144723-9778-60.pdf[In Persion]

Khajavi, Sh. Valipour, H. and Asgari, S. (2011). Investigating Conservative Impact on Profitability of Corporates Listed in Tehran Stock Exchange. *Accounting and Auditing Research*, 3, https://www.sid.ir/fa/journal/ViewPaper.aspx?ID=297755[In Persion]

Khajavi, Sh. and Ghadirian Arani, M.H. (2016). Investigation of the Impact of Earnings Quality on Restatement of Financial Statements. *Journal of Accounting Advances*, 7(2), 59-84. http://jaa.shirazu.ac.ir/article_3546.html[In Persion]

Kormendi, R and Lipe, R. (1987). Earnings Innovation, Earnings Persistence and Stock Returns. *Journal of Business*, 60 (3), 323-345. https://www.jstor.org/stable/2352874

Miko, N. and Kamardin, H. (2015). Impact of Audit Committee and Audit Quality on Preventing Earnings Management in the Pre- and Post-Nigerian Corporate Governance code 2011, Management and Social Science Research, 172, 651-657. https://doi.org/10.1016/j.sbspro.2015.01.415

Sina Qods, A. (2009). Corporate Governance and Reform of Board structure. *Tadbir*, No. 125, pp. 42- 59. http://ensani.ir/file/download/article/20110214164335-0%20(856).pdf

Seyyed Ali Khani, S.R. (2012). Corporate Ranking in Earnings Quality Point of View with MADM Methods and its Relationship to P/E Ratio. MAthesis of Accounting,

University of Qom. [In Persion]

Tsipouridou, M. and Spathis, Ch., (2014). Audit Opinion and Earnings Management: Evidence from Greece. *Accounting Forum*, 38(1), 38-52. https://doi.org/10.1016/j.accfor.2013.09.002

Valipour, H. Talebnia, Gh. and Javanmard, S.A. (2014). The Investigation of Earning Management Effects on Earning Quality in Firms Under Financial Crises. *Journal of Accounting Knowledge*, 4(13), 75- 103. https://jak.uk.ac.ir/article_558.html [In Persion]

Vichitsarawong, T. and Pornupatham, S. (2015). Do audit opinions reflect earnings persistence?. *Managerial Auditing Journal*, 30(3), 244-276. https://doi.org/10.1108/MAJ-12-2013-0973

Wallace W.A. (2004). The economic role of the audit in free and regulated markets: a look back and a look forward. *Research in Accounting Regulation*, 17, 267– 298. https://doi.org/10.1016/S1052-0457(04)17012-4

Yahya Hassas, Y. and Maghsoudi, O. (2011). The Impact of Professional Conduct Rules and Experience on the Quality of Audit Judgment. *Official Accountant*, 9, 49-57. http://ensani.ir/file/download/article/20101121153840-11.pdf [In Persion]

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Research Article

The Relationship Between Accruals and Investors' Perceptions of Earnings Forecast Error

Mohammad Reza Razdar*, Jafar Ahmadpour

Department of Accounting, Qaenat Branch, Islamic Azad University, Qaenat, Iran

Abstract

This study aims to investigate the relationship between accruals and investors' perceptual management. The study's statistical population includes all firms listed on the Tehran Stock Exchange from 2011 to 2017. After reviewing the firms and systematically deleting them, 95 firms were selected for the study. The Findings show a positive and significant relationship between accruals and investors' perceptions (earnings forecasting error). This study attempts to state that if managers face limitations in the management of accruals, they report aggressive forecast earnings as a complementary approach to investor perception management and accounting earnings containing information content. Business management can manage investors' beliefs by managing accruals.

Keywords: Accruals Management, Investors' Perceptions, Earnings Forecast Error

*Corresponding Author: Assistant Professor of Accounting, Email: Mr2razdar@Gmail.com

1. Introduction

Accounting is an information system responsible for collecting, classifying, summarizing, and reporting an organization's financial and economic events as the most important subset of management information systems. Although most users of this information are shareholders and managers of an enterprise, management provides various information to users outside the firm based on the duties and responsibilities it has towards different groups of users of financial information, as well as legal requirements. Previous research has shown that managers provide voluntary disclosure reports, such as earnings forecasts, to meet investors and financial analysts' demand for information. Meeting information demand increases liquidity or reduces capital costs (Ciftci & Salama, 2017). Therefore, in this regard, managers can complete the earnings management process by managing accruals and the management of investors' perceptions through earnings forecasting, which is, on average higher than accounting earnings, and if managers face limitations in accrual management of accruals. They report aggressive anticipated earnings as an alternative to earnings management.

The purpose of this study is to investigate the relationship between accruals using earnings management methods and investor perception management through earnings forecasting error. In other words, this study tries to answer the question that if managers face limitations in earnings management, do they report aggressive forecast earnings as an alternative and complementary method in investor perception?

Despite the many studies conducted by management in our country regarding earnings forecasting, most of the research has examined the factors affecting earnings forecasting error, predictive earnings information content, and comparing the accuracy of forecast earnings with the accuracy of different earnings forecasting models. Experimental research has slightly examined the opportunistic behavior of management in providing earnings forecasting.

2. Literature Review

Previous research has suggested that managers may publish voluntary information, such as earnings forecasts, to reduce information asymmetries between investors and managers. According to this discussion, previous research shows that firms that publish earnings forecasts have more information asymmetry than firms that do not publish forecasts (Ciftci & Salama, 2017). In addition, Coller & Yohn (1997) found that information asymmetry decreased after the prediction was published. Similarly, Lennox & Park (2006) suggest that managers' published predictions reduce information asymmetry impact and reduce estimated risk (Barry & Brown, 1985). Previous research has also shown that investors seek to disclose future information, such as earnings forecasting, and that analysts cover firms with more future disclosures (Ajinkya et al., 2005).

Healy et al. (1999) showed that widespread management disclosure leads to increased institutional ownership and analyst coverage. One of the motivations for voluntary disclosure is to develop a credible relationship with investors.

Elshafie et al. (2010) examined managers' methods in earnings management and investor perception management. They concluded that managers use commitment management or real earnings management to achieve target earnings. Managers complement these methods by managing investors' perceptions through earnings forecasting, which is, on average higher than accounting earnings. Their research showed that managers report less aggressive earnings forecast by management when managers can achieve targeted earnings. They measured the aggressiveness of earnings forecasting through the difference between earnings forecasted by management and reported earnings and concluded that the aggressiveness of earnings forecasting by management was

negatively related to their ability to manipulate earnings through accruals and Real management earnings.

Das et al. (2011) showed that managers positively take advantage of earnings management and expectations management. If earnings management becomes difficult, managers try to replace earnings management with expectations management. Also, according to their research, comparing the earnings of expectation management with the benefits of earnings management showed that expectation management is much more expensive than earnings management.

Mehrani et al. (2017) examined the effect of three indicators of earnings quality, including the quality of accruals, absolute value of unusual accruals, and fluctuations in earnings on the strength of financial distress forecasting models. They showed that increasing the two indicators of earnings quality (the quality of accruals and fluctuations in earnings) reduces the likelihood of financial distress.

Nikolaev (2018) analyzed accrual items into the components of an accounting error, economic performance, and accrual performance and described the accounting quality structurally as facilitating performance measurement by accruals. In his research, econometric strategies have been used to identify accruals and earnings' quality under the flexibility set of assumptions. Research analysis states that the variance of performance components is greater than the accounting error, and the performance component explains a large gap in the variance of accruals.

Moghimi (2019) examined the relationship between earnings management and earnings forecasting accuracy by management in firms listed on the Tehran Stock Exchange. The results show that after controlling the firm's return on equity and size, there is no significant relationship between earnings forecasting accuracy and earnings smoothing in each of the two smoothing and non-smoothing procedures.

Huang (2020) examined the firm’s predictive errors in management and investment efficiency. The results showed that the predictive errors of the signed management are associated with an abnormal investment. More optimistic forecasts are associated with over-investment, while more pessimistic forecasts are associated with lower investment.

3. Research Methodology

The present study is quantitative and is done with an inductive approach. Also, since the present study's data is real and historical information, it can be classified as post-event (quasi-experimental). Library methods and documentary studies were used to gather theoretical information about the research literature. To obtain the required information, financial statements of firms listed on the Tehran Stock Exchange will be used to process the research hypothesis. Also, the research data were collected from www.codal.ir site and collected using Excel software. The hypothesis test method in the present study is using Eviews9.5 statistical software. To test the research hypothesis (there is a significant relationship between accruals and investors' perceptions (earnings forecasting error), the conventional least squares regression model (OLS) is used.

$$EFE_{it} = \beta_0 + \beta_1 DACC_{\ it} + \beta_2 MTB_{it} + \beta_3 SIZE_{\ it} + \beta_4 ROA_{\ it} + \varepsilon_{it}$$

In this model, β_1 is used to prove the research hypothesis.

β: Model coefficients.

ε: Model error.

i: Firm.

t: Current year.

3.1. Dependent Variable: Earnings Forecast Error (EFE_{it})

Earnings forecasting accuracy was defined by management based on the study of

Garcia et al. (2011) as a dependent variable. The earnings forecast error is calculated by the absolute value of the difference between the real net earnings and the net earnings forecasted for each share divided by the absolute value of the real net earnings per share.

$$FE_{it} = \left|\frac{AP_{it} - FP_{it}}{AP_{it}}\right|$$

Where we have:

FE_{it}: Predictive error of earnings per share i for period t.

AP_{it}: The real earnings per share i firm for the period t.

FP_{it}: The first forecast of earnings per share by managers to participate in i period t.

In the above formula, the first forecast of net earnings per share is the earnings that are published at the same time as the announcement of last year's earnings, and the earnings are considered as the forecasted earnings in the above formula that is presented to the public before the end of July. Also, since 2018, the predictions based on the Tehran Stock Exchange Organization decisions have not been disclosed.

3.2. Independent Variable: Accruals ($DACC_{it}$)

In this study, in order to measure the accruals, the earnings management method, which is in the research texts of the edited version of the original Jones model and is referred to as the adjusted Jones model, has been used. This model was first used by Dechow et al. (1995). One of the disadvantages of the Jones model is that it ignores the possibility of making earnings management by commenting on revenue recognition. The adjustment made prevents this.

The modified Jones model is calculated as follows:

$$NDA_t = \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{\Delta REV_t - \Delta REC_t}{A_{t-1}}\right) + \alpha_3\left(\frac{PPE_t}{A_{t-1}}\right) + \varepsilon$$

Where in:

NDA_t: Non-custodial part of accruals in the year t.

A_{t-1}: Total assets in t-1 year.

$\triangle REV_t$: Year income t minus year income t-1.

PPE_t: Total value of property, machinery, and equipment at the end of the year t.

$\triangle REC_t$: Net accounts receivable for the year t minus net accounts receivable for the year t-1.

α_1, α_2, α_3: The specific parameters of the firm are obtained using the following model:

$$\frac{TA_t}{A_{t-1}} = a_1\left(\frac{1}{A_{t-1}}\right) + a_2\left(\frac{\Delta REV_t}{A_{t-1}}\right) + a_3\left(\frac{PPE_t}{A_{t-1}}\right)$$

Where in:

TA_t: Total accruals per year t.

If non-voluntary accruals are deducted from accruals, optional accruals will be obtained.

$$DA_t = TA_t - NDA_t$$

DA_t: Optional components of accruals in year t.

It should be noted that the following equation can be used to calculate the sum of accruals:

$$TA_t = EARN_t - CFO_t$$

$EARN_t$: Net earnings per year t.

CFO_t: Operating cash flow in the year t.

3.3. Control Variables:

Firm Market Value (MTB): The firm's market value is the book value of the

shareholders' equity.

Return on Assets (ROA): Net Profit-Loss Ratio to Total Assets.

Firm size (Size): The natural logarithm of the market value of equity.

The study's statistical population includes all firms listed on the Tehran Stock Exchange from 2011 to 2017. In the present study, the statistical population was adjusted based on systemic characteristics (a statistical sample). The following characteristics were considered in the selection of companies:

In order to increase the comparability and uniformity of the conditions of the selected firms, the firm's financial year should be the end of March of each year, and this date has not changed during the period of access to information.

In order to simulate the type of items and classify them in financial statements, the selected firm belongs to the stock exchange industries "Banks, Credit Institutions and Other Monetary Institutions", "Other Financial Intermediaries", "Financial Investments" and "Multidisciplinary firms". Not industrial.

In order to have a reliable market price, do not stop trading for more than three months during the research period, and have a transaction throughout the research period.

After examining the firms in terms of the mentioned features and systematic deletion, 95 firms were selected as the study sample.

4. Findings

After entering the information in Excel and performing statistical tests, the results of descriptive statistics and unit root test are as follows:

The number of observations shows that the research data comprises the balanced panel type of 95 firms (over 7 years). The average corporate earnings forecast error was 0.05. At the same time, the average of this variable is equal to 0.13. This difference between the mean and the mean indicates the significance of the two evaluation criteria in the research community, indicating that the earnings forecast by the management of the firms under study is generally optimistic and has an error of 0.05.

Observations also show that the earnings management of sample statistical research firms, on average, has either considered a policy of increasing earnings or a high level of accruals; Of course, this does not mean earnings management in all sample firms. Average positivity may be optional due to the positive mean of the commitment items.

The average return on assets of firms is 0.13, and the average is 0.12. In fact, corporate profitability averaged 0.13. In addition, the high standard deviation in the variables indicates a high distribution in the data. The highest standard deviation belongs to accrual items, and the lowest belongs to return on assets.

Also, the maneuverability test's significance level is less than 0.05 if the maneuverability indicator is variable. In addition, in order for a variable to remain stable, the relevant test statistic must be greater than 2 in the absolute value, which is as follows in the table below:

In this study, the statistical Variance Inflation Factor "VIF" was used to investigate the correlation between the model variables. When the variance inflation factor is less than 5, there is no correlation between the model variables. The leveling test was performed using Eviews software, and the results are as follows:

Table 1: Descriptive statistics and unit root of variables

Variables	Mean	Median	S-Deviation	Obsv	Unit Root
EFE	0.05	0.13	0.88	665	-21.06145 (0.0000)
DACC	61.66	82	40.45	665	-22.74731 (0.0000)
MTB	0.61	0.47	0.45	665	-9.502716 (0.0000)
SIZE	13.57	13.47	1.17	665	-22.74731 (0.0000)
ROA	0.13	0.12	0.11	665	-10.36715 (0.0000)

Table 2: Variance Inflation Test (VIF) for Model

Model	DACC	MTB	ROA	SIZE
VIF	1.15	1.31	1.31	1.15

In order to investigate the variance inequality test, considering that the pattern of constant effects in the software was confirmed, the similarity of Breusch Pagan-Godfrey variance is used. According to the test results, the model has a significant level of more than 0.05, which does not suffer from the variance mismatch problem.

One of the assumptions considered in regression is the independence of the errors (the difference between the actual values and the values predicted by the regression equation) from each other. Linear regression cannot be used if there is self-correlation in the errors. If this statistic is between 1.5 and 2.5, there is no need to worry. Durbin-Watson statistics in the model (equal to 1.899920) most likely refute the assumption of the existence of self-correlation.

The F test for the equality of width coefficients test from the origin of different sections and the Hausman test to determine the model of fixed and random effects has been estimated.

It should first be noted that there is no need to consider the data panel (differences or specific firm effects). It is possible to combine data from different firms and use it to estimate the model. In single-equity estimates, the F (Chaw) test statistic is used to make the final decision. As shown in Table 3, at the 0.95 confidence level, the panel method is accepted.

In the following discussion, the choice of fixed and random effects models is used, for which the Hausman test is used. Table 3 indicates that in the statistical research model, the probability is less than 0.05, so the fixed effects method should be used.

Also, in examining the whole model's significance, considering that the F statistic's probability value is less than 0.05, it is confirmed with 0.95 certainties that the whole model is significant. Also, by examining the model's modified determination coefficient, it is shown that 0.184018 is the percentage that the independent variables and model control explain the dependent variables.

As mentioned, the hypothesis is validated if β_1 is significant at the 0/05 error level (0/95 confidence level). In order to investigate the research hypothesis in the model, it is observed that the statistical t-statistic of the independent variable of the research items is 2.761153 (with a coefficient of 0.0377339). Also, this statistic's significance level is equal to 0.6060, which shows that this variable's statistic is significant at 0/95 confidence level (0/05 error level). In other words, the probability level is less than 0/05. Therefore, according to the obtained results, it can be stated that the accruals and perceptions of investors (earnings forecasting error) have a significant relationship. Therefore, the hypothesis is confirmed. Also, by examining the variable coefficient of accrual items,

which is equal to 0.0373339, it can be stated that accrual items and investors' perception (earnings forecasting error) have a positive and significant relationship.

Table 3: Research Hypothesis Test

$EFE_{it} = \beta_0 + \beta_1 DACC_{it} + \beta_2 MTB_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \varepsilon_{it}$				
Dependent variable: Earnings Forecast Error (EFE_{it})				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.475338	0.150631	3.155634	0.0017
$DACC_{it}$	0.037639	0.013632	2.761153	0.0060*
MTB_{it}	-0.00000475	0.0000085	-0.558476	0.5769
ROA_{it}	0.035900	0.010857	3.306783	0.0010*
$SIZE_{it}$	-0.066767	0.199542	-0.334600	0.7381
R-squared	0.357887			
Adjusted R-squared	0.184018			
F-statistic (Prob)	2.058365 (0.000001)			
Durbin-Watson stat	1.899920			
Variance analysis	4.98798			
	(0.0071)			
	Failure to verify that the error variance is the same			
F-Limer test	1.368864			
	(0.0221)			
	The width of the source is not the same in all sections (panel data)			
Hausman test	46.360474			
	(0.0000)			
	The method of fixed effects is appropriate			

5. Conclusion

The study focused on alternative methods that managers use to manipulate or manage accruals (earnings management) and investors' perceptions to achieve the desired results. This study shows that if managers face limitations in earnings management, they will report aggressive forecast earnings as an alternative to investor perception management. We examined the relationship between accrual management in the research model using earnings management tools with earnings forecasting error. The results showed that accrual items have a significant relationship with earnings forecasting error. The variable rate of return on assets had a significant relationship with earnings forecasting error. The results of the present study are researched by Bartov et al. (2002), Bloomfield (2002), Dutta and Gigler (2002), Black et al. (2014), Das et al. (2011), and Elshafie et al. (2010) is similar.

According to this study, managers complete the earnings management process by managing accruals and evaluating investors' perceptions by forecasting earnings above average on accounting earnings. In other words, when managers can achieve targeted earnings, they report less aggressive earnings forecasting. In general, the aggressiveness of management-forecasted earnings is negatively related to their ability to manipulate earnings through accruals (Elshafie et al., 2010). There is also a positive and significant relationship between earnings forecast error and optional accruals (earnings management tools). In fact, the existence of accruals will make the earnings less stable.

Therefore, venture capitalists are advised to pay attention to the above point when analyzing the firm's earnings. Financial analysts are also advised to analyze their profit and loss statement information based on net earnings and loss items rather than the total net earnings and loss because the net earnings and loss components are more than the total net earnings and loss provides useful information.

References

Ajinkya, B.B. Bhojraj, S. and Sengupta, P. (2005). The Association between Outside Directors, Institutional Investors and the Properties of Management Earnings Forecasts. *Journal of Accounting Research*, 43(3), 343-376. https://doi.org/10.1111/j.1475-679x.2005.00174.x

Bartov, E. Givoli, D. and Hayn, C. (2002). The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics*, 33(2), 173-204. https://doi.org/10.1016/S0165-4101(02)00045-9

Bloomfield, R.J. (2002). The incomplete revelation hypothesis and financial reporting. *Accounting Horizons*, 16(3), 233-243. https://doi.org/10.2308/acch.2002.16.3.233

Barry, C.B., and S.J. Brown. (1985). Differential information and security market equilibrium. *Journal of Financial and Quantitative Analysis,* 20(4), 407–422. https://www.jstor.org/stable/2330758

Black, E.L. and Christensen, Th.E. and Joo, T.T. and Schmardebeck, R. (2014). The Relation between Earnings Management and Pro Forma Reporting. *Contemporary Accounting Research*, 34(2), 750-782. https://doi.org/10.1111/1911-3846.12284

Ciftci, M. and Salama, F. (2017). Stickiness in Costs and Voluntary Disclosures: Evidence from Management Earnings Forecasts. *Journal of Management Accounting Research*, 30 (3), 211–234. https://doi.org/10.2308/jmar-51966

Coller, M. and Yohn, T.L. (1997). Management Forecasts and Information Asymmetry: An Examination of Bid-Ask Spreads. *Journal of Accounting Research*, 35(2),181-191. https://www.jstor.org/stable/2491359

Das, S. Kim, K. and Patro S. (2011). An Analysis of Managerial Use and Market Consequences of Earnings Management and Expectation Management. The Accounting Review, 86(6), 1935-1967. https://www.jstor.org/stable/41408042

Dechow P.M. Sloan, R.G. and Sweeney, A.P. (1995). Detevting of earnings management. *Journal of accounting review*, 70(2), 193-225. https://www.jstor.org/stable/248303

Dutta, S. and Gigler, F. (2002). The effect of earnings forecasts on earnings management. *Journal of accounting Research*, 40(3), 631-655. https://www.jstor.org/stable/3542267

Elshafie, E. Yen, A. and Yu, M. (2010). The association between pro forma earnings and earnings management. *Review of Accounting and Finance*, 9(2), 139-155. https://doi.org/10.1108/14757701011044161

García-Meca E. and Sánchez-Ballesta J.P. (2011). Ownership structure and forecast accuracy in Spain. *Journal of International Accounting, Auditing and Taxation*, 20(2), 73-82. https://doi.org/10.1016/j.intaccaudtax.2011.06.002

Healy, P.M. Hutton, A.P. and Palepu, K.G. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research*, 16(3), 485-520. https://doi.org/10.1111/j.1911-3846.1999.tb00592.x

Huang, K. (2020). Management Forecast Errors and Corporate Investment Efficiency. *Journal of Contemporary Accounting & Economics*, 16(3), https://doi.org/10.1016/j.jcae.2020.100208

Lennox, C. and Park, C.W. (2006). The informativeness of earnings and management's issuance of earnings forecasts. *Journal of Accounting and Economics*, 42(3), 439–458. https://doi.org/10.1016/j.jacceco.2006.05.001

Mehrani, S. Kamyabi, Y. and Qayuor, F. (2017). Investigating the effect of earnings quality indicators on the strength of financial helplessness prediction models. *Accounting and auditing reviews*, 24(1), 103-126. https://acctgrev.ut.ac.ir/article_61846_en.html [In Persion].

Moghimi, F. (2019). Investigating the Relationship between Earnings Management and

Accuracy of Earnings Forecasting by Management in Firms Accepted in Tehran Stock Exchange. *17th Iranian National Accounting Conference*, Qom. Farabi Campus, University of Tehran.

Nikolaev, V. (2018). Identifying Accounting Quality. (December 1, 2018). Chicago Booth Research Paper No. 14-28, *Available at SSRN:* https://ssrn.com/abstract=2484958

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Research Article

The Role of Intellectual Capital Components on the Quality of Internal Control and Financial Restatements in Iran

Mahdie Yazdani*, Mahin Mirzaee

Department of Economics and Administrative Sciences, Imamreza International University, Mashhad, Iran

Abstract

In the present study, we examined the impact of firms' intellectual capital components on the quality of internal control and financial restatements in Iran.

Data obtained from the audit reports and financial statements of 116 companies listed on the Tehran Stock Exchange over the period 2012 to 2016.

The hypotheses testing results showed that none of the human, structural, and communicational capital coefficients have a significant relationship with the quality of internal control and financial restatements. Our findings could indicate that firms consider little value to human resources and its management during the examination period. Our study results do not deny the importance of human resources in implementing the internal control process.

The study outcomes may benefit the impact of intellectual capital on internal control and restatement in developing countries.

Keywords: intellectual capital, quality of internal control, financial restatements.

***Corresponding Author**: MSc of Accounting, Email: yazdani.mahdieh90@gmail.com

1. Introduction

Intellectual capital is one of the important factors in firm efficiency, which is a proportion of the necessary resources required for the success of a knowledge-based economy (Ujwary-Gil, 2012). Implementing effective internal control in firms could provide reasonable confidence (not absolute) about the ability to trust management's financial information and protect shareholders' equity and financial creditors. By insisting on intellectual capital, a considerable difference is evident between traditional and modern economies, which inclines the firms toward competitive advantages. According to resource theory, organizations' human resource is the only infrequent source, which could not be copied easily by the rivals (Chen, Liaw & Lee, 2003) and result in a sustainable competitive advantage. The presence of an efficient and positive intellectual capital, which is a combination of human, structural, and communicational capital, could elevate firms' efficiency and step up the equity value (Barnes and McClure, 2009). The complexity of operations in firms and the subsequent changes in the world economy have led to a better understanding of the difference between traditional performance monitoring solutions and modern organizational ethical approaches (e.g., staff self-control). Senior managers are more flexible about using intellectual capital to plan operational activities (Datta, Guthrie & Wright, 2005). In addition, intellectual capitals contribute significantly to operational costs and could affect the processes of firms' internal control and net profit (D'Aquila & Houmes, 2014). Thus, to achieve the goals of an economic enterprise and the effectiveness of operation is the main objective of effective controls is proportionate with the managerial needs in the field (Hoitash, Hoitash & Bedard, 2008). Strong human capital and structure control prevent people from different levels from abuse of invisible behaviors. Previous research studies revealed that the more the weaknesses in internal control of resources exist, the more the exploitation from the part of management happens (Cheng, Dhaliwal & Zhang, 2013). Moreover, firms' managers with lower quality of financial reporting are more inclined to their organizational resources (Biddle et al., 2009; Garcia-Teruel et al., 2009; Huang & Zhang, 2011; Cheng et al., 2013). Therefore, there is a relationship between firms' resource allocation (for example, allocation of intellectual capital) and financial reporting quality (Qi, Li, Zhou & Sun, 2016). Thus, this paper focused on a connection between intellectual capital allocation, financial reporting quality, and the restated financial statements. The related literature considered the impact of SOX legislation before and after implementing internal control and the board characteristics' impact on disclosure of internal control weaknesses (Zhang et al., 2007; Lin et al., 2011). In addition, a comprehensive review carried out on the Board and CEOs' characteristics including, experience, independence, expertise, and the impact of workflow management on the quality of internal controls (Srinivasan, 2005; Johnstone et al., 2011; Hoitash et al., 2009; Haynes & Hillman, 2010; Chen Lin et al., 2014). However, none of the studies has studied the role of strategy, communicational network within firms, knowledge, ability, and the culture of all organizational employees.

In contrast, these are considered as the main elements of firm intellectual capital. Thus, given the prominent role of intellectual capital in creating value for the firm, studying the relationship between the organization's intellectual capital in improving internal controls and the restatement of financial statements is useful and relevant. Also, intellectual capital is a full-fledged issue (Cuganesan, Boedker, and Guthrie, 2007). Researchers have taken an interest in discussion on how to use intellectual capital accounts qualitatively and quantitatively (Dumay,2009; Dumay&Roslender,2013; Rooney &Dummay,2015).

2. Literature and Hypotheses Development

2.1. Intellectual capital

From the experts' perspective, intellectual capital consists of three components: human, structural, and communicational. The human capital of an organization involves skill, expertise, problem-solving ability, and leadership styles (Brooking, 1996). Human capital, as the basis of intellectual capital, results in improved performance, and creates profits for the firm (Chen et al.,2004). The most important human capital indicators are the professional qualifications of key employees, education, experience, and careful distribution of responsibilities (Rodov & Leliaert, 2002). Structural capital includes databases and organizational charts and instruction to implement the processes, strategies, and executive programs (Roos et al., 1997). Communicational capital knows marketing channels and relationships with customers, which are the decisive factors in reflecting intellectual capital in its business performance (Chen et al. 2004). Recent changes in the global economy, the complexity of firms' operations, dynamic and competitive environment make further understanding for managers of industrial units about the difference between traditional solutions of monitoring performance and new value-approaches in organizations (e.g., staff self-control). By using the intellectual capital, management has greater flexibility to make strategic planning and operational activities of the organization. Intellectual capital is a combination of tangible and intangible assets, and it has a direct effect on those unseen financial statements, which can improve the firm's financial performance. Therefore, intellectual capital has become one of all organizations' main priorities (Green, 2007; Cohen & Kaimenakis, 2007). Conducted research studies in this field have proved that investing in human resources is necessary to attract and develop the organizations' knowledge and skills (Yellen, 1984; Titman and Wessels, 1988; Laffont & Tirole, 1988).

During his research, Wickramasinghe (2015) proved that organizations need to involve their human resources more and expand their capabilities to improve their services and products. He revealed in his research that human resources directly impact the quality of services provided by companies.

Thomas (2003) investigated the effect of the use of intellectual capital information by stock analysts. He concluded that those who only considered annual reports based on decision-making had lower average income and profit predictions than analysts who considered annual reports information and intellectual capitals.

Barnes and McClure (2009) reported that almost half of Australia’s economy is related to intellectual capital. They also stated that higher growth of investment was in structural capital. They showed that positive and efficient intellectual capital could increase firms' productivity and efficiency and enhance a firm's equity value.

Coram (2010) showed that using financial information with non-financial performance indicators related to resource allocation strategies such as intellectual capital positively affects estimating investors' and analysts' stock price.

Maditinos et al. (2010) studied the impact of intellectual capital on market value, and firms' financial performance was under investigation using 96 Greek firms' data. Their results indicated a significant relationship between human capital and returned on earning (ROE). However, there was no relationship between other intellectual capital components and other financial performance (ROA and GR).

Ting and Lean (2009) examined the role of intellectual capital on firms’ financial performance from 1999 to 2007. Results illustrated that intellectual capital is positively related to the profitability of the enterprise.

Guo et al. (2016) noted that employment policies and relationships between staff play a vital role in improving internal control. They showed that paying more attention to employees' benefits and motivating them are two effective factors to reduce human capital

errors. It could lead to an increase in the effectiveness of internal control and restatement of financial statements.

2.2. Internal control

Internal control is a process influenced by the Board of Directors, management, other employees of the enterprise, procedures, and policies which are designed to establish acceptable confidence to achieve organizational goals related to reporting, operations, and compliance(COSO, 2013; Lawrence, Minutti-Meza, and Vyas, 2014). Improving the quality of firms' financial reporting, identifying points of weakness in the controlling process, and well-timed correction are other basic objectives that make firms use the internal control process (Qi, Li, Zhou & Sun, 2016). Doyle et al. (2007) showed that weak points of internal control decrease financial statements' quality. Qi, Li, Zhou & Sun (2016) declared that effective internal control over financial reporting creates order in the capital market. Therefore, it would reduce agency problems. They also demonstrated a high quality of financial reporting impairs managers' ability to misuse firms' resources. Gao&Jia (2015) studied the impact of internal control weakness on financial reporting and protection of firms' resources. They stated that the firms' resources with weak internal control are less valuable to investors. They have also shown that the consequences of a negative assessment of firms' internal control are largely related to the financial reporting process. Annual reports of firms with weak internal control are less valuable to investors. Researches (Hochberg et al., 2006; Ashbaugh-Skaife et al., 2008; Petrovits et al., 2011) also confirmed the existence of strong controls could lead to understandable, exact, and accurate financial reporting. This is crucial for investors and users and draws up their confidence in the reports presented. According to the research results conducted by the Association of Chartered Accountants of America, internal control weakness is the most important reason for fraudulent financial reporting.

Eldridge, van Iwaarden, van der Wiele, & Williams (2013) Stated and developing a comprehensive quality management approach, accountants and economists have also studied the process of financial control. Still, MCS's use, which involves simultaneous attention to human, physical, and financial resources, makes the work process be managed better in the condition of uncertainty.

The human resources of each firm are the executives of controlling processes.

Ge&Mcvay (2005) and Doyle et al. (2007) showed a lack of qualified staff with technical expertise in Generally Accepted Accounting Principles. Securities and Exchange Commission are the common causes that make firms internal controls ineffective. Firms' commitments to attract, develop, retain, and maintain qualified human resources in support of organizational goals are the basic principle of the internal control framework. Therefore, human resources are the key elements of the internal environment (D'Aquila & Houmes, 2014). Researches in the field of restatement of financial statements have also proved that human errors and lack of skills and expertise in the application of accepted accounting principles are other reasons to restate financial statements (Hennes, Leone, and Miller, 2008; Acito, Burks, and Johnson 2009; Usvyatsky 2013). Accordingly, we raise the first hypothesis of the study as follows:

H_1: There is a significant relationship between a firm human capital coefficient of efficiency and the quality of internal controls and financial restatement.

The control environment is a set of standards, processes, and guidelines that provide a basis for internal controls across an organization (COSO[1], 2013). The control environment has a comprehensive effect on the entire system of internal control.

[1] -Committee Of Sponsoring Organizations of the Treadway Commission (COSO)

Information and communications are other components of the internal control framework. Internal and external communications are sources of information. External communications are useful in the process of internal control in two ways. First, it provides access to relevant external information. Second, it is related to the provision of information for outsiders and responds to their requests and expectations (D'Aquila, Jill. M. 2013). They also relate the structural capital of a series of guidelines to implement processes. Executive programs are also included in the existing knowledge of communicational channels. The second and third hypotheses in this study are as follows:

H_2: There is a significant relationship between a firm structural capital coefficient of efficiency and the quality of internal controls and financial restatement.

H_3: There is a significant relationship between a firm communicational capital coefficient of efficiency and the quality of internal controls and financial restatements.

3. Research Methodology

The present study aims to survey the effect of intellectual capital components on companies listed on the Tehran Stock Exchange. Given that, this project is practical and is considered as a dynamic panel regression study. The study is carried out throughout 2012-2016, and the statistical population is all companies listed on the Tehran Stock Exchange. Companies should have presented their financial statements, audit reports, and the required information to the stock exchange period under review regarding the study's time. To have a unified procedure and sample, companies under study did not change their fiscal year. Concerning the inflationary condition in Iran and its impact on companies' financial policies, the desired companies should have no trading interval for more than three months (have continuous capital market activity). Hence, given the mentioned terms, a total of 116 companies were selected for the study. Rahavard-e- Novin Software was used to gather the required data and financial information of variables from the financial statements and audit reports, which were available on the Codal Website (www.codal.ir) the supervision of the Tehran Stock Exchange.

3.1. Variables

3.1.1. Dependent variable- the status of internal control

The number of weaknesses of internal control is the dependent variable of the study. To measure the number of internal control weaknesses, reports of dependent auditors and authorized inspectors of companies available in the comprehensive information system for publishers of securities (Codal), under the supervision of the Tehran Stock Exchange, were used. The Maximum reported weakness cases in the auditor's report were about lack and inappropriateness of cost calculation system, lack of sufficient insurance coverage for fixed properties, and lack of proper warehouse and not regulating the laws of the Tehran Stock Exchange.

3.1.2. Independent variable- Intellectual capital and its components

In this study, independent variables include intellectual capital and its components: Human, structural and communicational capital, which is calculated based on the Pulic model (2000). Pulic raised the measurement model of intellectual capital in 1997. He developed the model in 1998 and completed it in 2000. According to this model, value-added resulting from resources of the current year is calculated based on the following relation**:**

$$VA=OP+EC+D+A \quad (1)$$

OP=Operating profit of the present year

EC=Labor costs in the current year

D= The cost of depreciation of fixed assets in the current year

A=Cost of intangible assets amortization in the current year

Pulic introduced criteria for measuring intellectual capital under three criteria: the value-added coefficient of structural, communicational, and human capital.

$VAIC_i = HCE_i + SCE_i + CEE_i$

$VAIC_i$: Value-added coefficient of the intellectual capital of firm i

HCE_i: Human capital efficiency coefficient of firm i

SCE_i: Structural capital efficiency coefficient of firm i

CEE_i: communicational capital efficiency coefficient of firm i

Salary is one of the indicators of firms' human capital, so human capital efficiency is calculated as follows, which shows that for every Riyal (Iranian currency) spent for the staff, how much value-added will be achieved in Riyals.

$$HCEi = \frac{VA}{HC}$$

Where human capital includes direct labor, indirect labor, and salary of sales sectors, marketing, and administration. Pulic stated there is an inverse proportional relationship between salary and structural capital. In this model, structural capital is calculated as the difference between the values added minus human capital.

$SCE_i = 1-(HC/VA)$

The efficiency coefficient of communicational capital is calculated as follows:

$$CEEi = \frac{VA}{CE}$$

Where CE is the book value of the net assets of the firm.

3.1.3. Control variables

Based on previous research (Ge&McVay, 2005; Ashbaugh et al., 2007; Doyle et al., 2007), some control variables documented that they relate to internal control weaknesses entered the model. These control variables include 1.The complexity of operations (Presence of external parts) 2. Organizational changes (Integration and combination) 3. Indicators of resource limitation (loss, the logarithm of the market value) 4) accounting tools to measure risk (Sales growth, inventory). Control variables related to firm status include size and financial leverage. The larger the firm's size, the more objective guidelines and procedures will produce, and the accounting errors will be reduced to a minimum, while this is not possible in small firms with limited financial resources. Therefore, more errors are expected to be found in the presentation of accounting information in these firms (Guthrie & Abhayawansa, 2016). Changing accounting figures is one way that managers use to report firm status in a better situation. High financial leverage is a sign of financial problems and pressures—control variables associated with firms' managerial factors, including management tenure and change management. Senior managers have a prominent role in the enterprise; therefore, they can ignore internal controls and influence financial reporting (Moore, 2007)

3.2. Research models

The model used in this study comes from studies of (Guo et al., 2016 and Morris, 2011):

Model (1)

$$\text{Count-Weak}_{it} = \gamma_{0+} \gamma_1 HCE_{it} + \gamma_2 \text{ERS}_{it} + \gamma_3 \text{Foreign}_{it} + \gamma_4 M\&A_{it} + \gamma_5 Loss_{it} + \gamma_6 Salegrw_{it} + \gamma_7 Invtat_{it} + \gamma_8 \text{Log age}_{it} + \gamma_{10} \text{Lev}_{it} + \gamma_{11} MDUR_{it} + \gamma_{12} MCH_{it} + \text{Size}_{it} + \varepsilon_{i,t}$$

The variables used in the above model:

A number of internal control weaknesses reported.

Count-Weak $_{it:}$ Auditing of firms

$HCE_{it:}$ Calculated human capital efficiency coefficient of firm i following Pulic model (2000) in year t.

ERS $_{it:}$ Control variable equals one if the firm i restates its financial statements in year t.

Foreign $_{it:}$ Control variable equals 1 if the firm has the non-zero conversion of foreign exchange, otherwise equals zero (benchmark of operations complexity).

M &A_{it}: Control variable equals 1 if the firm is reported in the acquisition of the cash flow statement; otherwise, it equals zero.

$Loss_{it:}$ Control variable equals 1 if the firm is unprofitable; otherwise equals zero.

$Salegrw_{it:}$ Percentage of changes in sales of firm i in year t.

$Invtat_{it}$: Ratio of inventory to total assets of firm i in year t.

$LogMKTV_{it:}$ The natural logarithm of the market value of capital of firm i in the year t.

Log $age_{it:}$ The natural logarithm of the number of years that firm has been a member of the Tehran Stock Exchange.

Lev $_{it:}$ Financial leverage of firm i in year t.

$MDUR_{it:}$ The period of management tenure of firm i equals the number of years of chief executive officer tenure in this capacity.

MCH_{it}: Management change without a change of CEO over the previous year equals1 otherwise equals zero.

Size $_{it}$: The natural logarithm of the stock market value of firm i in the year t

Model (2)

Count-Weak $_{it}$= γ_{0+} $\gamma_1 SCE_{it}$ + γ_2 ERS $_{it}$+ γ_3 Foreign $_{it}$+ γ_4 M &A_{it}+ $\gamma_5 Loss_{it}$ + $\gamma_6 Salegrw_{it}$+ $\gamma_7 Invtat_{it}$+ $\gamma_8 LogMKTV_{it}$ + γ_9 Log age_{it} +γ_{10} Lev $_{it}$+ $\gamma_{11} MDUR_{it}$+ $\gamma_{12} MCH_{it}$+ γ_{13} Size $_{it}$ +$\varepsilon_{i,t}$

Model (3)

Count-Weak $_{it}$= γ_{0+} $\gamma_1 CEE_{i\ t}$ + γ_2 ERS $_{it}$+ γ_3 Foreign $_{it}$+ γ_4 M &A_{it}+ $\gamma_5 Loss_{it}$ + $\gamma_6 Salegrw_{it}$+ $\gamma_7 Invtat_{it}$+ $\gamma_8 LogMKTV_{it}$ + γ_9 Log age_{it}+γ_{10} Lev $_{it}$+ $\gamma_{11} MDUR_{it}$+ $\gamma_{12} MCH_{it}$+ γ_{13} Size $_{it}$ +$\varepsilon_{i,t}$

4. Empirical Results

4.1. Descriptive statistics of variables

Table 1 shows the descriptive statistics of the study variables. As can be seen, the structural capital coefficient, which includes organizational charts, instructions to implement processes, and administrative programs, has allocated the minimum average in intellectual capital components. The greatest number of internal control weaknesses is related to a firm that has been unprofitable during the whole period of examination. Management has changed three times during the investigation.

4.2. Validity of research variables

Prior to hypotheses testing, the static structure of research variables was checked by Haderi tests to prevent well-dressed false regressions—the results of this study presented in Table 2. A significant level of independent, dependent, and control variables of the mentioned test is smaller than 0.05, which indicates static variables were used in the study and reject the null hypothesis of this test (variables have unit root (they are non-viable).

Table 1: Descriptive statistics of research variables

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
SCE	0.5738	0.685	7.44	-8.94	1.91
HCE	3.206	2.695	10.5	-1.17	2.66
CEE	1.3208	0.935	4.27	0.000	1.05
VAIC	5.1016	4.565	14.85	-8.78	3.92
ERS	0.14	0.000	1.000	0.000	0.35
Count-Weak	5.54	5.000	18.000	0.000	4.16
M & A	0.26	0.000	1.000	0.000	0.44
SIZE	8.5148	8.475	10.74	6.6	1.02
Foreign	0.34	0.000	1.000	0.000	0.48
Log age	1.108	1.04	1.58	0.78	0.22
MDUR	1.6	1.000	4.000	1.000	0.83
MCH	0.54	1.000	1.000	0.000	0.50
loss	0.12	0.000	1.000	0.000	0.33
INVTAT	0.2454	0.23	0.51	0.07	0.09
Salegrw	0.21	0.15	2.5	-0.33	0.39
Lev	2.6474	1.575	41.74	0.63	5.70

Table 2: Test result of research variables validity

Variables	Hadri Z-stat		Variables	Hadri Z-stat	
	Statistic	Prob.		Statistic	Prob.
SCE	6.93	0.000	Log age	7.45	0.000
HCE	3.43	0.000	MDUR	4.53	0.000
CEE	4.43	0.000	MCH	2.44	0.007
VAIC	4.58	0.000	loss	2.04	0.021
ERS	2.1	0.012	INVTAT	5.1	0.000
Count-Weak	5.01	0.000	Salegrw	3.35	0.000
M & A	3.1	0.000	Lev	7.05	0.000
SIZE	4.1	0.000			
Foreign	3.302	0.000			

4.3. Test of selecting a suitable pattern for the regression model

To select a suitable pattern for a regression model, prior to hypotheses testing, we examined the panel type of data by using the Chow test, and we examined the fixed or random-effects model by using the Hausman test. In Table 3, the Chow test's significance level and the result of the test of used models data were provided. Given that the random effects approach is the null hypothesis in the Hausman test and considering the significance level obtained from models one to four shown in Table 4, this table's results are as follows.

Table 3: Results of the Chow test

Result	Sig.	statistics	Chow test
Panel data	0.0082	3.26	Model 1
Panel data	0.009	0.18	Model2
Panel data	0.0028	3.9	Model3

Table 4: Results of the Hausman model

Result	Significance level	Chi-squared Standard deviation	Chi-squared statistics	Summary of the Hausman test
Using random effects approach	1.000	13.000	0.000	Model1
Using random effects approach	1.000	13.000	0.000	Model2
Using a random-effects approach	1.000	13.000	0.000	Model3

4.4. Test results of research first hypothesis

Table 5 displays the results of the research first hypotheses testing. It investigates the relationship between a firm human capital coefficient of efficiency and the quality of internal controls and restatement of financial statements. The significance level of count-weak is equal to 0.23, and the variable of restatement of financial statements is equal to 0.24, which is greater than 0.05, which means the absence of a significant relationship between a firm human capital coefficient of efficiency and the quality of internal control and the restatement of financial statements of a firm. Durbin-Watson statistic is also equal to 1.94, close to 2, which shows that erroneous sentences lack autocorrelation. The level of significance for F statistic also shows that the model is significant statistically.

Table 5: Test results of research first hypothesis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Count-Weak	-0.109459	0.091408	-1.197473	0.2389
ERS	1.067742	0.897177	1.190113	0.2418
FOREIGN	0.855399	0.767147	1.115039	0.2722
INVTAT	-6.890292	3.928423	-1.753959	0.0879
LEV	-0.006418	0.047074	-0.136336	0.8923
LOGAGE	1.866508	2.072108	0.900777	0.3737
LOGMKTV	1.868204	0.983333	1.899868	0.0655
LOSS	-0.585595	1.248729	-0.468953	0.6419
MCH	-0.582342	0.892910	-0.652185	0.5184
MDUR	0.419166	0.534358	0.784431	0.4379
SALEGRW	-0.247056	0.779100	-0.317104	0.7530
M & A	0.221360	0.729996	0.303234	0.7635
SIZE	0.480715	0.420640	1.142818	0.2607
R-squared	0.413058	Mean dependent var		1.794982
Adjusted R-squared	0.201107	S.D. dependent var		1.829402
S.E. of regression	1.635135	Sum squared resid		96.25196
F-statistic	1.948834	Durbin-Watson stat		1.947236
Prob(F-statistic)	0.057026			

$$\text{Count-Weak}_{it} = \gamma_{0+} \gamma_1 HCE_{it} + \gamma_2 \text{ ERS}_{it} + \gamma_3 \text{ Foreign}_{it} + \gamma_4 \text{ M \&A}_{it} + \gamma_5 Loss_{it} + \gamma_6 \text{ Salegrw}_{it} + \gamma_7 Invtat_{it} + \gamma_8 LogMKTV_{it} + \gamma_9 \text{ Log age}_{it} + \gamma_{10} \text{ Lev}_{it} + \gamma_{11} MDUR_{it} + \gamma_{12} MCH_{it} + \text{Size}_{it} + \varepsilon_{i,t}$$

4.5. Test results of research second hypothesis

The research second hypothesis's test result examines the relationship between a firm

structural capital coefficient of efficiency and the quality of internal controls and the restatement of each firm's financial statements. The significance level of Count-Weak and ESR is equal to 0.56 and 0.608 that is greater than 0.05 and represents the rejection of the second hypothesis and indicates that there is no relationship between structural capital and the quality of internal control and the restatement of financial statements.

Table 6: Test results of research second hypothesis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Count-Weak	0.059216	0.103094	0.574386	0.5693
ERS	-0.599246	1.157987	-0.517489	0.6080
FOREIGN	-0.198205	0.812265	-0.244016	0.8086
INVTAT	-3.289509	3.890274	-0.845573	0.4034
LEV	0.015205	0.060195	0.252593	0.8020
LOGAGE	1.722185	1.866782	0.922542	0.3624
LOGMKTV	-0.380805	1.250807	-0.304448	0.7625
LOSS	-0.227547	1.492945	-0.152415	0.8797
MCH	-0.267892	1.136204	-0.235778	0.8149
MDUR	0.425357	0.689494	0.616912	0.5412
SALEGRW	-0.448887	0.914335	-0.490943	0.6264
M & A	0.406799	0.868594	0.468342	0.6424
SIZE	0.169841	0.459751	0.369419	0.7140
R-squared	0.117546	Mean dependent var		0.573800
Adjusted R-squared	-0.201118	S.D. dependent var		1.905527
S.E. of regression	2.088372	Sum squared resid		157.0068
F-statistic	0.368870	Durbin-Watson stat		2.060614
Prob(F-statistic)	0.971463			

$$\text{Count-Weak}_{it} = \gamma_{0+} \gamma_1 SCE_{it} + \gamma_2 \text{ ERS}_{it} + \gamma_3 \text{ Foreign}_{it} + \gamma_4 M\&A_{it} + \gamma_5 Loss_{it} + \gamma_6 Salegrw_{it} + \gamma_7 Invtat_{it} + \gamma_8 LogMKTV_{it} + \gamma_9 \text{ Log age}_{it} + \gamma_{10} \text{ Lev}_{it} + \gamma_{11} MDUR_{it} + \gamma_{12} MCH_{it} + \gamma_{13} \text{ Size}_{it} + \varepsilon_{i,t}$$

Table 7: Test results of research third hypothesis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Count-Weak	-0.031967	0.040834	-0.782850	0.4388
ERS	0.235037	0.391904	0.599732	0.5524
FOREIGN	0.556448	0.344145	1.616902	0.1146
INVTAT	1.374331	1.805947	0.761003	0.4516
LEV	-0.025044	0.020564	-1.217869	0.2312
LOGAGE	-1.288054	0.973099	-1.323662	0.1940
LOGMKTV	0.886026	0.432554	2.048358	0.0479
LOSS	0.185004	0.552876	0.334621	0.7399
MCH	-0.630838	0.390522	-1.615371	0.1150
MDUR	0.057899	0.233439	0.248025	0.8055
SALEGRW	0.231837	0.346573	0.668941	0.5078
M & A	-0.614477	0.321488	-1.911350	0.0639
SIZE	0.065214	0.188888	0.345252	0.7319
R-squared	0.419771	Mean dependent var		0.666027
Adjusted R-squared	0.210243	S.D. dependent var		0.788029
S.E. of regression	0.700307	Sum squared resid		17.65550
F-statistic	2.003417	Durbin-Watson stat		1.328772
Prob(F-statistic)	0.049975			

$$\text{Count-Weak}_{it} = \gamma_{0+} \gamma_1 CEE_{i\,t} + \gamma_2 \text{ ERS}_{it} + \gamma_3 \text{ Foreign}_{it} + \gamma_4 M\&A_{it} + \gamma_5 Loss_{it} + \gamma_6 Salegrw_{it} + \gamma_7 Invtat_{it} + \gamma_8 LogMKTV_{it} + \gamma_9 \text{ Log age}_{it} + \gamma_{10} \text{ Lev}_{it} + \gamma_{11} MDUR_{it} + \gamma_{12} MCH_{it} + \gamma_{13} \text{ Size}_{it} + \varepsilon_{i,t}$$

4.6. Test results of research third hypothesis

Table 7 shows the third research hypothesis's test results, showing the relationship between communicational capital and internal control quality and financial statements' restatement. Count-Weak and ERS variables' significance level is equal to 0.43 and 0.55, which is greater than 0.05 and indicates no significant relationship between sample variables.

5. Discussion and Conclusion

The current study attempts to figure out the impact of a firm's intellectual capital components on internal control quality and accurate and reliable financial reporting. Different firms have different internal controls based on different situations (Ji et al., 2015). Managers, supervisors, and other personnel in each firm are responsible for implementing internal control processes. Intellectual capital is an important factor in evaluating firms' performance and is one of the organizational factors that play a major role in implementing managers' objectives. Lack of qualified staff is one of the factors that make internal controls ineffective. Organizational structures, guidelines, and communications are components of any firm for a controlled environment and have a pervasive effect on the internal control structure. Therefore, in the present project, we examined whether different degrees of coefficients of intellectual, human, structural, communicational capital components could affect the quality of internal controls and restatement of financial reports. Given that, we calculated the coefficient of efficiency of intellectual capital components of 116 firms listed on the Tehran Stock Exchange over the period from 2010 to 2014 and according to the Pulic model (2000) and we considered the number of weaknesses in the audit reports of firms as the measures of the internal quality control. The statistical analysis of collected data using dynamic panel regression showed no significant relationship between human, structural, and Communicational capital of each firm and the quality of internal control and the restatement of financial statements.

Such a result is in contrast with that of Guo et al. (2016), who indicated that setting appropriate policies for human resources could affect the internal control and financial restatements. Moreover, in contrast with Acito, Burks, and Johnson (2009), Usvyatsky (2013) stated that human errors are an influential factor in financial restatements. We found no significant relationship between human, structural. Communicational capital and financial restatements and the quality of firms' internal controls and our findings substantiate a gap between theory and practice. In contrast to the previous studies, like Becker & Gerhart (1996) and Asiaei and Jusoh (2015), where human and intellectual capital has a positive relationship with firm performance, we concluded an inverse result, and this could be due to different situations in developing countries, including Iran. Inconsistent economic issues and lack of transparent financial and non-financial information are two different situations in such countries. The presence of peculiar economic conditions in Iran and the imposed sanctions within the recent decade have caused the firms not to regulate a fixed framework for their policies. Within that framework, they have no significant relationship between intellectual capital and internal control of firms. Such a finding is important because intellectual capital has gained importance in the economic reform plan of Iran.

We herein acknowledge that no significant relationship has been established between intellectual capital components, internal control quality, and financial restatement during the study. However, since according to the studies of the American Institute of Certified Public Accountants, the essential reason for the fraudulent financial report is the weakness

of internal control and human resources of those who implement the process of internal control, we could not ignore the significant role of human resources and organizational structure of firms on the quality of internal control. As Guo et al. (2016) expressed, we should be cautious about analyzing issues related to human resources and intellectual capitals. The behavior and performance of human resources are entangled with many other causal relations.

Accordingly, concerning the obtained results, we highly recommend that a combination of financial and non-financial models be used for measuring intellectual capital. Given the significance of intellectual capital concerning investors' decision-making, we recommend future researchers design a model for intellectual capital information in financial statements and their additional notes.

Lack of detailed information in additional notes by some firms or distorted financial statements on the Tehran Stock Exchange website was among the study's main limitations.

References

Abhayawansa, S. and Guthrie, J. (2016). Does intellectual capital disclosure in analysts' reports vary by firm characteristics?. *Advances in Accounting, 35, 26-38.* ttps://doi.org/10.1016/j.adiac.2016.04.002

Acito, A.A. Burks, J.J. and Johnson, W.B. (2009). Materiality decisions and the correction of accounting errors. *The Accounting Review,* 84(3), 659-688. https://www.jstor.org/stable/27784190

Ashbaugh-Skaife, H. Collins, D.W. and Kinney, W.R. (2007). The discovery and reporting of internal control deficiencies prior to SOX-mandated audits. *Journal of Accounting and Economics,* 44(1-2), 166-192. https://doi.org/10.1016/j.jacceco.2006.10.001

Ashbaugh-Skaife, H. Collins, D.W. Kinney Jr, W R. and LaFond, R. (2008). The effect of SOX internal control deficiencies and their remediation on accrual quality. *The accounting review,* 83(1), 217-250. https://www.jstor.org/stable/30243517

Asiaei, K. and Jusoh, R. (2015). A multidimensional view of intellectual capital: the impact on organizational performance. *Management Decision,* 53(3), 668-697. Doi: 10.1108/MD-05-2014-0300

Barnes, P. and McClure, A. (2009). *Investments in intangible assets and Australia's productivity growth.* Productivity Commission.

Becker, B. and Gerhart, B. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of management journal,* 39(4), 779-801. https://doi.org/10.5465/256712

Biddle, G.C. Hilary, G. and Verdi, R.S. (2009). How does financial reporting quality relate to investment efficiency?. *Journal of accounting and economics,* 48(2-3), 112-131. https://doi.org/10.1016/j.jacceco.2009.09.001

Brooking, A. (1996). *Intellectual Capital–Core asset for the third millennium enterprise*. International Thomson Business Press. New York.

Chen, J. Zhu, Z. and Yuan Xie, H. (2004). Measuring intellectual capital: a new model and empirical study. *Journal of Intellectual capital*, 5(1), 195-212. Doi: 10.1108/14691930410513003

Chen, L.H. Liaw, S.Y. and Lee, T.Z. (2003). Using an HRM pattern approach to examine the productivity of manufacturing firms-an empirical study. *International Journal of Manpower*, 24(3), 299-318. Doi: 10.1108/01437720310479750

Cheng, M. Dhaliwal, D. and Zhang, Y. (2013). Does investment efficiency improve after the disclosure of material weaknesses in internal control over financial reporting?. *Journal of Accounting and Economics*, 56(1), 1-18.

https://doi.org/10.1016/j.jacceco.2013.03.001

Cohen, S. and Kaimenakis, N. (2007). Intellectual capital and corporate performance in knowledge-intensive SMEs. *The Learning Organization*,14(3), 241-262. https://doi.org/10.1108/09696470710739417

Committee of Sponsoring Organizations of the Treadway Commission (COSO), (1992). Internal Control – Integrated Framework. American Institute of Certified Public Accountants, Durham, NC. 2013. Internal Control – Integrated Framework: Executive summary. www.coso.org

Coram, P.J. (2010). The effect of investor sophistication on the influence of non-financial performance indicators on investors' judgments. *Accounting & Finance,* 50(2), 263-280. https://doi.org/10.1111/j.1467-629X.2009.00328.x

COSO, (1992). *Internal Control –Integrated Framework.*

Cuganesan, S. Boedker, C. and Guthrie, J. (2007). Enrolling discourse consumers to affect material intellectual capital practice. *Accounting, Auditing & Accountability Journal*, 20(6), 883-911. https://doi.org/10.1108/09513570710830281

D'Aquila, J.M. and Houmes, R. (2014). COSO's Updated Internal Control and Enterprise Risk Management Frameworks. *CPA Journal*, 84, 54-59

D'Aquila, J. (2013). COSO's Internal Control–Integrated Framework. *CPA Journal*, 83(10), 22-29.

Datta, D.K. Guthrie, J.P. and Wright, P.M. (2005). Human resource management and labor productivity: does industry matter?. *Academy of management Journal*, 48(1), 135-145. https://www.jstor.org/stable/20159645

Doyle, J.T. Ge, W. and McVay, S. (2007). Accruals quality and internal control over financial reporting. *The Accounting Review,* 82(5), 1141-1170. https://doi.org/10.2308/accr.2007.82.5.1141

Dumay, J.C. (2009). Reflective discourse about intellectual capital: research and practice. *Journal of Intellectual Capital*, 10(4), 489-503. https://doi.org/10.1108/14691930910996607

Dumay, J. and Roslender, R. (2013). Utilising narrative to improve the relevance of intellectual capital. *Journal of Accounting & Organizational Change*, 9(3), 248-279. https://doi.org/10.1108/JAOC-07-2011-0034

Gao, X. and Jia, Y. (2015). The Role of Internal Control in the Equity Issue Market Evidence From Seasoned Equity Offerings. *Journal of Accounting, Auditing & Finance*, https://doi.org/10.1177/0148558X15602821

Eldridge, S. van Iwaarden, J. Van der Wiele, T. and Williams, R. (2013). Management control systems for business processes in uncertain environments. *International Journal of Quality & Reliability Management*, 31(1), 66-81. https://doi.org/10.1108/IJQRM-03-2012-0040

García-Teruel, P.J. Martínez-Solano, P. and Sánchez-Ballesta, J.P. (2009). Accruals quality and corporate cash holdings. *Accounting & Finance*, 49(1), 95-115.

Ge, W. and McVay, S. (2005). The disclosure of material weaknesses in internal control after the Sarbanes-Oxley Act. *Accounting Horizons*, 19(3), 137-158. https://doi.org/10.2308/acch.2005.19.3.137

Green, G.M. (2007). Value creation in business incubation networks: The impact of innovation diffusion on intellectual capital development in start-up companies. University of Maryland University College.

Guo, J. Huang, P. Zhang, Y. and Zhou, N. (2016). The Effect of Employee Treatment Policies on Internal Control Weaknesses and Financial Restatements. *The Accounting Review*, 91 (4), 1167-1194. https://doi.org/10.2308/accr-51269

Haynes, K.T. and Hillman, A. (2010). The effect of board capital and CEO power on strategic change. *Strategic Management Journal*, 31(11), 1145-1163.

https://doi.org/10.1002/smj.859

Hennes, K.M. Leone, A.J. and Miller, B.P. (2008). The importance of distinguishing errors from irregularities in restatement research: The case of restatements and CEO/CFO turnover. *The Accounting Review*, 83(6), 1487-1519. https://www.jstor.org/stable/30243804

Hochberg, Y.V. Sapienza, P. and VISSING-JØRGENSEN, A. N. (2009). A Lobbying Approach to Evaluating the Sarbanes-Oxley Act of 2002. Journal of Accounting Research, 47(2), 519-583. https://doi.org/10.1111/j.1475-679X.2009.00321.x

Hoitash, R. Hoitash, U. and Bedard, J.C. (2008). Internal control quality and audit pricing under the Sarbanes-Oxley Act. *Auditing: A Journal of Practice & Theory*, 27(1), 105-126.

Hoitash, U. Hoitash, R. and Bedard, J.C. (2009). Corporate governance and internal control over financial reporting: A comparison of regulatory regimes. *The accounting review*, 84(3), 839-867.

http://www.auditanalytics.com/blog/restatements-where-they-come-from/

Huang, P. and Zhang, Y. (2011), Does enhanced disclosure really reduce agency costs? Evidence from the division of corporate resources, *The Accounting Review*, 87(1), 199–229. https://www.jstor.org/stable/41408066

Ji, X. D., Lu, W., and Qu, W. (2015). Determinants and economic consequences of voluntary disclosure of internal control weaknesses in China. *Journal of Contemporary Accounting & Economics*, 11(1), 1-17. https://doi.org/10.1016/j.jcae.2014.12.001

Johnstone, K. Li, C. and Rupley, K.H. (2011). Changes in corporate governance associated with the revelation of internal control material weaknesses and their subsequent remediation. *Contemporary Accounting Research*, 28(1), 331-383. https://doi.org/10.1111/j.1911-3846.2010.01037.x

Laffont, J.J. and Tirole, J. (1988). The dynamics of incentive contracts. *Econometrica Journal of the Econometric Society*, 56(5), 1153-1175. https://www.jstor.org/stable/1911362

Lawrence, A. Minutti-Meza, M. and Vyas, D. (2014). Is Operational Control Risk Informative of Financial Reporting Risk?. *A Journal of Practice & Theory: February*, 37(1),. 139-165. https://doi.org/10.2308/ajpt-51784

Lin, S. Pizzini, M. Vargus, M. and Bardhan, I.R. (2011). The role of the internal audit function in the disclosure of material weaknesses. *The Accounting Review*, 86(1), 287-323.Doi: 10.2139/ssrn.1592593

Lin, Y.C. Wang, Y.C. Chiou, J.R. and Huang, H.W. (2014). CEO characteristics and internal control quality. *Corporate Governance: An International Review*, 22(1), 24-42.

Maditinos, D. I. Šević, Z. and Theriou, N.G. (2009). Modelling traditional accounting and modern value-based performance measures to explain stock market returns in the Athens Stock Exchange (ASE). *Journal of Modelling in Management*, 4(3), 182-201. Doi: 10.1108/17465660911006431

Mavridis, D.G. (2004). The Intellectual Capital Performance of the Japanese Banking Sector. *Journal of Intellectual Capital*, 5 (1), 92-115. https://doi.org/10.1108/14691930410512941

Moore, D.L. (2007). Forecasting earnings management: Evidence from GAO restatement data. Moore, Debra L. (2007), Forecasting earnings management: Evidence from GAO restatement data, Doctoral Dissertation, Touro University International.

Petrovits, C. Shakespeare, C. and Shih, A. (2011). The causes and consequences of internal control problems in nonprofit organizations. *The Accounting Review*, 86(1), 325-357. http://dx.doi.org/10.2139/ssrn.1582765

Pulic, A. (2000). VAICTM– An accounting tool for IC management. *International Journal of Technology Management*, 20(5-8), 702-714. Doi: 10.1504/IJTM.2000.002891

Qi, B. Li, L. Zhou, Q. and Sun, J. (2016). Does internal control over financial reporting really alleviate agency conflicts?. *Accounting & Finance*, 57(4), 1101-1125. https://doi.org/10.1111/acfi.12198

Rodov, I. and Leliaert, P. (2002). FiMIAM: financial method of intangible assets measurement. *Journal of intellectual capital*, 3(3), 323-336. https://doi.org/10.1108/14691930210435642

Rooney, J. and Dumay, J. (2015). Intellectual capital, calculability and calculation. *The British Accounting Review*. DOI:10.1016/J.BAR.2015.07.002

Roos, G. and Roos, J. (1997). Measuring your company's intellectual performance. *Long range planning*, 30(3), 413-426. https://doi.org/10.1016/S0024-6301(97)90260-0

Srinivasan, S. (2005). Consequences of financial reporting failure for outside directors: Evidence from accounting restatements and audit committee members. *Journal of Accounting Research*, 43 (2):291–334. https://doi.org/10.1111/j.1475-679x.2005.00172.x

Thomas, A. (2003). A tale of two reports. *In European Business Forum, Financial Executives Research Foundation*, 16, 79-81.

Titman, S. and Wessels, R. (1988). The determinants of capital structure choice. *The Journal of finance*, 43(1), 1-19. https://doi.org/10.1111/j.1540-6261.1988.tb02585.x

Ujwary-Gil, A. (2012, September). Intellectual Capital Statement (ICS) as a method of measurement and management of knowledge assets. InProceedings of the 13th European Conference on Knowledge Management, Universidad Politécnica de Cartagena, Juan Gabriel Cegarra (Ed.), Spain (pp. 6-7).

Usvyatsky, O. (2013). Restatements: Where They Come From. Available at:

Wei Kiong Ting, I. and Hooi Lean, H. (2009). Intellectual capital performance of financial institutions in Malaysia. *Journal of Intellectual capital*, 10(4), 588-599.

Wickramasinghe, V. (2015). Effects of human resource development practices on service quality of services offshore outsourcing firms. *International Journal of Quality & Reliability Management*, 32(7), 703-717. Doi: 10.1108/IJQRM-03-2013-0047

Yellen, J. (1984). Efficiency wage models of unemployment. *American Economic Revie,w* 74 (2), 200–205. https://www.jstor.org/stable/1816355

Lu. Y. (2015). The Individual Characteristics of Board Members and Reported Internal Control Weakness: Evidence from China. *Pacific-Basin Finance Journal*, 51, 75-94. https://doi.org/10.1016/j.pacfin.2018.05.013

Zhang, Y. Zhou, J. and Zhou, N. (2007). Audit committee quality, auditor independence and internal control weaknesses. *Journal of Accounting and Public Policy*, 26 (3), 300–27. https://doi.org/10.1016/j.jaccpubpol.2007.03.001

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Research Article

Audit Committee Attributes and Readability of Financial Statement Footnotes

Shaban Mohammadi*
Department of Accounting, Shahid Rajaee Faculty, Vocational University of Khorasan, Khorasan, Iran
Nader Naghshbandi
Department of Accounting, Hakim Nezami institution of higher education Quchan, Quchan, Iran

Abstract

This study aimed to investigate the relationship between audit committee attributes and readability of financial statement footnotes of companies listed in the Iranian Stock Exchange.

This study's statistical population included all companies listed on the Tehran Stock Exchange over seven years from 2012 to 2018. A systematic elimination method has been used for sampling. Multivariate regression and Eviews software were used to test the research models.

The results showed a significant relationship between the audit committee's independence and the readability of financial statement footnotes. There was also a significant relationship between the number of audit committee meetings and the readability of financial statement footnotes. However, there was no significant relationship between the audit committee's financial expertise and financial statement footnotes' readability.

Companies with less readable financial statements are more likely to commit fraud than other companies. Financial reporting's readability plays an important role in enhancing the predictability of fraud in the financial statement. By using sophisticated and lengthy disclosures, managers keep some of their intended information secrets from investors and other stakeholders to avoid disclosing information about their bad news or performance. This study's results can be applicable for shareholders and investors; securities exchange, universities and research institutes, suppliers of goods and services, and the government. There have also been very limited efforts, especially in Iran, to investigate the relationship between audit committee attributes and readability of financial statement footnotes, so we address this topic in the present study.

Keywords: audit committee size, audit committee financial expertise, financial statement footnote readability, audit committee meetings.

****Corresponding Author***: Instructor of Accounting, Email: arashmoh2019@gmail.com

1. Introduction

Recent corporate scandals (such as Enron and WorldCom) have caused public concern about integrating information released in the capital market and ethical performance in the financial reporting process. New rules have been introduced to address these concerns that have made extensive changes to corporate governance needs and improved financial reporting quality. One of the fundamental changes required is the audit committee in the corporate governance structure. The audit committee is considered one of the board of directors' sub-committees and an essential component of the company's effective internal control structure. The shareholders also assign it an important role to oversee the process of financial reporting and internal auditing and independent auditing. An important factor affecting the transparency of the company is the activity of the audit committee. Information disclosure usually consists of three parts, including the content, timing, and presentation of information, the usefulness of each of them depends on the readability and intelligibility of financial reports. The term 'readability' means the approximate way a reader is likely to read and understand a text. In accounting and financial reporting, financial reporting's readability has recently attracted capital market legislators' attention. For example, there have been efforts since 1993 by the US Securities and Exchange Commission to publish more readable and comprehensible company reports, indicating that since all investors can understand complex company reports quickly, companies should refrain from publishing complex, lengthy or excessive reports (Lehavy & Merkley, 2011). The growing concern about the readability of financial statements with advanced technology that allows researchers to review large collections of text via readable data through annual reports has led to increased readability of financial reports. Evidence suggests that investors are affected by the ability to read annual reports. For example, Li (2008) states a significant relationship between financial reports with lower readability and lower sustainable profit. In addition, research shows that the readability of texts (contextual information) depends on whether investors can use them effectively. Psychological processing indicates people's concern for the ease of information processing and determining their dependence on disclosure. With the incomplete disclosure hypothesis, investors react to information that makes processing difficult in a timely and complete manner (Bloomfield, 2002). Li (2008) shows that managers with unrated (NR) stock options increase annual reports' complexity when current news is not stable. This shows that incentives can drive managers to misuse information. McMullen & Raghunandan (1996) showed that the audit committee's presence in improving financial reports is associated with a reduction in significant errors and irregularities. During the audit committee meeting, problems are identified in the financial reporting process; however, if the number of sessions is low, problems can persist and be resolved in the short term (Mohamad-Nor, Shafieand Wan-Hussin, 2010). Allegrini and Greco (2011) found a significant relationship between the number of audit committee meetings and the quality of reporting. Therefore, the independent audit committee reduces the inherent risk and assures the controlling environment's auditor and reduces his/her business risk. Prawitt (2009) examined the impact of the audit committee on the quality of financial reporting. They used criteria such as experience, professional certificates, training, reporting structure, and audit committee size to assess audit committee performance. They showed that the quality of internal audit committee work affects the quality of corporate financial reporting. Having a professional certification and the audit committee's size had a significant positive effect on financial reporting quality. Persons (2009) noted that in an audit committee with independent and specialized accounting and financial members, it is more likely that wrong financial statements and transactions will be discovered because they must act to maintain a reputation for professional ethics. The Braiotta and Zhou (2006) study results suggest that effective audit committees following

the Sarbanes-Oxley requirements have led to decreased profit management. Dhaliwal (2010) observed that the audit committee's quality increases accruals' quality after passing the Sarbanes-Oxley Act. Chang and Sun (2009) found that the Sarbanes-Oxley Act's provisions improved the audit committee's effectiveness and other corporate governance functions in monitoring the quality of profitability of foreign companies listed in a stock exchange. However, some scholars have argued that an audit committee's presence does not necessarily lead to better financial reporting quality. Forker (1992) observed a non-significant relationship between an audit committee's presence and disclosure quality. Brick & Chidambaran (2010) found that audit committee oversight activity has a negative impact on company value. However, the sub-courses results indicate a positive effect on corporate value for the course prior to the Sarbanes-Oxley Act but a negative (non-significant) effect after passing the act. Ghosh et al. (2010) examined whether the board of directors and the audit committee's characteristics before and after adopting the Sarbanes-Oxley Act were related to earnings management. Using the non-discretionary accruals, special items, and deferred tax expense as different earnings management structures, they found that the audit committee's size, tenure, and activity were related to earnings management. More importantly, the relationship's intensity is weaker in the years following the Sarbanes-Oxley Act than in the years before it. The audit committee's unique role in the corporate audit process may enable it to play a more prominent role in preventing managers from influencing audit fees. Beck & Mauldin (2014) demonstrated that in firms with stronger audit committees during the economic and financial crisis, the lower fees are reduced. A strong audit committee moderates the relationship between audit fees and managers' overconfidence. Wilbanks et al. (2017) found a significant relationship between audit committee members having social relationships (e.g., personal relationships) with the CEO with audit committee actions to assess fraudulent financial reporting risk and management integrity. Alves (2013) examined the combined effect of an audit committee's presence and an independent auditor on earnings management. Compared with the results of previous studies in which the audit committee's performance and the independent auditor were assumed to be independent of each other, this study identified a positive relationship between the audit committee's existence and an independent audit committee non-discretionary accruals. They also found that the existence of an audit committee and an independent auditor jointly reduced earnings management. KamelMadi, H. (2014) investigated the impact of audit committee characteristics on voluntary corporate disclosure. Their research results showed that independence, size, financial expertise, and audit committee meetings were correlated with corporates' voluntary disclosure. Alzeban and Sawan (2015) examined the impact of audit committee characteristics on implementing internal audit guidelines. They have concluded that independent, specialized accounting and auditing staff affects the understanding and implementation of internal audit recommendations. Implementation of such recommendations and guidelines also improves with the number of auditing committee and senior internal auditors meetings. Sun and Lan (2014) showed that committee members' oversight is positively correlated with real earnings management calculated from abnormal cash flows due to operations, abnormal discretionary expenses, and abnormal production (manufacturing) costs. The findings are also consistent with this finding that hiring members of the corporate committee's audit committee impairs their oversight effectiveness. Khlif and Samaha (2016) provided evidence showing that corporate executives restrict fraudulent activities that reduce stakeholder interests by examining audit committee members and the number of audit committee meetings during the year and sought to draw the audit committee members' attention to extend the term of their tenure. Therefore, they argue that increasing audit committee meetings will improve

internal control systems' quality. Al-Matari et al. (2017) examined the relationship between the audit committee's activities and the internal control system of commercial banks operating in Yemen. Their research indicated a significant relationship between the audit committee's activities, including the number of audit committee members' meetings and the internal control system. Bansal & Sharma (2017) examined the relationship between audit committee, corporate governance, and financial performance. The results showed a significant relationship between the board of directors' size and the CEO's duality of duty with financial performance (rate of return on assets and the return rate on equity). Simultaneously, there was no significant relationship between audit committee variables, including audit committee independence and the number of meetings with financial performance (rate of return on assets and returns on equity). Gabriela (2017) conducted a study on audit committee characteristics and financial performance in the UK. The results showed a significant relationship between the audit committee's size, the number of audit committee meetings, and the financial expertise of audit committee members with financial performance. The audit committee's various functions, including financial expertise, independence, size, and so on, can affect the audit committee's effectiveness. Previous studies indicate that audit committee members' financial expertise helps them to more effectively oversee the financial reporting process (Krishnan and Visvanathan, 2008). Audit committees with at least one financial expert can control accrual earnings management more effectively than those who lack financial expertise (Dhaliwal et al., 2010). The size of the audit committee can also have a constructive effect on the audit committee. Large audit committees include members with various expertise to oversee financial reporting practices (Baxter and Cotter, 2009 & Vafeas). Boubaker et al. (2018) examined the impact of annual report readability on corporate stock liquidity. By using computational linguistic techniques, they showed that less readable lists were associated with lower stock liquidity. Their study provides evidence that less readable annual reports impede investors' ability to process, analyze the information in corporate annual reports and reduce their willingness to trade, reducing stock liquidity. Ginesti et al. (2018) examine the relationship between female members of the board of directors and the annual report's readability. They collected data from a "network marketing" in Italy containing 435 annual reports. They performed regression analysis to examine whether the female participation on boards of directors affects the annual report's readability. Female participation in boards of directors has a positive impact on disclosure readability in companies with small boards of directors, which is in contrast with those with large ones. In the financial literature, the audit committee is considered part of the corporate governance structure, a tool for reducing agency costs, and an effective oversight tool for improving agency relationships. An audit committee's existence promotes the quality level of the corporate governance mechanism and can increase financial reporting quality. The audit committee reduces earnings management compared to the time before the existence of audit committees in American companies. Greater independence of the audit committee results in fewer accrual earnings management. Existing studies indicate the effect of some audit committee characteristics on limiting accrual earnings management and enhancing the quality of financial reporting, but the effect of these attributes on limiting earnings management through actual items have not been properly explained (Klein, 2002; Sun et al., 2014; Cohen & Zarin, 2008). Atef Oussii & Taktak (2018) showed a significant relationship between audit committees with financial expertise members and shorter audit report delay by multivariate regression analysis. Thus, the results show that the audit committee's financial expertise helps improve the timing and on-time financial statements. Unusual prolongation of audit time provides information about the risk associated with auditing. Luo et al. (2018) examined the relationship between the readability of annual report and agency costs in which

readability is reported with the length or size of the text. They found that companies with annual report readability reduce agency costs. The negative association between readability and agency costs is more prominent in companies with higher external audit quality, internal control quality, or analyst coverage. The positive impact on the readability of annual reports in private companies is more than public ones and becomes stronger after implementing new accounting standards in 2007. Healthy readable reports can oversee the opportunistic behavior of domestic companies, thereby reducing organization costs.

2. Theoretical Foundations and Research Background

2.1. Independence of the Audit Committee and Readability of Financial Statement Footnotes

Another feature of the audit committee, which is referred to as the basis of its effectiveness, is audit committee members (Abernthy et al., 2013). Joseph et al. (2003) often consider audit committee independence an essential and influential feature of audit committee effectiveness in monitoring and presenting financial reporting and suggest that audit committee independence is related to disclosing companies' financial position facing a financial crisis. Previous studies have shown that the independence of audit committee members reinforces the monitoring process for two reasons. First, independent managers do not have economic and mental dependence on company managers that interferes with their ability to examine their actions; and second, maintaining and enhancing the reputation of managers provides incentives for better oversight of independent audit committee members (Carcello and Neal, 2003 & Carcello and Neal, 2000). Beasley (1996) points out that non- bound (independent) managers use their management process to signal to foreign markets that are decision-makers, understand the importance of decision control, and can use such controlling systems (for example, the accounting system). Abbott and Parker (2000) also point out that although a person's membership as an independent manager (non-bound) in the audit committee increases his or her reputation, if the company provides financial misstatement, his/her reputation may be potentially compromised. Akeel and Dennis (2012) concluded that the audit committee's independence reduces corporate financial statements' restatement and increases their reliability. The independence of audit committee members reduces the chance of financial restatements by more monitoring for two reasons. First, the internal audit unit's independence and effectiveness are reinforced because the internal audit unit reports directly to the audit committee. Neither the present nor the former managers are present (Palmrose and Scholz, 2000). An effective audit committee needs more power and authority to better its supervisory role (Treadway Commission, 1987). Studies conducted on corporate governance have found that the prerequisite for effective oversight is its independence, and greater independence will lead to better oversight by the audit committee (Fama 1980; Klein, 2002). Researchers and legislators have always emphasized that independent external organizational members of audit committees are less likely to be assigned to other committees and responsibilities of the company and that committee members' independence improve earnings quality (Klein, 2002). Independence of audit committee members allows internal auditors to assess the company's status completely. Internal audit independence is an essential feature in reducing the amount of financial misstatement. Second, since the increase in the auditing scope of the independent auditor is frequent with the restatement of financial statements, an audit committee independent of the auditor may request to expand the auditing scope of the independent audit. The evidence suggests that the audit committee's independence enforces the company's internal control structure and increases independent audit effectiveness by reducing the likelihood of misstatement of financial statements

(Wallaceand Kreutzfeldt, 1991 & Abbott and Parker, 2000). Lawmakers and researchers have paid much attention to the audit committee (Abbott, Park & Parker 2000).Baxter (2009) showed that earnings management declines by the formation of the audit committee. There is little relationship between audit committee characteristics and financial reporting quality. The proponents of agency theory and resource dependency theory share similar views, arguing that increasing the number of outside directors in an audit committee reduces the possibility of committee members' agreement on conducting roles and responsibilities. In addition, due to lack of bias, more independent audit committees may be better able to remove important financial accounting issues such as earnings quality, exposure to independent auditors, and settling disputes (Bedard, Chtourou, and Courteau, 2004). Previous research has shown that those audit committees that are largely independent directors are likely to hire specialist auditors in the industry, employ internal audit units in the firm, be more conservative in accounting, and improve financial reporting quality. Corporate finance improves firms (Goodwin, 2003). Hysham et al. (2014) show that committee independence and its size directly correlate with voluntary disclosure, but the number of committee meetings and committee members' expertise does not influence voluntary disclosure. Poretti et al. (2018), in a study on the role of audit committee independence in the market reaction to the earnings announcement, showed that there is a significant relationship between the information content of earnings announcements and market response. The audit committee's independence moderates the impact of the information content of the profit and loss statements on market reaction. Klein (2002), in a study titled "investigating the impact of audit committee members on financial reporting quality," found that there was an inverse relationship between the committee independence and the level of voluntary accruals (where its unlimited use reduces the quality of financial reporting). He found that while legislators support fully independent committees, a committee with a majority composition of independent board members is more likely to reduce accruals than a fully independent committee.

The first hypothesis is presented as follows:

H1: There is a significant relationship between the audit committee's independence and the readability of financial statement footnotes.

2.2. Financial Expertise of the Audit Committee and Readability of Financial Statement Footnotes

One of the extensively considered features in the audit committee literature is audit committee members' financial expertise. But the definition of this feature of the audit committee in the research literature suggests that there are two distinct perspectives, including the limited and the broad view. Proponents of the limited view consider the audit committee's financial expertise related to education and work experience only in accounting and auditing. This means that there is a distinction between the accounting and non-accounting expertise of the audit committee members. (2014) Abernathy et al. (2014) have linked the increase in audit committee members' accounting expertise with raising commercial units' share prices. Rchamblett et al. (2008) examined the relationship between audit committee, remuneration incentives, and accounting figures' restatement. The results showed that financial experts in the audit committee reduce the likelihood of fraud in the company and improve its performance. The market may react to the presence of people with accounting and non-accounting expertise in the audit committee. In contrast, advocates of the broader view of the audit committee's financial experts believe that those with executive or managerial backgrounds who have studied in a field other than accounting and auditing are considered to be of the audited committee's financial expertise, which is consistent with the definition presented for SEC regarding the

financial expertise of the audit committee. In other words, financial expertise includes accounting and auditing expertise and those who oversee the provision of financial statements (Abernthy et al. 2013). Although some research has shown that the audit committee's financial expertise reduces the restatement of financial statements, it also reduces the likelihood of error and fraud in financial reporting (Farber D., 2005 & Abbott, Parker, Peters, & Raghunandan, 2003). Carcello (2006) has shown that audit committee members' financial expertise is not correlated with abnormal production costs as a measure of real earnings management. Many theoretical and practical perspectives in research suggest that the audit expertise of finance committee members is effective. One of the corporate governance mechanisms, having members with accounting and auditing knowledge, is essential for better and more effective oversight. So, the presence of certified accountants in the audit committee reduces the amount of compulsory action by legislators or the restatement of seasonal reports. Financial professionals are more responsible for the financial reporting process due to their superior financial knowledge, understanding of financial issues, and reporting problems. Therefore, these individuals are more motivated to apply conservational approaches to increase reputation for retention of capital, increase the likelihood of being appointed to other management positions, and reduce the risk of a lawsuit. (Dhaliwal, 2010; Bull & Sharp, 1989). Much of the recent research and debate in audit committees have emphasized the need for committee members' expertise in financial reporting and auditing (DeZoort, 1998; Beasley, & Salterio, 2001). The proponents of agency theory argue that the presence of members with financial expertise increases the audit committee's ability to ensure the auditor's accurate performance, understands audit statements, recognizes and settle auditor-firm disputes, and ultimately reduces audit report delays. In addition, members with financial expertise assist the audit committee in creating more effective internal control and risk management (McDaniel, Marinette & Mainz 2002; Cohen, Hewitt, Krishnamours & Wright, 2013). Supporters of resource dependence theory express support of financial experts' presence in audit committees that this presence helps sub-committees have more power on financial accounting information and audit comments. If the audit committee lacks this expertise, it relies heavily on the independent auditor to ensure that significant financial accounting figures (such as earnings) are reliable and appropriate for external organizational decision-makers (Defond, Hann &Hu, 2005; Soltana, and Fandezun, 2013). Abernathy et al. (2014) examined the relationship between audit committee members' financial expertise and corporate financial reporting timeliness. Their results showed a significant relationship between audit committee members' financial skills and timely accounting information. Sanchez and Meca (2017) found that the presence of financial experts in the audit committee effectively reduces the risk of banks' bankruptcy. By presenting a broad definition of committee members' financial expertise, Farber (2005) indicated that the audit committee's financial experts would lead to less financial fraud.

Defond et al. (2005), in their research, separated the financial and non-accounting financial expertise and showed that there was a positive and significant relationship between the presence of members with financial accounting expertise in the corporate audit committee and the abnormal market returns. However, no relationships were found with the presence of members with non-accounting financial expertise. Abbott et al. (2004) examined the relationship between audit committee members' financial expertise and the preparation and restatement of financial statements. They concluded a significant negative relationship between financial experts' presence in the audit committee and the incidence of restatement of financial statements. Wallace and Shi (2004) found that audit committee members' financial and accounting knowledge and education played an effective role in releasing reliable information. Abbott, Parker & Peter (2002) found that

the audit committee's lack of financial expertise has a significant relationship with an increased likelihood of financial fraud and error. Their results showed that the presence of an independent audit committee of board members is likely to reduce financial fraud and error incidence. Abbott et al. (2000) studied the relationship between financial reporting quality and audit committee characteristics. Another study found that financial statements' misstatement was less in companies with an independent audit committee by financial professionals. Wild (1996) investigated a number of companies with auditing committees in his study and found that after the audit committee's formation, the information content of these economy units' earnings reports has increased. Kalbers & Fogarty (1993) states that audit committee members with financial and accounting expertise increase audit committee effectiveness. In addition, audit committee expertise enhances the quality of financial reporting. The expertise of the audit committee plays a key role in the effectiveness of the audit committee. The audit committee's presence becomes more important when the banking sector's internal regulations and controls are weak. Soltana (2015) argues that there is a significant relationship between audit committee financial expertise and conservatism measured by earnings and accruals. Therefore, the second hypothesis is presented as follows:

H2: There is a significant relationship between the audit committee's financial expertise and financial statement footnotes' readability.

2.3. Number of Audit Committee Meetings and Readability of Financial Statement Footnotes

Board size is the number of board members and is an important influencing factor. A literature review indicates conflicting views about the relationship between the board of directors' size and its effectiveness. From the agency theory perspective, it can be argued that a larger board of directors is more likely to be aware of agency problems because more people will oversee management tasks (Nicholson & Kiel, 2003). The number of audit committee members is considered an important factor that was influencing audit committee effectiveness (lin et al., 2014). The audit committee's role is to oversee internal control and provide stakeholders with reliable information on evaluating managers in administrating controlling environment and controlling systems. Zhang et al. (2007) stated that the number of audit committee members could be used to indicate audit committee acts. The audit committee evaluates the number of members with greater scrutiny and discussion. It leads to an improvement in the quality of internal control systems and reduces the likelihood of fraud in the financial statements and internal control system. On the other hand, audit committees with fewer members appear to agree with managers' views, distort financial statements, and reduce internal control systems' quality. Allegrini and Greco (2013) have also acknowledged that increasing the number of audit committee members during the year cause that the executive activities of the board of directors, especially the CEO, to be further reviewed and evaluated, and given the audit committee's duty to ensure that the company's environment is healthy. They are required to take appropriate action, and this will allow corporate executives to rethink their performance and administrative activities leading to improved quality of internal control systems. Khlif and Samaha (2016) have also provided evidence indicating that the corporate executives restrict fraudulent activities that reduce shareholder interest by reviewing members of the audit committee during the year. They try to attract the members of the audit committee to increase the length of their tenure. Therefore, they argue that increasing audit committee members' numbers will improve internal control systems' quality. In addition, numerous studies are showing that the quality of internal controls is influenced by factors such as the independence of the audit committee and its size (Krishnan, 2005), a number of committee members' meetings, auditing and

independent auditor size (Khlif and Samaha, 2016; Zhang et al. 2007), characteristics of the board of directors (Lin et al., 2014), ownership structure (Mitra & Hussein, 2011). Al-Matari et al. (2017) also acknowledged that increasing the number of audit committee members' meeting during the year cause that the executive activities of the board of directors, especially the CEO, to be further reviewed and evaluated, and given the audit committee's duty to ensure that the company's environment is healthy. They are required to take appropriate action, and this will allow corporate executives to rethink their performance and administrative activities leading to improved quality of internal control systems.

H3: There is a significant relationship between the number of audit committee meetings and the readability of financial statement footnotes.

3. Research Methodology

3.1. Method of Data Collection

Research data were collected from the database of the Tehran Stock Exchange.

3.2. Statistical Population and Sample

The statistical population of this study includes all companies listed on the Tehran Stock Exchange. In this research, a systematic elimination method was used to select the statistical sample. For this purpose, the following five criteria are considered, and if a company meets all the criteria, it will be selected as the sample and the rest eliminated.

1- The company has been listed on the exchange before 2012 and will be active on the exchange until the end of 2018.
2- Due to the specific nature of the holding companies' activities, insurance, leasing, banks, financial and investment institutions, and their significant differences with the manufacturing and trading companies, the company selected is not among those listed here.
3- Corporate financial data are available.

After meeting all of the criteria mentioned above, 150 companies remained a screened population, all of which were selected as samples. Hence, our observations over the period 2012 to 2018 reached 1050 firm-years (7 years × 150 companies). In this study, the data panel and multivariate linear regression method and EViews software are used for data analysis and hypothesis testing.

3.3. Research Model and Analysis

In this study, a regression model was used to test the hypotheses to estimate the relationship between audit committee characteristics and readability of company financial statement footnotes and control variables.

Hypothesis Test Model 1:

$$READ_{i,t} = \beta_0 + \beta_1\, ACIND_{i,t} + \beta_2 ACFSIZE_{i,t} + \beta_3 CHANGE_{i,t} + \beta_4 TENURE_{i,t} + \beta_5 REPU_{i,t} + \beta_6 AO_{i,t} + \beta_7 \mathrm{AFEE}_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} ROA_{i,t} + \beta_{11} LOSS_{i,t} + \beta_{12} REST_{i,t} + \beta_{13}\ AGE_{i,t} + \beta_{14} MTB_{i,t} + \beta_{15} CFO_{i,t} + \varepsilon_{i,t}$$

Table 1. Definition of research variables

Variable	Symbol	Type	Operational definition
financial statement footnote readability	READ	Dependent	The fog index was used to calculate financial reporting readability.

audit committee's independence	*ACIND*	Independent	The ratio of the independent committee members to the total number of audit committee members.
Audit committee financial expertise	*CFE*	Independent	It is a dummy variable; if the member of the audit committee (manager) has the financial expertise, he/she takes number 1 and otherwise 0
Number of audit committee meetings	*ACMET*	Independent	Number of audit committee meetings per year
Audit committee size	ACFSIZE	Controlling	It is a dummy variable; if the auditor is the audit organization, it takes number 1 and otherwise 0
Auditor’s Change	CHANGE	Controlling	It is a dummy variable if the company auditor changes. It is equal to 1 and otherwise 0
Auditor’s tenure	TENURE	Controlling	The number of years the company has retained the auditor.
Auditor's reputation	REPU		This variable is set to 1 if the audit company is well- known; otherwise, it will be zero. To distinguish a reputable auditor from an unreputable one, the number of companies under their auditing is used. They are classified by their stock exchange workload method. And if the audit firm is one of the top 20 in terms of workload, it is regarded as a reputable auditor, otherwise an unreputable one.
Auditor's opinion	AO		If the auditor gives an acceptable opinion on its financial statements, it is equal to 1; otherwise, it is 0.
Audit fee	AFEE		It is measured based on the auditor's natural logarithm to homogenize large and small companies' fees. This method has been used in all previous studies.
Size of the company	SIZE	Controlling	The company size is used by the natural logarithm of the total sales of the company.
Financial leverage	LEV	Controlling	The debt-to-asset ratio represents the company's financial leverage
Return on assets	ROA	Controlling	Return on assets is net earnings divided by total assets
Losses	LOSS	Controlling	It is a virtual variable that, if the company has losses this year, is equal to one; otherwise, it will be 0.
Restatement	REST	Controlling	The variable is a zero-to-one dummy variable set to 1 if it is re-stated in the financial statements, and otherwise, it will be 0.
Age of company	AGE	Controlling	Company lifetime from the date of establishment to the date of initial release in years (the logarithm of this variable will be used in the model).

The ratio of market value to book value	MTB	Controlling	The market-to-book ratio is calculated by dividing the stock's current closing price by the number of shares issued and held by shareholders by the book value of the company's total equity.
Operating cash flow	CFO	Controlling	This variable is derived from the following relation: Net Profit + Non-Cash Expenses + Working Capital

Hypothesis Test Model 2:

$$READ_{i,t} = \beta_0 + \beta_1\, CFE_{i,t} + \beta_2 ACFSIZE_{i,t} + \beta_3 CHANGE_{i,t} + \beta_4 TENURE_{i,t} + \beta_5 REPU_{i,t} + \beta_6 AO_{i,t} + \beta_7 AFEE_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} ROA_{i,t} + \beta_{11} LOSS_{i,t} + \beta_{12} REST_{i,t} + \beta_{13}\ AGE_{i,t} + \beta_{14} MTB_{i,t} + \beta_{15} CFO_{i,t} + \varepsilon_{i,t}$$

Hypothesis Test Model 3:

$$READ_{i,t} = \beta_0 + \beta_1\, ACMET_{i,t} + \beta_2 ACFSIZE_{i,t} + \beta_3 CHANGE_{i,t} + \beta_4 TENURE_{i,t} + \beta_5 REPU_{i,t} + \beta_6 AO_{i,t} + \beta_7 AFEE_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} REST_{i,t} + \varepsilon_{i,t}$$

The definition of all the variables in the three models above is presented in Table 1.

4. Research Findings

4.1. Descriptive Statistics of Observations

Descriptive statistics are the arrangement and classification of data, graphical representation, and the calculation of values such as mean, median, etc., indicating the characteristics of each member of the population in question. Table 2 provides information on central tendency indices (mean, median, maximum, and minimum) and data dispersion (standard deviation, skewness, and kurtosis). The degree of asymmetry is often called skewness. If the skewness coefficient is zero, the population is perfectly symmetrical, and if the skewness coefficient is positive, its skewness will tend to the right and, if negative, to the left. The positive kurtosis coefficients indicate that the distribution of variables is higher than the normal distribution and that the data is more concentrated around the mean.

4.2. Correlation of Variables

Pearson correlation analysis was used to investigate the presence or absence of collinearity among the research variables. Table (3) shows Pearson's correlation coefficients between variables.

4.3. F-Limer Test

First, the F-Limer test is used to select between panel data methods and pooled data. If the probability calculated (p-value) is greater than the 0.05 error level, the integrated data will be used; otherwise, panel data will be applied. Table (4) shows the results of the F- Limer test.

Table 2. Summary of descriptive statistics of variables

	READ	ACIND	CFE	ACMET	ACFSIZE	CHANGE	TENURE	REPU	AO
Mean	-16.0027	0.4767	0.49135	0.50952	0.2343	0.2639	4.2171	0.7886	0.4676
Median	-15.52	0.6667	0.66667	0.000	0.000	0.000	3.000	1.000	0.000
Maximum	-13.904	1.000	1.000	2.000	1.000	1.000	16.000	1.000	1.000
Minimum	-21.908	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000
Std. Dev.	1.5522	0.3699	0.4108	0.5298	0.4237	0.4409	4.1006	0.4085	0.4992
Skewness	-1.1493	-0.2790	-0.0699	0.2699	1.2547	1.0719	1.4792	-1.4134	0.1298
Kurtosis	4.2727	1.5780	1.3930	1.7428	2.5743	2.1489	3.9126	2.9978	1.0169
Observations	1050	1050	1050	1050	1050	1050	1050	1050	1050

Table 3. Summary of descriptive statistics of variables

	AFEE	SIZE	LEV	ROA	LOSS	REST	AGE	MTB	CFO
Mean	4.9076	13.9159	0.6301	0.0955	0.1209	0.7104	20.2533	2.4439	0.1162
Median	6.3795	13.7754	0.6177	0.0829	0.0000	1.000	18.5000	2.0360	0.1030
Maximum	9.3486	19.7226	4.0027	0.6269	1.0000	1.0000	52.000	121.5096	0.6422
Minimum	0.0000	8.8997	0.1085	-1.0632	0.0000	0.0000	2.000	-53.2179	-0.46
Std. Dev.	3.1000	1.4905	0.2550	0.1445	0.3262	0.4537	10.4012	6.1393	0.1267
Skewness	-0.8479	0.7885	3.4461	-0.5215	2.3249	-0.9281	0.4819	8.2669	0.2722
Kurtosis	1.9444	4.8595	36.9977	10.0317	6.4053	1.8614	2.6127	187.4198	4.7167
Observations	1050	1050	1050	1050	1050	1050	1050	1050	1050

According to the results of Table (4), there are no too high or too low correlation coefficient values (close to +1 and -1) to affect the results of regression analysis. Consequently, there is no collinearity between independent research variables.

Table 4: Correlation coefficients of variables

	READ	ACIND	CFE	ACMET	ACFSIZE	CHANGE	TENURE	REPU	AO
READ	1	-0.031	0.017	-0.1191	0.0228	-0.008	0.067	0.047	0.060
ACIND	-0.031	1	0.770	0.0274	0.066	0.011	0.029	-0.052	0.094
CFE	0.017	0.770	1	-0.011	-0.010	-0.003	-0.012	-0.0427	0.096
ACMET	-0.119	0.027	-0.011	1	-0.065	-0.0005	-0.054	0.026	-0.072
ACFSIZE	0.022	0.066	-0.010	-0.065	1	-0.280	0.788	0.286	0.004
CHANGE	-0.008	0.011	-0.003	-0.000	-0.280	1	-0.469	-0.134	-0.049
TENURE	0.067	0.029	-0.012	-0.054	0.788	-0.469	1	0.247	0.0057
REPU	0.047	-0.05	-0.042	0.026	0.286	-0.134	0.247	1	-0.0008
AO	0.060	0.094	0.096	-0.0727	0.004	-0.049	0.005	-0.0008	1

Table 5: Correlation coefficients of variables

	AFEE	SIZE	LEV	ROA	LOSS	REST	AGE	MTB	CFO
AFEE	1	-0.193	-0.084	0.059	-0.034	-0.010	-0.086	-0.048	0.048
SIZE	-0.193	1	0.074	0.125	-0.072	0.038	0.075	-0.032	0.159
LEV	-0.084	0.074	1	-0.688	0.413	0.073	0.002	-0.037	-0.277
ROA	0.059	0.125	-0.688	1	-0.424	-0.062	0.026	0.051	0.488
LOSS	-0.034	-0.072	0.413	-0.424	1	0.043	0.019	0.029	-0.160
REST	-0.0108	0.038	0.073	-0.062	0.043	1	0.047	-0.040	-0.014
AGE	-0.086	0.075	0.002	0.026	0.019	0.047	1	-0.016	0.034
MTB	-0.048	-0.032	-0.037	0.051	0.029	-0.040	-0.016	1	0.016
CFO	0.048	0.159	-0.277	0.488	-0.160	-0.014	0.034	0.016	1

According to Table (6), given the significance level (Prob) obtained from the F-Limer test, the hypothesis testing methods are determined. In all three models, the probability calculated (p-value) is greater than the error level of 0.05. Thus the integrated data is used.

Table 6: F-Limer Test

Hypothesis	Test type	Prob	Result
1	F- limer	0.7876	Pooled
	Hausman	-	-
2	F- limer	0.9223	Pooled
	Hausman	-	-
3	F- limer	0.9648	Pooled
	Hausman	-	-

4.4. Results of Research Hypotheses Test

Table 7: Estimation Results of Model 1

Dependent Variable: READ				
Method: Panel EGLS (Cross-section weights)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-18.2598	0.8681	-21.0329	0.0000
ACIND	0.1105	0.0497	2.2244	0.0264
ACFSIZE	-0.0646	0.0749	-0.8623	0.3888
CHANGE	0.0457	0.0234	1.9505	0.0515
TENURE	0.0231	0.0096	2.3931	0.0170
REPU	0.0568	0.0227	2.5038	0.0125
AO	0.0242	0.0322	0.753130	0.4516
AFEE	0.0056	0.0079	0.7149	0.4749
SIZE	0.1726	0.0481	3.5899	0.0004
LEV	-0.4638	0.1196	-3.8775	0.0001
ROA	-0.5560	0.2047	-2.7159	0.0068
LOSS	-0.0934	0.0489	-1.9070	0.0569
REST	-0.0087	0.0178	-0.4902	0.6241
AGE	-0.0331	0.0212	-1.5597	0.1193
MTB	0.0049	0.0020	2.3821	0.0175
CFO	-0.0724	0.0980	-0.7383	0.4606
AR(1)	0.8969	0.0206	43.441	0.0000
AR(2)	0.04037	0.0201	2.0102	0.0448
	Weighted Statistics			
R-squared	0.909844	Mean dependent var		-27.6904
Adjusted R-squared	0.9077	S.D. dependent var		29.5591
S.E. of regression	0.786384	Sum squared resid		452.6685
F-statistic	434.5440	Durbin-Watson stat		2.2043
Prob(F-statistic)	0.000000			

Table 7 shows the estimation results of Model 1 using Eviews software. The results shown in Table 5 show that the F test's significance level is 0.0000, which is < 0.05. Since the F statistic shows the model's overall validity, it can be concluded that this model is significant at the 95% level and has high validity. Also, the adjusted coefficient of determination of this model is 0.9077. This value indicates that the model's explanatory variables can explain 90% of the dependent variable variations; since the Durbin-Watson statistic of the model is 2.2043, this value is between 1.5 and 2.5 say that there is no type II autocorrelation model. Table 5 also shows that the calculated significance level for audit committee size is 0.0264 and is < 0.05. As a result, there is a significant relationship between the audit committee's size and the readability of financial statement footnotes. Accordingly, research hypothesis 1 is confirmed at a 95% confidence level in Model 1.

Table 8: Results of Model 2

Dependent Variable: READ				
Method: Panel EGLS (Cross-section weights)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-18.2310	0.8819	-20.671	0.0000
CFE	0.0421	0.0433	0.9717	0.3314
ACFSIZE	-0.0475	0.0734	-0.6472	0.5177
CHANGE	0.0495	0.0233	2.1282	0.0337
TENURE	0.0214	0.0097	2.2181	0.0269
REPU	0.0287	0.0199	1.4509	0.1472
AO	0.0287	0.0321	0.8946	0.3713
AFEE	0.0070	0.0079	0.8942	0.3715
SIZE	0.1844	0.0489	3.7683	0.0002
LEV	-0.4786	0.1228	-3.8955	0.0001
ROA	-0.5317	0.2079	-2.5569	0.0108
LOSS	-0.1014	0.0499	-2.0292	0.0428
REST	-0.0074	0.0178	-0.4127	0.6799
AGE	-0.0338	0.02139	-1.5816	0.1142
MTB	0.0049	0.00212	2.3324	0.0200
CFO	-0.0658	0.0985	-0.6679	0.5045
AR(1)	0.8960	0.0209	42.9042	0.0000
AR(2)	0.0415	0.0203	2.0459	0.0411
	Weighted Statistics			
R-squared	0.9104	Mean dependent var		-27.8892
Adjusted R-squared	0.9084	S.D. dependent var		30.3366
S.E. of regression	0.7906	Sum squared resid		457.5706
F-statistic	437.7294	Durbin-Watson stat		2.2174
Prob(F-statistic)	0.0000			

Table 8 shows the estimation results of Model 2 using Eviews software. The results shown in Table 8 show that the F test's significance level is 0.0000, which is < 0.05. Since the F statistic shows the model's overall validity, it can be concluded that this model is significant at the 95% level and has high validity. Also, the adjusted coefficient of determination of this model is 0.9104. This value indicates that the model's explanatory variables can explain 91% of the dependent variable variations; since the Durbin-Watson statistic of the model is 2.2174, and this value is between 1.5 and 2.5, we can say that there is no type II autocorrelation model. Table 6 also shows that the calculated significance level for audit committee financial expertise is 0.3314 and is > 0.05. As a result, there is no significant relationship between the audit committee's financial expertise and the readability of financial statement footnotes (by the Fog Index Method). Accordingly, research hypothesis 2 is rejected at a 95% confidence level in Model 2.

Table 9 shows the estimation results of Model 3 using Eviews software. The results shown in Table 9 show that the F test's significance level is 0.0000, which is < 0.05. Since the F statistic shows the model's overall validity, it can be concluded that this model is significant at the 95% level and has high validity. Also, the adjusted coefficient of determination of this model is 0.8994. This value indicates that the model's explanatory variables can explain 89% of the dependent variable variations; since the Durbin-Watson statistic of the model is 2.2104, this value is between 1.5 and 2.5 say that there is no type II autocorrelation model. Table 7 also shows that the calculated significance level for the number of audit committee meetings is 0.0453 and is < 0.05. As a result, there is a significant relationship between the number of audit committee meetings and the readability of financial statement footnotes (by the Fog Index Method). Accordingly,

research hypothesis 3 is approved at a 95% confidence level in Model 3.

Table 9: Results of Model 3

Dependent Variable: READ				
Method: Panel EGLS (Cross-section weights)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-18.390	0.7904	-23.2665	0.0000
ACMET	-0.0600	0.0299	-2.0055	0.0453
ACFSIZE	-0.0386	0.0863	-0.4469	0.6551
CHANGE	0.0434	0.0277	1.5683	0.1172
TENURE	0.0183	0.0109	1.6685	0.0956
REPU	0.0451	0.0305	1.4787	0.1396
AO	0.0149	0.0316	0.4717	0.6373
AFEE	0.0083	0.0078	1.0656	0.2869
SIZE	0.1492	0.0474	3.1478	0.0017
LEV	-0.3016	0.1103	-2.7329	0.0064
REST	-0.0298	0.0257	-1.1615	0.2458
AR(1)	0.9028	0.0197	45.976	0.0000
AR(2)	0.0328	0.0190	1.7279	0.0844
Weighted Statistics				
R-squared	0.8994	Mean dependent var		-26.224
Adjusted R-squared	0.8977	S.D. dependent var		16.8348
S.E. of regression	0.7904	Sum squared resid		460.4772
F-statistic	548.9436	Durbin-Watson stat		2.2104
Prob(F-statistic)	0.0000			

5. Discussion and Conclusion

In the last decade, financial information and accounting texts' readability has attracted many financial market observers' attention. As satisfying the quality of intelligibility is largely dependent on understanding the concept of readability, understanding the impact information readability has on a variety of stakeholder decisions, especially investors, seems essential. Proper settlement of the audit committee can positively impact the economic unit's performance and, subsequently, its report, and somehow protect users' interests. It can also help establish effective reporting systems to provide transparent and reliable information, given the board of directors' responsibility for disclosure and reporting. The audit committee acts as an intermediary between internal and independent auditors and management and plays a key role in overseeing and controlling the financial reporting process. Ensuring that management's financial statements are free of any bias is an important matter for shareholders. To achieve this goal and ensure the value-added content of accounting information, it is essential to have an effective audit committee. Corporate auditing is an important mechanism in corporate governance. The audit committee's effective work can provide the Reinforcement and health of financial reporting and improve corporate financial statements' quality. The audit committee is one of the most important committees of the board of directors, ultimately responsible for overseeing all company activities. Therefore, the audit committee is a new control mechanism in financial reporting. A key factor in assessing the effectiveness of the audit committee activity is the existence of a statute or activity charter containing all that the board of directors would expect in terms of responsibility, including overseeing, controlling, and directing the organization. An effective audit committee as a determinant of the financial reporting process increases audited financial statements' validity. Members of this committee work with the board of directors responsible for safeguarding shareholders' interests and oversee the quality and suitability of financial statements,

accounting, auditing, internal control, and the reporting process. Communicating with auditors, audit committees, and the board of directors increases the flow of useful, effective, and informative information. By reviewing the audit committee members during the year, the company's managers restrict fraudulent activities that reduce shareholder interest. In this way, they try to attract the audit committee members to increase their tenure length. Therefore, they state that increasing audit committee members' numbers will improve internal control systems' quality. To improve the audit committee's performance, the corporate governance principles associated with it should be strengthened. Companies should be encouraged to observe the audit committee charter with a stronger emphasis and stricter rules on the Tehran Stock Exchange part. The audit committee member's activities should be more supervised to make this committee do its job accurately and properly. The purpose of this study was to investigate the relationship between audit committee characteristics and the readability of financial statements of companies listed on the Iranian Stock Exchange. Financial statements' readability can lead to managers' less opportunistic behavior and the probability of fraudulent reporting by reducing the information asymmetry between managers and investors and, consequently, increasing transparency and understanding of financial statements. The results showed a significant relationship between the audit committee's independence and the number of audit committee meetings with the readability of financial statement footnotes. However, there is no significant relationship between the audit committee's financial expertise and financial statement footnotes' readability. Investors and financial analysts are advised to consider the relationship between financial reporting readability and fraud probability in their decision-making models when analyzing financial statement information and note that fraudulent reporting is more likely to occur in companies with more complex and difficult financial reports. Audit firms are suggested to consider the readability and understanding of corporate financial statements, besides other factors, in their evaluations of the auditor's firm's level, planning of operations, and the volume of audits. This study's results can help enrich the theoretical foundations of Iran and the capital market directly and indirectly. Specifically, this study's findings may highlight the necessity for setting guidelines (similar to the easy to understand English guidelines of the US Securities and Exchange Commission) to increase the readability of nonprofit and minor investors' financial statements. It is also recommended that institutions overseeing capital markets develop the necessary mechanisms to diversify information channels other than corporate financial statements (such as increasing financial analysts, rating agencies, etc.). Given the limitations of the “Fog Index Method,” the development of a native Iranian model is recommended to assess accounting and financial literature's readability with proper validity and feasibility in the Iranian reporting environment.

References

Abernathy, J.L. Beyer, B. Masli, A. and Stefaniak, C. (2014). The association between characteristics of audit committee accounting experts, audit committee Chairs, and financial reporting timeliness, *Advance in Accounting*, 30(2), 283-297. https://doi.org/10.1016/j.adiac.2014.09.001

Abernthy, j. Herrmann, D. Kang, T. and Krishnan, G.V. (2013). Audit Committee Financial Expertise and Properties of Analyst Earnings Forecasts. *Journal of Advance in Accounting*, 29(1), 1-11. https://doi.org/10.1016/j.adiac.2012.12.001

Abbott, L. Parker, S. and Peters, G. (2004). Audit Committee Characteristics and Restatements. *Auditing: A Journal of Practice &Theory*, 23(1), 69-87. Doi: 10.2308/aud.2004.23.1.69

Alves, S. (2013). The impact of audit committee existence and external audit on earnings management Evidence from Portugal. *Journal of financial reporting and accounting*, 11(2), 143-165. https://doi.org/10.1108/JFRA-04-2012-0018

Allegrini, M. and Greco, G. (2011). Corporate boards, audit committees and voluntary disclosure: evidence from Italian Listed Companies. *Journal of Management and Governance*, 17(1), 187-216. http://hdl.handle.net/10.1007/s10997-011-9168-3

Abbott, L.J. Park, Y. and Parker, S. (2000). The Effects of Audit Committee Activity and Independence on Corporate Fraud. *Managerial Finance*, 26(11), 55–67. https://doi.org/10.1108/03074350010766990

Al-Matari1.Y., Sulaiman.A.S.M, and Al-Matari.E.M. (2017). Audit Committee Activities and the Internal Control System of Commercial Banks Operating in Yemen. International Review of Management and Marketing, 7(1), 191-196. https://www.econjournals.com/index.php/irmm/article/view/2899

Atef, O. and Neila, B.T. (2018). Audit committee effectiveness and financial reporting timeliness: The case of Tunisian listed companies. African Journal of Economic and Management Studies, 9(1), 34-55. https://doi.org/10.1108/AJEMS-11-2016-0163

Akeel, M.L. and Dennis, W.Y. (2012). Governance Characteristics and Role Effectiveness of Audit Committees. *Managerial Auditing Journal*, 27(4), 336-354. https://doi.org/10.1108/02686901211217969

Abbott, L.J. and Parker, S. (2000). Audit Committee Characteristics and Auditor Selection. *Auditing: A Journal of Practice & Theory*, 19(2), 47-66. Doi: 10.2308/aud.2000.19.2.47

Alzeban, A. and sawan, N. (2015). The impact of audit committee characteristics on the implementation of internal audit recommendations. *Journal of International Accounting, Auditing, and Taxation*, 24, 61– 71. https://doi.org/10.1016/j.intaccaudtax.2015.02.005

Amer, M. Ragab, A.A. and Shehata, Sh.E. (2014). Audit Committee Characteristics and Firm Performance: Evidence from Egyptian Listed Companies. *Proceedings of 6th Annual American Business Research Conference 9.* Sheraton LaGuardia East Hotel, New York, USA, ISBN: 978-1- 922069-52-8.

Archambeault, S. Todd DeZoort, F. and Dana, R.H. (2008). Audit Committee IncentiveCompensation and Accounting Restatements. *Contemporary AccountingResearch*, 25 (4), 965-992. https://doi.org/10.1506/car.25.4.1

Baxter, P. and Cotter, J. (200). Audit committees and earnings quality. *Accounting and Finance*, 49(2), 267-290. Doi:10.1111/j.1467-629X.2008.00290.x

Beasley, M.S. (1996). An Empirical Analysis of the Relation between the Board of Director Composition and Financial Statement Fraud. *The Accounting Review*, 71(4), 443-465. https://www.jstor.org/stable/248566

Bansal, N. and and Sharma, A.K. (2017). Audit Committee, Corporate Governance, and Firm Performance:Empirical Evidence from India. *International Journal of Economics and Finance*, 8 (3), 103-116. Doi: 10.5539/ijef.v8n3p103

Baxter, P. and Cotter, J. (2009). Audit committees and earnings quality. *Accounting and Finance*, 49(2), 267-290. https://doi.org/10.1111/j.1467-629X.2008.00290.x

Bedard, J. Chtourou, S.M. and Courteau, L. (2004). The Effect of Audit Committee Expertise, Independence, and Activity on Aggressive Earnings Management. *Auditing: A Journal of Practice & Theory*, 23(2), 13–35. https://doi.org/10.2308/aud.2004.23.2.13

Boubaker, S. and Gounopoulos, D. and Rjiba, H. (2018).Annual Report Readability and

Stock Liquidity. *Financial Markets, Institutions & Instruments,* 28(2), 159-186. https://doi.org/10.1111/fmii.12110

Braiotta, L. (2000). *The Audit Committee Handbook.* Second edition. NY: John Wiley & Sons, Inc.

Braiotta, L. and Zhou, J. (2006). An exploratory study of the effects of the Sarbanes–Oxley Act, the SEC and United States Stock Exchange(s) rules on audit committee alignment. *Managerial Auditing Journal*, 21(2), 166–190. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2926062

Brick, I.E. and Chidambaran, N.K. (2010). Board meetings, committee structure, and firm value. *Journal of Corporate Finance*, 16(4), 533–553. https://doi.org/10.1016/j.jcorpfin.2010.06.003

Beck, M.J. and Mauldin, E.G. (2013). Who's really in charge? Audit committee versus CFO power and audit fees. *The Accounting Review*, 89(6), 2057-2085. Doi: 10.2308/accr-50834

Bull, I. and Sharp, F. (1989). Advising clients on Treadway audit committee recommendations. *Journal of Accountancy*, 167(2), 46–52. https://www.semanticscholar.org/paper/Advising-clients-on-Treadway-audit-committee-Bull Sharp/0b21d81e85894ceace92fadaef4221215f9f1cba

Bloomfield, R.J. (2002). The "incomplete revelation hypothesis" and financial reporting. *Accounting Horizons* 16: 233-243.

Bouaziz, Z. (2012). The Impact of the Presence of Audit Committees on the Financial Performance of Tunisian Companies. *International Journal of Management & Business Studies*, https://ideas.repec.org/p/pra/mprapa/42175.html

Chang, J.C. and Sun, H.L. (2009). Crossed-listed foreign firms' earnings informativeness, earnings management and disclosures of corporate governance information under SOX. *The International Journal of Accounting*, 44(1), 1–32. https://doi.org/10.1016/j.intacc.2008.12.004

Carcello, J. Hollingsworth, C. and Neal, T. (2006). Audit committee financial experts: Acloser look using firm designations. *Accounting Horizons*, 20(4), 351–373. https://doi.org/10.2308/acch.2006.20.4.351

Carcello, J.V. and Neal, T.L. (2000). Audit Committee Characteristics and Auditor Reporting. *The Accounting Review,* 75(4), 453-467. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=53917

Carcello, J.V. and Neal, T.L. (2003). Audit Committee Characteristics and Auditor Dismissals Following New Going Concern Reports. *The Accounting Review,* 78(1), 95-117. https://www.jstor.org/stable/3203297

Cohen, D.A. and Zarowin, P (2008), *Economic consequences of real and accrual-based earnings management activities*, New York University. https://www.semanticscholar.org/paper/Economic-Consequences-of-Real-and-Accrual-Based-Cohen-Zarowin/07ed2d640f753d1c207b9864a1f50fd194bb437c?p2df

Dhaliwal, D. Naiker, V.C. and Navissi, F. (2010). The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees. *Contemporary Accounting Research*, 27 (3): 787-827. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1548766

DeZoort, F.T. Hermanson, D.R. and Houston, R.W. (2003). Audit Committee Support for Auditors: The Effects of Materiality Justification and Accounting Precision. *Journal of Accounting and Public Policy*, 22(2), 175–99. https://doi.org/10.1016/S0278-4254(03)00007-3

Defond, M.L. Hann, R.N. and Hu, X. (2005). Does The Market Value Financial Expertise

on Audit Committees of Boards of Directors?. *Journal of Accounting Research*, 43(2), 153-193. https://doi.org/10.1111/j.1475-679x.2005.00166.x

Fama, E.F. (1980). Agency problem and the theory of the firm. *Journal of Political Economy*, 88(2), 288–307. https://www.jstor.org/stable/1837292

Forker, J.J. (1992). Corporate governance and disclosure quality. *Accounting and Business Research*, 22(86),111-124. https://doi.org/10.1080/00014788.1992.9729426

Farber, D. (2005). Restoring Trust after Fraud: Does Corporate Governance Matter?. *The Accounting Review*, 80 (2), 539 -561. https://www.jstor.org/stable/4093068

Gabriela. Z. (2017). The Audit Committee Characteristics and Firm Performance: Evidence from the UK. 201400130@fep.up.pt / gabriela.zabojnikova@gmail.com

Ghosh, A. Marra, A. and Moon, D. (2010). Corporate boards, audit committees, and earnings management: pre and post-SOX evidence. *Journal of Business Finance & Accounting*, 37(9-10), 1145–1176. https://doi.org/10.1111/j.1468-5957.2010.02218.x

Ginesti, G. Drago, C. Riccardo, M. and Sannino, G. (2018). Female board participation and annual report readability in firms with boardroom connections. *Gender in Management: An International Journal*, https://doi.org/10.1108/GM-07-2017-0079

Goodwin, J. (2003).The Relationship between the Audit Committee and the Internal Audit Function: Evidence from Australia and New Zealand. *International Journal of Auditing*, 7(3), 263–78. https://doi.org/10.1046/j.1099-1123.2003.00074.x

Hillman, A.J. and Dalziel, T. (2003). Boards of Directors and Firm Performance: Integrating Agency and Resource Dependence Perspectives. Academy of Management Review, 28(3), 383–96. https://www.jstor.org/stable/30040728

Hysham, R. Zainuddin, Y.H. and Haron, H. (2014). The relationship between corporate social responsibility disclosure and corporate governance characteristics in Malaysian public listed companies. *Social Responsibility Journal*, 5(2), 212-226. https://doi.org/10.1108/17471110910964496

Jensen, H.L. and Tang, R.Y.W. (1993). Audits of Collective Bargaining. *The Internal Auditor*, 50(2), 37–42.

Joseph, V. Carcello, T. and Neal, L. (2003). Audit Committee Characteristics and Auditor Dismissals following "New" Going-Concern Reports. *The Accounting Review*, 78(1), 95-117. https://www.jstor.org/stable/3203297

Klein, A. (2002). Audit Committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33(3), 375-400. https://doi.org/10.1016/S0165-4101(02)00059-9

Khlif, H. and Samaha, K. (2016). Audit committee activity and internal control quality in Egypt: does external auditor's size matter?. Managerial Auditing Journal, 31(3), 269-289. https://doi.org/10.1108/MAJ-08-2014-1084

Krishnan, G. and Visvanathan, G. (2008). Does the SOX definition of an accounting expert matter? The association between audit committee directors' accounting expertise and accounting conservatism. *Contemporary Accounting Research*, 25(3), 827-858. https://doi.org/10.1506/car.25.3.7

Kalbers, L.P. and Fogarty, T.J. (1993). Audit committee effectiveness: An Empirical Investigation of the Contribution of Power. Auditing: A Journal of Practice & Theory, 12(1), 24-49. https://www.semanticscholar.org/paper/Audit-committee-effectiveness%3A-An-empirical-of-the-Kalbers-Fogarty/a23007e8a41f852736f2fb499daa7bdfda87448f

KamelMadi, H. Ishak, Z. and Abdul Manaf, N. (2014). The impact of audit committee

characteristics on corporate voluntary disclosure. *Procedia - Social and Behavioral Sciences*, 164, 486-492. https://doi.org/10.1016/j.sbspro.2014.11.106

Lehavy, R. Li, F. and Merkley, K. (2011). The effect of annual report readability on analyst following and the properties of their earnings forecasts. *Accounting Review*, 86(3), 1087–1115. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1477392

Li, F. (2008). Annual report readability, current earnings, and persistence. *Journal of Accounting and Economics*, 45(2-3), 221-247. https://doi.org/10.1016/j.jacceco.2008.02.003

Luo, J. Li, X. and Chen, H. (2018). Annual report readability and corporate agency costs. *China Journal of Accounting Research*, 11(3), 187-212. https://doi.org/10.1016/j.cjar.2018.04.001

McMullen, D.A. and Raghunandan, K. (1996). Enhancing audit committee effectiveness. *Journal of Accountancy*, 182(2), 7–81.

Mohamad-Nor, M.N. Shafie, R. and Wan-Hussin, W.N. (2010). Corporate governance and audit report lag in Malaysia. *Asian Academy of Management Journal of Accounting and Finance*, 6(2), 57–84. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1695085

Nicholson, G.J. and Kiel, G.C. (2003). BoardComposition and Corporate Performance: How the Australian Experience Informs Contrasting Theories of Corporate Governance. *corporate governance: An International Review*, 11(3), 189-205. https://doi.org/10.1111/1467-8683.00318

Poretti, C. Schatt, A. and Bruynseels, L. (2018). Audit committees independence and the information content of earnings announcements in Western Europe. *Journal of Accounting Literature*, 40, 29–53. https://doi.org/10.1016/j.acclit.2017.11.002

Persons, O.S. (2009). Audit committee characteristics and earlier voluntary ethics disclosure among fraud and no-fraud firms. *International Journal of Disclosure and Governance*, 6 (4), 284–297. https://link.springer.com/article/10.1057/jdg.2008.29

Prawitt, D. Smith, J. and Wood, D. (2009). Internal audit quality and earnings management. The Accounting Review, 84 (4), 1255–1280. https://doi.org/10.2308/accr.2009.84.4.1255

Raghunandan, K.R. and McHugh, J.A. (1994). Internal Auditors Independence and Interactions with Audit Committees. Advances in Accounting, 12, 313- 333.

Rittenberg, L. Moore, W. and Covaleski, M. (1999). *The Outsourcing Dilemma: What's Best for Internal Auditing?*. Inst. of Internal Auditors, Research Foundation, ISBN: 0-89413-384-5

Sanchez, I.M. and Meca, E. (2017). Do financial experts on audit committees matter for bank insolvency risk-taking? The monitoring role of bank regulation and ethical policy. Journal of Business Research, 76, 52–66. https://doi.org/10.1016/j.jbusres.2017.03.004

Soltana, N. (2015). Audit committee characteristics and accounting conservatism. *International Journal of Auditing*, 19(2), 57–78. https://doi.org/10.1111/ijau.12034

Sun, J. and Lan, G. (2014). Independent Audit Committee Characteristics and real Earnings Management. *Managerial Auditing Journal*, 29(2), 153-172. https://doi.org/10.1108/MAJ-05-2013-0865

Turley, S. and Zaman, M. (2007). Audit Committee Effectiveness, Informal Processes, and Behavioural Effects. *Accounting, Auditing & Accountability Journal*, 20(5), 765-788. https://doi.org/10.1108/09513570710779036

Treadway, C. (1987), Report of the National Commission on Fraudulent Financial Reporting. *New York Journal*, 20(5), 765–88.

Vafeas, N (2005). Audit committees, boards, and the quality of reported earnings. *Contemporary Accounting Research*, 22. http://hdl.handle.net/11295/77116

Wakaba, R. (2014). Effect of audit committee characteristics on the financial performance of companies listed at the Nairobi securities exchange. REG NO: D61/68129/2011.

Wang, M.C. Lee, M.H. and Chuang, J.J. (2015). Relations among audit committee establishment, information transparency, and earnings quality: evidence from simultaneous equation models. *Quality & Quantity: International Journal of Methodology*, 50(6), 2417-2431. http://www.springer.com/economics/journal/11135

Wallance, N. and Davidson, X.B. (2004). Market Reaction to Voluntary Announcements of Financial Expertise. *Journal of Accounting and public policy*, 23(4), 279-293. https://doi.org/10.1016/j.jaccpubpol.2004.06.001

Wallace, W. A. and Kreutzfeldt, R.W. (1991). Distinctive Characteristics of Entities with an Internal Audit Department and the Association of the Quality of such Department with Errors. *Contemporary Accounting Research*, 7(2), 485-512. https://doi.org/10.1111/j.1911-3846.1991.tb00826.x

Wild, J. (1996). The Audit Committee and Earnings Quality. *Journal of Accounting, Auditing, and Finance*, 11(2), 247-276. https://doi.org/10.1177/0148558X9601100206

Wilbanks, R. (2017). Audit Committee Oversight of Fraud Risk: The Role of Social Ties, Professional Ties, and Governance Characteristic. *The Accounting Review,* 31(3), 1-*43*. https://doi.org/10.2308/acch-51695

Yang, J.S. and Krishnan, J. (2005). Audit committees and quarterly earnings management. *International Journal of Auditing*, 9(3), 201–219. https://doi.org/10.1111/j.1099-1123.2005.00278.x

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Research Article

New Evidence on the Determinants of Internal Control Weaknesses

Vahab Rostami*, Zeynab Bazarghani

Department of Accounting, Payame Noor University, Tehran, Iran

Abbas Rostami

Department of Accounting, Zanjan Branch, Islamic Azad University, Zanjan, Iran

Abstract

The present study evaluates whether there is a significant relationship between investment, earnings management, ownership structure, and internal control weaknesses.

For the study purpose, panel data, including the financial variables of sample companies listed on the Tehran Stock Exchange, were evaluated during 2012-2018. To test the hypothesis, we analyzed the effect of seven descriptive variables on the dependent variable of internal control weakness; three models of Logit Pooled, LPM Pooled, and Probit Pooled are used for hypothesis testing.

The results showed a negative and significant relationship between board compensation, real earnings management, accrual earnings management, capital structure, family ownership, and internal control weakness. Moreover, a positive and meaningful relationship was discovered between institutional ownership and internal control weaknesses.

The current study's outcomes significantly show the relationship between internal control weaknesses, investment, earnings management, and firm ownership in a developing country.

Keywords: internal control weakness, earnings management, ownership structure, financial reporting quality.

*__Corresponding Author__: Assistant Professor of Accounting, Email: vahab.rostami@gmail.com

1. Introduction

Since management is responsible for financial statements and the internal control system, internal audit services increasingly investigate an internal control system (Jarvinen and Myllymaki, 2016).

Among the significant factors for efficient operation, we could refer to the successful establishment of internal control systems in business firms, improving accountability and financial transparency, complying with regulations and preventing fraud and financial abuse. Hence, professional bodies and law-making authorities in different countries are concerned about compiling frameworks, declarations, and guidelines on how internal controls are established, evaluated, and reported by management and how they are audited by the business's auditors firms (Wang and Hooper, 2017).

Internal controls are formulated to ensure the effective implementation of an operation and guarantee reliable financial statements. We expect firms with weak internal control systems, a low operational efficiency level, investment functionality, and financial reporting quality. Thus, the internal control problems can contribute to the amount of cash available for executing the firm missions, directly or indirectly. Besides, since internal control weaknesses can indicate a lack of effectiveness in providing services, business firms with internal control weaknesses are considered unreliable organizations compared with firms with efficient internal control systems; receive fewer financial resources from people (Kim et al., 2017).

In short, a high-quality internal control would lower the risk of incorrect selection and moral hazard and due to the improvement of shareholders and creditor's capabilities in controlling and monitoring the managerial operations, would abate the costs for monitoring managers, oblige the managers to select appropriate and efficient projects, and consequently lower the risk and cost of financing. Further, as a result of these factors, a firm's chance of investment inefficiency would be declined, which means ignoring the investment opportunities in projects with positive net present value and/or investing in projects with negative net present value (Tadesse and Murthy, 2018).

Hu et al. (2014) indicated that internal control could make more transparent, concise, and flawless reports, which is of great importance for investors and users and strengthen their confidence in the published reports. Lenard et al. (2016) discovered a positive relationship between firms' distorted real activities and internal controls. Gady et al. (2018) noticed that companies with significant weaknesses in internal controls are entangled with more complicated operations and reorganized recently. Hence, such companies' accounting risk has a growing trend, and they have lower financial resources for internal control investments.

2. Theoretical Issues and Literature Review

2.1. The board compensation

From the early 20th century, when public companies' management is separated from the rulers and their shareholders, board compensation becomes one of the main items of shareholders' decisions in the general assembly of stock owners. In the beginning, shareholders made different arrangements to encourage and attract the managers to maximize shareholders' capital. The conventional method was to pay a bonus based on a percentage of particular interest in the company. Within the past two decades, the basis for conducted experimental studies in developed countries is alternative incentive schemes for specific earnings schemes. Based on this scheme, instead of paying a bonus to the managers' stocks, they will encourage them, like shareholders, to maximize the firm's market value and increase their interests (Huang et al., 2018).

An effective bonus contract will motivate the manager to maximize the value of a company. An effective contract plus a bonus scheme would connect managers' interests

with that of the shareholders (Gomes, 2016).

Managers contribute to the labor market and would be compensated based on their performance and the organization where they belong, and the so-called market would regulate their performance. So, if the defined compensation does not conform to the performance, the manager who is rewarded less than his/her performance will quit the company. Therefore, managers and shareholders' interests converge where the compensation schemes are designed; otherwise, the firm and manager value will be declined in the labor market. Managers' behavioral characteristics are also among those factors that contribute to the amount of compensation, one of which is the authorities the board has to manipulate real activities that will lead to internal control weaknesses (Friese et al., 2008).

Alali (2011) realized that since managers attempt to maximize their compensations' value, they may manipulate the profit, so a positive relationship is probably established between the increase of managers' compensation and the manipulation of real activities. Isidro and Marqes (2013) believe that systematic increases in senior managers' compensation are due to corporate governance's robustness and higher managerial leadership than the previous periods. The corporate governance system's improvement raises this possibility that a poor managerial performance will be eliminated. Regarding this point of view, risk aversion managers ask for higher compensation to cover this probability.

Andreou et al. (2014) declare that rewarding would motivate managers to present high-quality financial reports and a high-quality audit firm to explore the errors and significant internal weaknesses. Gomes (2016) found a significant relationship between board compensation and corporate governance mechanisms. Huang et al. (2018) noted that companies with controlling shareholders are more inclined toward low-quality audit firms with internal control weaknesses to conceal their opportunistic efforts for more profit and compensation.

H_1: There is a negative and significant relationship between board compensation and the weaknesses of internal control.

2.2. Investment opportunities

Investment can be defined as follows: buying an item of the real or financial asset, the amount of return of which is equal to the expected risk. To put it simply, investment is any type of sacrificing values at present (which is usually definite) in the hope of achieving more value in the future (Chuen et al., 2018).

Investment opportunities do not occur customarily, but they should be realized or created. Different levels of corporate sections may drive different types of investment opportunities. Some investment opportunities may be presented by top organizational management or board members. The partnership of top management in presenting investment opportunities is usually limited to some strategic efforts, like developing firm activities through financial policies and entering new markets. Since investment opportunities cause the allocation of financial resources to profit or decrease the costs, regular and systematic financial policies may be executed by the firms for this purpose (Datta, 2017).

Financial constraints would oblige the managers of listed companies on the capital market to reduce their amount of investments and, due to lack of financial resources, even to refrain from investment opportunities with positive net present value due to lack of financial resources (Giriati, 2016).

Recently the role of internal control quality is growing increasingly in investment efficiency. The higher the quality of the internal controls, the more the managers' responsibility and the better the surveillance would be. This would cause information

asymmetry and follow that the inappropriate selection and ethical risks would be reduced and, consequently, decrease the problems related to overinvestment and underinvestment.

Sun and Al Farooque (2018) found that companies' investment amount would decline after disclosing internal control weaknesses and would increase after such companies alleviate the so-called weaknesses.

Jarvinen and Myllymaki (2016) indicated that companies with internal control weaknesses are inclined toward investment inefficiency, and the number of internal control weaknesses contributes negatively to the investment efficiency.

Chendra-mouli et al. (2018) noticed that investment opportunities are a considerable and developing portion of a firm's firm assets. In addition to this, a substantial amount of a firm's growth potential to improve the economic resources and firm value lies in the investment opportunity.

H_2: There is a negative and significant relationship between investment opportunities and the weaknesses of internal control.

2.3. Real earnings management

The collected evidence indicates that managers' concerns regarding the firm performance motivate them toward earnings management within the current period. This occurs due to managerial pessimism because external investors and analysts rely on the current period's profit. Since managers are usually rewarded based on the profit-based contracts, this motivates them to manage and enhance the current period's profit. In other words, they borrow from the income and profit of the future periods and will transfer them to the current period. Presently, the investors and other financial statements users are more inclined toward financial reporting, especially the reported net profit value, to analyze the firm units. Recent studies revealed that investors select those companies with more stable and higher quality profit within the process of decision-making. In cases where business units are entangled with economic fluctuations and are under marginal pressures, managers attempt to have an influence on the reflected rate of profit of financial statements to organize the firm status, in/directly, and to lead to the positive view of users of financial statements, especially the investors. All these efforts are called earnings management (Ipion and Parbonetti, 2016).

Real earnings management is a method in which the profit is manipulated through the firm's real activities. Real earnings management contributes directly to the cash flows of a firm. In this method, the cash is sacrificed to the accrued profit, and the most important damage is the loss of firm value due to the reduction of future cash flows. Managers are more in pursuit of real earnings management than accrual earnings management, which is occurred during the current period and causes the firm loss at the end of the period (Einhorn et al. 2018).

The resultant earnings management from real activities could have some direct and deleterious consequences on current and even future cash flows, which is difficult to understand by the investors and usually is taken for granted by the board, auditors, financial statement providers, and other stakeholders (Ding et al. 2018).

Beuselinck et al. (2014) found that after the announcement of corporate governance corrective laws in these two companies, the amount of earnings management not only did not decrease, but it is increasing.

By evaluating a large sample of multinational companies, Miko and Kamedin (2015) proved that such companies manage the integrated profit more through their subsidiaries in countries with weaker internal control regulations.

Abbadi et al. (2016) noticed an inverse relationship between internal control mechanisms and real earnings management, which signifies that the amount of manipulation would decrease with the former increase in real activities with the former

increase.

Benjamin et al. (2018) argued that new regulations were made on the internal control structure after recent financial scandals. Managers preferred real earnings management to earnings management through discretionary accruals. They also believed that the use of real accruals for earnings management could indicate the ethical degradation of managers in facing with the earnings management, which arouses more concerns for accountants.

H_3: There is a negative and significant relationship between real earnings management and internal control weaknesses.

2.4. Accrual earnings management

The accrual earnings management includes accounting selections in the form of approved accounting principles and tries to make the economic performance unclear or to cover that. Accrual earnings management is also called accounting earnings management. Through optional discretionary accruals, management is concerned about forming accounting figures following a set of desired objectives. In general, the method is derived from selecting appropriate accounting methods by the management to achieve the desired level of earnings. The earnings management tool is a facility that enables the management to manipulate the reported profit to its benefit. Since accrual earnings management occurs through optional discretionary accruals, it is the main accrual earnings management tool. Discretionary accruals are defined in a way that indicates the difference between accounting profit and cash components. In other words, it is a difference between cash flow and the timing of transaction recognition. Positively, this means that large discretionary accruals show the additional reported profit than the firm's cash flow. Such a difference is due to the accrual accounting system (Ball and Shivakumar, 2005). Suitable earnings management policies apply when managers perform them ethically. When managers can increase the stock price via these policies, empower the firm for financial supply, and create a sense of confidence concerning the firm's continuity.

Lenard et al. (2016) concluded that companies with internal control weaknesses have a higher earnings management level. Alhadab and Clacher (2017) realized that earnings management's negative effect is less on companies with suitable internal control. However, earnings management's negative effect is higher on the value of companies with weak internal control because such companies are more vulnerable to opportunistic managers. Sayari and Omri (2017) believed that the accrual earnings management includes accounting selections in accepted accounting principles, which try to either make the real economic performance unclear or cover that.

Jong et al. (2018) concluded that discretionary accruals' earnings management is decreased considerably after the Sarbanes–Oxley Act provision. Managers use the earnings management of real activities instead of earnings management of discretionary accruals, which become limited due to that organization's declarations.

H_4: There is a negative and significant relationship between accrual earnings management and internal control weaknesses.

2.5. Capital structure

Capital structure is one way to carry out the operations and develop a firm's future using a combination of liabilities and shareholders' wages. Such liabilities involve short-term and long-term debts, and long-term ones include bonds, long-term loans, etc., while the short-term debts comprise short-term loans, accounts payable, etc. Besides, the capital structure includes common stocks, preferred stock, and accumulated profit. We could say that capital structure is a combination of shareholders' debt and equity, called leverage (Kayo et al., 2018).

The corporate governance components monitor the managers to determine the optimum capital structure and affect their decision on this issue. The optimum structure of capital in each company causes an increase in firm value. Consequently, it leads to all firm beneficiaries' satisfaction—further, the contributing factors to corporate governance attempt to maximize the firm value. So, the capital structure and corporate governance try to maximize the firm value and satisfy all beneficiaries, so we could say in general that the corporate governance contributes significantly to the capital structure (Albassam, 2014).

Firm managers, as the agents of shareholders, are trying continuously to regulate the capital structure in a way to minimize the capital costs of the firm and to maximize the value and profitability because managers are motivated enough to present a favorable image of firm profitability procedures via profit smoothing to satisfy the creditors. Capital structure is one of the main contributing factors to firm valuation and inclination in the capital market. The changing and unstable environment of today has made the firms' credential gradation dependent, to a great extent, on the capital structure. The experimental evidence shows that firms' capital structure could affect firms' investment decisions and efficiency (RamaIho et al., 2018).

Kayo and Ripamonti (2016) found that internal control quality could affect both equity and debt in the capital structure.

Gloria and Mantovany (2017) realized that the board size, CEO duality, and compensation structure have a negative effect on the debt to equity ratio of shareholders. Still, the number of board members in meetings, managerial ownership, and firm size positively affects financial leverage.

Jiang et al. (2018) conducted a study on the contributing factors to small and medium-sized companies' capital structure in China. They noted a significant relationship between capital structure and firm value.

H_5: There is a negative and significant relationship between capital structure and the weaknesses of internal control.

2.6. Institutional ownership

By institutional ownership, we mean determining the context and composition of firm shareholders. Irrespective of the legal framework, companies' ownership structure could also influence the development of the corporate governance model. The ownership structure is two-sided, named ownership concentration and shareholders' identity. The identity of shareholders includes institutional ownership, managerial ownership, state ownership, and family ownership, and ownership concentration is a condition where a substantial amount of shares belongs to major shareholders or the majority (Jong et al., 2018).

Institutional investors are major investors, including banks and insurance companies. The position of institutional investors in corporate governance is complicated, theoretically. On the one hand, we could say that the institutional investors depict a different type of corporate governance mechanism, such that it could monitor the firm management. In this situation, significant results can be obtained to align management interests with those of the shareholders. The monitoring role of institutional investors is growing increasingly (Miguel et al., 2018).

The institutional investors are those adroit investors who benefit from their relative advantage in collecting and processing information. Such investors have become one of the main components of the capital market recently. Due to their long-term investment, the company's institutional owners are more willing to consume the resources to affect and monitor the management. The presence of institutional ownership directs the firm management to concentrate on economic performance and avoid opportunistic behaviors.

Moreover, the presence of institutional owners in a firm leads to high-quality financial reporting. Hence, one of the results of institutional owners' presence in companies is providing high-quality accounting information (Goncharov and Zimmermann, 2012).

Chung and Zheng (2011) found that the proportion of shares maintained by institutional investors could increase internal control quality.

In a study on the relationship between institutional ownership, internal controls, and earnings management, Lin et al. (2014) discovered that earnings management enhances internal controls' growth. Moreover, they found a negative relationship between earnings management and institutional investors.

Schmidt and Fahlenbrach (2016) revealed that institutional investors are not alike and do not have the same motivations to monitor the firms' adopted policies.

Jong et al. (2018) realized that firms' institutional investors might help investors deal with the agency problems derived from the separation of management and ownership. Moreover, financial firms are willing to invest in large corporations with smaller financial leverage.

H_6: There is a positive and significant relationship between institutional ownership and the weaknesses of internal controls.

2.7. Family ownership

Family firms can be defined in different aspects. The membership of family members on the board, the percentage of share ownership by the family members, the control, or the family's substantial influence in the firm, which will be explained in the second section, are among the family firms' determining factors. According to the proposed definitions, the ownership of at least 5% and more than 50% of shares is a condition for the family members. Hence, based on the business definitions, a family firm is a type of company. At least 20% of shares of which is possessed by a family and/or one of the family members is affiliated in the board and possessed at least 5% of the common stocks. In family companies, family members, as the owner, possess a proportion of the firm stocks. Thus, such people are both the owner and the agent, and there would be no problem concerning the agent-owner relations, as long as such a view puts forward on this issue (Chiraz and Lesage, 2012).

There is an enormous difference between family firms and other firms. Family firms attempt to transfer the firm from generation to generation. So, such companies are faced with a variety of commercial risks and challenges than other companies. A family firm combines family, business, and ownership. Although it is believed that such areas are independent of others in family firms, these three areas are strictly interwoven (Stephan et al., 2017).

Family firms' culture usually depends strongly on “supporting all shareholders and family members in society”. The firm is responsible for staff, customers, and contractors. In most family companies, personnel replacement is not that much and may draft their contracts with the personnel from one generation to another. Family companies' shares are often non-cash and transfer from one generation to the other in inheritance, gratuitous aid, and/or trade. Some of the family firms are listed on the stock market, which increases the stock liquidity and provides a new capital (Jong et al., 2018).

Jaggi et al. (2009) believed that family members are less willing to participate in Iranian family firms' financial strategies and policies.

Block, Jaskiewicz, and Miller (2011) declared that family companies' performance is more than 50% of companies with no family management.

Mcconaughy et al. (2011) set no condition about the percentage of share possession in family companies. They maintained that family companies are those where the board is composed of the same family members, leading to internal control weakness.

Miguel et al. (2018) stated that family ownership reduces the conflict of interests between managers and shareholders and would lead to the decline of internal control weaknesses.

H_7: There is a negative and significant relationship between family ownership and the weakness of internal controls.

3. Research Methodology

3.1. Statistical population and sample

The population under study should have the following unique qualifications. The information about these companies is studied for 7 years from 2012-2018.

The sample of the study is selected from the statistical population of companies listed on the Tehran Stock Exchange through a systematic elimination method, such that those with the following features will be included:

1) The statistical population of this study comprises all listed companies on the Tehran Stock Exchange with the following qualifications:

- Being listed on the Tehran Stock Exchange until the end of 2012;
- Should not change their financial yearend during the term of study;
- Should be active during the term of study and their stocks being transacted;
- Should completely present their financial information during the term of study; and,
- It should not be affiliated with investing, banks, and financial intermediaries.

In this paper, the screening (elimination) method is used to determine the statistical population. The qualified companies are selected and evaluated as the study sample, and other companies were eliminated. The study sample is achieved after placing the limitations mentioned earlier on the statistical population, and then the information related to research variables is obtained for these companies.

3.2. Research pattern

In this paper, we are concerned about the effect of internal control weaknesses on investment, earnings management, and profit ownership. The following model is used to evaluate the relationship and variable processing:

Model (1)

$$INW_{i,t} = \beta_0 + \beta_1 BC_{i,t} + \beta_2 INOP_{i,t} + \beta_3 REALE_{i,t} + \beta_4 ACCE_{i,t} + \beta_5 COPS_{i,t} + \beta_6 ION_{i,t} + \beta_7 FON_{i,t} + \beta_8 MON_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} SIZE_{i,t} + \beta_{11} AREP_{i,t} + \beta_{12} EXP_{i,t} + \beta_{13} INDUSTRY_{i,t} + SYear + \varepsilon_{i,t}$$

3.3. Measuring variables

3.3.1. Dependent variable

INW: internal control weakness of company i in the year t. The significant weak points of internal control are achieved through the report of independent auditors. Since the audit report only mentions significant weak points of the internal control as a specified term and avoids presenting all weak points the auditors referred to previously in the management letter, in this paper, all terms related to internal control weaknesses are considered as the significant weak points of the internal control. The numbers of significant weaknesses of the internal control in the audit report of listed companies on the Tehran Stock Exchange were extracted during the study. Hence, by significant weaknesses in the present study, we mean those weaknesses the auditor referred to in his/her report, which will normally be tackled during the fiscal year and will remain constant in some cases. In case the company has an internal control weakness, we assign 1; otherwise, 0.

3.3.2. Independent variable

BC: the board compensation of the company i in the year t. Based on Article 134 of the Business Law enacted in 1968, in case it is forecasted in the letter of association, the general assembly following Article 241 of the same law can allocate a certain proportion of the annual net profit of the firm to the board members as compensation, with the condition that the amount of compensation in the public corporations should not be more than 5% of the profit pay to the shareholders in the same year and the private companies should not be more than 10% of the profit pay to the shareholders in the same year.

INOP: investment opportunities of the company i in the year t, for calculating which the Tobin's Q ratio is used. It is equal to the total market value of shares and book value of debts divided by the book value of assets.

REALE: real earnings management of the company i in the year t shows the optional section of operational cash flows. It means setting the regular operational policies aside to reach a short-term profit. This variable occurs in the current period and causes an increase in a firm loss at the end of the period. Real earnings management, which is discretionary operational cash flow, is calculated using the improved version of the Roychowdhury model (2006) using the data of companies suspected of fraud, placed at the database of financial research the Stock Exchange for each year.

Model (2)

$CFO_{it}=a_0+a_1\ SALE_{it}+a_2\ \Delta SALE_{it}+a_3\ ROA_{it}+\epsilon_{it}$

CFO_{it}: operational cash flow of the company i in the year t, which is achieved through the cash flows obtained from the operation divided by total assets at the beginning of the period.

$SALE_{it}$: sales of the company i in the year t, which is calculated through net sales in the current period divided by total assets at the beginning of the period.

$\Delta SALE_{it}$: annual change in sales of the company i in the year t, which is calculated according to the annual change of sales of the current year compared with the previous year divided by total assets at the beginning of the period.

$\epsilon_{it:}$ the sum of the four right items of the model indicates non-discretionary cash flows obtained from the operation.

ACCE: accrual earnings management of company i in the year t, which indicates the discretionary accruals. This includes the accounting selections in accepted accounting principles, which makes the real economic performance unclear. Since most of the scholars used the model proposed by Kothari et al. (2005) for the estimation of the accruals, in this paper, the discretionary accruals are measured using the Kothari et al. (2005) article as follows:

Model (3)

$TACC_{it}=b_0+b_1PPE_{it}+b_2\Delta SALE_{it}+b_3ROA_{it}+\epsilon_{it}$

$TACC_{it}$: total accruals of the company i in the year t, which is calculated according to the difference between cash flows obtained from the operation and the net profit after tax divided by total assets at the beginning of the period.

PPE_{it}: gross properties, machinery, and equipment of the company i in the year t, which is achieved through gross properties, machinery, and equipment at the beginning of the period, divided by total assets.

ROA_{it}: return of assets in the current period of the company i in the year t, which is achieved through the profit before tax divided by total assets.

COPS: the company's capital structure of the company i in the year t indicates the firm's debt ratio and is considered the most conventional definition of the capital structure (Chendra-mouli et al. 2018). This variable is equal to the ratio book value of total assets to the market value of assets. To calculate the market value of assets, the total book value

of debts and the market value of common shareholders' equity is used.

ION: institutional ownership of the company i in the year t, which involves the number of common stocks of the firm, namely, the percentage of stocks related to insurance, investment companies, and banks. To calculate the percentage of institutional ownership in each firm, total institutional ownership shares are divided into the firm's total common stocks at the end of the period.

FON: family ownership of company i in the year t. In this paper, those companies are considered as family firms, the real shareholders of which possesses at least 20% of the common stocks and/or at least one of the relative members are among the board members and/or is the executive manager, actively interact with the board members, and works in managerial and operational positions. We assign 1 if the company has family ownership; otherwise, 0 will be shown.

3.3.3. Control variables of the study

LEV: financial leverage of the company i in the year t, which is equal to total debts divided by the company's total assets.

SIZE: The size of the company i in the year t, which is equal to the natural logarithm of total firm assets.

AREP: is the type of auditor report. Audit report and statement can be described as the final product of auditing a business firm, a report wherein auditors present the employer's financial statements. The testimony of auditors is expressed in the form of professional statements. The testimony indicates an auditor's opinion and belief concerning the range of conformity of the reported information with the predefined criteria. In this paper, the audit reports are divided into accepted and conditional groups and indicated with 1 and 0.

EXP: the export of the company i in the year t. In case the company exports, we assign 1; otherwise, 0 will be used.

INDUSTRY: the auditor industry expertise of the company i in the year t, which indicates the amount of concentration and skill of the auditor in the desired industry and the ability to explore the risks and threats related to the industry. Hence, we study the industries with a large number of population in the Stock Exchange (basic metal, chemicals, automotive, part manufacturing, pharmaceutical materials and products, cement, plaster, and lime, and other non-metallic mineral materials).

4. Research Findings

4.1. Descriptive statistics

First, we describe how certain numbers of companies have remained for fitting in Table 1:

Internal control weaknesses, family ownership, type of auditor’s report, and export are dummy variables specified with code 1 and 0. Frequency, frequency percentage, and mode are used to describe these variables regarding their measurement scale.

As can be seen in Table 2, the frequency percentage of 0 is related to internal control weakness and shows that the listed companies on the Tehran Stock Exchange are more concentrated on the rules and regulations of the significant points of internal control weaknesses, recently and the internal controls of such companies become much stronger. Moreover, the frequency percentage of 1 is related to exports and indicates that most stock companies have the so-called variable.

Table 1. Number of firms in the statistical population by imposing the conditions

Description	Eliminated firms in total periods	Total number of firms
Total listed firms on the Tehran Stock Exchange		445
Eliminating financial intermediaries, financial supply, insurance, and investment firms	107	
Firms with more than 6 months of transaction halt	112	
Eliminating firms entered the Stock Exchange during the study period	4	
Eliminating due to lack of access to information	113	
Statistical population		109

Table 2. The frequency of variables

Variable	Frequency		Frequency percentage	
	0	1	0	1
Internal control weaknesses	298	247	54.6	45.3
Family ownership	495	50	90.8	9.1
Type of auditor's report	241	304	44.2	55.7
Export	51	494	9.3	90.6

First, the descriptive statistics of the research variables, including mean, standard deviation, etc., are presented in Table 3, by separating the variables and years:

Table 3. Descriptive statistics of the entire

Variable	Minimum	Maximum	Mean	Standard deviation
Accrual earnings management	-0.71	0.77	0.004	0.11
Board compensation	0.000	17486	1263	1714
Capital structure	0.16	3.17	0.70	0.24
Investment opportunity	0.71	5.65	1.68	0.66
Institutional ownership	0.000	96.47	44.74	29.25
Financial leverage	0.14	2.31	0.63	0.23
Real earnings management	-0.46	0.43	0.006	0.10
Firm size	11.56	19.14	14.27	1.32
Internal control weakness	0.000	1.000	0.43	0.49
Family ownership	0.000	1.000	0.09	0.28
Type of auditor's report	0.000	1.000	0.56	0.49
Export	0.000	1.000	0.91	0.27

By comparing the minimum and maximum value and the mean between the accrual earnings management, real earnings management, and board compensation, we could observe that earnings management's increase enhances the board compensation. As depicted in Table 3, maximum institutional ownership by 96.47% indicates that the majority of shares of listed companies on the Tehran Stock Exchange are in the hand of legal entities of organizations, and other companies and the real persons possess only a small number of the firms' stocks.

4.2. Tests of model selection

By entering the research data into the Eviews Software, we carry out the model fitting procedure. We should consider the final output probability level within these analyses to check whether the hypotheses are in/significant. If the probability level of a variable is less than 0.1, the hypothesis is significant.

First, we should select an appropriate model, integrated data, or panel data model for the model estimation for the combined data. Hence, the F-Limer and Breusch-Pagan tests

are used in this paper, the results of which are presented in Table 4.

Table 4. The F-Limer and Breusch-Pagan tests

Description	F-Limer test		Breusch-Pagan test		Result
	Statistic	Probability level	Statistic	Probability level	
Research model	0.53	0.78	1.99	0.157	Integrated model

The Breusch-Pagan Test examines the null hypothesis of integrated data against the panel with random effects. Based on the achieved statistic and probability level, the null hypothesis is not rejected, so there is no need for the Hausman test, and the final model is integrated.

Since the dependent variable's value is 0 and 1, three models are used for the model analysis. Now, we perform the model fitting procedure using the random effects panel model. The specifications of model fitting and the results of coefficients, and the significance of model variables are presented in Table 5.

Table 5. Specifications of hypotheses model

R2	F statistic	F probability statistic	Durbin-Watson statistic
0.33	11	0.00	2.11

The coefficient of determination shows that the independent variables elucidate 33% of the dependent variable's change. The significance of the model, based on the statistic and level of F test probability, indicates the significance of the research model. The Durbin-Watson statistic value is also 2.11, between 1.5 and 2.5, which shows no autocorrelation among the error residuals.

$$INW_{i,t} = \beta_0 + \beta_1 BC_{i,t} + \beta_2 INOP_{i,t} + \beta_3 REALE_{i,t} + \beta_4 ACCE_{i,t} + \beta_5 COPS_{i,t} + \beta_6 ION_{i,t} + \beta_7 FON_{i,t} + \beta_8 MON_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} SIZE_{i,t} + \beta_{11} AREP_{i,t} + \beta_{12} EXP_{i,t} + \beta_{13} INDUSTRY_{i,t} + SYear + \varepsilon_{i,t}$$

Table 6. LPM Pooled

Variable	Coefficient	Standard deviation	T statistic	Sig.
Type of auditor's report	-0.04	0.01	-2.87	0.005
Accrued earnings management	-0.19	0.17	-1.08	0.285
Board compensation	-1.73	4.92	-2.78	0.015
Capital structure	-0.23	0.13	-1.68	0.095
Export	-0.07	0.02	-2.42	0.025
Family ownership	-0.10	0.04	-2.05	0.0245
Type of industry 1	-0.26	0.04	-6.01	0.005
Type of industry 2	-0.50	0.07	-6.68	0.005
Type of industry 3	-0.21	0.10	-2.14	0.035
Type of industry 4	-0.10	0.05	-2.02	0.045
Type of industry 5	-0.27	0.11	-2.43	0.025
Type of industry 6	-0.43	0.06	-6.87	0.005
Investment opportunity	-1.42	3.27	-4.34	0.005
Institutional ownership	0.00	0.00	2.23	0.035
Financial leverage	0.47	0.18	2.52	0.015
Real earnings management	-0.08	0.28	-0.28	0.775
Firm size	-0.12	0.00	-17.41	0.005
Intercept	2.55	0.16	15.49	0.005

As can be seen in Table 6, the coefficients of type of auditor's report, accrual earnings management, the board compensation, capital structure, export, family ownership, type

of industry 1-6, investment opportunity, institutional ownership, financial leverage, real earnings management, firm size, and intercept are -0.04, -0.19, -1.37,-0.23, -0.07,-0.10, -0.26, -0.050, -0.21, -0.10, -0.27, -0.43, -1.42, 0.00, 0.47, -0.08, -0.12, 2.55, respectively, the significance level of which is 0.00, 0.28, 0.01, 0.09, 0.02, 0.04, 0.00, 0.00, 0.03, 0.04, 0.02, 0.00, 0.00, 0.03, 0.01, 0.77, 0.00, and 0.00, so there is a significant relationship between type of auditor's report, the board compensation, capital structure, export, family ownership, type of industry 1-6, investment opportunity, institutional ownership, financial leverage, firm size, and intercept and internal control weaknesses.

Table 7. LOGIT Pooled model

Variable	Coefficient	Standard deviation	T statistic	Sig.
Type of auditor's report	-0.21	0.11	-1.84	0.005
Accrued earnings management	-0.28	0.10	-2.74	0.005
Board compensation	-4.47	2.21	-2.02	0.005
Capital structure	-0.74	0.27	-2.75	0.005
Export	-0.37	0.19	-1.89	0.015
Family ownership	-0.88	0.20	-4.43	0.005
Type of industry 1	-0.47	0.28	-1.65	0.10
Type of industry 2	-0.82	0.29	-2.83	0.005
Type of industry 3	-0.29	0.28	-1.03	0.305
Type of industry 4	-0.15	0.30	-0.49	0.625
Type of industry 5	-0.47	0.32	-1.44	0.15
Type of industry 6	-0.67	0.28	-2.32	0.025
Investment opportunity	-3.82	1.55	-2.46	0.005
Institutional ownership	0.00	0.00	0.68	0.495
Financial leverage	1.15	0.65	1.76	0.085
Real earnings management	-1.76	0.68	-2.56	0.005
Firm size	-0.22	0.05	-3.97	0.005
Intercept	3.59	0.89	4.02	0.005

As can be seen in Table 7, the coefficients of type of auditor's report, accrual earnings management, the board compensation, capital structure, export, family ownership, type of industry 1-6, investment opportunity, institutional ownership, financial leverage, real earnings management, firm size, and intercept are -0.21, -0.28, -4.47, -0.74, -0.82, -0.29, -0.15, -0.47, -0.67, -3.82, 0.00, 1.15, -1.76, -0.22, 3-.59, respectively, the significance level of which is 0.00, 0.00, 0.00, 0.00, 0.01, 0.00, 0.10, 0.00, 0.30, 0.62, 0.15, 0.02, 0.00, 0.49, 0.08, 0.00, and 0.00, so there is a significant relationship between type of auditor's report, accrual earnings management, the board compensation, capital structure, export, family ownership, type of industry 2-6, investment opportunity, institutional ownership, financial leverage, firm size, and intercept and internal control weaknesses.

As can be seen in Table 8, the coefficients of type of auditor's report, accrual earnings management, the board compensation, capital structure, export, family ownership, type of industry 1-6, investment opportunity, institutional ownership, financial leverage, real earnings management, firm size, and intercept are -0.32, 0.67, -0.00, 0.42, -0.43, -0.48, -0.45, -1, 0.15, -0.01, -0.02, -0.56, -2.94, 0.00, 0.78, -1.05, -0.31, and 5.05 respectively, the significance level of which is 0.00, 0.00, 0.00, 0.00, 0.00, 0.05, 0.43, 0.08, 0.78, 0.98, 0.97, 0.33, 0.00, 0.00, 0.01, 0.00, 0.00, and 0.00, so there is a significant relationship between type of auditor's report, accrual earnings management, the board compensation, capital structure, export, family ownership, type of industry 2, investment opportunity, institutional ownership, financial leverage, real earnings management, firm size, and intercept and internal control weaknesses.

Table 8. PROBIT Pooled model

Variable	Coefficient	Standard deviation	T statistic	Sig.
Type of auditor's report	-0.32	0.15	-2.11	0.005
Accrued earnings management	0.67	0.34	1.94	0.005
Board compensation	-0.00	0.00	-2.12	0.005
Capital structure	0.42	0.19	2.11	0.005
Export	-0.43	0.14	-2.87	0.005
Family ownership	-0.48	0.25	-1.89	0.050
Type of industry 1	-0.45	0.57	-0.79	0.435
Type of industry 2	-1.00	0.58	-1.72	0.085
Type of industry 3	0.15	0.55	0.28	0.785
Type of industry 4	-0.01	0.63	-0.02	0.985
Type of industry 5	-0.02	0.66	-0.04	0.975
Type of industry 6	-0.56	0.56	-0.98	0.335
Investment opportunity	-2.94	9.31	-3.15	0.005
Institutional ownership	0.00	0.00	3.41	0.005
Financial leverage	0.78	0.40	1.94	0.015
Real earnings management	-1.05	0.42	-2.47	0.005
Firm size	-0.31	0.12	-2.47	0.005
Intercept	5.05	1.93	2.61	0.005

5. Discussion and Conclusion

The result of the present study showed that there is a negative and significant relationship between board compensation and internal control weaknesses. The results of this study confirm with Huang et al. (2018), Gomes (2016), Andreou et al. (2014), Isidro, and Marqes. (2013), and Alali (2011).

The result of this paper indicated that there is a negative and significant relationship between investment opportunities and internal control weaknesses. Such a result is in line with that of Chendra-mouli et al. (2018), Gady et al. (2018), and Sun and Al Farooque (2018).

Furthermore, there is a negative and significant relationship between real earnings management and internal control weaknesses. The result of this study is following that of Benjamin et al. (2018), Abbadi et al. (2016), Miko and Kamedin (2015).

The results of this study also revealed a negative and significant relationship between accrual earnings management and internal control weaknesses, which is in line with that of Chung and Zheng (2011), Sayari and Omeri (2017), Alhadab and Clucher (2017), and Lenard et al. (2016).

There is also a negative and significant relationship between capital structure and internal control weaknesses. Such a result is in line with that of Jiang et al. (2018), Gloria and Mantoani (2017), and kayo and Ripamonti (2016).

Also, we found a positive and significant relationship between institutional ownership and internal control weaknesses. This result is in line with Jong et al. (2018), Schmidt and Fahlenbraj (2016), Lin et al. (2014), Chung and Zheng (2011).

In the end, we conclude that there is a negative and significant relationship between family ownership and internal control weaknesses. This result is similar to that of Miguel et al. (2018), Mcconaughy et al. (2011), Block, Jaskiewicz and Miller (2011), and Jaggi et al. (2009).

References

Abbadi, S.S. Higazi, Q.F. and Al-Rahahleh, A.S. (2016). Corporate Governance Quality and Earnings Management: Evidence from Jordan. *Australasian Accounting Business and Finance Journal*, 10(2), 54-75, http://dx.doi.org/10.14453/aabfj.v10i2.4

Alali, F. (2011). Audit fees and discretionary accruals: compensation structure effect. *Managerial auditing journal*, 26(2), 90-113. https://doi.org/10.1108/02686901111094994

Al-Bassam, W. (2014). Corporate governance, voluntary disclosure and financial performance: an empirical analysis of Saudi listed firms using a mixed methods research design", Ph.D. thesis, University of Glasgow. https://core.ac.uk/download/pdf/42373410.pdf

Alhadab, M., and Clacher, I. (2017). "The impact of audit quality on real and accrual earnings management around IPOs. *The British Accounting Review*, https://doi.org/10.1016/j.bar.2017.12.003

Andreou, P. Louca, C. and Panayides, P. (2014). Corporate governance, financial management decisions and firm performance, evidence from the maritime industry. *Transportation Research Part E: Logistics and Transportation Review*, 63(3), 59-78. http://dx.doi.org/10.1016/j.tre.2014.01.005

Ball, R. and Shivakumar, L. (2005). Earnings quality in U.K. private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39(1), 83-128, https://doi.org/10.1016/j.jacceco.2004.04.001

Benjamin, C. Hatfield, R.C. and Houston, R.W. (2018). The effect of real earnings management on auditor scrutiny of managements other financial reporting decisions. *The Accounting Review*, 93(5), 145-163. http: //doi.org/10.2308/accr-52032

Beuselinck, C. Cascino, S. Deloof, M., and Vanstraelen, A. (2014). Earnings Management within Multinational Corporations. Available at *SSRN:* http:// ssrn.com/ abstract=1599678. http://dx.doi.org/10.2139/ssrn.1599678

Block, J.H. Jaskiewicz, P. and Miller, D. (2011). Ownership versus management effects on performance in family and founder companies: A Bayesian reconciliation. *Journal of Family Business Strategy*, 2(4), 232-245. https://doi.org/10.1016/j.jfbs.2011.10.001

Chendra-mouli, V. Plesons, M. Sullivan, E. and Say, L. (2018). 38.8 million Additional modern contraceptive users: this, in fact, is "never-before opportunity to strengthen investment and action on adolescent contraception. *Reproductive Health*., 15(1), https://doi.org/10.1186/s12978-018-0457-z

Chiraz, B.A. and Lesage, C. (2012). Audit pricing and nature of controlling shareholders: Evidence from France. *China Journal of Accounting Research*, 6(1), 21–34, https://doi.org/10.1016/j.cjar.2012.08.002

Chuen, D.L. Li, G. and Wang, Y. (2018). Cryptocurrency: Anew investment opportunity?. *The journal of alternative investments*, 20(3), 16-40, https://doi.org/10.3905/jai.2018.20.3.016

Chung, K. and Zheng, H. (2011). Corporate governance and institutional ownership. *Journal of financial and quantitative Analysis*, 46(1), 247-273, https://doi.org/10.1017/S0022109010000682

Datta, T.K. (2017). Inventory system with defective products and investment opportunity for reducing defective proportion. Operational Research, 17(1), 297-312. https://link.springer.com/article/10.1007%2Fs12351-016-0227-z

Ding, R. Jialong, L. and Wu, Z. (2018). Government affiliation, real earnings management, and firm performance: the case of privately held firms. *Journal of business research*, 83, 138-150. https://doi.org/10.1016/j.jbusres.2017.10.011

Einhorn, E. Langberg, N. and Versano, T. (2018). cross firm real Earnings management.

Journal of Accounting research, 56(3), 883-911, https://doi.org/10.1111/1475-679X.12188

Friese, A. Link, S. and Mayer, S. (2008). Corporate governance- The state of the art. *In tax and corporate governance,*. 357-425, Doi: 10.1007/978-3-540-77276-7_25

Gady, J. Li, Y. Li, T. and Zheng, S.X. (2018), Internal control weakness, investment, and firm valuation. *Finance Research Letters*, 25, 165-171, https://doi.org/10.1016/j.frl.2017.10.018

Giriati. (2016). Free cash flow, dividend policy, investment opportunity set, opportunistic behavior, and firm's value. *Procedia - Social and Behavioral Sciences,* 219, 248-254, https://doi.org/10.1016/j.sbspro.2016.05.013

Gloria, S. and Mantovani, G.M. (2017). On the Shareholders' Composition of the Company and the Governance Mechanisms of the Firm. Can this Contribute to the Firm Performance (Including the Capacity to Attract Capital and Bank Allowances)?, Available at SSRN: https://ssrn.com/abstract=2907278

Gomes, A.P.M. (2016). Corporate Governance Characteristics as a Stimulus to Tax Management. *Revista Contabilidade & Finanças*, 27(71), 149-168. http://dx.doi.org/10.1590/1808-057x201500750

Goncharov, I. and Zimmermann, J. (2012). Earnings management when incentives compete: the role of tax accounting in Russia. *Journal of International Accounting Research*, 5(1), 41-65. https://doi.org/10.2308/jiar.2006.5.1.41

Hu, J. Li, A. and Zhang, F. (2014). Does Accounting Conservatism Improve the corporate information environment?. *Journal of International Accounting, auditing and Taxation*, 23(1), 32-43, https://doi.org/10.1016/j.intaccaudtax.2014.02.003

Huang, W. Ying, T. and Shen, Y. (2018). Executive cash compensation and tax aggressiveness of Chinese firms. *Review of Quantitative Finance and Accounting*, 1-30, DOI: 10.1007/s11156-018-0700-2

Ipion, E. and Parbonetti, A. (2016). Mandatory IFRS adoption: the trade-off between accrual-based and real earnings management. *Accounting and Business Research*, 47(1), 91-121. https://doi.org/10.1080/00014788.2016.1238293

Isidro, H. and Marqes, A. (2013). The effects of compensation and board quality on non-Gaap disclosures in Europe. *The International Journal of Accounting,* 48(3), 289-317. https://doi.org/10.1016/j.intacc.2013.07.004

Jaggi, B. Leung, S. and Gul, F. (2009). Family control, board independence, and earnings management: Evidence-based on Hong Kong firms. *Journal of Accounting and Public Policy*. 28(4), 281-300. https://doi.org/10.1016/j.jaccpubpol.2009.06.002

Jarvinen, T. and Myllymaki, E.R. (2016). Real earnings management before and after reporting sox 404 material weaknesses. *Accounting Horizons*, 30(1), 119-141. https://doi.org/10.2308/acch-51310

Jiang, J. Dong, F. and Du, B. (2018). Analysis on the factors affecting the capital structure of small and medium-sized enterprises in china. *Business & Economics*, 8(1), 156-162. DOI: 10.4236/ajibm.2018.81010

Jong, L. Ho, P.L. and Elliott, C. (2018). Inside the family: the impact of family and institutional ownership on executive remuneration. *Cogent Economics & Finance*, 6(1), https://www.tandfonline.com/doi/full/10.1080/23322039.2018.1432095

Kayo, E. and Ripamonti, A. (2016). Corporate governance and capital structure in Brazil: stock, bonds, and substitution. *Mackenzie management review*, 17(5), 85-109. http://dx.doi.org/10.1590/1678-69712016

Kayo, E.K. Brunaldi, E.O. and Aldrighi, D.M. (2018). "Capital structure adjustment in Brazilian family firms". *Revista de Administração Contemporânea*, 22(1), http://dx.doi.org/10.1590/1982-7849rac2018170004

Kim, J.B. Yeung, I. and Zhou, J. (2017). Stock price crash risk and internal control

weakness. *Accounting and Finance*, 59(2), 1197-1233. https://doi.org/10.1111/acfi.12273

Kothari, S. Leone, A.J. and Wasley, C.E. (2005). "Performance matched discretionary accrual measures", *Journal of accounting and economics*, 39(1),163-197. https://doi.org/10.1016/j.jacceco.2004.11.002

Lenard, M.J. Petruska, K.A. Alam, P. and Yu, B. (2016). Internal control weaknesses and evidence of real activities manipulation. *Advances in Accounting*, 33, 47-58, https://doi.org/10.1016/j.adiac.2016.04.008

Lin, L. Wu, C. M. Fang, T.Y. and Wun, G.C. (2014). The relation among accounting conservatism, institutional investors and earnings manipulation. *Economic Modeling*, 37, 164-174. DOI: 10.1016/j.econmod.2013.10.020

McConaughy, D.L. Matthews, CH., and Fialko, F.A. (2011). "Founding Family Controlled Firms: Performance, Risk, and Value". *Journal of Small Business Management*, 39(1), 31-49. http://dx.doi.org/10.1111/0447-2778.00004

Miguel, A. Ederer, F. Gine, M. and Schmalz, M. (2018). Common Ownership, Competition, and Top Management Incentives. *Ross School of Business*, https://ssrn.com/abstract=2802332

Miko, N.U. and Kamardin, H. (2015). Impact of Audit Committee and Audit Quality on Preventing Earnings Management in the Pre - and Post- Nigerian Corporate Governance code 2011. *Procedia - Social and Behavioral Sciences*, 172(27),. 651-657. https://doi.org/10.1016/j.sbspro.2015.01.415

RamaIho, J.J.S. Rita, R. and Silva, J.V. (2018). The impact of family ownership on the capital structure of firms: exploring the role of zero-leverage, size, location and the global financial crisis. *International Small Business Journal*, DOI: 10.1177/0266242617753050

Roychowdhury, H. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335-370, https://doi.org/10.1016/j.jacceco.2006.01.002

Sayari, S. and Omri, A. (2017). Earnings management, accruals, and stock liquidity. *Journal of finance and bank management*, 5(1), 17-28, DOI: 10.15640/jfbm.v5n1a2

Schmidt, C. and Fahenbrach, R. (2016). Do exogenous changes in passive institutional ownership affect corporate governance and firm value?. *Journal of financial economics*, 124(2), 285-306. http://dx.doi.org/10.2139/ssrn.2177699

Stephan, ASchafer, D. and Mosquera, J. (2017). Family ownership: does it matter for funding and success of corporate innovation?. *Small business economics*, 48(4), 931-951. DOI: 10.1007/s11187-016-9813-y

Sun, L. and Al Farooque, O. (2018). An exploratory analysis of earnings management before and after the governance and disclosure regulatory changes in Australia and New Zealand. *International Journal of Accounting & Information Management*, 26(1), 81-114, https://doi.org/10.1108/IJAIM-09-2016-0087

Tadesse, A.F. and Murthy, U.S. (2018). Nonprofessional investor perceptions of the partial remediation of IT and non-IT control weaknesses: An experimental investigation.*International Journal of Accounting Information Systems*, 28(3), 14-30, https://doi.org/10.1016/j.accinf.2017.12.001

Wang, J. and Hooper, K. (2017). Internal control and accommodation in Chinese organization. *Critical Perspectives on Accounting*, 49©, 18-30, DOI: 10.1016/j.cpa.2017.04.003

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Research Article

Impact of Audit Report Lag, Institutional Ownership and Board Characteristics on Financial Performance

Arash Arianpoor*

Department of Accounting, Attar Institute of Higher Education, Mashhad, Iran

Abstract

The present study's main objective is to assess the impact of audit report lag, institutional ownership, and board characteristics on the financial performance of listed firms on the Tehran Stock Exchange.

126 firms were assessed for this study during 2013-2017. To assess the firm performance, two criteria of ROE and ROA were used, and Audit Report Lag is measured via the number of days between the end of the firm's fiscal year and the audit report's date.

Results show that audit report lag has a negative and significant relationship with ROA and ROE. A decrease in the number of days spent by independent auditors for signing annual reports would probably enhance firm performance. Moreover, board independence and board size have a negative impact on firm performance. In contrast, institutional ownership has a positive effect on firm performance, and the gender diversity of board members does not affect firm performance.

Reporting lag is more related to patterns and dominant norms in the industry than analyzed firms' features. Besides, Governance characteristics like Institutional Ownership and Board Characteristics are of great importance for creating economic sustainability in developing countries. In the emergent markets and developing countries, like Iran with a specific ownership structure, governmental policies, culture, and more importantly, corporate governance system and which is faced with economic sanctions and its dominant norms can be different from that of the other countries, the impact of audit report lag and governance characteristics may be different on financial performance. Also, due to the global nature of the economy and the possibility of investing in each global capital market, performing this research and its results are necessary for facilitating decision-making during investing in Iranian firm stocks, which are a reason for conducting this paper.

Keywords: Audit Report Lag, Institutional Ownership, Board Characteristics, Financial Performance

Corresponding Author: Assistant Professor, Email: arash.arianpoor@attar.ac.ir

1. Introduction

Information timeliness is one aspect of relatedness, which means that before losing the effectiveness of decisions, the information should be available to decision-makers. Otherwise, it would be of no use for future actions (IASB). Lack of timeliness can affect related information. For example, the usefulness of firm reports may be associated with the lag in presenting reports. By increasing the lag, financial information will become less significant in the decision-making process (Atiase et al., 1989). Moreover, due to the growth and development of economic firms and more commercial deals, making a decision asks for related and timely information based on which one would allocate limited resources in an optimum trend. Hence, timely information contributes to market efficiency and would cause transparency, backing investors, and risk mitigation that finally enhances the quality of financial reporting and performance (Al-Ajmi, 2008).

On the other hand, since the firm's surrounding environment has changed, the features of corporate governance changes, as well, and the board of directors is the final element in charge of implementing corporate governance (Fuller and Jensen, 2003). Hence, it can be argued that different characteristics of corporate governance and the board contribute to financial reporting and firm performance.

Financial reporting timeliness is the main factor of the emergent and developed markets. Audited financial statements in the annual report are the only trusted information source available to the users (Azubike & Aggreh, 2014). In addition to an adverse effect of inappropriate corporate governance policies on firm credit and reputation within a financial community (McGee & Yuan, 2011), financial reporting lag also has a negative effect on firm reputation. It would cause the firm not to attract the capital successfully (Agyei-Mensah, 2018), which is a reason for assessing the impact of financial reporting lag (FRL) and corporate governance features on firms' financial performance in this paper.

Previous studies on the relationship between timely reporting, corporate governance, and firm performance have shown undeniable results. Bijalwan and Madan (2013) declare that corporate governance policies, transparency, and information disclosure are associated positively with firm performance. On the other hand, Hassan et al. (2008) state that there is no relationship between transparency (especially about timely reporting and amount of information disclosure) and firm performance in Malaysian firms. Further, according to Agyei-Menash (2018), financial reporting lag is associated negatively with firm performance. When firms' financial performance is high, it is less likely to disclose the condition early to the people.

Corporate governance is of great importance for creating economic sustainability in developing countries (Matama, 2008). It is an essential factor in developing financial markets and firm value, especially in the emergent markets (La Porta et al., 1997, 1998, 2000). Since in the emergent markets and developing countries, like Iran, which is faced with economic sanctions and its dominant norms (especially corporate governance topics) can be different from that of the other countries, the impact of corporate governance features and FRL may be different on financial performance. For example, the results of studies of Bebchuk et al. (2004) and Klapper and Love (2004) indicate that better corporate governance enhances performance, while Eisenberg et al. (1998) show that there is a negative relationship between corporate governance and firm performance.

In this paper, the impact of timely reporting and corporate governance features on firm performance is studied using the accounting information. Firm performance is measured using two accounting ratios: return on assets (ROA) and return on equity (ROE). Higher ROA and ROE show that corporate governance mechanism is more effective (Misha and Kapil, 2017). Moreover, accounting-based scales are of high

priority in assessing corporate governance because they reflect management capability in increasing value to the firm (Agyei-Menash, 2018).

Conducting this study is crucial in a developing country like Iran with a specific ownership structure, economic status, legal system, governmental policies, culture, and, more importantly, the corporate governance system. Besides, due to the global nature of the economy and the possibility of investing in each global capital market, performing this research and its results are necessary to facilitate decision-making during investing in Iranian firm stocks.

In the following sections, first, theoretical principles, the study's literature, and hypothesis development are described. The third section is about the research method, which includes the type of study and statistical population. The fourth section talks about data analysis and research findings, and the last section is on discussion and conclusion.

2. Theoretical Principles and Literature Review

2.1. Audit report lag and firm performance

Due to the information relatedness and effectiveness in decisions of external users of financial information, timely reporting of firms is an essential qualitative factor and a significant financial accounting component, so report usefulness may have a negative relationship with reporting lag (Agyei-Menash, 2018). The more the number of days the firm spent on publishing annual reports, the less profitable the information is in financial reporting (Al-Ajmi, 2008). On the other hand, if firms have fewer days for delivering their annual reports, the information would have higher usefulness. Hence, financial reporting lag is a determining factor in financial information usefulness available to external accounting information (Alkhatib and Marji, 2012). Nelson and Shukeri (2011) posit that losing firms, compared with profitable firms, have a longer lag in presenting audit reports. Bijalwan and Madan (2013) declare that corporate governance, transparency (timeliness), and information disclosure are associated with firm performance. On the other hand, Hassan et al. (2008) concluded that there is no relationship between transparency (especially about timely reporting and level of information disclosure) and firm performance in Malaysian firms.

Gabriel (2012) states that audit committee sessions positively correlate with financial reporting quality and timeliness. This means that the frequency of audit committee sessions could considerably cause timely reporting of audited financial statements. Moreover, Sharinah et al. (2014) conclude that audit committee sessions and committee member independence and audit committee are associated with financial reporting timeliness in Nigeria.

Moreover, it is expected from ownership concentration to affect the reporting timeliness. However, the studies that associate the block ownership with financial reporting timeliness are scarce (Agyei-Menash, 2018). Abdelsalam and Street (2007) conclude that block ownership causes less timeliness of financial reporting. Further, Ezat and El-Masry (2008) state a significant relationship between ownership structure and financial reporting timeliness.

Although firms are willing to the late disclosure of bad news and the amount of market reaction to early and late notices is different, reporting lag is more related to patterns and dominant norms in the industry than analyzed features (Givoly & Palmon, 1982). Hence, reporting lag is studied concerning the ownership structure, economic condition, legal system, governmental policies, culture, and specific corporate governance system of listed firms on the Tehran Stock Exchange.

Regarding the present theoretical principles, the first hypothesis is as follows:

H_1: Audit report lag has a significant *impact on* firm performance.

2.2. Institutional ownership, board characteristics, and firm performance

Corporate governance mechanisms are a tool for improving agency problems. Among these mechanisms, the board's supervisory role is a significant component in corporate governance, and its effectiveness is determined concerning the board size, composition, and independence (John and Senbet, 1998). The previous studies show that managers are willing to affect investors' understanding through timely disclosure of accounting reports and show the behaviors based on the early presentation of good news and late presentation of bad news (e.g., Givoly and Palmon, 1982; Chamber and Penman, 1984). Regarding the organization environment change and board responsibility in implementing corporate governance (Fuller and Jensen, 2003) and due to the effectiveness of corporate governance policies in firm reputation and credit (McGee and Yuan, 2011), different characteristics of the board can contribute to the manner of absorbing capital and consequently firm performance. Hence, according to the previous studies and the present study's objectives, four corporate governance features, including board size, board independence, board gender diversity, and institutional ownership, were selected.

The board of directors plays a significant role in corporate governance. According to the agency theory, one can claim that in larger boards, more people are evaluating and supervising management decisions, so the chance of the presence of agency problems is higher. This is because larger boards benefit from a variety of business expertise, which could lead to more effectiveness in supervision and, consequently, accountability and better disclosure of firms. Larger boards benefit from cumulative expertise and are more competent in performing duties (Akhtaruddin et al., 2009). Ezat and El-Masry (2008) state that larger boards improve the timeliness of financial statements. However, some studies show that larger boards cause communicational problems that lead to the decline of partnership and higher conflict of interests before reaching an agreement, and performance drop (Dimitropoulos and Asteriou, 2010). Ujunwa (2012) declares a negative relationship between board size and firm performance, while Nguyen et al. (2014) indicate that such a relationship is positive. However, the findings of a broad spectrum of studies are indicative of a negative relationship.

Unbounded managers are those affiliates who do not work in the firm. They are like a control mechanism with independent supervisory performance. The effect of independent managers on firm performance has different results. Luna and Tang (2007) conclude that independent managers enhance firm performance. Azeez (2015), however, figures out that the presence of people outside the organization in the board composition does not help the firm performance. Some others (like Adjoud et al., 2007; Erkens et al., 2010) reveal that independent managers have no significant impact on firm performance. According to Kelton and Yang (2008), a high percentage of independent managers on the board can intensify managerial opportunism supervision, lowering management's chance of not disclosing timely information. Hence, the board under the influence of unbounded independent managers deprive of management benefits is likely to strengthen firm compliance with information disclosure necessities that may finally lead to timely financial reporting. In general, available studies in the emergent markets on the impact of independent managers on firm performance have had different results.

The agency theory shows that a board with different ethnic and gender backgrounds can improve board independence and strengthen managerial supervision (Cabedo & Tirado, 2004; Elzahar & Hussainey, 2012). Studies related to gender diversity are based on the belief that women add different characteristics to the board, which causes the board to have better supervision on managerial decisions. On the other hand, gender diversity in a firm's managerial team bears some losses for the organization (Agyei-

Menash, 2018). Studies indicate that the relationship between board gender diversity and firm performance has had different results. Adams and Ferreira (2009) analyze women's board members' effect on corporate governance and American firms' performance. Results show that women board members make more supervision attempts, but their impact on firm performance is negative on average. Moreover, Darmadi (2013) declares that senior women managers have a negative association with ROA and Tobin's Q, and this shows that employing women does not lead to firm performance enhancement. However, Carter et al. (2003) state that firms with at least two women on the board, compared with firms with men members on the board, have better ROA and Tobin's Q. Besides, Eklund (2007) and Rose et al. (2009) conclude that the proportion of women on the board has no significant association with accounting and market performance.

Institutional investors are among crucial corporate governance mechanisms (Shleifer & Vishy, 1997), and regarding their considerable proportion in the firm, they are motivated enough for controlling management behavior (Jensen, 1993). Moreover, institutional investors play a significant role in aligning management interests with investors (Solomon, 2010). The current literature is not clear about the direction of the relationship between institutional ownership and firm performance. A part of the literature shows a positive and significant relationship, and the other part refers to the negative and significant relationship between institutional ownership and firm performance. For example, Cornett et al. (2007) state that there is a positive and meaningful relationship between institutional investors and return on operational turnover (as a criterion for firm performance), while the study of Bhattacharya & Graham (2007) reveal some evidence from a negative relationship between institutional ownership and firm performance.

Since the other objective of the present study is to assess the impact of corporate governance features on the financial performance of listed firms on the Tehran Stock Exchange, the following hypotheses are formulated based on the objective of the study and the proposed theoretical principles:

H_2: Institutional ownership has a significant *impact on* firm performance.

H_3: Board member independence has a significant *impact on* firm performance.

H_4: Board size has a significant *impact on* firm performance.

H_5: Board gender diversity has a significant *impact on* firm performance.

3. Research Methodology

The statistical population of the present study includes all listed firms on the Tehran Stock Exchange with the following conditions:

- Their financial periods should be set on March;
- Selected firms should not be affiliated with investment, financial intermediaries, holdings, and banks; and,
- The required information should be presented for the period of study from 2013-2017.

According to the evaluations and by imposing the available population's abovesaid limitations, 126 firms were selected.

Model 1 is used for testing the hypotheses as follows:

$$Performance_{it}=\alpha +\beta_1 ARL_{it}+ \beta_2 IO_{it}+ BI_{3it}+ \beta_4 BS_{it}+ \beta_6 BGD_{it}+ \beta_5 LEV_{it}+ \beta_7 LIQ_{it}+ \beta_7 SIZE_{it}+ \beta_8 IndustryDum_{it}+ \beta_9 YearDum_{it}+ \varepsilon_{it}$$

Performance: firm performance. Accounting-based scales about corporate governance are a top priority because they reflect the management capability to add value to the firm (Agyei-Menash, 2018). In this paper, two accounting ratios, namely Return on Assets (ROA) and Return on Equity (ROE), are used, which are derived from

other studies, including Machek and Kubicek (2018). ROE shows how much return can be created by a firm with the invested money by shareholders. This criterion is one of the most important parameters for firm investors (Gupta and Sharma, 2014). Moreover, ROA is usually used to measure firm performance in corporate governance literature (Al-Matari et al., 2014).

ARL: Audit report lag. This variable is measured via the number of days between the firm's end of the financial year and the audit report date. Audit report date may not be exactly the day firms publish the financial information. Still, according to the studies of Agyei-Menash (2018), McGee (2007), and Leventis et al. (2005), audit report date has been used as a surrogate for date of release.

IO: institutional ownership that the percentage of institutional ownership is considered in this paper.

BI: board independence, which is the proportion of unbounded managers to total board members.

BS: board size, which is computed based on the firm board's natural logarithm's total number.

BGD: board gender diversity. Similar to the study of Abbott et al. (2012), in this paper, if at least one woman exists in board 1, otherwise, 0 will be assigned.

LEV: financial leverage, which is computed from none current debts to equity. Studies show different results about the relationship between financial leverage and firm performance. The positive effect on firm performance may be due to creditors' conducted supervision (Saidat et al., 2019).

LIQ: liquidity that, according to the studies of Arping and Sautner (2010) and Agyei-Menash (2018), is calculated based on current assets to current debts. The previous studies show that the amount of liquidity and profitability contributes negatively to the financial crisis (Parker et al., 2002; Wang and Deng, 2006). Financial leverage ratios and liquidity ratios are used to control a firm's financial status (Shahwan, 2015).

SIZE: the firm size that is computed based on the natural logarithm of total assets. Firm size is analyzed in several studies (Cassar & Holmes, 2003; Al-Matari et al., 2012). It is assumed that firm size is probably correlated positively with firm performance. Joh (2003) expresses that larger firms have probably better opportunities than smaller ones, a chance that can increase the firm value.

IndustryDum: dummy variable for controlling the industry effect.

YearDum: dummy variable for controlling the effect of changes during time.

Table 1. Descriptive statistics of the study

Variable	No. of observations	Minimum	Maximum	Mean	Standard deviation
ROA	630	-0.81	3.84	0.176	0.183
ROE	630	-0.812	2.891	0.282	0.482
ARL	630	21	124	78.12	28.248
IO	630	0	0.848	0.679	4.67
BI	630	0.274	0.867	0.621	2.38
BS	630	1.083	1.963	1.710	0.589
BGD	630	0	1	0.191	0.283
LEV	630	0.185	2.627	0.655	0.245
LIQ	630	0.283	4.852	1.3745	0.64472
SIZE	630	10.172	18.831	13.924	1.523

Resource: Research findings

4. Research Findings

The descriptive statistics related to qualitative and quantitative variables are depicted

in Table 1. Evaluations show that the average return on assets and return on equity is 0.176 and 0.482. Besides, the number of days between the firm's financial year and the audit report date is 78 days, on average.

In the following, tests of stationary, linearity, normality of errors, and variance heterogeneity are presented. The stationary condition of variables is measured using Eviews Software and Levin, Lin, and Chu test method. Table 2 illustrates the results of this test.

Table 2. The results of the stationary condition of variables

Variable	Levin, Lin, and Chu test		Result
	Statistics	Sig.	
ROA	-14.2	0.000	H0 is rejected (variable is stationary)
ROE	-23.4	0.000	H0 is rejected (variable is stationary)
ARL	-5.1	0.000	H0 is rejected (variable is stationary)
IO	-42.1	0.000	H0 is rejected (variable is stationary)
BI	-9.5	0.000	H0 is rejected (variable is stationary)
BS	-4.46	0.000	H0 is rejected (variable is stationary)
BGD	-18.6	0.000	H0 is rejected (variable is stationary)
LEV	-4.42	0.000	H0 is rejected (variable is stationary)
LIQ	-6.1	0.000	H0 is rejected (variable is stationary)
SIZE	-3.8	0.000	H0 is rejected (variable is stationary)

Resource: Research findings

Table 2 shows that all probabilities are less than 5%, so the null hypothesis is rejected, and all variables are stationary. In the following, the Jarque-Bera test is used for analyzing error normality. This test's null hypothesis is for the normality of time series, so based on this test and its probability, the null hypothesis is accepted, which shows the normality of errors. Bartlett test is used to assess the fixation of error variance. The null hypothesis of this test is based on variance homogeneity. This test's probability value is more than 5%, so we can accept the null hypothesis concerning variance homogeneity. Moreover, the Chaw test (selecting model using pooling and panel method) and Hausman test (selecting model with fixed or random effects) are used to estimate the model, computing the coefficients and parameters, and select the model. The obtained results from the two tests show model estimation based on the panel model with fixed effects. Table 3 shows the results of this test.

Table 3. The results of Chaw, Hausman, normality, and variance homogeneity

With the dependent variable of ROA			With the dependent variable of ROE		
Test	Sig.	Test result	Test	Sig.	Test result
Jarque-Bera	0.21	Normality of errors	Jarque-Bera	0.43	Normality of errors
Bartllet	0.24	Variance homogeneity	Bartllet	0.24	Variance homogeneity
F	0.00	The model with panel data method (Panel)	F	0.00	The model with panel data method (Panel)
χ^2	0.04	Model with fixed effects	χ^2	0.03	Model with fixed effects

Resource: Research findings

Finally, Table 4 shows the results of model estimation with fixed effects and related coefficients to each variable

Table 4. The results of model estimation with fixed effect and related coefficient to each variable

Variable	The model with the dependent variable of ROA				The model with the dependent variable of ROE			
	Coefficient	Sig.	Test of linearity		Coefficient	Sig.	Test of linearity	
			VIF	Tolerance			VIF	Tolerance
Constant	0.211	0.000	-	-	0.000	0.322	-	-
ARL	-0.35	0.000	1.340	0.746	0.000	-0.29	1.340	0.746
IO	0.24	0.001	1.445	0.692	0.002	0.2	1.445	0.692
BI	-0.15	0.014	1.120	0.893	0.023	-0.26	1.120	0.893
BS	-0.29	0.018	1.290	0.775	0.036	-0.37	1.290	0.775
BGD	0.25	0.056	1.495	0.669	0.061	0.42	1.495	0.669
LEV	-0.03	0.038	1.279	0.782	0.029	-0.06	1.279	0.782
LIQ	0.44	0.000	1.350	0.741	0.000	0.28	1.350	0.741
SIZE	0.33	0.048	1.202	0.832	0.039	0.24	1.202	0.832
Industry Dummy	Considered				Considered			
Year Dummy	Considered				Considered			
Coefficient of determination	0.59	–			0.47	–		
Durbin-Watson statistic	1.73	–			1.89	–		
F statistic	18.685	0.000			14.766	0.000		

Resource: Research findings

The results of Table 4 indicate that at the 5% error level, a unit increase in the variable of Audit report lag causes a decrease in firm performance indices of ROA and ROE by -0.35 and -.029. In other words, the higher the Audit report lag, the less is the firm performance. Hence, the first hypothesis of the study is confirmed.

Moreover, at 5% error level, a unit increase in the institutional ownership variable increases firm performance indices of ROA and ROE by 0.24 and .02. In other words, the higher the institutional ownership, the higher is the firm performance. Hence, the second hypothesis of the study is confirmed.

A unit increase in board independence variable causes an increase in firm performance indices of ROA and ROE by -0.15 and -.026. Regarding the significance of less than 0.05, we could say that higher board independence in the firm lowers the firm performance. So, the third hypothesis is confirmed.

The results of Table 4 show that a 5% error level, a unit increase in the variable of board size, causes a decrease in firm performance indices of ROA and ROE by -0.37 and -.029. In other words, the larger the board size, the less is the firm performance. Hence, the fourth hypothesis of the study is confirmed.

On the other hand, although the coefficient of effectiveness of the variable of board gender diversity on firm performance variables of ROA and ROE is 0.25 and 0.42, respectively, since the level of significance for the effect of board gender diversity on firm performance is more than 0.05, the impact of board gender diversity on performance is not significant, so the fifth hypothesis is rejected.

The results of VIF test show that VIF is less than 10, so there is no multicollinearity. Moreover, the Durbin-Watson statistic for both models is 1.73 and 1.89, which is less than 2, so there is no autocorrelation problem. Besides, tolerance is variables is more than 0.2. A tolerance statistic of less than 0.2 indicates a potential multicollinearity problem, so this paper has no serious collinearity problems. In general, there is no problem with collinearity, multicollinearity, and autocorrelation. The coefficient of

determination of 0.59 and 0.47 for both models is indicative of the high explanatory power of the model. The F statistic of less than 0.05 means the significance of the entire regression.

5. Discussion

Due to the information timely and its effectiveness in external users' decisions, timely reporting is an essential qualitative factor and a significant financial accounting component. Descriptive statistics reveal that during the study period, the mean audit report lag of firms is 78 days, which seems logical concerning the operating instructions of information disclosure of listed firms on the Tehran Stock Exchange. The results of regression analysis show that audit report lag has a negative and significant relationship with ROA and ROE, so decreasing the number of days spent by independent auditors for signing annual reports would probably lead to the enhancement of firm performance, which is in line with the results of Agyei-Menash (2018) and Dogan et al. (2007). Another interpretation from this condition is that in increasing the firm (good news), the firm is probably willing to disclose the information sooner. Firms with inappropriate financial performance also try to present their financial reports with more lag. Besides, we can conclude that firms with favorable financial performance usually have fewer problems cooperating with their auditors, so the duration of time for auditors' duties will decrease.

Moreover, corporate governance features, like board independence and board size, have a negative impact on firm performance, while institutional ownership has a positive effect on firm performance. The results of Darko et al. (2016) and Agyei-Menash (2018) show that board independence has a negative and significant effect on ROE. This result does not follow the agency theory because, based on this theory, independent managers have more effective supervision on management, increase profitability, and decrease management's opportunistic behavior that finally increases the firm performance. Although larger boards benefit from a variety of business expertise that leads to more effectiveness in supervision and better accountability and disclosure of firms (Akhtaruddin et al., 2009), on the other hand, larger boards cause some communication problems that lower the performance, participation, and conflict of interests before reaching an agreement (Dimitropoulos and Asteriou, 2010) that could be an argument for the result of the present study. The results of this paper are in line with that of Ujunwa (2012) and Eisenberg et al. (1998) but in conflict with that of Nguyen et al. (2014). Moreover, the results of Agyei-Menash (2018) show that the impact of board size on ROA and ROW is not significant. Also, the results of this study suggest that institutional ownership has a positive effect on firm performance, while the results of Agyei-Menash (2018) show no significant relationship. Institutional investors are an important corporate governance mechanism (Shleifer and Vishny, 1997). Since they have a considerable share in the firm, they are motivated to control the management behavior (Jensen, 1993), leading to firm performance growth.

The results of this paper show that the gender diversity of board members does not affect firm performance, which is in line with that of Rose (2007), Agyei-Menash (2018), and Eklund et al. (2009). Studies show that the relationship between board gender diversity and firm performance has yielded different results. The results of Adams and Ferreira (2009) express that women board members try harder for supervision, but their influence on firm performance is negative on average. Moreover, Darmadi (2013) states that employing women is not in line with firm performance. However, Carter et al. (2003) declare that firms with at least two women on their boards, compared with firms with men in their boards, have better performance. In Iran, according to Sepasi and Abdoli (2016), there is no evidence concerning the direct

impact of the presence of a woman on the board on firm value. Still, women on the board contribute to financial performance and affect the firm value. Moreover, this study shows that financial leverage contributes negatively to firm performance, but liquidity and firm size positively affect firm performance. Although Agrawal and Knoeber (1996) declare that financial leverage has a positive association with firm performance, this paper's results align with Andrade and Kaplan (1998). They argue that firms with higher financial leverage have worse performance than firms with lower financial leverage. Myers (1977) believes that higher levels of financial leverage may have a negative impact on firm performance due to the problem of not investing in the firm. This is while the increase of financial leverage hinders the firm capability to increase new debts. This result conforms to the studies. Furthermore, previous studies indicate that the amount of liquidity and profitability contribute negatively to the chance of financial crisis (Parker et al., 2006; Wang and Deng, 2002), and liquidity condition can be a criterion for appropriate firm performance. Besides, large firms probably have better opportunities than smaller ones that could increase the firm value (Joh, 2003).

6. Conclusion

Reporting lag is more related to patterns and dominant norms in the industry than analyzed firms (Givoly & Palmon, 1982). Besides, Governance characteristics like Institutional Ownership and Board Characteristics are of great importance for creating the basis of economic sustainability in developing countries (Matama, 2008) and is an important factor in developing financial market, especially in the emergent markets (La Porta et al., 1997, 1998, 2000). In the emergent markets and developing countries, like Iran with a specific ownership structure, governmental policies, culture, and more importantly, corporate governance system and which is faced with economic sanctions and its dominant norms can be different from that of the other countries, the impact of audit report lag and governance characteristics may be different on financial performance. Due to the global nature of the economy and the possibility of investing in each global capital market, performing this research and its results are necessary to facilitate decision-making during investing in Iranian firm stocks. Hence, the topic of reporting lag and institutional ownership and board characteristics are studied concerning the ownership structure, economic condition, legal system, governmental policies, culture, and specific corporate governance system of listed firms on the Tehran Stock Exchange, and this study attempts to assess the impact of audit report lag, institutional ownership and board characteristics on financial performance.

According to the findings, timely reporting of firms is a significant factor. Firms that have no proper planning for their financial reporting are probably faced with problems in attracting capital. Besides, the present study some operating applications about firm managers, such that the presence of appropriate composition of board members can contribute significantly to firm performance. In this paper, only two criteria were used for measuring firm performance. However, utilizing other performance indices can contribute to the enrichment of the results of this paper. It is worth mentioning that firm performance is not merely limited to these two measurement criteria and other measurements, like net profit margin, Tobin’s Q, economic value-added can be included, as well. Moreover, data collection has been limited to five years, so by extending the study's duration and using more comprehensive data, this paper's results can change.

References

Abbott, L. Parker, S. and Presley, T. (2012). Female Board Presence and the Likelihood of Financial Restatement. *Accounting Horizons*, 26 (4), 607-629. Doi: 10.2308/acch-50249

Abdelsalam, O.H. and Street, D.L. (2007). Corporate governance and the timeliness of corporate internet reporting by the UK: listed companies. *Journal of International Accounting, Auditing and Taxation*, 16(1), 111-130.

Adams, R.B. and Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(3), 291-309. https://doi.org/10.1016/j.jfineco.2008.10.007

Adjaoud, F. Zeghal, D. and Andaleeb, B. (2007). The effect of board's quality on performance: a study of Canadian firms. *Corporate Governance an International Review*, 15(4), 623-635. https://doi.org/10.1111/j.1467-8683.2007.00592.x

Agrawal, A. and Knoeber, C.R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31(03), 377-397. https://www.jstor.org/stable/2331397

Agyei-Mensah, B.K. (2018). Impact of corporate governance attributes and financial reporting lag on corporate financial performance. *African Journal of Economic and Management Studies*, *9*(3), 349-366. https://doi.org/10.1108/AJEMS-08-2017-0205

Akhtaruddin, M. Hossian, M.A. Hossian, M. and Yao, L. (2009). Corporate governance and voluntary disclosure in corporate annual reports of Malaysian listed firms. *Journal of Applied Management Accounting Research*, 7(1), 1-20.

Al-Ajmi, J. (2008). Audit and reporting delays: evidence from an emerging market. *Advances in Accounting*, 24(2), 217-226, http://dx.doi.org/10.1016/j.adiac.2008.08.002

Alkhatib, K. and Marji, Q. (2012). Audit reports timeliness: empirical evidence from Jorda. *Social* and Behavioral Sciences, 62, 1342-1349. https://doi.org/10.1016/j.sbspro.2012.09.229

Al-Matari, E.M. Al-Swidi, A.K. Fadzil, F.H. and Al-Matari, Y.A. (2012). The impact of board characteristics on firm performance: evidence from non-financial listed companies in Kuwaiti stock exchange. *International Journal of Accounting and Financial Reporting*, 2(2), 310-332. Doi: 10.5296/ijafr.v2i2.2384

Al-Matari, E.M. Al-Swidi, A.K. and Fadzil, F.H.B. (2014). The measurements of firm performance's dimensions. *Asian Journal of Finance & Accounting*, 6(1), 24-49. https://doi.org/10.5296/ajfa.v6i1.4761

Andrade, G. and Kaplan, S.N. (1998). How costly is financial (Not Economic) Distress? Evidence from highly leveraged transactions that became distressed. *The Journal of Finance*, 53(5), 1443-1493. https://doi.org/10.1111/0022-1082.00062

Arping, S. and Sautner, Z. (2010). Corporate governance and leverage: Evidence from a natural experiment. *Finance Research Letters*, *7*(2), 127-134. https://doi.org/10.1016/j.frl.2010.02.003

Atiase, K.R. Bamber, L.S. and Tse, S. (1989). Timeliness of Financial Reporting, the Firm Size Effect, and Stock Price Reactions to Annual Earnings Announcement. *Contemporary Accounting Research*. 5(2), 526–552. Doi: 10.1111/j.1911-3846.1989.tb00722.x

Azeez, A.A. (2015). Corporate governance and firm performance: evidence from Sri Lanka. *Journal of Finance and Bank Management*, 3(1), 180-189. Doi: 10.15640/jfbm.v3n1a16

Azubike, J.U.B. and Aggreh, M. (2014). Corporate governance and audit delay in Nigerian quoted companies. *European Journal of Accounting Auditing and*

Finance Research, 2(10), 22-33. https://www.semanticscholar.org/paper/CORPORATE-GOVERNANCE-AND-AUDIT-DELAY-IN-NIGERIAN-Azubike-Aggreh/37ca30dceb67a3acfcaf1d3067c45ba4f763bb32

Bebchuk, L. Cohen, A. and Ferrell, A. (2004). What matters in corporate governance?. *The Review of Financial Studies*, 22(2), 783-827. https://doi.org/10.1093/rfs/hhn099

Bhattacharya, P.S. and Graham, M. (2007). Institutional ownership and firm performance: Evidence from Finland. SSRN working paper. Available at SSRN: http://ssrn.com/abstract=1000092.

Bijalwan, J.G. and Madan, P. (2013). Board composition, ownership structure and firm performance. *Research Journal of Economics and Business Studies*, 2(6), 86-101. https://www.researchgate.net/publication/236006079_Board_Composition_Ownership_Structure_and_Firm_Performance

Cabedo, J.D. and Tirado, J.M. (2004). The disclosure of risk in financial statements. *Accounting Forum*, 28(2), 181-200. https://doi.org/10.1016/j.accfor.2003.10.002

Carter, D.A. Simkins, B.J. and Simpson, W.G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33-53. https://doi.org/10.1111/1540-6288.00034

Cassar, G. and Holmes, S. (2003). Capital structure and financing of SMEs: Australian evidence. Accounting and Finance, 43(2), 123-147. Doi: 10.1111/1467-629X.t01-1-00085

Chamber A. and Penman, S. (1984). Timeliness of Reporting and the Stock Price Reaction to Earnings Announcements. *Journal of Accounting Research*, 22(1), 21-47. https://www.jstor.org/stable/2490700

Cornett, M.M. Marcus, A.J. Saunders, A. and Tehranian, H. (2007). The impact of institutional ownership on corporate operating performance. *Journal of Banking & Finance*, *31*(6), 1771-1794. https://doi.org/10.1016/j.jbankfin.2006.08.006

Darko, J. Aribi, Z.A. and Uzonwanne, G.C. (2016). Corporate governance: the impact of director and board structure, ownership structure and corporate control on the performance of listed companies on the Ghana stock exchange. *Corporate governance*, 16(2), 259-277, doi: 10.1108/CG-11-2014-0133.

Darmadi, S. (2013). Board members' education and firm performance: evidence from a developing economy. International Journal of Commerce and Management, 23(2), 113-135. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1904762

Dimitropoulos, P.E. and Asteriou, D. (2010). The effect of board composition on the informativeness and quality of annual earnings: empirical evidence from Greece. *Research in International Business and Finance*, 24(2), 773-784. https://doi.org/10.1016/j.ribaf.2009.12.001

Dogan, M. Coskun, E. and Celik, O. (2007). Is the timing of financial reporting related to firm performance? – An examination on ISE listed companies. *International Research Journal of Finance and Economics*, 12(3), 220-233. https://www.researchgate.net/publication/241374226_Is_Timing_of_Financial_Reporting_Related_to_Firm_Performance_-_An_Examination_on_Ise_Listed_Companies

Eisenberg, T. Sundgren, S. and Wells, M.T. (1998). Larger board size and decreasing firm value in small firms. *Journal of financial economics*, *48*(1), 35-54. https://doi.org/10.1016/S0304-405X(98)00003-8

Eklund, J.E. Palmberg, J. and Wiberg, D. (2009). Ownership structure, board composition, and investment performance. *Corporate Ownership and Control*, 7(1),Doi: 10.22495/cocv7i1p11

Elzahar, H. and Hussainey, K. (2012). Determinants of narrative risk disclosures in UK interim reports. *Journal of Risk Finance,* 13(2), 133-147. Doi: 10.1108/15265941211203189

Erkens, D. Hung, M. and Matos, P. (2010). Corporate governance in the 2007-2008 financial crisis: evidence from financial institution worldwide. *Journal of Corporate Finance*, 18(2), 389-411. https://doi.org/10.1016/j.jcorpfin.2012.01.005

Ezat, A. and El-Masry, A. (2008). The impact of corporate governance on the timeliness of corporate internet reporting by Egyptian listed companies. *Managerial Finance*, 34(12), 848-867. https://doi.org/10.1108/03074350810915815

Fuller, J. and Jensen, M. (2003). *What's a Director to Do?" In Best Practices: Ideas and Insights from the World's Foremost Business Thinkers.* Cambridge, MA: Perseus Publishing and London, Bloomsbury Publishing, ISBN-13 : 978-0738208220

Gabriel, S. (2012). Attributes of audit committee members and quality of financial reporting in banks in Nigeria. MSc thesis, Ahmadu Bello University, Zaria.

Givoly, D. and Palmon, D. (1982). Timeliness of annual earnings announcements: Some empirical evidence. *Accounting Review*, 57(3), 486−508. https://www.jstor.org/stable/246875

Gupta, P. and Sharma, A.M. (2014). A study of the impact of corporate governance practices on firm performance in Indian and South Korean companies. *Procedia – Social and Behavioral Sciences,* 133, 4-11. https://doi.org/10.1016/j.sbspro.2014.04.163

Hassan, M. Rahman, R.A. and Mahenthiran, S. (2008). Corporate governance, transparency and performance of Malaysia companies. *Managerial Auditing Journal*, 23(8), 744-778. https://doi.org/10.1108/02686900810899518

IASB (2010). The objective of financial reporting and qualitative characteristics of decision-useful financial information. London, available at: www.iasb.org/Home.htm (accessed January 12, 2018).

Jensen, M.C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance*, 48(3), 831–880. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x

Joh, S.W. (2003). Corporate governance and firm profitability: evidence from Korea before the economic crisis. *Journal of Financial Economics*, 68(2), 287-322. https://doi.org/10.1016/S0304-405X(03)00068-0

John, K. and Senbet, L. (1998). Corporate Governance and Board Effectiveness. *Journal of Banking and Finance*, 22(4), 371-403. https://doi.org/10.1016/S0378-4266(98)00005-3

Kelton, A.S. and Yang, Y. (2008). The impact of corporate governance on internet financial reporting. *Journal of Accounting and Public Policy*, 27(1), 62-87, available at: https://doi.org/10.1016/j.jaccpubpol.2007.11.001

Klapper, L.F. and Love, I. (2004). Corporate governance, investor protection, and performance in emerging markets. *Journal of Corporate Finance*, 10(5), 703-728. https://doi.org/10.1016/S0929-1199(03)00046-4

La Porta, R. Florencio L.S. Andrei, S. and Robert, V. (1997). Legal Determinants of External Finance. *Journal of Finance*, 52(3), 1131-1150. https://www.jstor.org/stable/2329518

La Porta, R. Florencio L.S. Andrei, S. and Robert, V. (1998). Law and Finance. *Journal of Political Economy*, 106(6), 1113-1155. https://www.jstor.org/stable/10.1086/250042

La Porta, R. Florencio L.S. Andrei, S. and Robert, V. (2000). Investor Protection and

Corporate Governance. *Journal of Financial Economics*, 58(1-2), 3-27. https://doi.org/10.1016/S0304-405X(00)00065-9

Leventis, S. Weetman, P. and Caramanis, C. (2005). Determinants of audit report lag: some evidence from the Athens Stock Exchange. *International Journal of Auditing*, 9(1), 45-58, http://dx.doi.org/10.1111/j.1099-1123.2005.00101

Luna, C. and Tang, M. (2007). Where is independent director efficacy?. Corporate Governance: An International Review, 15(4), 636-643. https://doi.org/10.1111/j.1467-8683.2007.00593.x

Machek, O. and Kubíček, A. (2018). The relationship between ownership concentration and performance in the Czech Republic. *Journal of International Studies*, 11(1), 177-186. https://www.jois.eu/?408,en_the-relationship-between-ownership-concentration-and-performance-in-czech-republic

Matama, R. (2008). Corporate governance and financial performance of selected commercial banks in Uganda. A Paper presented to the CRRC Call for Papers, Queen's University, Belfast.

McGee, R.W. (2007). Corporate governance in Russia: a case study of timeliness of financial reporting in the telecom industry. *International Finance Review*, 7, 365-390. Doi:10.1016/S1569-3767(06)07015-4

McGee, R. and Yuan, X. (2011). Corporate Governance and the Timeliness of Financial Reporting: A Comparative Study of the People's Republic of China, the USA, and The European Union. *Journal of Asia Business Studies, 6* (1), 5-16. Doi: 10.1108/15587891211190679

Mishra, R. and Kapil, S. (2017). Effect of ownership structure and board structure on firm value: evidence from India. *Corporate Governance: The International Journal of Business in Society*, 17(4), 700-726, https://doi.org/10.1108/CG-03-2016-0059

Myers, S.C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147-175. https://doi.org/10.1016/0304-405X(77)90015-0

Nelson, S.P. and Shukeri, S.N. (2011). Corporate governance and audit report timeliness: evidence from Malaysia. *Research in Accounting in Emerging Economies*, 11(1), 109-127. https://doi.org/10.1108/S1479-3563(2011)0000011010

Nguyen, T. Locke, S. and Reddy, K. (2014). A dynamic estimation of governance structures and financial performance for Singaporean companies. *Economic Modelling*, *40*, 1-11. https://doi.org/10.1016/j.econmod.2014.03.013

Parker, S. Peters, G.F. and Turetsky, H.F. (2002). Corporate governance and corporate failure: a survival analysis. *Corporate Governance: International Journal of Business in Society*, 2(2), 4-12. https://doi.org/10.1108/14720700210430298

Rose, C. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance: An International Review*, 15(2), 404-413. https://doi.org/10.1111/j.1467-8683.2007.00570.x

Saidat, Z. Silva, M. and Seaman C. (2019). The relationship between corporate governance and financial performance: Evidence from Jordanian family and nonfamily firms. *Journal of Family Business Management*, 9(1), 54-78. https://doi.org/10.1108/JFBM-11-2017-0036

Sepasi, S. and Abdoli, L. (2016). The impact of women on Board of Directors on Corporate Value and Financial Performance. *Financial Accounting and Auditing Research*, 8(29), 39-58 (In Persian).

Shahwan, T.M. (2015). The effects of corporate governance on financial performance and financial distress: evidence from Egypt. *Corporate Governance*, *15*(5), 641-662. https://doi.org/10.1108/CG-11-2014-0140

Sharinah, P. Mohd, F.M. and Azlina, A. (2014). Audit committee and timeliness of financial reporting: Malaysian public listed companies. *Middle-East Journal of Scientific Research*, 22(2), 162-175. Doi: 10.5829/idosi.mejsr.2014.22.02.21886

Shleifer, A. and Vishny, R.W. (1997). A survey of corporate governance. *Journal of Finance*, 52(2), 737-783. https://doi.org/10.1111/j.1540-6261.1997.tb04820.x

Solomon, J. (2010). Corporate Governance and Accountability, 3rd ed. John Wiley and Sons Publication, West Sussex.

Tong, S. and Ning, Y. (2004). Does capital structure affect institutional investor choices?. The Journal of Investing, 13(4), 53-66. Doi: 10.3905/joi.2004.450757

Ujunwa, A. (2012). Board characteristics and the financial performance of Nigerian quoted firms. *Corporate Governance: The International Journal of Business in Society*, 12(5), 656-674. https://doi.org/10.1108/14720701211275587

Wang, Z.J. and Deng, X.L. (2006). Corporate governance and financial distress: Evidence from Chinese listed companies. *The Chinese Economy*, 39(5), 5-27. Doi: 10.2753/CES1097-1475390501

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Research Article

The Structural and Environmental Challenges and Bottlenecks of Financial Supervision of the Accountants of the Executive Organs of the Country: An Approach to Optimal Implementation of the Public Sector Accounting System

Mahdi Jani

Departemant of Accounting, Chabahar Branch, Islamic Azad University, Chabahar, Iran

Ahmad Pifeh*, Mahdi Faghani

Department of Accounting, University of Sistan and Baluchestan, Zahedan, Iran

Abstract

In this research, we examined the structural and environmental challenges and bottlenecks of financial supervision of the accountants of the executive organs of the country on the proper implementation of the public sector accounting system. So, we can provide suggestions to improve supervision to achieve the goals of the public sector accounting system by identifying current obstacles and challenges.

Research Method: The present research is applied in terms of purpose and descriptive and survey research to measure variables and data collection. In this research, we have used a combined approach of library or documentary methods as well as interviews, questionnaires, and data mining methods.

Results: we extracted statistical results regarding the components and barriers related to structural and environmental indicators in the form of 23 questions and a Likert scale questionnaire. Then we analyzed the data using SPSS and AMOS software. The results show the significant impact of structural and environmental barriers and challenges of accountants' financial supervision on the proper implementation of the public sector accounting system. Using structural equation modeling, we investigated the relationship and correlation between the two structural and environmental components. The results indicate a significant relationship and a positive correlation between these two challenges.

Conclusion: The research results show that the structural and environmental barriers and challenges of accountants' financial supervision significantly affect the proper implementation of the public sector accounting system.

Keywords: Financial Supervision, Accountants, Public Sector Accounting, Ministry of Economic and Finance Affairs

***Corresponding Author**: Assistant Professor of Accounting, Email: pifeh@acc.usb.ac.ir

1. Introduction

The country's public sector's accounting system has undergone many changes since the beginning of 2015 and has moved from the cash accounting system to the gradual implementation of the accrual financial system. Changes in the public sector financial system will significantly impact the standards, structure, and organization of financial units, the list of accounts, operating procedures, accounting guidelines, and how financial management is handled and reported.

The public sector accounting system is a set of accounting concepts, assumptions, standards, procedures, and guidelines for identifying, measuring, registering, classifying, summarizing, and reporting the reporting units' financial events. Implementing the mentioned system is subject to all components' continuous observance to achieve the desired goals.

The change from accrual to cash accounting is a change in the accounting system and a conceptual change in applying accounting principles and standards in public sector management (Kordestani and Iranshahi, 2009).

Due to the change in accounting and the measurement approach in the public sector's accounting and financial reporting system, monitoring its proper and complete implementation is necessary and inevitable.

We can classify the public sector accounting and financial reporting system's main objectives into three groups as follows.

1. Assisting the public sector in fulfilling and evaluating public accountability
2. Providing information needs of users of financial reports of reporting units and
3. Creating the necessary platform for extracting and accurately calculating the cost of programs, activities, services, and products in line with performance-based budgeting.

Achieving these goals requires identifying and addressing the challenges of changing the financial system and creating the necessary mechanisms to implement them properly.

Financial supervision in the implementation of public sector accounting is supposedly one of the important issues. The General Accounting Law entrusts the accountant with supervision before and during the executive organs' expenditure. Therefore, it will be important to pay attention to the direct impact of accountants' performance in the financial supervision of public sector accounting in Iran.

Since the country's executive organs' accountants have a serious responsibility in implementing and establishing the accounting and financial reporting system of the public sector, the study and identification of structural and environmental challenges and bottlenecks of supervision for its proper implementation is the focus of this research.

The course of accounting developments in international institutions shows that the provision of binding laws and regulations has had a significant impact on changes in the administrative structure and providing services and creating a fundamental change in the public sector's accounting and financial reporting system. These infrastructures have recently been provided in our country to create a change in the public sector's financial system. Its complete and accurate implementation requires sufficient time, proper planning, and careful supervision. Given that monitoring and control in implementation are inevitable in the country's management, the existence of an effective supervision system financially will greatly contribute to social justice and the country's economic development. Overseeing government budget and expenditures is done through pre-expenditure supervision, supervision during expenditure, and post-expenditure one. In this regard, supervision during and before expenditure according to Article 90 of the General Accounting Law is the responsibility of the Ministry of Economic and Finance

Affairs (accountants) and post-expenditure supervision according to Article 55 of the Constitution and Note 3 of Article 95 of the General Accounting Law is the responsibility of the Court of Accounts of Country; Article 174 of the Constitution is the responsibility of the General Inspection Organization, and Note 2 of the single article of the law on the Establishment of the Auditing Organization is the responsibility of the Auditing Organization (independent auditors).

Execution of accrual accounting has been included in the budget circular since the beginning of 2015, and all executive organs are obliged to implement it. The most important part of it is monitoring government expenditures, i.e., monitoring during and before spending. It is carried out by the accountants appointed by the Ministry of Economic and Finance Affairs (Article 31 of the Law on Public Accounts) as the main custodians of monitoring the proper implementation of the public sector accounting system in the executive organs of the country.

Less than five years have passed since the establishment and implementation of the public sector accounting system. Examining the obstacles and problems of supervising the implementation of public sector accounting from the perspective of accountants due to their direct connection with and responsibility for its problems and challenges can pave the way for comprehensive and accurate financial oversight, increasing the efficiency of accountants, reducing administrative bureaucracies and eliminating parallel tasks with other supervision bodies.

The research's main objective is to identify the structural and environmental challenges of accountants' financial supervision of the proper implementation of the public sector accounting system. It has the following secondary objectives: 1) identifying structural obstacles and problems of financial supervision of accountants on the proper implementation of the public sector accounting system and 2) identifying environmental obstacles and problems of financial supervision of accountants on the proper implementation of the public sector accounting system

2. Theoretical Issues and Hypothesis Development

The role of the accountant as a supervisor during the expenditure of the executive branch is associated directly with accepting the principle of supervision and control by officials and executive managers, clear laws and regulations and raising the level of knowledge and awareness of persons at any level and position and facilitates matters (Hedayati and Ghandi, 2016).

In any political system, programs, budgets, and financial supervision are mutually interdependent. As the principle of supervision is necessary for any movement, in a sense, supervision is certainly not necessarily less than the government itself because the survival of the government depends on supervision (Bahman, 2015).

The efficiency and dynamism of political and social systems are directly related to how they are monitored. Due to its size and impact, the public sector, especially in Iran, is one of the most important sectors in any country's financial system. The need for financial supervision on its performance is of great importance (Bahman, 2015).

Mohammadian and Taghipour Kazemi (2016) showed that the performance of the General Directorate of Supervision on Accountantships based on Malcolm Baldrige's organizational excellence model is appropriate. The results of ranking the research variables have shown that the most emphasis is on the general administration's leadership area, and the least emphasis is on the customer area.

Rabiee Mandajin and Gholizadeh Nargesi (2017) identified staff empowerment and its dimensions that include a feeling of meaning, competence, and effectiveness, affecting employees' job performance by improving the level of motivation. But from among the dimensions of empowerment, employee independence cannot significantly

affect employees' job performance by improving motivation.

Akhavan Alavi et al. (2014) have reviewed the effect of motivational factors on improving financial supervision of accountants and financial managers of Qom province. The analysis results show that motivational factors, job factors, organizational factors, and individual factors are associated with financial supervision quality.

Raudla et al. (2015) show that auditors can find performance auditing useful, even if it does not lead to specific changes in organizational policies and practices.

Oyebisi et al. (2017) concluded that a lack of transparency and accountability in the public sector is a major risk to capital market efficiency, financial stability, Long-term economic stability, and economic growth. Unfortunately, accountability is a major problem in Nigeria. This is a result of the high rate of corruption in all sectors of the Nigerian economy.

Al-Wardat and Mohammad Bashikh (2017) examined the impact of general managers' factors, i.e., managers' experience, and competence, on the Saudi Audit Institute's contributions to facilitate commitments for changes in government offices. The results of a survey of 96 Saudi government officials show that the Saudi Supreme Audit Institution can achieve considerable gains in improving Saudi public affairs.

2.1. Public sector accounting system

Public sector accounting in developing countries and developing economies often has historical roots (Antipova and Bourmistrov, 2013). Therefore, understanding the past, present, and future of public accounting cannot be separate from understanding the so-called accounting system (Jones and Dugdale, 2001). Due to the widespread need for accountability and the growth of financial needs at the level of various governments worldwide, public accounting systems have changed and required a more complete and comprehensive accounting system (Christians et al., 2013; Oulasvirta, 2014).

In accrual accounting, the statement of financial resources in the case of period activities will be similar to a business profit and loss statement that can provide comparability between public and private units (McPhee, 2006).

Chan (2008) showed that the choice of accrual accounting system in the public sector leads to increased government accountability to the people, better financial management by public sector managers, and comparability of management performance in different areas. Fundamental changes in the accounting system are rooted in a change in the public sector accounting outlook from cash changes to events that lead to cash changes.

Kazemi and Karbasi Yazdi (2012) examined five factors of lack of theoretical and conceptual framework, laws and regulations in the financial and Accounting system, standards and methods of government accounting, lack of full implementation of operational budgeting, lack of performance auditing in the public sector. Findings showed that all five factors examined are obstacles to implementing accrual accounting in the public sector.

Amini Mehr et al. (2015) examined the usefulness of the accrual accounting basis for reporting transparency and accountability of universities affiliated with the Ministry of Science. Findings indicated that accrual accounting improves public sector accountability. Accrual accounting also has no significant effect on reporting transparency. In addition, the results showed that accrual accounting is effective in determining the cost of services at Kharazmi University.

Akrami et al. (2017) examined the conditions and resources needed to implement accrual accounting in the public sector, the factors affecting the transition period and reviewed experiences in some countries and have concluded that the time frame set out in the law is not realistic due to the vastness of Iran's public sector, limited resources, and infrastructures.

Kordestani et al. (2016) showed that a lack of real will on the part of politicians for developing and implementing Transition program, lack of public demand for government performance, government economy and the extent of government ownership in the economy, and lack of appropriate standards and laws in the public sector are among the most important obstacles to the implementation of accrual accounting in the public sector.

Caperchione (2015) suggests that central governments should implement international standards of public sector accrual accounting.

McPhee (2015) shows that the selection of accrual accounting in the public sector leads to increased government accountability to its clients, better financial management of public service managers, and comparability of management performance in different areas; ultimately, this improves the quality of reported information.

Becke et al. (2014) showed that different accountants have had different challenges in being coordinated with budgeting based on accrual accounting and have made many efforts to implement accrual accounting.

Christians et al. (2013) show that the current laws, especially those related to budget accounting and the importance of budget accounting concerning financial reporting's general purposes, are reasons for not accepting international standards.

In interventional research using accrual accounting system in public sector organizations, Bruns (2014) showed that the implementation of accrual accounting system motivates and promotes public services and beneficiaries' satisfaction.

Caperchione (2015) examined the application of accrual accounting in Australian municipalities. Findings indicate that this system has been effective in the performance of municipalities. System complexities and risks such as fraud, corruption, and compromising domestic capital are also less common.

Ritonga (2018) investigated the quality of accrual accounting. The quality of accrual accounting is calculated based on five types of accrual transactions, which are: conversion of assets into cost transactions, collection of costs of illegal transactions, collection of illegal transactions of assets, collection of illegal transactions of income, and conversion of debt into income transactions. This study shows no significant quality difference in accrual accounting implementation between different types of local governments, i.e., local government, municipal local government, and provincial, local government. The main question of the research is that what are the important structural and environmental challenges and barriers related to the financial supervision of the accountants of the executive organs of the country regarding the proper implementation of the public sector financial reporting and accounting system? It is divided into secondary questions as follows: 1) what are the important structural challenges and obstacles related to the financial supervision of the accountants of the executive organs of the country regarding the proper implementation of the public sector financial reporting and accounting system? 2) what are the important environmental challenges and obstacles related to the financial supervision of the accountants of the executive organs of the country regarding the proper implementation of the public sector financial reporting and accounting system?

3. Research Methodology

3.1. Research Hypotheses

3.1.1. Main research hypothesis

Structural and environmental challenges and bottlenecks in accountants' financial supervision hinder the proper implementation of the public sector accounting system's establishment.

It is finally classified into two secondary hypotheses.

3.1.2. Secondary hypotheses

Hypothesis 1: Structural challenges and bottlenecks in accountants' financial supervision hinder the public sector accounting system's proper implementation.

Hypothesis 2: Environmental challenges and bottlenecks in accountants' financial supervision hinder the public sector accounting system's proper implementation.

3.2. Research method

In fact, the present research is applied in terms of purpose and descriptive and survey research to measure variables and collect data. This research has used a combined approach of library or documentary methods and interviews, questionnaires, and data mining methods. In this method, the researcher has used the tool of taking notes from library resources as well as designed tools such as specialized checklists designed to collect the required information and interviews and questionnaires in combination.

3.3. Data collection

Since this research is descriptive, in the first part, we extracted demographic information and descriptive statistical indicators about the collected data, and, in the second part, through data mining and analysis of relevant information, we extracted the necessary findings inductively to answer each of the research questions.

3.4. Defining research variables

Dependent variable: Optimal financial supervision with the approach of implementing the public sector accounting system

Independent variables: 1. Environmental factors, 2. Structural factors

3.5. Statistical population

The statistical population is all accountants of the country's executive organs, and the size of the population is 742 people. We used Cochran’s formula to select a statistical sample from the statistical population. According to the mentioned formula, the sample size has been 253 people:

$$n = \frac{\frac{Z^2 pq}{d^2}}{1 + \frac{1}{N}\left[\frac{Z^2 pq}{d^2} - 1\right]}$$

The value of n represents the sample size.

The values of p and q are the success and failure ratios, which are considered 0.5.

The value of Z is the percentage of the standard error of acceptable reliability at the error level of 0.05 being equal to 1.96.

The error valued of the desired degree of confidence or probable accuracy is also considered 0.05.

The value of N represents the size of the target population.

3.6. Sampling method

According to the size calculated by Cochran’s formula, we should distribute at least 253 questionnaires among the country's accountants of the country's executive organs. Accordingly, we distributed 320 questionnaires among the statistical population. We distributed this number of questionnaires among 12 provinces of the country.

Considering that the subject under study is the problems and bottlenecks of financial supervision of accountants and the main task of accountants is to monitor the expenditure of government credits, financial resources, and the budget of the whole

country, we ranked first the provinces of the country with an average of the last 5 years of the share of budget credits of the whole country extracted from the statistical yearbook of the country between the years (2013-2017). Then we divided it into three groups, the first group up to 2%, the second group from 2% to 4% and the third group above 4% of the total budget share of the country and finally we randomly selected 4 provinces from each group and distributed the questionnaire among accountants as follows:

First group: Provinces of Qazvin, Ardabil, South Khorasan, and Hamedan.

Second group: Provinces of Kurdistan, Golestan, Hormozgan, and East Azerbaijan.

Third group: Provinces of Sistan and Baluchestan, Kerman, Fars, and Tehran.

Then we received 260 questionnaires from 10 provinces and continued the research.

3.7. Research reliability

We have used a questionnaire based on the Likert scale (Figure 1). So, after selecting the subject and determining the research hypotheses, to obtain information about the obstacles and problems of structural and environmental financial supervision of accountants in the public sector accounting system by referring to articles and books in relevant fields and translating articles and dissertations which were available outside of Iran and through the Internet and journals, and referring to accountants, university professors and elites in the field of research, we identified and extracted factors and influential components; then we developed the relevant questionnaire.

I agree completely 2. I agree 3. I have no opinion 4. I disagree 5. I disagree completely

Figure 1: Likert spectrum

We have used Cronbach's alpha to obtain reliability, as described in Table 1, which is acceptable for research purposes (greater than 0.7).

Table 1: Cronbach's alpha

Questionnaire	Cronbach's alpha	Number of questions	Number of sample
Structural factors	0.790	11	260
Environmental factors	0.840	12	260
Total questionnaire	0.876	23	260

4. Research Findings

4.1. Descriptive statistics

The results of descriptive statistics are shown in Table 2, which was obtained from 260 questionnaires collected.

Table 2: General Information of Questionnaire

Variable		Frequency	Frequency percentage
Degree	Financial	168	64.6
	Non-financial	92	35.4
Education	Diploma	6	2.3
	BSc	86	33.1
	MSc	160	61.5
	PhD	8	3.1
Experience	Below 15 years	42	16.2
	15-20	76	29.2
	21-25	92	35.4
	26-30	39	15
	Above 30 years	11	4.2

4.2. Descriptive statistics of research variables

We will calculate the minimum, maximum, average, standard deviation, skewness, and kurtosis for each of the research variables with the data collected from the questionnaire.

Table 3 shows the descriptive indicators of the research variables. As you can see, the averages of environmental and structural factors are 1.69 and 1.97, respectively. Standard deviation values for research variables, environmental and structural factors are equal to 0.47 and 0.51, respectively.

Table 3: Descriptive statistics of research variables

Research variables	Minimum	Maximum	Mean	Standard deviation	Skewness	Kurtosis
Environmental factors	1	75.3	69.1	47.0	07.1	97.1
Structural factors	1	36.3	97.1	51.0	37.0	37.-0

4.3. Inferential statistics

This section will first use the Kolmogorov-Smirnov normality test to determine the parametric or non-parametric tests to test hypotheses. If the data is normal, we use one-sample t-test parametric tests, and if the data is not normal, we will use the Wilcoxon non-parametric test.

4.3.1. Kolmogorov-Smirnov test for investigating the normality of research variables

For this purpose, we use the Kolmogorov-Smirnov valid test to check the normality of the main variables' distribution. This test compares the observed cumulative distribution function with the expected cumulative distribution function in a variable at the distance measurement level in the single-sample mode. In interpreting the test results, if the amount of error level observed is greater than 0.05, then the observed distribution is the same as the theoretical distribution. There is no difference between the two. That is, the obtained distribution is a normal one. However, if the significance value is less than 0.05, then the observed distribution is different from the expected distribution, and the above distribution will not be normal. This test examines the normality of the data according to the following hypotheses.

H_0: Data distribution is normal.

H_1: Data distribution is not normal.

The results of the test of normality of the research variables are shown in the table below.

Table 4: Kolmogorov-Smirnov test results

Research variables	Test statistic	Significance level
Environmental factors	0.091	0.000
Structural factors	0.066	0.007

According to the results of the table above, the significance level of the Kolmogorov-Smirnov test for all research variables is less than 0.05, so we conclude that the distribution of all research variables is not normal.

Since the research variables were not normal, we use the Wilcoxon test to examine the hypotheses' status. The hypothesis test in the Wilcoxon method is as follows.

H_0: The factor in question is ineffective in the proper implementation of the establishment of the public sector accounting system. (Median of observations is not significantly different from the number 3).

H_1: The factor in question prevents or does not prevent the proper implementation of the public sector accounting system (median is significantly different from the number 3).

Therefore, when examining research hypotheses, if the null hypothesis is accepted, the median of the variable or index under test is not much different from the number 3; in other words, the desired factor is ineffective in the proper implementation of the public sector accounting system. But suppose hypothesis zero is rejected, and the median of the observations is more than 3. In that case, it means that the factor in question does not prevent the proper implementation of the public sector accounting system's establishment. Finally, suppose the null hypothesis is rejected, and the median of the observations is less than 3. In that case, the factor in question prevents the proper implementation of the public sector accounting system's establishment. We should note that because in the 5-option Likert spectrum, the average and median are 3, this number is considered the criterion and moderate status.

4.4.Testing the hypotheses

Hypothesis 1: Environmental challenges and bottlenecks in accountants' financial supervision hinder the public sector accounting system's proper implementation. The questions are given in the questionnaire, according to the following table. The answers are in this order: *I completely agree*, *I agree*, *I have no opinion*, *I disagree*, and *I'm afraid I have to disagree*.

The results of the Wilcoxon test for this hypothesis are shown in the table below.

Table 5: Results of the Wilcoxon test for testing the first hypothesis

Index	Median	Test statistic	Significance level
Environmental factor	1.66	-13.87	0.000

According to the above table, the significance level is zero, which is less than 0.05, so the null hypothesis is rejected. In other words, according to the previous explanations, the environmental factor is not ineffective in the proper implementation of the establishment of the public sector accounting system. Because the median of this factor is less than 3, we can say that the environmental challenges and bottlenecks in accountants' financial supervision hinder the proper implementation of the public sector accounting system.

4.5.Ranking of environmental challenge items

The table below shows the ranking results of this challenge.

Table 6: Results of environmental challenge ranking

Challenge items	Mean Rank	Rank
First item	6.42	Sixth
Second item	6.02	Second
Third item	5.60	First
Fourth item	6.67	Ninth
Fifth item	6.96	Eleventh
Sixth item	6.30	Fifth
Seventh item	6.55	Eighth
Eighth item	6.05	Third
Ninth item	6.49	Seventh
Tenth item	7.85	Twelfth
Eleventh item	6.82	Tenth
Twelfth item	6.26	Fourth

According to the ranking table, the third item is one of the most important environmental challenge items. The ranking of the other items is written in the rank column in front of each item. (We should note that the items with lower average rank were considered top ranks because the numbers from one to five in the questionnaire were given to the options *I completely agree* to *I can't entirely agree*, respectively).

Hypothesis 2: Structural challenges and bottlenecks in accountants' financial supervision hinder the public sector accounting system's proper implementation. The questions are described in the questionnaire, according to the following table. The answers are in the form of I strongly agree, I agree, I have no opinion, disagree, and strongly disagree, respectively.

The results of the Wilcoxon test for this hypothesis are shown in the table below.

Table 7: Results of the Wilcoxon test for testing the second hypothesis

Index	Median	Test statistic	Significance level
Structural factor	2	-13.82	0.000

According to the above table, the significance level is equal to zero, which is less than 0.05, so the null hypothesis is rejected. In other words, considering the previous explanations, the structural factor is not ineffective in the proper implementation of the establishment of the public sector accounting system. Since the median of this factor is less than 3, we can say that the structural challenges and bottlenecks in accountants' financial supervision hinder the proper implementation of the public sector accounting system.

4.6. Ranking of structural challenge items

The table below shows the ranking results of this challenge.

Table 8: Results of Structural challenge ranking

Challenge items	Mean Rank	Rank
First item	5.41	Fourth
Second item	5.06	Second
Third item	6.82	Ninth
Fourth item	7.45	Eleventh
Fifth item	6.49	Eighth
Sixth item	5.58	Sixth
Seventh item	4.69	First
Eighth item	5.12	Third
Ninth item	5.64	Seventh
Tenth item	7.28	Tenth
Eleventh item	5.46	Fifth

According to the ranking table, the seventh item is one of the most important structural challenges. The ranking of the other items is written in the rank column in front of each item.

Main Hypothesis: Structural and environmental challenges and bottlenecks in accountants' financial supervision hinder the public sector accounting system's proper implementation.

Based on the results of the first and second hypotheses, we concluded that the environmental and structural challenges and bottlenecks of accountants hinder the proper implementation of the public sector accounting system. Accordingly, the main hypothesis is confirmed.

We compare the two structural and environmental challenges using the Friedman test; we have given the test result in the following table.

Table 9: Results of structural and environmental challenge ranking

Challenge	Mean Rank	Rank
Structural	1.73	First
Environmental	1.27	Second

According to the above table results, the structural challenge is of higher priority than the environmental.

4.7. Modeling of structural equations

The structural equation model is a specific causal structure between a set of invisible constructs. A structural equation model consists of two components: a structural model that defines the causal structure between the hidden variables and a measurement model that defines the relationships between the hidden variables and the observed variables. We can analyze structural equation models using Amos software. Using this technique, we can study and analyze various conceptual models of different researches.

In structural equation modeling, we can trust model estimates when the model has sufficient fit. Model fit means that the variance-covariance matrix observed with the variance-covariance matrix predicted by the model must have values close to each other or so-called fit. The closer the values in the two matrices are, the more the model fits. Amos calculates a goodness-of-fit index (the ratio of the sum of the squares explained by the model to the total sum of the squares of the matrix estimated in the population). This index is similar to the correlation coefficient in terms of optimality. These criteria vary from zero to one, although they may theoretically be negative (this should not be the case, as this indicates that the model does not fit the data definitively). The closer the goodness-of-fit index and the adjusted fit index are to one, the greater the goodness-of-fit model with the observed data.

The following figure shows the two-way relationship between structural and environmental challenges.

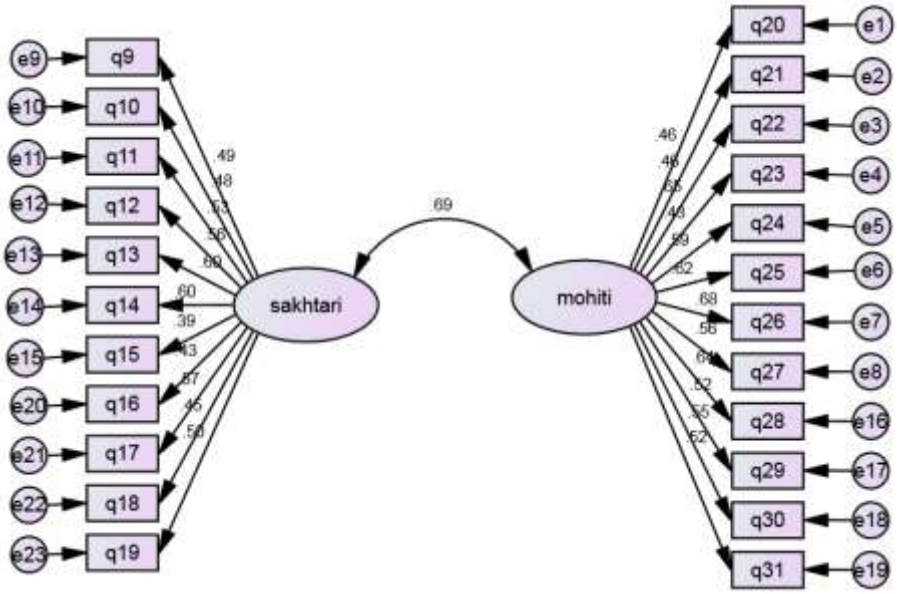

Figure 2: Diagram of the two-way relationship between structural and environmental challenges

According to the above figure, the correlation between environmental and structural challenges is equal to 0.69; this relationship's significance level is less than the test

level, so the relationship between these two challenges is significant. Since the sign of the correlation between these two is positive, the direction of the relationship between them is also direct, directly affecting each other.

The following table shows the results of the above model:

Table 10: Results of fitting the model of the two-way relationship between environmental and structural challenges

Relationships between challenges	Correlation	Significance level
Environmental --> Structural	0.69	0.000

Considering the higher rank of structural challenges than environmental ones, we examine the impact of structural barriers on environmental barriers. The following figure shows the model of the impact of the structural challenge on the environmental one.

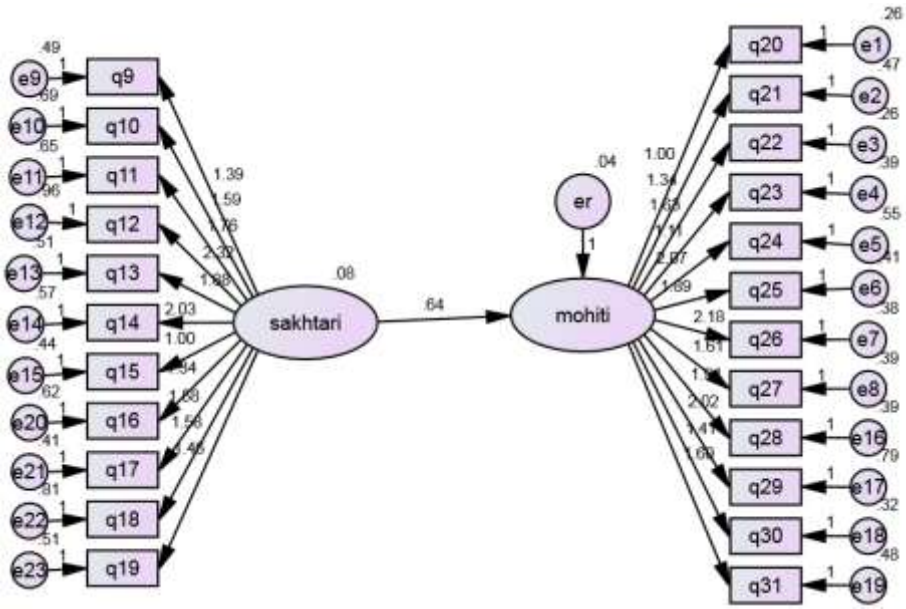

Figure 3: Diagram of the impact of the structural challenge on the environmental one

In the above figure, er1 is considered as a standard variable with a standard coefficient of 1.

According to the above figure, the effect of structural challenge on the environment is equal to 0.64, indicating and confirms structural problems' effect on environmental ones. This relationship's significance level is less than the test level, so the structural challenge's effect on the environment is significant.

Table 11: Results of fitting the model of the one-way relationship between environmental and structural challenges

Relationships between challenges	Correlation	Significance level
Structural --> environmental	0.64	0.000

5. conclusion

As explained in the research's reliability, after reviewing and processing articles, journals, dissertations, referring to accountants, elites, and university professors, we

prepared and extracted the questionnaire. The results obtained from the research show that the structural and environmental obstacles and challenges of accountants' financial supervision have a significant effect on the proper implementation of the public sector accounting system. Due to the ranking of items and structural factors, we identified the following cases as the most important structural obstacles to the implementation of the public sector accounting system: lack of accountability system, lack of costing activities and services of each executive organ, multiplicity of supervision organs with different attitudes, lack of operational budgeting structure in Executive organs, inadequacy of public accounting education system, including inadequate training and non-conformity of educational materials with the real situation, inconsistency of resources and sufficient budget, lack of quality control structure affecting the functioning of supervision bodies, ambiguity in the attitude of supervision bodies regarding performance of Public sector accounting system, defects and problems of some topics and instructions, lack of control and continuous monitoring of the Ministry of Economic and Finance Affairs regarding the implementation of the public sector accounting system in achieving the objectives and centrality of the accountant as responsible for monitoring and implementing most laws. Ahmadi and Jamshidi Navid (2016) concluded in their research that there is a significant relationship by 76% between structural and organizational weakness and improving the quality of government audit by the country's financial monitoring system. In another research, Hozoori et al. (2015) considered human factors and the current government accounting system as effective factors in the occurrence of financial deficiencies in the executive organs' financial control system.

We identified the following defects as the most important environmental obstacles to the proper implementation of the public sector accounting system: lack of familiarity of managers with the rules and instructions of the public sector accounting system, non-compliance between the number of manpower and the volume of activities of the executive bodies, unfamiliarity of executive staff with the rules and instructions of the public sector accounting system, lack of integration of Financial systems software, non-participation and decision-making of accountants in the appointment and transfer of financial personnel, lack of necessary specialized capacity in the financial body, unfamiliarity of executive staff with the objectives of the public sector accounting system, non-participation and decision-making of accountants in encouraging and punishing public sector employees, unfamiliarity of managers with the objectives of the public sector accounting system, absolute decision of senior managers in the distribution of credits and budget resources, ambiguity in the organizational position of the accountant in the administrative hierarchy of the executive organ and lack of appropriate public and social supervision structures. In their research, Blume and Voigt (2011) introduced environmental factors of auditing as one of the criteria for improving government auditing quality. In another research, Ramezani et al. (2016) emphasized the great impact of environmental factors on improving financial supervision.

Given the first hypothesis that the structural challenges and bottlenecks of accountants' financial supervision hinder the proper implementation of the public sector accounting system, we make the following suggestions:

A) Elimination of parallel monitoring activities of supervisory bodies with the supervisory duties of accountants.

B) Allocating sufficient resources and budget to improve and complete the infrastructures required to implement the public sector accounting system properly.

C) Existence of continuous and periodic training following the chapter headings and accountants' needs related to the public sector accounting system.

Given the second hypothesis that the environmental challenges and bottlenecks of accountants' financial supervision hinder the proper implementation of the public sector

accounting system, we make the following suggestions:

A) Employing specialized and sufficient human resources in the financial sector of the executive organs.

B) Providing necessary and sufficient training to familiarize employees and managers of executive organs with the public sector accounting system's objectives.

C) Training the executive organs' financial department's employees with the instructions and chapter headings of the public sector accounting system.

D) Using more integrated and comprehensive software at the executive organ level following changes in the public sector accounting system.

Research limitations

Apart from the inherent limitations of the research, i.e., using a questionnaire and lack of access to all accountants of the executive organs of the country, as well as limitations due to sampling and use of statistical methods, there are other influential factors and components as follows that we did not use in the research:

A) Using a set of documents, models, standards, and executive measures to change from the current situation to the desired situation with the focus on information technology under the title of organizational architecture

B) Using superior business process documentation methods as a determining factor to achieve success in implementing business process management in the executive organs.

C) Investigation of various activities that lead to improving executive organs' performance and manage all data and processes in a software system and the form of a database in a continuous, regular and accurate manner, called the creation of integrated organizational systems.

D) Study comprehensive knowledge and information on all the factors that affect the executive organ, namely organizational intelligence.

Further to the study

According to the researcher, the following researches will be effective to complete and achieve a single result for eliminating the obstacles and structural and environmental challenges of the financial supervision of the accountants regarding the public sector accounting system and considering the mentioned limitations:

A) Investigating the obstacles to the proper implementation of the public sector accounting system with a focus on organizational architecture, organizational intelligence, integrated organizational systems, and business process documentation

B) Investigating the structural and environmental problems of the managers of the executive organs of the country in the proper implementation of the public sector accounting system

C) Investigating the structural and environmental challenges of the optimal implementation of the public sector accounting system from the perspective of the employees of the executive organs of the country

D) Study of structural and environmental barriers to the proper implementation of the public sector accounting system from the perspective of the staff of supervisory organs (Court of Accounts, Inspection Organization, and Audit Organization)

Reference

Akhavan, S.H. Rahmati, M.H. and Ghanbari, A.A. (2014). Investigating the Impact of Motivational Factors (Job, Organizational, Individual) on the Quality of Financial Supervision of Accountants and Financial Managers of Executive Organizations. *Journal of Organizational Culture Management*, 34, [In persion]

Ahmadi, Z. and Jamshidi Navid, B. (2015). Identifying and ranking the main obstacles facing the country's financial monitoring system to improve the quality of public audit from the point of view of the auditors of the Court of Accounts. 2nd International Conference on Management and Development Culture, Tehran, [In Persion

Antipova, T. and Bourmistrov, A. (2013). Is Russian public sector accounting in the process of modernization? An analysis of accounting reforms in Russia. *Financial Accountability & Management*, 29(4), 442-478. https://doi.org/10.1111/faam.12021

Amini Mehr, A. Hejazi, R. and Ziaeddin, Sh.P. (2015). The Benefits of Accrual Accounting Basis on Reporting Transparency and Accountability in Universities Affiliated to the Ministry of Science, Research and Technology (Case Study of Kharazmi University of Tehran). Government Accounting Quarterly, 2 (2), 55-66. [In Persion]

Blume, L. and Voigt, S. (2011). Does organizational design of supreme audit institutions matter? A cross-country assessment. *European Journal of Political Economy*, 27(2), 215-229. https://doi.org/10.1016/j.ejpoleco.2010.07.001

Bahman, A. (2015). Review of Financial Oversight Charges of the Ministry of Economic Affairs and Finance. Fifth National Conference and Third International Conference on Accounting and Management with New Approaches and Research, [In persion]

Becke, S. D.; Jagalla, T.; and P. Skærbæk (2014). The Translation of Accrual Accounting and Budgeting and the Reconfiguration of Public Sector Accountants' Identities Critical Perspectives on Accounting. Available at: http://vahabonline.com/wpcontent/

Bruns, H.J. (2014). HR Development in Local Government: How and Why does HR Strategy Matter in Organizational Change and Development?. *Business Research*, 7 (1), 1-49. Doi: 10.1007/s40685-014-0002-z

Caperchione, E. (2015). Standard Setting in the Public Sector: State of the Art. *In Public Sector Accounting and Auditing in Europe, Palgrave Macmillan UK*, 1-11. https://link.springer.com/chapter/10.1057/9781137461346_

Christians, J. Reyniers, B. and Rolle, C. (2013). Impact of IPSAS on Reforming Governmental Financial Information Systems: a Comparative Study. *International Review of Administrative Sciences*, 76(537), 54.Doi: 10.1177/0020852310372449

Chan, J.L. (2008). International public sector accounting standards: conceptual and institutional issues. university of Illinois at Chicago, http://citeseerx.ist.psu.edu/messages/downloadsexceeded.html

Hedayati and Ghandi, M. (2016). The Role and Function of the Court of Auditors in Implementing Financial Supervision. *United Nations Research Quarterly*, 2 (18), [In persion]

Hozoori, M.J. Gerd, A. and Goldost, M. (2015). A Study of Factors Affecting the Failure of Failure in the System of Financial Controls of Executive Plants. *Auditing Knowledge*, 5(59), 19-41. [In Persion]

Jones, T.C. and Dugdale, D. (2001). The concept of an accounting regime. *Critical Perspectives on Accounting*, 12(1), 35-63. https://doi.org/10.1006/cpac.2000.0412

Kordestani, Gh. Rahimian, N. and Shahrabi, Sh. (2016). Identifying Barriers to Transition to Accredited Accounting in the Public Sector (Based on International Public Sector Standards Board Studies). *Auditing Knowledge*, 16 (65), 47, [In Persion]

Kordestani and Iranshahi, A.A. (2009). Investigating the Factors Affecting the Application of Accrual Accounting in the Public Sector. *Journal of Auditing*

Knowledge, 28, [In persion]

McPhee, I. (2006). How Accrual Accounting Enhances Governance and Accountability. *CPA Australia Public Sector Finance and Management Conference*, 1-11.

McPhee, I. (2015). How Accrual Accounting Enhances Governance and Accountability. CPA Australian Public Sector Finance and Management Conference. Available at: http://www.anao.gov.au/

Mohammadian, S.M. and Taghi Pourkazemi, R. (2016). Performance Evaluation of Baldrige Organizational Excellence Model, *(Case Study: General Accounting Office of the Ministry of Economic Affairs and Finance), Public Accounting*, 4(2), 47-54. [In persion]

Oyebisi, O. Wisdom, O. Lawrence, I. Bibiana, N. and Dorcas, A. (2017). Impact of Public Sector Auditing in Promoting Accountability And Trasparency in Nigeria. *Quest Journals Journal of Research in Business and Management*, 5(5), 28-32. https://www.icommercecentral.com/open-access/impact-of-public-sector-auditing-in-promoting-accountability-and-trasparency-in-nigeria.php?aid=86417

Oulasvirta, L. (2014). The reluctance of a developed country to choose International Public Sector Accounting Standards of the IFAC. *A critical case study. Critical Perspectives on Accounting*, 25(3), 272-285. https://doi.org/10.1016/j.cpa.2012.12.001

Rabiee Mandin Jane, M.R. and Gholizadeh Nargessi, S. (2017). Investigating the Impact of Empowerment by Improving the Level of Motivation on Accounting Job Performance (Case Study: Ministry of Economic Affairs and Finance). *Public Accounting*, 3(2), 59-70. [In persion]

Raudla, R. Taro, K. Agu, C. and Douglas, J.W. (2015). The Impact of Performance Audit on Public Sector Organizations: The Case of Estonia. *Public Organization Review*, 16, 217–233. https://link.springer.com/article/10.1007/s11115-015-0308-0

Ritonga, I.T. (2018). Analysing the Quality of Accrual Accounting Implementation In Indonesia Local Governments. *Jurnal Akuntansi*, 22(2), 162-172. Doi: 10.24912/ja.v22i2.345

Ramezani, S.M. Ahmadi, A. and Saeedi, M.H. (2016). A Study of Factors Affecting the Improvement of Financial Supervision in the Financial System of the Public Sector of Iran. *First National Conference on Auditing and Financial Supervision of Iran, Mashhad, Ferdowsi University of Mashhad* [In Persion]

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