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The Effect of Auditor Characteristics on the Relationship between Geographical Diversification and Accrual Earnings Management in Tehran Stock Exchange Listed Firms

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ABSTRACT
Purpose: The purpose of this research is to investigate the impact of auditor's characteristics on the relationship between diversification and accrual earnings management. Design/methodology/approach: A total of 204 firms accepted in Tehran Stock Exchange from 2012 to 2017 were investigated based on elimination, selection, and information by the use of SPSS24 software. Findings: Based on significant values of hypotheses, no significant relationship was found between geographic diversification and earnings management according to the initial hypothesis. Examination of the three auditor's characteristics also revealed that these three moderating variables did not have significant effects on the relationship between diversification and accrual earnings management. Originality: This research examines the effect of auditor characteristics on earnings management in diverse firms so that users of financial statements can predict the quality of earnings of firms audited by audit firms with each of the three characteristics (expert, tenure, auditsize).
Keywords: Auditor's Characteristics; Geographical Diversification; Accrual Earnings Management

Introduction

Auditing reduces information asymmetry between managers and corporate stakeholder groups by allowing the control of the accuracy of financial statements with the external users of information (Becker et al., 1998). Many studies have examined the impacts of the tenure, auditor expertise, and auditor size on audit quality. For example, Kyriakou and Dimitras (2018) have found that the audit quality depends on the years of audit tenure, the auditor's tenure can have a significant impact on the audit quality. Sinaga and Sinaga (2019) have also reported that audit tenure has a significant effect on audit quality. Elder, Lowensohn, and Reck (2015) argue that audit specialists are associated with higher audit quality and auditing expertise and can increase audit quality. By doing audit firm size toward audit quality and reputation of public accounting firm research, Suseno and Nofianti (2011) showed that audit quality was significantly affected by audit firm size. As a result of the previous researches, there are significant effects of these three characteristics on audit quality, which defends the investor and increases the value of the firm. Auditors want to evaluate the supervision of managers and investigate the extent to which they protect the interests of shareholders. Independent audit controls reduce the likelihood of failure and negligence in auditing according to the ethical standards, and will also increase the credibility of auditors. The value of a high-quality auditing is that independent auditors create constraints on the way of doing opportunistic behaviors by managers, and freedom to act in the financial reporting process and reduce

information risk (Chen et al., 2011). Audit quality plays an important role in reducing earnings management. According to the theory of representation, it reduces the mechanisms of monitoring the coordination of shareholders' and managers' interests and the conflict of interests, as well as subsequent opportunistic behaviors. Audit quality is of particular importance as a monitoring mechanism to prevent managers from manipulating earnings (Jensen, 1986; Fatahi and Fazel, 2018)

One of the items in the financial statements is the "Earning Report", which is considered as a criterion for the evaluation of the performance and profitability of a profit unit. However, the calculation of net earnings of a profit unit is influenced by accounting methods and estimates. Managers' authority in using the principles of expertise and compliance, estimation and forecasting, and practices such as changing inventory evaluation method, goodwill depreciation, and current or capital cost, research, and development costs, as well as determining the cost of bad debt claims, are among the cases that can be implemented by managers to change the earnings. Because of more awareness, on the one hand, managers can change the earnings by implementing the cases mentioned above. Because of greater awareness of managers about the status of the firm, however, it is expected that the information is prepared and provided in a way to reflect the status of the firm in the best manner. For some reasons such as staying in the firm, receiving reward, and so on, the business unit management intentionally or unintentionally may show off the firm's situation to be desirable by manipulating the earnings. Under such circumstances, real earnings conflict with reported earnings in the financial statements and an event has occurred named earnings management (Namazi et al., 2011). Based on what denoted above, it can be exemplified that the auditor's expertise leads to increased quality of the audit and, as a result, decreased earnings management. It is, therefore, expected that using specialist auditors will lead to a decrease in earnings management.

The purpose of this research is to investigate the amount of earnings management in companies where auditors have one of the three characteristics mentioned above. The value of this research is the study of these variables under the conditions of the geographical diversity of the company. The geographical diversification can be defined by referring to the definition presented in Iranian standards, which denotes a firm or firms doing activity in two or more various geographical regions. In fact, each geographic segment is a separable component of a business unit presenting products or services in a specific geographical region that comprises one or more geographical regions and has different risks and returns relative to other components that are doing activity in other geographical regions (Accounting Standard, No. 530, 25).

Most of the researches have been done without considering the company diversification. As companies are being more inclined to diversify in recent years, it will become increasingly important to examine the relationships and impacts of accounting variables on such companies. The first main question of this study is to examine whether or not accrual earnings management of firms will increase with increasing the geographical diversity of companies. Also, the second main question is to study how accrual earnings management will behave if the audit firm has one of the three characteristics of an auditor's expertise, tenure, and size in geographical firms? In the research ahead, therefore, the auditor's characteristics including size, tenure, and industry expertise have been considered as one moderating variable to examine the effect of these three characteristics on accrual earnings management in geographical diversified companies. In addition, the relationship between geographical diversification and accrual earnings management is examined to measure their effect on the relationship between diversification and earnings management. Based on preliminary results of the research, shareholders can deduce the impact of the geographical diversification of investee firms on earnings management and thus, the quality of earning and transparency of financial statements. Also, they can become aware of the auditor's characteristics of the companies to be able to predict accrual earnings management behavior and discourage investment if there is a high risk.

Background and hypotheses

- **Earnings Management and Diversification**

The issue of diversification in the products of a firm is a strategy that has been considered by many firms worldwide for the last half-century. This strategy includes benefits such as earnings increase,

market share increase of the firm, effective use of human and financial resources, and accelerating the growth of an organization. Oxford dictionary (2009) defines the term diversification as "(in the case of enterprises) it means expanding or changing the spectrum of products, area of activity, or the like, in order to reduce the enterprise's dependence on a particular market and like that". Products lead to the creation or stimulation of new markets and promote new product innovation markets (Dadbeh and Bagherabadi, 2012).

In the firms that use a business diversification strategy, it can be believed that information asymmetry increases due to a decrease in transparency (Hadlock et al., 2001). According to Burch and Nanda (2003), Dennis et al. (2002), and Doukas and Pantzalis (2003), diverse firms have more information asymmetry than single-product companies. This information asymmetry increases the ability and the inclination of management in diverse firms to manipulate the earnings. In fact, the necessary context for earnings management for the management will be created, and consequently, earnings management also may be increased by increasing information asymmetry in companies (Babajani et al., 2014). Trueman and Titman (1988) believe that information asymmetry, between the management of the firm and the shareholders of the firm, is an essential condition for doing earnings management. Earnings management itself can be performed in two ways of real and accruals in diverse companies. For example, the research of Lim et al. (2008) showed that discretionary accrual earnings management in diverse firms was more than in non-diverse firms and suggested a direct relationship between the diversification ratio of the firm and the degree of accrual earnings management. Also, Dadashzadeh et al. (2017) investigated the Tehran Stock Exchange firms over 2009-2013 and concluded that there was no significant relationship between corporate business diversification and real earnings management.

Accordingly, the initial hypothesis of this research is compiled as:

H_1: There is a significant positive relationship between geographical diversification and accrual earnings management.

- **Industry Expertise, Diversification, and Earnings Management**

Davidson and Neu (1993) define audit quality comprehensively as the auditor's ability to detect and remove significant deviations and manipulations performed on reported earnings. Therefore, the ability of the auditor is an important issue in audit quality. This issue has been investigated from a variety of perspectives and is extensively related to the external and internal organizational factors, auditors' characteristics (such as experience, competence, ethics observation, etc.), auditors' independence (independence from the employer, competition in the market, etc.), and the legislation environment (mandatory change, auditing and non-auditing services, etc.) (Hakim and Omri, 2010). The multidimensionality of the audit quality has led to the failure of accurately and directly evaluating this feature of auditing. Various researches, such as those of Rubin and Zhang (2015), McGuire et al. (2012), and Hejazy et al. (2015), showed that the use of industry-expertise auditors would lead to increased audit quality. In fact, professional auditors can promote the quality of auditing because of the necessary familiarity with the industry and the specific characteristics and conditions of each industry (Vaez and Dorseh, 2016). On the other hand, an increase in the quality of auditing can prevent or disclose the deviation of the completed financial statements. Hammersley (2006), Ashton (1991), and Libiby and Frederick (1990) concluded that the knowledge gained from the auditing experience could lead to the probability increase of disclosing deviations in the financial statements. Also, some studies investigated the impact of using industry-expertise audit on the earning management of firms. For example, Krishnan (2003) investigated the relationship between the auditor's expertise in the industry and the absolute level of the discretionary accruals of the employer, and found that the employers who did not use the industry-expertise auditors had more discretionary accruals than those who used them. Also, Aghaee and Ardekani (2012) studied the auditor's expertise in the industry and the discretionary accruals management, and showed that firms whose auditors were industry-expertise had a lower level of discretionary accrual management. Regarding the mentioned researches, the impact of using an expertise auditor can be investigated on the relationship between earnings management and diverse firms.

The second hypothesis is also explained based on the results of above researches:

H_2: Auditor's industry expertise has a significant negative impact on the relationship between geographical diversification and accrual earnings management.

- **Tenure, Diversification, and Earnings Management**

Tenure has always been one of the research topics because there are different views regarding the relationship between tenure and auditing quality. Rajabi (2006) showed that long-term presence of the auditor next to the employer would create tendencies to maintain and observe the views of the employer's management, a situation that distorts their independence and impartiality. Research results of Vanstraelen (2000) indicate the point that long-term partnerships of the auditor and the employer increase the likelihood of issuing an accepted report by the auditors. Among other researches is that of Myers et al. (2003), suggesting that in firms with a long-term auditing tenure, there is more probability for managing earnings than real and earnings deviation. Accordingly, some believe that an increase in tenure affects the independence of the auditor and, as a result, the auditor's reports are presented with a specific orientation. In contrast to this belief, some others follow a different view. In other researches, increasing tenure leads the auditor to become sufficiently familiar with the status of the firm, industry, and specific issues existing in the firm. As a result, experts believing this view oppose the mandatory auditor rotation. In this case, the auditor can better investigate the financial statements and identify existing deviations, thereby promoting the quality of the audit. The research of Johnson et al. (2002) can be mentioned who found out that non-standard audits generally occurred in the firms where the auditor was not familiar with the environment of the employer and its industry and opposed restrictions on the auditor's tenure and auditor's mandatory rotation. El Guindy and Basuony (2018) also believed that increasing the tenure of the auditor would lead to an increase in the audit quality and hence they strongly opposed the mandatory auditor rotation. Therefore, it is not possible to have a consistent opinion about this auditor's characteristics and determine the impact of the tenure on audit quality. It is important that both views may be confirmed and the main difference between these two views can completely be attributed to the personality and individual characteristics of the auditor. The relationship between tenure and earnings management was also investigated by some researchers. According to findings of Karami et al. (2010), it can be argued that the existence of a long-term relationship between the employer and the auditor increases the flexibility of management to use discretionary accruals, but this application is more in the direction of reducing (conservative) earnings. Achieving high-quality auditing can minimize earnings manipulation by the management and provides high-quality earnings in the financial statements. Now, the role that the tenure can play in these diverse business units should be considered by increasing the use of diverse strategies in firms. Considering the stated points, the third hypothesis in this research has also been formed based on the mentioned researches:

H_3: The tenure has a significant positive effect on the relationship between geographical diversification and accrual earnings management.

- **Size, Diversification, and Earnings Management**

As with other characteristics mentioned above, the auditor's size is one of the variables that can affect auditing quality. In an article about the relationship between auditor firm size and auditor's quality, DeAnglo (1981) mentioned that larger auditing firms would have a stronger incentive to provide higher quality audits. Because larger firms are interested in gaining a better reputation in the market and are worried about losing customers due to a high number of their customers. It is assumed that such institutions provide higher quality auditing services because of access to more resources and facilities for training their auditors and conducting various tests. Perhaps the research of DeAnglo is regarded as one of the most initial researches conducted to determine the relationship between the auditor's size and the audit quality. Later on, this relationship was also investigated by Chen and Hsu (2009) to find out a possible positive relationship between auditing size and auditing quality. They found a positive relationship between auditing size and auditing quality of large auditing firms compared to small auditing firms, but this was not true regarding medium auditing firms compared to small ones. In any case, their empirical evidence supports the auditing size as a basis for measuring auditing quality and shows that large auditing

firms with high auditing quality have additional fees. Likewise, Suseno and Nofianti (2018) presented evidence that the auditor's size could have a significant positive impact on auditing quality. In fact, these two researchers, the same as De Angelo, believed that large auditing firms would spend more resources and time to promote their auditors, thus they are expected to have better auditing quality. Moreover, Yeganeh and Azinfar (2010) investigated on firms certified in Tehran Stock Exchange, and concluded that there was a positive relationship between auditing quality and auditing firm size. The diversification or the lack of diversification of firms has not been considered in these researches, which necessitates considering the impact of using large auditing firms in diverse firms. It is also important to examine possible impact of using large auditing firms on earnings management in various geographical firms. On this basis, the last hypothesis is also compiled as:

H_4: The auditor's size has a significant negative impact on the relationship between the firm's geographical diversification and accrual earnings management.

Research Methodology

This study is considered an applied research in terms of the goal. Applied researches are those performed using the results of fundamental researches to improve and make the behaviors, methods, tools, devices, products, structures, and patterns used by human societies. Also, applied researches are those that utilize the theories, legalities, principles, and techniques compiled in basic researches to solve executive problems. The correlation-descriptive method was used here to discover the correlation of relationships between variables. Correlation research is a type of descriptive research. On the other hand, the present research is of post-event type, meaning that it is performed based on the analysis of the past (financial statements of the firms).

Statistical population and sampling method

The statistical population of this research was the firms accepted in Tehran Stock Exchange in during 2012-2017.

The statistical sample was collected through elimination according to the following criteria:

1. All required information regarding the firms should be available from 2012 to 2017.
2. It should not be among the intermediary, financial, insurance, and bank firms.

The stocks of the firms have been traded during each year of the research period and have no trading interruption for more than 3 months.

Ultimately, a total of 1087 observations were investigated and tested from 204 firms (Table 1).

Table 1: Research samples

No.		Description	Number of firms	Number of observation
1		Firms accepted in the stock exchange at the end of 2010	510	2169
Restriction	2	Firms whose data are not available	239	889
	3	Firms that are among the intermediary, financial, insurance, and bank firms	63	140
	4	Having more than 3 months trading interruption	4	53
Remaining firms			204	1087

Models and definitions of research variables

- **Research Model**

Following Lai and Liu (2018), the first model was used to test the initial hypothesis:

$$ABEM_{i,t} = \beta_0 + \beta_2 GDIVFY_{i,t} + \beta_3 CYCLE_{i,t} + \beta_4 PROFIT_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 LEV_{i,t} + \beta_7 MB_{i,t} + B_8 LOSS_{i,t} + \beta_9 INST + \beta_{10} CFO_{i,t} + \beta_{11} LAGACCRUAL + \Sigma\beta j INDUSTRYj + \Sigma\beta t YEARt + \nu i$$

The second model was used to test the second, third, and fourth hypotheses:

$$ABEM_{i,t} = \beta_0 + \beta_2 GDIVFY_{i,t} + \beta_3 TENURE_{i,t} + \beta_4 EXPERT_{i,t} + \beta_5 AUDITSIZE_{i,t} + \beta_9 GDIVFY_{i,t} \times TENURE_{i,t} + \beta_{10} GDIVFY_{i,t} \times EXPERT_{i,t} + \beta_{11} GDIVFY_{i,t} \times AUDITSIZE_{i,t} + \beta_{12} CYCLE_{i,t} + \beta_{13} PROFIT_{i,t} + \beta_{14} SIZE_{i,t} + \beta_{15} LEV_{i,t} + \beta_{16} MB_{i,t} + B_{17} LOSS_{i,t} + \beta_{18} INST + \beta_{19} CFO_{i,t} + \beta_{20} LAGACCRUAL + \Sigma \beta j INDUSTRYj + \Sigma \beta t YEARt + \nu i$$

- ✓ **Dependent variables**

ABEM = Absolute value of discretionary accrual earnings management = l εit l

The adjusted formula of Jones was used to determine discretionary accrual earnings management:

TAit / Ai, t-1 = α0 + α1 [ΔSALESit-ΔRECit / Ait-1] + α2 [PPEit / Ait-1] + εit

TA = Tacc = Total accruals of the firm i in the year t = Operating cash flow - Operating earnings

ΔSALESi, t = Change in firm i sales (Sales $_t$-Sales $_{t-1}$)

ΔRECit = Change in net receivable accounts

PPE = Net properties, plants, and equipment

A = Total asset (Decho et al., 1995)

The remainder value (εit) represents discretionary accruals earnings management for the firm in year i.

- ✓ **Independent variables**

GDIVFY = Geographical Diversification= Export-to-Total Sales Ratio (Schmid and Walter, 2012)

- ✓ **Moderating variables**

Industry Expertise Auditor: It is the ratio of auditor's expertise in the audited industry that is calculated as follows: "The sum of the assets of all the employers of a particular auditing firm in a particular industry divided by the sum of the assets of the employers in this industry." In this research, some firms are considered as the industry experts whose market share (the above equation) is higher than [1.2 * (firms existing in an industry/1)] (Palm Rose, 1986).

Tenure of Auditor: It is equal to the number of consecutive years of auditing a firm by an auditor. Number 1 is considered if the auditor is auditing a firm for 4 years or more, otherwise it is considered 0 (Pezeshkian and Hosseini, 2017).

Audit Firm Size: Number 1 is considered if the auditing firm is an auditing organization, and number zero is considered in other cases (Hajiha and Qanea, 2016).

- ✓ **Control variables**

LAGACCRUAL = Last year's accruals divided by total assets at the beginning of the previous year period.

CYCLE = It is the period of product purchase and sale and then receiving the cash. The operational cycle of this research is obtained from the sum of the product inventory turnover period and the period of receiving the claims. These ratios show how effectively the firm uses its resources. This value is measured according to the presented formulas:

1) Product Inventory Turnover Ratio = The Ratio of the actual cost of the product sold to the average inventory

Product Inventory Turnover Period = 360 divided by the product inventory turnover ratio

2) Turnover Ratio of Receivable Accounts= Sales divided by the average of receivable accounts

The Period of Receiving the Claims = 360 divided by the ratio of receivable accounts turnover (Hoitash et al., 2007)

Cycle = Invt+Rect=Product Inventory Turnover Period + The Period of Receiving the Claims

SIZE = The natural logarithm of the market value obtained by multiplying the number of shares to the current price per share in the market (Sun and Liu, 2013).

PROFIT = Profitability of a firm, which is calculated by the net earnings before tax divided by total asset

LEV = Corporate Leverage = The ratio of total debt to total assets of the firm. This variable specifies what portion of a firm's assets has been provided by individuals other than the owners of the business unit.

MB = Ratio of the market value of equity to book value of equity

LOSS = It indicates the loss of the firm and is equal to 1 if the firm (for the financial period t) has reported a loss, otherwise, it is 0.

INST = Ratio of shares held by institutional owners (banks, insurances, holdings, investment firms, pension fund, financing firm and investment funds, governmental organizations, institutions, and firms) to total shares issued.

CFO = Cash obtained from the operations divided by the total assets

Descriptive statistics

Table 2: Descriptive Statistics Indicators of the Research Model Variables

Operational definition	Symbol	Mean	Median	Standard deviation	Minimum	Maximum
Accrual Earnings Management	ABEM	0.112	0.078	0.115	0.000	1.122
Geographical Diversification	GDIVFY	0.100	0.007	0.188	0.000	1.000
Product Purchase and Sale Cycle	CYCLE	2.407	2.401	0.378	1.051	6.370
Firm Profitability	Proft	0.097	0.081	0.189	-1.822	0.811
Size of the Firm	Size	13.863	13.814	1.585	9.340	19.190
Firm Financial Leverage	LEV	0.660	0.616	0.324	0.197	1.978
Market Value to Book Value of Equity	MB	2.396	2.198	1.761	-1.104	8.489
Percentage of Institutional Shareholders	Inst	0.277	0.148	0.31	0.000	0.991
Cash Flow Operation	CFO	0.115	0.095	0.138	-0.387	0.873
Accruals of Last Year	Lagacrual	0.028	0.011	0.168	-0.609	1.178

Operational Definition	Symbol	Mean	Median	Standard Deviation	Minimum	Maximum
Industry-expertise auditor	AEXPERTISE	0.365	0.000	0.482	0.000	1.000
Auditor's tenure	ATENURE	0.200	0.000	0.400	0.000	1.000
Auditor's size	ASIZE	0.188	0.000	0.391	0.000	1.000
Firm loss	Loss	0.178	0.000	0.383	0.000	1.000

Based on Table 2, accrual earnings management the dependent variable has a mean of 0.122 and all the numbers are more than the corresponding median, indicating that there are more than half of the firms with earnings management in the sample.

Also, the dependent variable of this research is geographical diversification with a mean of 0.10. On the other hand, the three moderating variables are also related to the auditor's characteristics, which represent the audit expertise in the industry, tenure, and size, respectively. The auditor's tenure variable has a mean of 0.2, indicating that about 20% of the firms had auditors who were in charge of auditing for more than 4 years. Also, the auditor's size with a mean of 0.188 indicates that about 19% of the sample firms are investigated by the audit organization.

Regarding the control variables, it is also evident that the earnings before the interest and tax are about 10% of the firms' assets, with a debts to assets ratio of 66% for the firms. The ratio of market-to-book value of equity is about 2.5 times, and 18% of the sample firms are also a loser. Institutional shareholders also have a mean of about 28%.

Results

The relationship between geographical diversification and discretionary accruals earnings management was evaluated by investigating and testing the data using the initial model, and the results are address below.

- **First hypothesis:**

There is a significant relationship between geographic diversification of the firm and accrual earnings management.

Table 3: Results of the first research hypothesis test (dependent variable: accrual earnings management)

Variable	Coefficient	Standard deviation	T Statistics	Significance
(Constant)	0.080	0.045	1.781	0.075
GDIVFY	-0.011	0.020	-0.538	0.591
CYCLE	0.008	0.011	0.700	0.484
Proft	0.010	0.033	0.319	0.750
Size	-0.004	0.003	-1.378	0.168
LEV	0.047	0.015	3.084	0.002
MB	0.002	0.002	1.248	0.212
Loss	0.029	0.011	2.537	0.011
Inst	-0.014	0.012	-1.184	0.237
CFO	0.024	0.028	0.839	0.402
LagAcrual	0.000	0.023	-0.006	0.995
∑IND	Controlled			
∑YEAR	Controlled			
F statistics	6.750			
F statistics significance	0.000			
Coefficient of determination	0.161			
Adjusted coefficient of determination	0.137			

Table 3 shows the results of the first hypothesis test using the dependent variable of accrual earnings management. The significance value of the Fisher statistic (0.000) in the model indicates a linear and appropriate fit of the model. The adjusted coefficient of determination also indicates that the independent variables explain about 14% of the dependent variable. Also, year and industry variables have controlled the constant effects of the year and industry.

For the main independent variable of geographical diversification, a significance value of 0.591 is higher than 5% error level, which **does not confirm** the first hypothesis, hence there is no significant relationship between geographic diversification of the firm and accrual earnings management.

By adding moderating variables and testing the impact of these variables on the relationship between geographical diversification and accrual earnings management, the second model also investigated the remaining three hypotheses, and the results are presented in Table 3.

*7,2 Second hypothesis***:** The auditor's industry expertise has a significant impact on the relationship between the geographical diversification of the firm and accrual earnings management.

Table 4: Results of the second research hypothesis test (dependent variables: accrual earnings management, moderator: auditor's industry expertise)

Variable	Coefficient	Standard deviation	T Statistics	Significance
(Constant)	0.083	0.049	1.700	0.089
GDIVFY	-0.013	0.024	-0.526	0.599
AEXPERTISE	0.000	0.009	0.050	0.960
AEXPERTISEGDIVFY	0.006	0.039	0.147	0.883
CYCLE	0.008	0.011	0.697	0.486
Proft	0.010	0.033	0.318	0.750
Size	-0.004	0.003	-1.274	0.203
LEV	0.047	0.015	3.055	0.002
MB	0.003	0.002	1.254	0.210
Loss	0.029	0.011	2.538	0.011
Inst	-0.014	0.012	-1.175	0.240
CFO	0.023	0.028	0.822	0.411
LagAcrual	0.000	0.023	-0.014	0.989
∑IND	Controlled			
∑YEAR	Controlled			
F statistics	6.318			
F statistics significance	0.000			
Coefficient of determination	0.161			
Adjusted coefficient of determination	0.135			

According to Table 4, the significance value of Fisher's statistic (0.000) indicates a linear and appropriate fit of the model. The adjusted coefficient of determination also indicates that independent variables have explained about 13% of the dependent variables. Also, year and industry variables have controlled the constant effects of the year and industry.

For the main independent variable,the interactive effect of geographical diversification and the auditor's industry expertise, a significance value of 0.883 is higher than 5% error level, which **does not confirm** the second hypothesis.

- **Third hypothesis:**

The auditor's tenure has a significant effect on the relationship between geographical diversification of the firm and accrual earnings management.

Table 5: Results of the third research hypothesis test (dependent variables: accrual earnings management, moderator: auditor's tenure)

Variable	Coefficient	Standard Deviation	T Statistics	Significance
(Constant)	0.083	0.045	1.855	0.064
GDIVFY	-0.019	0.021	-0.885	0.376
ATENURE	0.003	0.010	0.288	0.774
ATENUREGDIVFY	0.044	0.044	0.993	0.321
CYCLE	0.007	0.011	0.672	0.502
Proft	0.011	0.033	0.328	0.743
Size	-0.004	0.003	-1.450	0.147
LEV	0.047	0.015	3.051	0.002
MB	0.002	0.002	1.178	0.239
Loss	0.029	0.011	2.565	0.010
Inst	-0.015	0.012	-1.298	0.194
CFO	0.023	0.028	0.814	0.416
LagAcrual	4.243 E-05	0.023	0.002	0.999
∑IND	Controlled			
∑YEAR	Controlled			
F statistics	6.376			
F statistics significance	0.000			
coefficient of determination	0.162			
Adjusted coefficient of determination	0.137			

According to Table 5, the significance value of Fisher's statistic (0.000) indicates a linear and appropriate fit of the model. The adjusted coefficient of determination also indicates that the independent variables have explained about 14% of the dependent variables. Also, year and industry variables have controlled the constant effects of the year and industry.

For the main independent variable, the interactive effect of geographical diversification and the auditor's tenure, a significance value of 0.321 is higher than 5% error level, which **does not confirm** the third hypothesis.

- **Fourth hypothesis:**

The auditor's size has a significant effect on the relationship between geographical diversification of the firm and accrual earnings management.

Table 6: Results of the fourth research hypothesis test (dependent variables: accrual earnings management, moderator: auditor's size)

Variable	Coefficient	Standard deviation	T Statistics	Significance
(Constant)	0.083	0.046	1.796	0.073
GDIVFY	-0.007	0.021	-0.315	0.753
ASIZE	0.008	0.010	0.781	0.435
ASIZEGDIVFY	-0.027	0.046	-0.581	0.561
CYCLE	0.008	0.011	0.679	0.498
Proft	0.011	0.033	0.343	0.732
Size	-0.004	0.003	-1.435	0.152
LEV	0.046	0.015	3.018	0.003
MB	0.003	0.002	1.258	0.209
Loss	0.029	0.011	2.510	0.012
Inst	-0.015	0.012	-1.26	0.208
CFO	0.024	0.028	0.862	0.389
LagAcrual	0.000	0.023	-0.009	0.993
∑IND	Controlled			
∑YEAR	Controlled			
F statistics	6.342			
F statistics significance	0.000			
Coefficient of determination	0.161			
Adjusted coefficient of determination	0.136			

According to Table 6, the significant value of Fisher's statistic (0.000) indicates a linear and appropriate fit of the model. The adjusted coefficient of determination also indicates that the independent variables have explained about 14% of the dependent variables. Also, year and industry variables have controlled the constant effects of the year and industry.

For the main independent variable. the interactive effect of geographical diversification and the auditor's size, a significance value of 0.561 is higher than 5% error level, which **does not confirm** the fourth hypothesis.

Discussion and Conclusion

The impact of characteristics such as industry expertise, size, and tenure of the auditor on audit quality and the reduction of financial statements deviations have been among the research topics considered by researchers. The results of the majority of conducted researches indicate that auditor's expertise in a particular industry leads the auditor to be able to better identify the existing deviations in the financial statements than non-expert auditors because of more familiarity with the industry environment and industry-specific financial events. The auditor's size is also a factor in order to increase audit quality because of maintaining the reputation of the audit firm and the financial resources available to audit firms. The tenure has always been the topic of discussion by various researchers. Some believe that increasing tenure leads to a decrease in audit quality because it tarnishes the auditor's independence, and some others believe that the audit quality promotes as the tenure increases because of the auditor's more familiarity with the employer's environment. By testing the existing evidence to investigate the relationship between geographical diversification and accrual earnings management, the first research hypothesis was not confirmed through considering the significance ratio. In fact, no significant relationship was found between these two variables in the firms existing in Tehran Stock Exchange based on the results of this research. However, these two variables have a negative relationship, contrary to the prediction made in the first hypothesis. Also, the effect of three auditor's characteristics, including auditor's industry

expertise, tenure and auditor's size as moderator variables, was tested on the relationship between geographical diversification and accruals earnings management. According to the results, auditor's industry expertise, or audit with the tenure of 4 years or more in those firms that used large audit firms, these three characteristics will not have a significant effect on the relationship between diversification and earnings management. Therefore, these three hypotheses are also rejected. Also, despite the non-significant effects of the three characteristics of the auditor on the relationship between diversity and earnings management, the auditor's size and audit's tenure had negative and positive effects, respectively, which is in accordance with the third and fourth hypotheses; however, the auditor's expertise had a positive effect, which is contrary to the prediction made in the second hypothesis.

A limitation of this research is the lack of access to the audit firms' data to measure some of the research variables such as the auditor's industry expertise. It is also worth mentioning that this research merely studied the Tehran Stock Exchange firms in from 2012 to 2017. Thus, different results may be obtained in different years or by investigation on other firms.

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