

The Effect of Auditor's Type and Expertise on Real and Accrual Earnings Management Based on Fraud Triangle Concepts

Rasoul Salmani

Faculty of Administration & Economic Science, University of Mazandaran, Iran

Masoumeh Shahsavari*

Department of Accounting, Faculty of Humanities, Kosar University of Bojnord, Iran,

ABSTRACT

This study investigated the effect of auditor's type and expertise on real activities manipulation and compared it with accrual-based earnings management within the framework of fraud triangle concepts (opportunity, pressure, and rationalization). The research statistical population consists of all companies listed on Tehran Stock Exchange during 2001-2015. According to the literature review, the earnings manipulation is conducted through methods such as offering sales discounts, facilitation of credit sales opportunities, overproduction, and reduced discretionary expenditure.

Based on the theoretical literature, companies with a low return (first level after zero earnings) were selected as the companies exposed to earnings manipulation, and accordingly, the levels of accrual and real earnings manipulation in this group of companies were measured. The estimation results indicated high levels of abnormal accrual and real activities in companies exposed to the earnings management. Having employed the earnings manipulation proxies, we examined the impact of auditor's type and expertise on reducing the level of real activities and discretionary accruals at two levels, including all companies listed on stock exchange and companies exposed to earnings manipulation. The results of hypothesis testing indicated a significant and positive relationship between auditor's type and earnings manipulation level through real activities.

*- Corresponding author, Instructor of Accounting, email: m.shahsavari@kub.ac.ir

Keywords: Earnings manipulation, real earnings management, accrual-based earnings management, auditor's type, auditor's expertise.

Introduction

The level of Fraud has increased at a hectic and steady pace in recent years. The financial crisis of 2001 has witnessed an unprecedented scale of corporate accounting frauds and involved some of America's largest corporations (Lokanan, 2015). Stakeholders rely greatly on auditors to serve in a "public watchdog" role and help manage fraud risk and protect the investors (McEnroe and Martens, 2001; Abdel-Khalik, 2002; Arel et al., 2012). The scope of accounting fraud literature focuses heavily on the fraud triangle (Cressey, 1973) as a theoretical framework for understanding why fraud occurs and evaluating the impact of fraud risk factors on the financial reporting (Boyle, DeZoort and Hermanson, 2015).

The literature on the relationship between audit expertise, size and the level of earnings manipulation is vast and considerable. Managers have a great incentive to conduct earnings manipulation in line with their own interests. These incentives stem from earnings-related covenants. Albrecht et al. (2009) argued that a suitable accounting system could be considered as a supporting tool for audit practice and fraud detection.

The accounting earnings are important for shareholders from both "value" and "contract" aspects and are considered as the best tool for solving the problem of "information asymmetry". However, accounting standards are flexible in determining earnings in many cases and assigning corporate managers to the accounting judgments and estimates. It is assumed that the process of information transfer is facilitated and the quality of financial statements is enhanced by delegating these authorities.

Given the above-mentioned discussions, there are three factors namely, opportunity, pressure [motivation] and rationalization, which are known as three corner points of fraud triangle in the manipulation of accounting earnings, so that the pressure by the capital market and by the company stakeholders, managers' opportunities and authorities and, ultimately, the benefits of earnings manipulation for corporate managers provide the infrastructure required for this phenomenon in the firms.

Earnings management refers to managers' intentional acts to make the reported earnings closer to their desired threshold and it is generally classified into three categories of earnings management, earnings fraud, and accounting creativity. "Earnings management" means earnings manipulation

within the framework of accounting standards and rules (paper management) or modifying the structure of corporate activities in a way that it exerts no negative effect on the firm value (real activity management). "Earnings fraud" is a kind of earnings manipulation, which violates the accounting standards and laws or reduces the firm value by changing the structure of an activity. Finally, "creative accounting" is a kind of earnings manipulation, which is caused by a shortcoming or lack of any standard or particular law, and accordingly, it does not violate the accounting standards and the corporate regulations.

In terms of method, the earnings manipulation can be conducted as an "accrual-based earnings management" and "real earnings management". Real earnings management is conducted by one of the sales increase methods through sales discount, or credit sales, overproduction and a reduced discretionary expenditure.

The concept of fraud triangle introduced for the first time by the Statement of Auditing No. (82) of the United States in 1997 (AICPA, 1997). Romney and Steinbart (2003) considered the pressure or motivation, opportunity for violation, and rationalization as prerequisites for the occurrence of fraud in any business enterprise. According to fraud triangle, fraud can be prevented by controlling and removing one of the mentioned factors.

Opportunity refers to a situation, where one believes that one can commit a fraud and conceal it. Buckhoff (2001) considered the individual opportunity as the first and the most important factor for committing fraud. Albrecht et al. (2009) introduced the growth factors of fraud as the weakness of internal controls, failure of accounting system to evaluate firm performance, inability to punish fraudster, lack of access to information, unawareness, indifference and incompetence, and finally lack of audited financial statements.

Pressure (motivation) refers to a situation, where one believes that there is no other alternative for him/her except for participating in a fraudulent activity. The pressure exerted on corporate managers arises from various sources such as shareholders (to increase the stock price) and the creditors (to prevent the violation of contracts and maintain job security and managers' compensation).

Rezaee and Riley (2009) introduced the last fraud factor as fraud rationalization, which refers to measures trying to consider the earnings manipulation as an ethical and legal measure.

Dechow and Skinner (2000) put forward some issues such as speeding up the sales of goods, modifying the schedule for delivering the products, delaying in recording the research and development (R&D) costs, and savings in maintenance costs as parts of an earnings manipulation process. Furthermore, Thomas and Zhang (2002) reported the evidence of overproduction and Chapman (2011) provided the evidence of sales discounts in the final quarter of a financial year as signs of earnings manipulation.

Gunny (2010) classified the earnings manipulation methods through real activities into five groups of (1) saving money in R&D costs, (2) saving in administrative and public costs, (3) changes in the schedule of long-term asset sales and investment, (4) sales discount, and (5) overproduction.

Literature Review

The role of the fraud triangle in fraud detection

Professional audit standards and related regulatory guidelines have evolved over the past decades, which refer to the fraud triangle as a guideline. For instance, SAS No.(99) is based on the fraud triangle and Appendix A of the standard provides examples of types of fraud risk factors that are related to the external auditors. Similarly, ISA 240 (IFAC, 2010) describes the fraud risk factors as consistent with the fraud triangle. Beyond these authoritative standards, the Center for Audit Quality (2010), Committee of Sponsoring Organizations (COSO) (Beasley et al., 2010), and the Public Company Accounting Oversight Board (PCAOB, 2007) provide an additional fraud-related guidance or insight based on the fraud triangle.

Although a number of studies provide general support for the fraud triangle and its use in auditing standards, the literature (e.g., Wilks and Zimbelman, 2004; Hogan et al., 2008; Johnson et al., 2013; Trompeter et al., 2013) emphasizes that more comprehensive study of the fraud triangle is needed. The literature also lacks some on rationalizations, which Wilks and Zimbelman (2004) found to be the most important component of the fraud triangle. Other studies asserted that rationalization is difficult to observe and incomplete when evaluating individual characteristics needed for fraud to occur (Dorminey et al., 2012). For instance, SAS No. (99) details the use of the fraud triangle and extends the rationalization component required for formal assessment of management attitudes, which may be more observable than rationalization.

Real and Accrual Earnings Management based on Fraud Triangle Concepts

Janin and Piot (2005) argued that on the one hand, auditing is one of the ways to reduce and prevent earnings manipulation and on the other hand, the audited earnings are of higher quality and information content. Francis, Maydew and Sparks (1999) have first attributed the audit quality to earnings manipulation and stated that the big four audit firms have been more successful in preventing the firm earnings manipulation and their clients reported less discretionary accruals. These results are consistent with those reported by DeAngelo (1981), who considered a correlation between firm size and audit quality.

According to a research conducted by Janin and Piot (2005), the "tenure" has a significant effect on auditor's objectivity and awareness in the initial years of auditor's activity, but it has negative effects in subsequent years. Yu (2008) also examined the relationship between auditor's expertise and type of earnings manipulation and discovered that companies with audit services are less prone to accrual-based management, but, by contrast, they are more prone to real activities manipulation.

Boone, Khurana and Raman (2004) compared the audit quality in BIG4 audit firms with other institutions. According to preliminary results of their study, the clients of BIG4 audit firms had (1) lower levels of accrual-based earnings management, (2) higher levels of real activities manipulation, and (3) higher quality according to investors' views. The results of a research conducted by Boone, Khurana, and Raman (2004) were used as one of the hypotheses of this research in companies listed on the Tehran Stock Exchange.

Boyle, DeZoort and Hermanson (2015) evaluated how the use of alternative fraud model practices affects external auditors' fraud risk judgments. The results indicated a significant fraud model type effect; through which auditors evaluate the fraud risk factors based on a fraud diamond practice more efficiently than (more conservatively) the fraud risk factors based on a fraud triangle practice. Lokanan (2015) explored the concept of the fraud triangle as a useful practitioner framework employed to cope with fraud. This study was inspired by Fairclough's critical discourse theory and is supported by evidence from three accounting fraud cases. Lokanan (2015) indicated that the Association of Certified Fraud Examiner's (ACFE, 2008) perpetuates a discourse that presents a restricted version of fraud. Fraud is a multifaceted phenomenon, whose contextual factors may not fit into a particular framework. Consequently, the fraud

triangle should not be seen as a sufficiently reliable model for antifraud professionals.

Numerous studies have been conducted on the impact of audit type, size, and reputation on earnings management In Iran. These studies are concentrated on accrual-based earnings management (not real earnings management) and have been done by different methodologies. In most of the cases, the level of accruals has been considered as a proxy for earnings quality and the audit firm has been classified as a big and small ones. According to Aghaei and Kouchaki (1995), the size, history, reputation, and type of audit firms can be considered as criteria, which distinguish the audit quality. Ebrahimi-Kordlou and Seyyedi (2009) studied the effect of auditor's opinion and firm size on discretionary accruals and concluded that among all research variables only the audit firm size is associated with the discretionary accruals.

Etemadi, Mohammadi, and Nazemi-Ardakani (2010) examined the relationship between auditor's expertise and the quality of earnings during 2002-2007 and concluded that firms, which have industrial specialist auditors have lower discretionary accruals and higher earnings response coefficient (ERC). Namazi, Bayazdi and Jabbarzadeh-Kangarloe, (2010) studied the relationship between audit quality and earnings management. They measured the audit quality and earnings management as auditor's size and tenure and modified Jones' model. The research results indicated a significant and positive association between earnings manipulation and auditor's tenure.

Research hypotheses

In this research, we posit 5 hypotheses to examine the relationship between real and accrual-based earnings management and auditor's type and expertise in our statistical sample as follows:

H₁: The accrual-based earnings management is lower in firms whose financial statements are audited as compared to their counterparts.

H₂: The real earnings management is higher in firms whose financial statements are audited in comparison with their counterparts.

H₃: The accrual-based earnings management is lower in firms whose financial statements are audited by industry specialized auditors as compared to their counterparts.

H₄: The real earnings management is higher in firms whose financial statements are audited by industry specialized auditors as compared to their

counterparts.

H₅: There is a significant and negative relationship between accruals-based earnings management and real earnings management.

Research Methodology

There is no concern regarding the sampling bias as we collected our required data from the entire population. The spatial domain of this research consists of companies listed on the Tehran Stock Exchange and its time domain covers 2001-2014. Firms operating in financial and banking industries are excluded from our initial statistical sample, primarily due to their different reporting requirements that could influence the figures associated with dependent variables. Since the market value of a firm is one of the main factors of this model, we limit our statistical sample to firms whose shares are actively traded on the Tehran Stock Exchange.

We employed Unbalanced Panel Data Analysis to estimate our regression models. The need to allocate a distinct intercept for each section and period is examined by using the Hausman and Chow tests. Furthermore, the collinearity between variables is measured by a correlation matrix and also the variance inflation factor (VIF). The correlation of error terms is also measured by Durbin-Watson Statistic. Finally, the heterogeneity of the regression models is examined by using the White Statistics.

Research models

Models for estimating the level of earnings manipulation

According to the related literature, companies conduct upward earnings manipulation by accruals manipulation, overproduction, saving in costs, giving discounts, and facilitation of credit sales conditions and these measures lead to some effects such as too many accruals and production costs and too low discretionary expenditure and operating cash flows. The manipulation level is estimated by models of Table No (1).

Models 2 and 4 refer to overproduction and reduced discretionary expenditure indices developed by Roychowdhury (2006) and based on the model proposed by Dechow, Kothari and Watts (1998). Models 3 and 5 refer to Gunny's earnings management measure, which considers some items such as size and growth opportunities (in both models) and cost stickiness (in discretionary expenditure model). Abnormal level of indices is expressed based on the error term (ϵ). Model 6 indicates the modified Jones model.

Table 1. Applied models for the estimation of real and accrual-based earnings management

	Models
1	$\frac{CFO_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + B_2 \frac{S_t}{A_{t-1}} + B_3 \frac{\Delta S_t}{A_{t-1}} + \varepsilon_t$
2	$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + B_1 \frac{S_t}{A_{t-1}} + B_2 \frac{\Delta S_t}{A_{t-1}} + B_3 \frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon_t$
3	$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + B_2 Q_t + B_3 \frac{S_t}{A_{t-1}} + B_4 \frac{\Delta S_t}{A_{t-1}} + B_5 \frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon_t$
4	$\frac{DISEXP_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + B_1 \frac{S_{t-1}}{A_{t-1}} + \varepsilon_t$
5	$\frac{DISEXP_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 MV_t + \beta_2 Q_t + B_3 \frac{INT_t}{A_{t-1}} + B_4 \frac{\Delta S_t}{A_{t-1}} + B_5 \frac{\Delta S_t}{A_{t-1}} \times DD_t + \varepsilon_t$
6	$\frac{TACC_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + B_1 \frac{\Delta S_t - \Delta AR_t}{A_{t-1}} + B_2 \frac{PPE_t}{A_{t-1}} + \varepsilon_t$

The dependent variables of models above are the cash flow from operation (CFO), production costs (PROD), discretionary expenditure (DISEXP), and total accruals (TACC) which are calculated as the difference between operating earnings and cash flow from operations. The variables on the right side of the equations are: the sales of current year (S_t), changes in sales of current year (ΔS_t), changes in sales of previous year (ΔS_{t-1}), Tobin's Q ratio (Q_t), natural logarithm of market value (MV), internal funds (INT) and cost stickiness DecDummy (DDt). Domestic fund (INT) refers to the total earnings and amortization expense and a measure of managers' funds for investment. Cost stickiness DecDummy (DDT) is a zero-one variable, which takes the value of 1 if there is a drop in sales, otherwise zero. According to the definition, at the time of increased sales, the increased expense is more than the reduced expense during the same amount of reduced sales. According to a usual theory on cost stickiness, the managers keep a balance between the costs of maintaining the unproductive resources in recession and the costs of alternative sources during the market upturn (Anderson, Banker and Janakiraman. 2003). All variables are scaled by total assets at the beginning of the year (A_{t-1}).

Boone, Khurana, and Raman's model

Boone, Khurana, and Raman's model (2004) is employed to test research hypotheses according to Table 2 and it investigates the effects of type (size) and expertise on reduced earnings manipulation through accruals and real activities.

Table 2. Boone, Khurana, and Raman's model for investigation of auditor's type and expertise on level of earnings manipulation

Mode 1	Description
1	$NDACC = \alpha + \beta_1 SAZMAN + \beta_2 AUDTEN + \beta_3 AUDITSPER + \beta_4 DMARKETSIZE + \beta_5 DMTB + \beta_6 DISTRESS + \beta_7 CFO + \beta_8 \Delta S_t + \beta_9 FINANCE + \beta_{10} LEVERAGE + \beta_{11} IMPLICIT + \beta_{12} SDSALE + \beta_{13} SDROA\beta + \beta_{14} SDCFO + \varepsilon$
2	$AGGREM = \alpha + \beta_1 SAZMAN + \beta_2 AUDTEN + \beta_3 AUDITSPER + \beta_4 DMARKETSIZE + \beta_5 DMTB + \beta_6 DISTRESS + \beta_7 CFO + \beta_8 \Delta S_t + \beta_9 FINANCE + \beta_{10} LEVERAGE + \beta_{11} IMPLICIT + \beta_{12} SDSALE + \beta_{13} SDROA\beta + \beta_{14} SDCFO + \varepsilon$

This model aims at investigating the coefficients of auditor's type and expertise in the entire sample and those exposed to earnings manipulation. It is expected that they be negative in the first model. Coefficients of model 2 can be positive or negative based on different theories. The variables used in the above model are as follows:

The first and hundredth percentiles of data are known as the outlier data and modified through trim plugin in Eviews software.

Yu's model (2008)

Yu's model (2008) is employed to further investigate the research hypotheses. Unlike Boone, Khurana and Raman's model [10], it is impossible to measure directly the effects of auditor's expertise on real earnings management and it can be indirectly estimated by the identification of a correlation between accruals and real earnings management. Yu's model (2008) is utilized at two stages as follows:

In the model of the second stage, the dependent variable is one of the four variables, namely the aggregate real earnings management (AGGREM), abnormal cash flow from operations (ABCFO), abnormal discretionary expenditure (ABEXP), and abnormal production costs (ABPROD). Yu's model (Yu, 2008) is different as compared to the former model because of the following features:

NDACC	abnormal accruals which is calculated by modified Jones model (Jones,1991)
AGGREM	Real earnings management, which is the sum of accumulation of three variables namely the abnormal and negative production costs, abnormal and negative operating cash flow, and abnormal discretionary expenditure.
SAZMAN	1 If the audit of financial statements is the Iran Auditing Organization, otherwise zero.
AUDTEN	"Tenure" indicates the number of audit engagement.
AUDITSPEL	It is a dummy variable, which is calculated based on auditor contribution to market value of any industry and is measured based on two criteria. (1) Liz and Water considered the audit, which has the highest share of industrial market value, equal to 1 [10] and (2) Don and Mayhew considered the audit with more than 20% of industrial market value equal to one, otherwise zero (Boone, Kurana and Raman, 2004).
DMARKETSIZE	Deviation of natural logarithm of firm size from natural logarithm of the same industry size.
DMTB	Market to book value variable: It is a measure of firm growth opportunities.
DISTRESS	A measure of financial conditions determined based on Zmijewski and Altman's models.
CFO	Cash flow from operation. The predicted sign of this variable is negative.
ΔSt	Measures sales changes as a proxy for the firm growth. The sign of this variable is expected to be positive.
FINANCE	It takes the value of 1 in the case of increased capital (over 10%) or debt growth (over 20%), otherwise zero.
LEVERAGE	Company debt ratio: The firms with higher financial leverage have a greater incentive to manipulate earnings.
IMPLICIT	Dependence on human resources: It is measured based on Matsumoto's model and refers to one minus ratio of implicit assets to total firm asset.
SDSALE SDCFO SDROA	SD of sales, earnings and cash flows from operations are included in model as control variables. Fluctuations of accruals and real activities can depend on the operating features of company. These features are measured by fluctuations in sales, profit, and operating cash flow.
Bench	It takes the value of 1 if the firm is among the companies with earnings near to zero or the earnings change is almost zero compared to the previous year (firms exposed to earnings manipulation), otherwise zero.

Table 3. Yu's models used for examining the effect of auditor's expertise on level of earnings manipulation

First stage	Mode 1 (1)	$NDACC_t = \beta_0 + \beta_1 DMARKETSIZE_t + \beta_2 DMTOB_t + \beta_3 DROAT_t + \beta_4 Mktshare_t + \beta_5 Mktshare_t^2 + \varepsilon$
	Mode 1 (2)	$NDACC_t = \beta_0 + \beta_1 DMARKETSIZE_t + \beta_2 DMTOB_t + \beta_3 DROAT_t + \beta_4 AUDITSPEL_t + \varepsilon$
Second stage	Mode 1 (3)	$Y_t = \beta_0 + \beta_1 DMARKETSIZE_t + \beta_2 DMTOB_t + \beta_3 DROAT_t + \beta_4 NDACC_t + \varepsilon$

- "Auditor's expertise in industry" proxy is both zero and one (model 1) and continuous (model 2) in model. "Auditor's expertise" continuous variable is calculated by the ratio of client's total sales in a specific industry to its total sales. Since there is a nonlinear correlation between audit expertise continuous variable and discretionary accruals, the audit expertise square is also added to model (Balsam, Krishnan, and Yang, 2003). This means that the expertise advantage creates in the industry only when the auditor reaches a certain level of knowledge and expertise in each industry.
- Despite using Boone, Khurana and Raman's model (2004) for testing all research firms, the above model will be used only for firms exposed to earnings manipulation.

Results

Hypothesis testing by using Boone, Khurana and Raman's model:

The necessary statistical tests such as reliability of variables and Chow and Hausman's test are conducted to determine the appropriate model for the estimation of parameters before estimating the regression. Table No. (4) indicates the correlation between some variables in Boone, Khurana, and Raman's model.

The above table indicates a positive and strong correlation between the auditor's type and expertise due to the experience and development of audit firm activities as it has led to more contribution in audit market by industries. The modified Boone, Khurana, and Raman's model is conducted because of this co-linearity and in order to homogenize the sample companies. First, this model is once conducted after the exclusion of audit expertise variable from model (columns 1 and 2 of Table No. 5) and then after the exclusion of audit type variable (columns 3 and 4 of Table 5). The strong co-linearity of two variables is confirmed due to the lack of change in the coefficient of determination after the exclusion of these variables

(compared coefficients of determination in columns 3 and 4 with 1 and 2 of Table No. 5). Second, the SAZMAN×BENCH and AUDITSPEL×BENCH variables are added to model for testing this model on a homogeneous group of companies exposed to earnings manipulation.

Table 4. Correlation coefficients between independent variables of Boone, Khurana and Raman's model

	SAMA N	AUDTE N	AUDITSPE L	CFO T	ΔSt	FINAN CE	LEVERAG E	IMPLICI T
SAZMAN	1	0.352	0.875	0.087	0.061	0.048	0.009	0.029
AUDTEN	0.352	1	0.314	-	-	-0.085	-0.049	0.007
AUDITSPE L	0.875	0.314	1	0.109	0.067	0.074	-0.016	0.012
CFOT	0.087	-0.025	0.109	1	0.184	-0.009	-0.294	-0.203
ΔSt	0.061	-0.009	0.067	0.184	1	0.155	-0.083	0.013
FINANCE	0.048	-0.085	0.074	-	0.155	1	-0.029	0.008
LEVERAG E	0.009	-0.049	-0.016	-	-	-0.029	1	0.067
IMPLIT	0.029	0.007	0.012	0.294	0.083	0.008	0.067	1
				0.203	0.013			

Table 5 is based on Boone, Khurana, and Raman's model for companies listed on the stock exchange during 2001-2014 and it investigates the correlation between earnings manipulation and variables such as auditor's type, expertise, tenure, etc. The results of Redundant Fixed Effects Test indicate the need for allocation of distinct intercepts for each period and stage.

Adjusted t-statistic is used based on the heterogeneity to investigate the significance of coefficients. The results reported in table No. (5) indicate a significantly negative relationship between auditor's type and accruals manipulation at the significance level of 10% in sample firms (t-statistic is -1.71). Furthermore, there is a negative relationship between the audit expertise and accruals manipulation. The previous studies have considered this issue as the high quality of audit firm reports and auditors' expertise compared to other audit firms.

The above table indicates a positive relationship between audit size, accruals and real earnings management in firms exposed to earnings manipulation. In other words, the level of earnings manipulation in firms, which is examined by audit firm, is more than other firms and these firms benefit from the real and accruals methods to manipulate earnings.

Table 5. Hypothesis test for Boone, Khurana, and Raman's model

Dependent Variable:	1		2		3		4	
	AGGREM_WINS		NDACC_WINS		AGGREM_WINS		NDACC_WINS	
Variable	t-Stat.	Prob.	t-Stat.	Prob.	t-Stat.	Prob.	t-Stat.	Prob.
C	3.701	0.000	-0.790	0.429	3.669	0.000	-0.769	0.441
SAZMAN	0.258	0.796	-1.714	0.086				
SAZMAN*BENCH	1.709	0.087	1.528	0.126				
AUDTEN	-0.803	0.421	0.200	0.841	-1.307	0.191	-0.180	0.856
AUDITSPEL					0.234	0.217	-1.424	0.154
AUDITSPEL*BENCH					0.938	0.348	2.068	0.038
DMARKETSIZE_WINS	6.202	0.000	3.810	0.000	6.196	0.000	3.834	0.000
DMTOB_WINS	-0.039	0.968	2.276	0.022	-0.007	0.994	2.272	0.023
ZSCORE_WINS	0.670	0.502	8.028	0.000	0.672	0.501	8.031	0.000
CFOT_WINS	-27.772	0.000	-28.166	0.000	27.723	0.000	28.196	0.000
Δ St_WINS	4.595	0.000	-9.170	0.000	4.604	0.000	-9.177	0.000
FINANCE_WINS	3.604	0.000	-0.127	0.898	3.580	0.000	-0.129	0.896
LEVERAGE_WINS	1.132	0.257	2.916	0.003	1.127	0.256	2.916	0.003
IMPLICIT_WINS	-0.746	0.080	-2.974	0.003	-1.728	0.084	-2.975	0.003
SDSALE_WINS	2.107	0.035	1.455	0.145	2.060	0.039	1.457	0.145
SDROA_WINS	-2.915	0.003	4.504	0.000	-2.917	0.003	4.502	0.000
SDCFO_WINS	-2.032	0.042	-0.154	0.877		0.041	-0.138	0.890
Adjusted R-squared	0.703		0.652		0.703		0.652	
F-statistic	17.865		14.625		17.861		14.627	
Durbin-Watson stat	2.074		1.973		2.074		1.972	

These findings are consistent with those reported by Boone, Khurana, and Raman (2004) who argued that the level of real earnings manipulation is higher for clients audited by BIG4 audit firms.

Hypothesis testing by using Yu's model

Before conducting Yu's model (Yu, 2008), the fixed effect approach is selected to estimate the coefficients of the model through the Hausman Test. The significance test on intercept coefficients indicates the importance of both sectional and periodic coefficients in the model. The results of the model can be explained according to table No (6).

There is a significantly negative relationship between abnormal cash

flows and accruals manipulation (t-statistic is equal to -49.64). Since the accruals manipulation reduces the cash flows compared to its normal level, a negative correlation indicates the simultaneous real earnings manipulation lowering the cash flows with accruals manipulation of firms.

Table 6. Correlation between real and accrual earnings management

Dependent Var.:	AGGREM_WINS		ABPRODR_WINS		ABCFO_WINS		ABEXPR_WINS	
	t-Stat.	Prob.	t-Stat.	Prob.	t-Stat.	Prob.	t-Stat.	Prob.
Variable								
C	1.737	0.0823	1.590	0.111	-0.757	0.448	-1.308	0.190
DMARKETSIZE_WINS	7.138	0.0000	1.786	0.074	-5.722	0.000	-5.831	0.000
DMTOB_WINS	1.009	0.3126	-0.551	0.581	0.044	0.964	0.054	0.952
DROAT_WINS	-14.827	0.0000	-11.232	0.000	15.784	0.000	5.022	0.000
NDACC_WINS	27.475	0.0000	4.6127	0.000	-	0.000	-4.133	0.000
Adjusted R-squared	0.529		0.378		0.664		0.627	
F-statistic	10.120		5.956		17.292		14.867	
Durbin-Watson stat	1.803		1.960		1.817		1.806	

There is a significantly positive relationship between overproduction and accruals manipulation (t-statistic is 4.61). This positive relationship indicates the simultaneous earnings manipulation through overproduction and accruals manipulation. There is a significantly negative correlation between the abnormal discretionary expenditure and accruals manipulation (t-statistic is -4.13). Finally, there is a significantly positive correlation between the manipulation of real and accruals manipulation (t-statistic is 27.47).

In general, the results of above table indicate that unlike the previous studies, there is no negative and significant relationship between the real earnings and accruals manipulation. However, there is a significantly positive relationship between earnings manipulation through real activities and accruals in Iran during the recent years and this indicates that companies listed on the Tehran Stock Exchange have used two complementary earnings manipulation methods to achieve the target earnings.

Since there is no relationship between audit expertise and accruals in the sample consisting of all firms, our sample is limited to firms exposed to earnings management (zero earnings level), and Yu's model is repeated, but there is no relationship between accruals manipulation and audit expertise once again. According to compared coefficients of determination, there is a low explanatory power in the model and lack of necessary control on variables to explain the correlation between variables.

Table 7. Role of audit expertise in reduction of earnings management by employing Yu's model

Variable	Model 1			Model 2		
	Coefficient	t-Stat	Prob	Coefficient	t-Stat	Prob
C	0.003	0.944	0.344	0.006	1.219	0.222
DMARKETSIZE_WINS	0.052	5.120	0.000	0.052	5.179	0.000
DMTOB_WINS	0.000	1.784	0.074	0.000	1.717	0.085
DROAT_WINS	0.196	8.726	0.000	0.194	8.671	0.000
AUDITSPEL	-0.002	-0.293	0.768			
AUDITSHAREYEAR				0.000	0.016	0.987
AUDITSHAREYEAR ²				-0.022	-0.506	0.612
Adjusted R-squared	0.116			0.117		
F-statistic	2.089			2.091		
Durbin-Watson stat	2.257			2.257		

Conclusion

This study investigates the role of auditor's type and expertise as the factors influencing the earnings manipulation. According to the prior literature, the clients of BIG4 audit firms have less opportunity to manipulate the accruals, and thus they tend to manipulate the real earnings. However, according to results of this research, despite the fact that there is no significant difference between the level of accruals in clients of the Iranian Auditing Organization and the clients of other audit firms, the real earnings manipulation is higher in former clients than the latter. According to a positive relationship between the accruals and real earnings, the earnings manipulation is increased in Iranian Auditing Organization clients because of limited accruals manipulation opportunities in these firms as it leads them to earnings manipulation.

Consistent with a large body of research, this research hypothesizes the uniform effect of macroeconomic variables on all firms and stable market flow during the research period. To reduce the effects of these limitations, the employed models are estimated at each level of the year and most of the variables are defined as a deviation from the median. This partially resolves the above-mentioned limitation. Other research limitations can be explained as follows:

- Determination of only a group of firms as those suspected of upward earnings manipulation: This approach is also performed by Roychowdhury (2006) and Gunny (2010); and the "insignificance of earnings manipulation in other firm levels" is its main problem.
- Integration or removal of some industries from research sample due to

the insufficient data to conduct the earnings manipulation models in every industry per year could be another problematic limitation.

Further to the study

- 1- Investigation of auditor's role in reducing the real earnings and accruals manipulation opportunities in firms operating monetary and financial industries: The proxies of this research are mainly applicable for manufacturing companies, but the real earnings manipulation is conducted by different ways in specialized holdings, investment firms and banks. The proxies are proposed to measure each mentioned case, and it can be suggested to conduct studies on the auditor's role in reducing the earnings manipulation opportunities in this group of firms.
- 2- Conducting studies on negative consequences of accruals and real earnings and the auditors' roles in preventing them.
- 3- Due to the rejected hypotheses of auditor's expertise, it can be suggested to conduct a research on measuring the audit expertise through other available proxies such as "contribution of industries in portfolios of audit firms" while excluding the audit firm employers from research samples.

References

- Abdel-Khalik, A. (2002). Reforming Corporate Governance Post Enron: Shareholder's Board of Trustees and The Auditor. *Journal of Accounting and Public Policy*, 21 (2), pp. 97–103, DOI: 10.1016/S0278-4254(02)00040-6
- Aghaei, M.A., and Kouchaki, H. (1995). The Behavior of Accounting Earnings. *Journal of the Accounting and Auditing Reviews*, 4 (2), pp. 32-49, https://acctgrev.ut.ac.ir/article_25878_2649.html (in Persian).
- Albrecht, W. S., Albrecht, Ch. O., Albrecht, C. C., and Zimbelman, M. F. (2009). *Fraud Examination*. South-Western Cengage Learning, ISBN-13: 978-0-324-56084-8
- American Institute of Certified Public Accountants (AICPA). (1997). *Consideration of Fraud in a Financial Statement Audit*". SAS No. 82. New York, NY: AICPA., <http://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-00316.pdf>
- Anderson, M., Banker, R. D., and Janakiraman, S. N. (2003). Are Selling, General, and Administrative Costs Sticky?, *Journal of Accounting*

- Research*, 41 (1), pp. 47-63, DOI: 10.1111/1475-679X.00095
- Arel, B., Jennings, M., Pany, K., and Reckers, P. (2012). Auditor Liability: A Comparison of Judge and Juror Verdicts. *Journal of Accounting and Public Policy*, 31 (5), pp. 516–532, DOI: 10.1016/j.jaccpubpol.2011.10.004
- Balsam, S., Krishnan, J., and Yang, J. S. (2003). Auditor Industry Specialization and Earnings Quality. *Auditing: A Journal of Practice & Theory*, 22 (2), pp. 71-97, DOI: 10.2308/aud.2003.22.2.71
- Beasley, M. S., Carcello, J. V., Hermanson, D. R., and Neal, T. (2010). Fraudulent Financial Reporting 1998–2007, An Analysis of U.S. Public Companies. *Committee of Sponsoring Organizations of the Treadway Commission, Durham, NC.*, <https://www.coso.org/Pages/FFR-Analysis-Summary.aspx>
- Boone, J., Khurana, I. K., and Raman, K. K. (2004). Is Audit Quality Different For Big 4 and MID_TIER Auditors?. *Working Paper*, DOI:10.1.1.463.1762
- Boyle, Douglas M., DeZoort, F. T., and Hermanson, Dana R. (2015). The Effect of Alternative Fraud Model Use on Auditors' Fraud Risk Judgments. *Journal of Accounting and Public Policy*, 34 (6), pp. 578–596, DOI: 10.1016/j.jaccpubpol.2015.05.006
- Buckhoff, T. A. (2001). Employee Fraud: Perpetrators and Their Motivations. *The CPA Journal*, 71 (11), pp. 72–73. <https://www.questia.com/library/p61591/the-cpa-journal/i2495708/vol-71-no-11-november>
- Chapman, C. J. (2011). The Effects of Real Earnings Management on The Firm, its Competitors and Subsequent Reporting Periods. *Electronic copy Available at SSRN*: <https://ssrn.com/abstract=1747151> <http://dx.doi.org/10.2139/ssrn.1747151>, DOI: 10.2139/ssrn.1747151
- DeAngelo, L. (1981). Auditor Size and Audit Quality. *Journal of Accounting and Economics*, 3 (3), pp. 183-199, DOI: 10.1016/0165-4101(81)90002-1
- Dechow, P., and Skinner, D. (2000). Earnings Management: Reconciling The Views of Accounting Academics, Practitioners, and Regulators. *Accounting Horizons*, 14 (2), pp. 235-250, DOI: 10.2308/acch.2000.14.2.235
- Dechow, P.M., Kothari, S.P., and Watts, R.L. (1998). "The Relation between Earnings and Cash Flows". *Journal of Accounting and Economics*, 25(2), 133-168., DOI: 10.1016/S0165-4101(98)00020-2

- Dorminey, J., Fleming, A., Kranacher, M., and Riley Jr., R. (2010). Beyond The Fraud Triangle: Enhancing Deterrence of Economic Crimes, *The CPA Journal Archives*, 80 (7), pp. 17-23, <https://www.nysscpa.org/news/publications/the-cpa-journal/article-preview?ArticleID=10614>
- Ebrahimi-Kordlou, A., and Seyyedi, S.A. (2009). Independent Auditor's ARoles in Decreasing Discretionary Accruals, *Journal of Accounting and Auditing Reviews*, 16 (1), pp. 3-16, https://acctgrev.ut.ac.ir/?_action=articleInfo&article=19957
- Etemadi, H., Mohammadi, A., and Nazemi-Ardakani, M. (2010). The Relationships between Auditor Industry Specialization and Earnings Quality in Listed Companies on Tehran Stock Exchange. *Financial Accounting Research*, 1 (1), pp. 17-32, http://far.ui.ac.ir/issue_3250_3251_Volume+1%2C+Issue+1%2C+Winte+r+2010.html
- Francis, J., Maydew, E., and Sparks, H. (1999). The Role of Big 6 Auditors in the Credible Reporting of Accruals, *Auditing: A Journal of Practice and Theory*, 18(2): 17-34, DOI: 10.2308/aud.1999.18.2.17
- Cressey, D. (1973). Other People's Money: A Study in The Social Psychology of Embezzlement. *International Review of Modern Sociology*, 3 (1), pp. 114-116, <http://www.jstor.org/stable/41420485>
- Gunny, K. (2010). The Relation between Earnings Management using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks. *Contemporary Accounting Research*, 27 (3), pp. 855-888, DOI: 10.1111/j.1911-3846.2010.01029.x
- Hogan, C. E., Rezaee, Z., Riley Jr. R., and Velury, U. K. (2008). Financial Statement Fraud: Insights from the Academic Literature. *Auditing: A Journal of Practice & Theory*, 27 (2), pp. 231-252, DOI: 10.2308/aud.2008.27.2.231
- International Federation of Accountants (IFAC). (2010). International Standard on Auditing No. 240: The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements, IFAC, New York, NY, <http://www.ifac.org/system/files/downloads/a012-2010-iaasb-handbook-isa-240.pdf>
- Institute of Internal Auditors (IIA), AICPA, and ACFE. (2008). Managing the Business Risk of Fraud: A Practical Guide. The IIA, Altamonte Springs, FL, https://www.acfe.com/uploadedfiles/acfe_website/content/documents/ma

- naging-business-risk.pdf
- Janin, R., and Piot, Ch. (2005). Audit Quality and Earnings Management in France., *SSRN Electronic Journal*, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=830484
- Johnson, E. N., Kuhn, J. R., Apostolou, B. A., Hassell, J. M. (2013). Auditor Perceptions of Client Narcissism as a Fraud Attitude Risk Factor. *Auditing: Journal of Practice and Theory*, 32 (1), pp. 203–219, DOI: 10.2308/ajpt-50329
- Jones, J. (1991). Earnings Management during Import Relief Investigations. *Journal of Accounting Research*., 29 (2), PP. 193-228. <http://dx.doi.org/10.2307/2491047>
- Lokanan, M. E. (2015). Challenges to The Fraud Triangle: Questions on Its Usefulness. *Accounting Forum*, 39 (3), PP. 201–224, DOI: 10.1016/j.accfor.2015.05.002
- McEnroe, J.E., and Martens, S.C. (2001). Auditors' and Investors' Perceptions of the "Expectation Gap". *Accounting Horizons*, 15 (4), PP. 345–358, DOI: 10.2308/acch.2001.15.4.345
- Namazi, M., Bayazdi, A., and Jabbarzadeh-Kangarloei, S. (2010). Study on Correlation Between Audit Quality and Earnings Management in Companies Listed on Tehran Stock Exchange. *Journal of Accounting and Auditing Research*, 3 (9), pp. 4-21, <http://iraniana.com/publications/10/17>
- Public Company Accounting Oversight Board (PCAOB). (2007). Observations on Auditors' Implementation of PCAOB Standards Relating to Auditors' Responsibilities with Respect to Fraud. PCAOB Release No. 2007-001 (January 22). PCAOB, Washington, DC. http://pcaobus.org/Inspections/Documents/2007_01-22_Release_2007001.pdf.
- Rezaee, Z., and Riley, R. (2009). Financial Statement Fraud: Prevention and Detection. *John Wiley and Sons Publishing*, 352 pages, ISBN: 978-0-470-45570-8
- Romney, M. B., and Steinbart, P. J. (2003). *Accounting Information Systems*, 9th Edition. Prentice Hall Business Publishing
- Roychowdhury, S. (2006). Earnings Management through Real Activities Manipulation. *Journal of Accounting and Economics*, 42(3), 335-370, DOI: 10.1016/j.jacceco.2006.01.002.
- Thomas, J. K., and Zhang, H. (2002). Inventory Changes and Future Returns. *Review of Accounting Studies*, 7 (2-3), pp. 163-187, DOI:

10.1023/A:1020221918065

- Trompeter, G., Carpenter, T., Desai, N., Jones, K., and Riley Jr., R. (2013). A Synthesis of Fraud Related Research. *Auditing: A Journal of Practice & Theory*, 32 (1), pp. 287–321, DOI: 10.2308/ajpt-50360
- Wilks, J., and Zimbelman, M. (2004). Decomposition of Fraud-Risk Assessments and Auditors' Sensitivity to Fraud Cues. *Contemporary Accounting Research*, 21 (3), pp. 719–745, DOI:10.1506/HGXP-4DBH-59D1-3FHJ
- Yu, W. (2008). Accounting-based Earnings Management and Real Activities Manipulation. *Publisher: Georgia Tech (Georgia Institute of Technology)*. <http://hdl.handle.net/1853/24686>