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## Article

# Do audit firm reputation provide insight into financial reporting quality? Evidence from accrual and real management of listed companies in Vietnam

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Do audit firm reputation provide insight into financial reporting quality? Evidence from accrual and real management of listed companies in Vietnam

Ngoc Mai Tran<sup>1\*</sup> and Manh Ha Tran<sup>1</sup>

**Abstract:** The purpose of this paper is to investigate whether audit firm reputation provides insight into financial reporting quality of listed companies in Vietnam. Earning management measured by accrual earning management and real earning management is compared between firms audited by Big 4 auditors and non-Big 4. Using difference in differences approach on the sample of 331 listed companies in Vietnam during 2013–2020, the study finds that Big 4 improves financial report quality through decreasing earning management. The role of Big 4 auditor in monitoring real earning management is more significant than accrual earning management in auditing year because real earning management has been preferred over accrual in years before. This study could provide valuable information for investors and shareholders when using financial report as well as the Government administration in preventing earning management practices and promoting high level of accounting and auditing compliance.

**Subjects:** Corporate Finance; Auditing; Corporate Social Responsibility & Business Ethics

**Keywords:** earning management; real earning management; Big 4

### 1. Introduction

One of the most important objectives of financial reporting is to provide information on firm's performance and financial position to investors, creditors and other interested parties (International Accounting Standard Board, IASB). Historically, there have been a number of frauds like Enron, WorldCom and Tyco in which firms manipulated their financial reports. The collapses of these firms have created negative impacts on the financial market, causing significant losses for a series of banks, insurance companies, pension funds and investors as well as the whole economy.

In Vietnam, the problem can be found in number of cases such as Hoang Anh Gia Lai joint stock company (HAG), No 9 Construction Joint Stock Company (VC9), Dong A Plastic Joint Stock Company (DAG) and Tan Tao Investment and Industry Corporation (ITA). HAG had reported a profit of around 250 billion Vietnam Dong instead of the audited loss of around 2,000 billion Vietnam Dong in 2019. VC9 has not accounted for a large amount of cost of goods sold; inflated reported earnings thus

create misunderstandings among investors. DAG's profit has changed from positive to negative after the review, while ITA decreases its earning after an audit. When it comes to strength of auditing and reporting standards, Vietnam has been ranked low, downgraded from 115th in 2017 to 128th in 2019 (GovData360), far lower than other countries in the region such as Thailand, Malaysia, Philippines, Laos and Brunei. This downgrade raises the need of control financial report quality and the role of management authorities and auditing company in ensuring the accuracy of financial statement.

Auditing company's reputation is believed to be related to the quality of financial report. Auditing firms can be divided into two groups: Big 4 auditors include four largest international accounting and professional services firms Deloitte, EY, KPMG and PwC. Non-Big 4 auditors include less dominant firms (DeAngelo, 1981). On the one hand, Big 4 auditors are considered to be superior in quality over non-Big 4 auditors (Alzoubi, 2016; Lawrence et al., 2011; Mitton, 2002) due to their professional skills and great reputation to protect. On the other hand, there are also arguments that the quality of financial report audited by two groups is at the same level because both types of auditing firms must conform to the same regulation. Especially, some arguments are in favor of the non-big 4 due to their advantages in local markets and relationship with clients (Louis, 2005). Others argue that the closer relationship among non-Big 4 firms and their clients could lead to potential compromise, reducing the auditing quality. Hence, there is no concrete opinion on the auditing quality of Big 4 versus non-Big 4.

Therefore, the study is carried out to examine the difference between Big 4 versus non-Big 4 in audit quality represented by earning management in Vietnam. Vietnam is selected to examine the impact of auditors' reputation due to the following reasons. First, the corporate governance awareness and practices in Vietnam are quite low. Vietnamese firms carrying out corporate governance is mainly due to compliance. Data from The Vietnam Institute of Directors show that corporate governance is 70% compliance by which firms adapt behavior to guidelines, rules, laws and regulation. Compared with six countries taking part in assessment for ASEAN Corporate Governance Scorecard, Vietnam has been ranked sixth out of sixth, with only one company on the list of top 200 enterprises. Because corporate governance is a mechanism balancing interests between stakeholders, especially outside investors (Shleifer & Vishny, 1997), poor corporate governance therefore is detrimental to shareholder's interests as well as quality of financial reporting (Cohen et al, 2002).

Furthermore, Vietnamese Accounting Standards comprises 26 standards based on the old version of International Accounting Standards. Meanwhile, almost all countries in the world have adopted International Financial Reporting Standards (IFRS) which brings improved consistency and transparency of financial statement. Institutional setting in Vietnam is characterized by low level of investor protection and low level of litigation risk. Even though there have been several cases of financial misreporting, there is no noticeable penalty to auditors. Therefore, previous findings on the relationship between auditor's reputation and earning management in developed countries may not be applicable to Vietnam.

This study makes the following contributions: First, this study provides Vietnam-based evidence on the relationship between auditors' reputation and financial reporting quality measured by earning management. Both accrual and real earning management are employed. Second, this study also examines the impact of pre and post changes in Big 4 auditors on both types of earning management. Before being audited by Big 4, firms prefer real manipulation to accounting management. In years being audited by Big 4, both types of management are decreased but real earning management is greatly influenced. The findings support the importance of auditing on earning management.

The remainder of the study is as follows. Section 2 discusses the literature and hypothesis development. Section 3 examines the data and methodology. Section 4 starts by providing

descriptive statistic of the research data, followed by the empirical studies. The paper is concluded with the recommendation that firms audited by Big 4 are experiencing lower level of earning manipulation and better financial reporting quality.

## 2. Literature review

### 2.1. Prior studies on auditors' characteristics

Auditors' characteristics are believed to be related to the earning quality. The auditors' characteristics can be measured by auditing fee and being Big 4 or not (Chi et al., 2011; Francis, 2004; Stanley & DeZoort, 2007). The earning quality can be proxied by the earning manipulation, under both accrual and real earning management. Due to the conflict of interest between managers and stockholders, managers may act for their own interest rather than for the stockholders. Managers have incentives to manage the earnings (Healy & Wahlen, 1999); thus, auditing helps to provide assurance on the quality of financial report. Compared to non-Big 4, Big 4 is perceived to have more resources from both financial and operational perspective. They can invest in technology, recruitment and development, standardize audit methodologies and thus provide better audit quality (Becker et al., 1998; Behn et al., 2008; Khurana & Raman, 2004; Palmrose, 1988). Big 4 with its sheer size produce lower discretionary accruals.

Further argument explaining the superior quality of Big 4 over non-Big 4 is due to the reputation. Behn et al. (1997) and Krishnan (2003) mentioned that Big 4 has global network with large client base, and they have greater motivation to keep their audit quality and protect their brand name reputation. They are more sensitive to any misreports from customers (DeAngelo, 1981) and are likely to issue going-concern warnings than non-Big 4 in the same situation (Francis & Krishnan, 1999). Francis and Wang (2008) examine the signed value of earning management across 42 countries and strengthen the role of Big 4 firms over legislation or investor protection. Non-Big 4, however, are not at the same risk as Big 4; thus, they do not have strong pressure to ensure clients' higher reporting quality. Non-Big 4 are considered to be more willing to allow some discretion in the financial report to accommodate client; they have more to gain when consider cost-benefit calculus (Francis & Wang, 2008).

There are also some prior studies reporting the comparable quality between Big 4 and non-Big 4. Big 4 and non-Big 4 operate under the same regulation; thus, they must adhere to the reasonable level of quality (Lawrence et al., 2011). Non-Big 4 are small firms lacking the size needed to spread the fixed insurance fees (GAO, 2003, p. 49), so they have to improve audit quality themselves rather than being backed by insurance companies, resulting in higher auditing quality. Moreover, the employees switching between auditors cause the knowledge transfers and dilute the difference between Big 4 and non-Big 4 auditors. Van Tendeloo and Vanstraelen (2008) also document the indifference in quality between Big 4 and non-Big 4 when the investor protection is weak. In countries with weak investor protection, the impact of reputational damage is lower than other countries, causing weak difference between Big 4 and non-Big 4 audit quality (Majoor & Vanstraelen, 2006; Van Tendeloo & Vanstraelen, 2008). Chi et al. (2011) support Ding et al. (2007) that real earning management and accrual earning management are just substitutes. Big 4 auditors result in real earning management which is costly than accrual earning management (Cohen et al., 2008). Big 4, therefore, is not superior over non-Big 4 on constrain earning management (Chi et al., 2011).

Based on these arguments, we set the following hypothesis:

**H1:** Auditor reputation proxied by Big 4 is associated with lower level of earning management

### 3. Data and methodology

#### 3.1. Data

This study examines the relationship between auditor's reputation and earning management of listed companies in Vietnam during 2013–2020. Financial information to calculate earning management is collected from financial statement of listed companies on the Vietnamese stock exchange. We use FIINPRO database to extract these data on annual basis. Data on auditor reputation are collected from Wichart—another data provider in Vietnam. After excluding companies with few observations, our sample include 331 listed companies with about 3300 observations, starting from 2013 because almost all data on auditors are available from 2013 on Wichart.

##### 3.1.1. Measurement of variables

**3.1.1.1. Earning management measurement.** Earning management has been measured using both accrual earning management and real earning management. Accrual earning management is measured using the standard Jones model (1991), modified Jones model (Dechow et al., 1995) and the modified Jones model with return on asset (Kothari et al., 2005). Real earning management has been calculated using Roychowdhury (2006). Data on revenue (*Rev*), gross value of property, plant and equipment (*PPE*), total assets (*TA*), current asset (*CA*), cash and equipment (*Cash*), current liabilities (*CL*) and depreciation and amortization (*DEP*) are employed to calculate managerial interventions into financial statement.

Standard Jones model (Jones, 1991)

Jones (1991) employ accrual model in which normal accruals or nondiscretionary accruals are estimated from changes in revenue, property, plant and equipment.

$$\frac{TA_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 \left( \frac{\Delta Rev_t}{A_{t-1}} \right) + \alpha_3 \left( \frac{PPE_t}{A_{t-1}} \right) + \varepsilon_t \quad (1)$$

The total accruals are estimated using equation (2) and scaled before substituting in equation (1):

$$TA_t = (\Delta CA_t - \Delta Cash_t) - \Delta CL_t - DEP_t \quad (2)$$

Residuals of regression (1) represent the discretionary accruals or the Jones (1991) accrual earning management.

The modified Jones model (Dechow et al, 1995)

Dechow et al. (1995) employ the modified version of the Standard Jones model (1991) accounting for the credit policy (Dechow et al., 1995). First, total accruals are calculated using equation (3):

$$TA_t = (\Delta CA_t - \Delta Cash_t) - (\Delta CL_t - \Delta STD_t) - DEP_t \quad (3)$$

Then discretionary accruals are estimated as the residuals of the regression (4):

$$\frac{TA_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 \left( \frac{\Delta Rev_t - \Delta Rec_t}{A_{t-1}} \right) + \alpha_3 \left( \frac{PPE_t}{A_{t-1}} \right) + \varepsilon_t \quad (4)$$

The Kothari et al. (2005) model

Kothari et al. (2005) proposed modified version of Dechow et al. (1995) model in which last year performance is considered when calculating discretionary management. Last year ROA is added to regression (4) to form new regression (5) for calculating accruals:

$$\frac{TA_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 \left( \frac{\Delta Rev_t - \Delta Rec_t}{A_{t-1}} \right) + \alpha_3 \left( \frac{PPE_t}{A_{t-1}} \right) + \alpha_4 (ROA_{t-1}) + \varepsilon_t \quad (5)$$

The Roychowdhury (2005) real earning management

Instead of altering reporting number using accounting methods, managers can create real earning management by altering real business activities. They can boost the earning by over-producing inventory to reduce the cost of goods sold and reduce R&D, advertising and selling, general and administrative cost. The former is estimated as the residual of production equation (6): the higher the residual, the larger level of managerial management. The latter is estimated as the residual of the discretionary expenses in equation (7) multiplied by  $-1$  due to the fact that the higher the values, the larger the expenditure cut thus higher earning management. Managerial management variable, REM, is the aggregation of the two above measurements.

Production expenses:

$$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 \left( \frac{Sales_t}{A_{t-1}} \right) + \alpha_3 \left( \frac{\Delta Sales_t}{A_{t-1}} \right) + \alpha_4 \left( \frac{\Delta Sales_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (6)$$

Discretionary expenses:

$$\frac{DISX_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 \left( \frac{\Delta Sales_t}{A_{t-1}} \right) + \varepsilon_t \quad (7)$$

### 3.1.2. Auditor's measurement

Data on main explanatory variable are collected from financial information on Wichart-data provider in Vietnam. The information includes name of auditors each year. *BIG4* get 1 if auditors are Big 4 companies and 0 otherwise. Big 4 companies in Vietnam include Deloitte, EY, KPMG and PricewaterhouseCoopers (PwC).

To account for the impact of pre-changes and post-changes in Big 4 auditors on the earning management, dummy variables *big4n2*, *big4n1*, *big4n0*, *big4p1* and *big4p2* are created. *big4n2*, *big4n1* and *big4n0* are indicator variables being 1 if the year is the *k*th year prior to the auditor changes. *big4p1* and *big4p2* are indicator variables being 1 if the year is *k*th year after the auditor changes.

### 3.2. Methodology

The staggered adoption of Big 4 auditors across companies allows us to examine the impact of auditor on earning management using difference in differences design. Firms adopting Big 4 auditors are classified as treatment firms, and those audited by non-Big 4 are control firms. The regression equation is as follows:

$$Earning\ management_{it} = \alpha + \beta_1 Auditor\ variable_{it} + \beta_2 X_{i,t} + Firm_i + Year_t + \varepsilon_{i,t} \quad (8)$$

where *i* denotes firm and *t* denotes year. Earning management can be measured by accrual earning management and real earning management.  $X_{i,t}$  represents firm characteristics, while  $Firm_i$  and  $Year_t$  capture firm and year effects, respectively.  $X_{i,t}$  includes firm size (*Size\_mcap*), capital structure (*Lev*), sales growth (*Dsales*), firm age (*lage*), liquidity (*cashholding*), market to book value (*mb*) and profitability ratio (*roa*) that followed Bozzolan et al. (2015) and Roychowdhury (2006). Standard errors are clustered at industry level.

To measure the impact of Big 4 auditors on earning management, *auditor variable* is proxied by *BIG4*. Coefficient  $\beta_1$  related to *BIG4* accounts for the difference in earning management between companies audited by Big 4 and not.

$$Earning\ management_{it} = \alpha + \beta_1 BIG4_{i,t} + \beta_2 X_{i,t} + Firm_i + Year_t + \varepsilon_{i,t} \quad (9)$$

To confirm the impact of being audited by Big 4 on earning management, *auditor's adoption year* *big4n2*, *big4n1*, *big4*, *big4p1* and *big4p2* are added to the model. The coefficients on *big4n2* and

*big4n1* illustrate the difference in earning management between control and treatment groups before Big 4's adoption year. If they are insignificant, the difference between earning quality exists only when being audited by Big 4.

Similarly, if coefficients related to *big4p1* and *big4p2* are insignificant, the impact of being audited by Big 4 is not significant in years after the adoption year. In other words, having Big 4 auditors creates an impact on earning quality on that audited year only.

$$\begin{aligned}
 \text{Earning management}_{it} = & \alpha + \beta_{11}\text{big4n2}_{i,t} + \beta_{12}\text{big4n1}_{i,t} + \beta_{13}\text{big4n0}_{i,t} + \beta_{14}\text{big4p1}_{i,t} \\
 & + \beta_{15}\text{big4p2}_{i,t} + \beta_2 X_{i,t} + \text{Firm}_i + \text{Year}_t + \varepsilon_{i,t}
 \end{aligned}
 \tag{10}$$

#### 4. Empirical analyses

##### 4.1. Descriptive statistics

The sample includes 331 listed companies ranging from 16 different industries. All the variables are winsorized at 1st and 99th percentiles. Using the descriptive statistics in Table 1, the means of accrual earning management calculated by standard Jones model (*aem*) and real earning management (*rem*) are -0.031 and -0.014, respectively, and show that managers do engage in earning management. Real earning management is smaller but more volatile than accrual earning management. Mean value of *big4* is 0.338, meaning that approximately a third of firms are being audited by Big 4. Firms have an average of 11.5% ROA, leverage ratio of 0.48, market to book ratio of 0.98 and cash holding of about 3.8%.

##### 4.2. Empirical results

Table 2 present correlation matrix between independent variables in the model. All pairwise correlation values in Table 2 are quite low and less than 0.7 and suggest no multicollinearity problem in the model. The largest value of correlation in the table is 0.474 between firm size (*size\_mcap*) and auditor reputation (*big4*) variables and suggests that large firms tend to use auditing services of Big 4.

Table 3 illustrates the impact auditor reputation on both types of earning management: accrual earning management and real earning management. The first column represents the relationship between Big 4 and accrual earning management without other control variables. Statistically significant negative coefficient related to Big 4 variable shows that firms being audited by Big 4 are associated with lower accrual earning management. This relationship is confirmed when adding firm's characteristics as control variables in the second column. When examining the real earning management, the last two columns show the same results: firms experience lower earning management when being audited by Big 4. The result is consistent with Krishnan (2003) and

**Table 1. Descriptive statistics**

	Mean	sd	p25	p50	p75
aem	-.0309474	.2534114	-.1789518	-.0682298	.0631724
rem	-.0141462	.5524772	-.1343598	-.0113324	.1228763
big4	.3379473	.4730904	0	0	1
size_mcap	27.31192	1.634689	26.13447	27.07937	28.20763
dsales	.4838707	2.511641	-.1602774	.0563945	.2497075
lev	.4856813	.2091321	.3256146	.5059891	.6514512
lage	2.504953	.5063341	2.197225	2.484907	2.772589
roa	.1148925	.3689759	.0026939	.0162197	.0656905
mb	.9821771	1.617069	.2651463	.5579066	1.073022
cashholding	.0383853	.0403896	.0113473	.0250652	.0507768



**Table 2. Correlation matrix**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) big4	1.000							
(2) size_mcap	0.474	1.000						
(3) dsales	0.010	-0.003	1.000					
(4) lev	0.023	-0.007	-0.039	1.000				
(5) lage	0.011	-0.028	-0.031	0.007	1.000			
(6) roa	-0.091	-0.178	0.021	-0.113	-0.069	1.000		
(7) mb	0.032	0.289	0.001	-0.339	-0.096	0.073	1.000	
(8) cashholding	-0.002	-0.029	0.020	-0.034	0.030	0.021	0.099	1.000

**Table 3. Regression results with Big 4**

	(1)	(2)	(3)	(4)
	aem	aem	rem	rem
big4	-0.038**	-0.041**	-0.076**	-0.070***
	(-2.711)	(-2.322)	(-2.408)	(-2.996)
size_mcap		0.008		-0.015
		(0.517)		(-0.385)
dsales		0.000		-0.000
		(1.091)		(-0.339)
lev		-0.417***		0.162
		(-5.709)		(1.390)
lage		-0.034		0.179
		(-0.447)		(0.881)
roa		0.002***		-0.007***
		(4.796)		(-3.449)
mb		-0.000***		-0.001***
		(-11.462)		(-4.178)
cashholding		-0.284**		0.412
		(-2.604)		(1.109)
N	2563	2495	2516	2489
adj. R-sq	0.505	0.552	0.333	0.342

Notes: t statistics in parentheses. \* $p < 0.10$ , \*\* $p < 0.05$  and \*\*\* $p < 0.01$ .

Francis and Wang (2008) that Big 4 is superior in technology, professional skills as well as reputation to protect which lead to higher reporting quality.

To confirm the impact of Big 4 on audit quality, variables *big4n2* and *big4n1* are added to the model. Coefficients related to *big4n2* and *big4n1* in the first and second columns of Table 4 are statistically insignificant that show that there is no difference in accrual earning management before being audited by Big 4 between the two groups: treatment group (audited by Big 4 at time  $t = 0$ ) and control group (not audited by Big 4 at time  $t = 0$ ). In other words, the difference in earning management is merely due to the participation of Big 4 auditors. Negative coefficient of *big4* shows that Big 4 auditors reduce the earning management in auditing year.

When it comes to the real earning management, statistically significant coefficients of *big4n2* and *big4n1* in columns 3 and 4 of Table 4 show that in years prior to the involvement of Big 4 auditors, firms use real activities to achieve the reporting target. Even though real manipulation is costly to the firm in long term due to the impact on firm operation and cash flow, it is not costly to the manager because of lower possibility of being scrutinized (Cohen et al., 2008). Real manipulation also does not violate any laws or regulations. Therefore, managers normally prefer carrying out real earning manipulation to accrual management (Chi et al., 2011; Roychowdhury, 2006), illustrated by a positive and statistically significant coefficient related to *big4n2* and *big4n1*.

However, when there is an involvement of Big 4, these misreports are decreased. Upward real earning management in years prior to Big 4 involvement is then decreased, with the greater magnitude than accrual earning management (0.057 compared with 0.043). It coincides with results in Table 5 when accounting for the impact of post change in Big 4 auditors.

In order to validate the impact of Big 4 auditors on reporting quality, alternative measures of earning management have been employed including the modified Jones model and the Kothari

**Table 4. Regression results pre change in Big 4 auditors**

	(1)	(2)	(3)	(4)
	aem	aem	rem	rem
big4n2	0.014 (0.650)	0.009 (0.414)	0.057** (2.885)	0.050** (2.282)
big4n1	0.031 (0.719)	0.023 (0.542)	0.119** (2.633)	0.107** (2.463)
big4		-0.043*** (-3.065)		-0.057*** (-2.985)
size_mcap	0.007 (0.463)	0.010 (0.678)	-0.007 (-0.161)	-0.002 (-0.060)
dsales	0.001 (1.367)	0.001 (1.383)	-0.010** (-2.209)	-0.010** (-2.179)
lev	-0.431*** (-5.344)	-0.430*** (-5.359)	0.125 (1.091)	0.126 (1.111)
lage	-0.022 (-0.284)	-0.018 (-0.222)	0.093 (0.621)	0.100 (0.672)
roa	-0.005 (-0.206)	-0.005 (-0.212)	0.071 (0.654)	0.071 (0.652)
mb	-0.002 (-0.374)	-0.003 (-0.491)	-0.020 (-1.404)	-0.021 (-1.434)
cashholding	-0.271* (-1.917)	-0.282* (-2.067)	0.474 (1.053)	0.458 (1.026)
N	2495	2495	2489	2489
adj. R-sq	0.550	0.551	0.346	0.346

Notes: t statistics in parentheses. \* $p < 0.10$ , \*\* $p < 0.05$  and \*\*\* $p < 0.01$ .

**Table 5. Regression results post change in Big 4 auditors**

	(1)	(2)	(3)	(4)
	aem	aem	rem	rem
big4		-0.045** (-2.783)		-0.072*** (-3.342)
big4p1	-0.030 (-1.432)	-0.025 (-1.244)	0.013 (0.494)	0.021 (0.780)
big4p2	-0.000 (-0.014)	0.007 (0.436)	-0.057 (-1.469)	-0.046 (-1.107)
size_mcap	0.007 (0.472)	0.010 (0.685)	-0.006 (-0.160)	-0.001 (-0.033)
dsales	0.001 (1.383)	0.001 (1.411)	-0.010** (-2.185)	-0.010** (-2.146)
lev	-0.431*** (-5.365)	-0.431*** (-5.359)	0.139 (1.206)	0.140 (1.227)
lage	-0.022 (-0.276)	-0.018 (-0.220)	0.095 (0.627)	0.103 (0.688)
roa	-0.005	-0.005	0.069	0.069

(Continued)

**Table 5. (Continued)**

	(1)	(2)	(3)	(4)
	(-0.209)	(-0.214)	(0.637)	(0.636)
mb	-0.003	-0.003	-0.021	-0.021
	(-0.427)	(-0.537)	(-1.457)	(-1.484)
cashholding	-0.268*	-0.281*	0.488	0.467
	(-1.887)	(-2.052)	(1.099)	(1.062)
N	2495	2495	2489	2489
adj. R-sq	0.550	0.551	0.345	0.345

Notes: t statistics in parentheses. \*p < 0.10, \*\*p < 0.05 and \*\*\*p < 0.01.

**Table 6. Robustness check using different measures of earning management**

	(1)	(2)	(3)	(4)
	aem	aem	aem	aem
big4	-0.039**	-0.052***	-0.038**	-0.046**
	(-2.753)	(-2.955)	(-2.525)	(-2.610)
size_mcap		0.030		0.025
		(1.716)		(1.442)
dsales		0.001		0.001
		(0.709)		(0.585)
lev		-0.216**		-0.243***
		(-2.878)		(-3.633)
lage		-0.041		-0.041
		(-0.507)		(-0.498)
roa		0.000		0.001
		(0.007)		(0.046)
mb		-0.003		-0.003
		(-0.510)		(-0.715)
cashholding		-0.286*		-0.293*
		(-2.065)		(-2.131)
N	2548	2481	2501	2475
adj. R-sq	0.436	0.467	0.461	0.472

Notes: t statistics in parentheses. \*p < 0.10, \*\*p < 0.05 and \*\*\*p < 0.01

model. The impact is presented in Table 6 columns (1) and (2) for the modified Jones model and in columns (3) and (4) for the Kothari model. All four coefficients related to *big4* are statistically negative, revealing that Big 4 reduces earning management. These findings coincide with those showed before.

Overall, the study confirms the role of Big 4 auditors in controlling earning management in auditing years, especially real earning management which is usually employed due to its difficulty in detection and exempt from regulations. Therefore, auditing is associated with earning management as well as financial reporting quality of listed firms in Vietnam. Big 4 involvement reduces accrual and real earning management, even after controlling for the difference between treatment and control group before being audited by Big 4.

## 5. Conclusion

In this study, we explore the role of auditor's reputation on reporting quality which is represented by accrual earning management and real earning management of listed companies in Vietnam stock exchange. Using the dataset of about 300 companies during 2013–2020, the study shows that Big 4 is associated with lower level of both accrual and real earning management. Moreover, examining the accounting quality years before being audited by Big 4 shows that firms tend to manipulate real earning management due to the fact that REM does not violate any rules or regulations. However, the inclusion of Big 4 reduces the real and accrual earning manipulation on auditing year.

There could be some merits to look at the auditor reputation on Big 4 or non-Big 4 to infer the reporting quality of earning. Investors can look at the auditor reputation to get insight into the financial reporting quality before making decisions. The Government administration can employ this result to revise the quality control system of auditing in Vietnam. Vietnamese audit firms are less competitive with Big 4 in terms of financial resources, professional supports from their global organization as well as technical competence. The administration therefore should monitor auditing activities of both Big 4 and non-Big 4 firms to ensure their compliance with auditing regulations. Shareholders can select reputational auditing firms and develop corporate governance system to achieve the long-term success of the firm.

However, some potential limitations remain. For example, the relationship between auditor's reputation and earning management can be examined at industry level considering unique characteristics of each industry. Audit fee and auditor rotation can be considered to have further look into the impact of auditor on earning management. Last but not least, other measures of financial reporting quality can be considered rather than earning management measurement.

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### Originality

This study contributes to the literature by examining impact of auditors' reputation on both accrual and real earning management using Vietnam-based evidence.

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