Accounting Analysis Journal

https://journal.unnes.ac.id/sju/index.php/aaj

Do Chief Audit Executives Able to Influence Real Earnings Management Practices? Evidence from Indonesia

Taufiq [1]✉

[1]*Department of Accounting, Faculty of Economics and Business, Universitas Indonesia, Indonesia*
[1]*Inspectorate, Badan Riset dan Inovasi Nasional, Indonesia*

ARTICLE INFO

Article History:
Submitted February 23rd, 2023
Revised June 12th, 2023
Accepted September 12th, 2023
Published September 30th, 2023

Keywords:
Chief Audit Executive, Financial Expertise, Tenure, Real Earnings Management

ABSTRACT

Purpose : This study aims to investigate the relationship between financial expertise and tenure of the Chief Audit Executive [CAE] on real earnings management [REM] practices
Method : This study uses a sample of 797 observations from companies in the manufacturing sector in Indonesia during the period 2012 – 2019. For data analysis, regression of feasible generalized least squares was used. Data related to financial expertise and tenure of CAE were manually collected from the annual report and financial data was obtained from Thomson-Reuters Database.
Findings : The results of this study indicate that CAE with better financial expertise is associated with lower REM. Conversely, this study also indicates that CAE tenure has an association with higher REM. This result is robust by using an alternative REM measurement. By breaking down the indicators of CAE's financial expertise, namely CAE's certification, experience in financial positions within/inside the company or outside the company, the results show that CAE certification has the largest effect on REM.
Novelty : This study contributes to the real earnings management and internal audit literature by demonstrating the importance of attributes possessed by CAEs as leaders of the internal audit function in mitigating REM practices.

INTRODUCTION

Research related to REM has recently received much attention. Since the implementation of the Sarbanes-Oxley Act and the adoption of IFRS, companies have shifted to applying earnings management through operational activity manipulation [REM] rather than through accrual-based earnings management [AEM] (Chowdhury & Eliwa, 2021; Cohen et al., 2008; Lenard et al., 2016; Rennekamp et al., 2019). One of the reasons REM is used so extensively by managers is due to the low possibility of such acts being identified by external auditors. This is especially significant when severe restrictions prohibit accrual earnings management methods and high audit quality (Chi et al., 2011; Cohen et al., 2008; Graham et al., 2005).

REM practices are increasingly interesting to discuss because external auditors, who are expected to detect and prevent opportunistic behavior from managers, seem unable to do much (Commerford et al., 2016). Research by Chowdhury and Eliwa (2021) shows that REM practices are outside the limited scope of external auditing and the absence of audit standards to detect REM. When faced with REM practices, external auditors will react by increasing audit fees (Choi et al., 2016). Even in high REM manipulation, auditors may react by resigning from engagement (Kim & Park, 2014).

Given the nature, REM techniques are operational manipulation practices that include establishing the number of sales, overproduction, and the amount of discretionary spending. As a result, it is significantly easier for the internal audit function to identify these practices compared to external audits. The internal audit function is involved in a wide range of audit operations that not only focus on finance/accounting but also audits that focus on enhancing operational performance and efficiency (Burton et al., 2012; Jiang et al., 2020). Several earlier studies (Bills et al., 2020; Carcello et al., 2020; Jiang et al., 2020) have shown an association between internal audit function

* *E-mail: taufiq11@ui.ac.id*
Address: Jl. Prof. Dr. Sumitro Djojohadikusumo UI Depok 16424, Indonesia

DOI 10.15294/aaj.v12i1.66585 p-ISSN 2252-6765 e-ISSN 2502-6216

and decreased operational risk. Furthermore, the internal audit function benefits from being involved in managers' everyday work and is likelier to detect REM (Ghaleb et al., 2020). Based on these justifications, earlier research has demonstrated a negative relationship between REM with investment, in-house sourcing, and outsourcing internal audit services to firms with firm-specific knowledge (Baatwah et al., 2021; Ghaleb et al., 2020). In contrast to prior research, this study focuses on the role of the Chief Audit Executive [CAE] as the person in charge of internal auditing, as well as an influential position in sustaining the effectiveness and independence of the internal audit department.

As the head of internal audit, CAEs are responsible for the routines of the internal audit function within the company. The characteristics possessed by CAEs will affect how they manage their function (Dal Mas & Barac, 2018; Sarens et al., 2009). This argument is consistent with Hambrick and Mason (1984) upper-echelon theory, which states that the outcome of an organization is a strategic choice and performance that can be partly predicted through the background characteristics of the leader. One of the characteristics that can drive the role of CAEs as a supervisory function is their expertise in finance. This research argues that CAEs with finance expertise are better at identifying manipulation and assessing risk fraud, particularly concerning finance and internal control. In addition, CAEs with finance expertise can provide better information for audit committees (Sarens et al., 2009) and assistance for external auditors (Wood et al., 2008). This argument is supported by the results of research by Lobo et al. (2022), which shows that replacing CAEs with lower financial expertise can affect the quality of financial statements and internal control. In addition, Zeng et al. (2021) also showed a negative relationship between the supervisory ability of the CAE and the likelihood of fraud. Therefore, this study predicts that CAEs with financial expertise have the opportunity to detect and mitigate REM practices through audit planning related to operational efficiency and effectiveness and focus on the possibility of fraud occurring. Based on these arguments, the first hypothesis proposed is:

H_1: CAE's financial expertise is negatively associated with REM

The CAE leads the internal audit function in managing assurance and advisory activities based on input from the audit committee and management. The CAE may conduct various audit programs and is not limited to financial aspects. Continued oversight by the same CAE can improve internal audit effectiveness, as the CAE better understands the company's business processes and characteristics. Thus, the longest tenure of the CAE will likely influence improving the quality of internal control over financial statements. Based on this argument, both Lobo et al. (2022) and Bills et al. (2020) state that continued supervision by the CAE will improve the quality of the company's internal control and impact the quality of the company's internal control quality of financial statements. Replacing the CAE will provide changes or disruptions to the system that the previous CAE has managed. The new CAE will need more time to understand how the company's business processes and how to formulate an audit universe to provide reasonable assurance that internal controls are adequate.

In contrast, research by Cho et al. (2019) shows that employee tenure is positively associated with upward earnings management through reducing discretionary expenses and overproduction. They suggest that employees' participation in REM will build credibility in the capital market by signaling better performance. Another research by Chi et al. (2011) also found that longer auditor tenure is associated with greater REM in the context of external auditors. This study argues that the longer tenure of CAEs will affect the objectivity and independence of the internal audit function. CAEs who interact longer with management will have incentives that are aligned with management. This argument is in line with the experimental results of Norman et al. (2010), which show a decrease in the level of fraud risk assessment if the reporting line goes directly to the audit committee due to internal auditors' concerns about the impact that management will obtain. Even Roussy (2013) indicated that the internal audit's role could be a management protector, thus indicating the nuances of "gray independence" from the internal audit function. Therefore, this study predicts that the longer tenure of CAEs will affect their incentives to monitor REM practices. Based on these arguments, the next hypothesis proposed is as follows:

H_2: CAE's tenure is positively associated with REM

RESEARCH METHODS

This study uses all data of manufacturing companies listed on the Indonesia Stock Exchange. The industry classification uses the classification of the Jakarta Stock Industrial Classification [JASICA] for companies listed on the Indonesia Stock Exchange. Based on JASICA, the manufacturing industry comprises basic & chemical industry groups, miscellaneous industries, and consumer goods industry. Companies that are delisted, with incomplete data, and do not disclose internal audit head information are excluded from the sample. So that the final sample of observation companies from 2012-2019 is 135 companies with unbalanced panel data, so the total observations are 797 company-years. Unbalanced panel data is obtained because some companies do not have or do not disclose the profile of the head of internal audit in a particular year. Table 1 shows the details of the observation sample selection.

The sample selection focuses on manufacturing firms because REM occurs mainly in firms in the manufacturing industry (Roychowdhury, 2006). Thomson Reuters Datastream was used to obtain data for REM and control variables. Data related to financial expertise and CAE tenure were manually collected from annual reports in each

Table 1. Sample selection

Sample selection	Company-Years
All listed manufacturing companies based on JASICA classification	1530
Unavailable data to calculate REM for 2011-2019	(727)
Unavailable data for 2012-2019 CAE information	(6)
The final sample	797

Source: The Processed Primary Data [2022]

firm-year. If the information from the annual report is limited, it is continued through searching information on search sites, LinkedIn, or annual reports outside the observation year.

The REM dependent variable uses an aggregate estimate of real earnings management from Roychowdhury (2006) with a cross-sectional model for each industry and year. Roychowdhury's (2006) model implies that companies perform REM activities through abnormal operating cash flow [ACFO], abnormal production costs [APRO], and abnormal discretionary expenses such as advertising, sales, administration, and general and R&D expenses [ADIS]. Like previous studies, ACFO, APRO, and ADIS are measured by obtaining the actual value of each item minus the normal value calculated from the residual value of equations {1}-{3} as follows:

$$CFO_{it} / A_{i,t-1} = \beta_{1t} [1 / A_{i,t-1}] + \beta_{2t} [S_{i,t} / A_{i,t-1}] + \beta_{3t} [\Delta S_{i,t} / A_{i,t-1}] + \varepsilon_{i,t} \quad \text{.....1}$$

$$PROit / Ai,t-1 = \beta 1t [1 / Ai,t-1] + \beta 2t [Si,t / Ai,t-1] + \beta 3t [\Delta Si,t / Ai,t-1] + \beta 4t [\Delta Si,t-1 / Ai,t-1] + \varepsilon i,t \quad .2$$

$$DISit / Ai,t-1 = \beta 1t [1 / Ai,t-1] + \beta 2t [Si,t-1 / Ai,t-1] + \varepsilon i,t \quad \text{.....3}$$

where CFOit is operating cash flow; Ait-1 is the previous period's total assets; Sit is annual sales; Sit is the previous year's sales; ΔSit is the change in sales from the previous year; ΔSit-1 is the t-1 change in sales; PROit is the sum of changes in inventory and cost of goods sold; DISit is the sum of selling, general and administrative expenses.

Following Cohen & Zarowin (2010), this study also uses an aggregate measure of REM by summing the residual values of the above three equations shown in equation {4}. Since ACFO and ADIS have the opposite direction interpretation to APRO, ADIS is multiplied by [-1] first so that the higher APRO and ADIS values also indicate high REM through overproduction and cutting discretionary expenses to manipulate earnings. Then the three are summed up to obtain the total REM, which is denoted by REM. Following Cohen and Zarowin (2010), Zang (2011) and Harris et al. (2019) imply that a higher REM value indicates higher REM practices.

$$REM = ACFO^{*}-1 + APRO + ADIS^{*}-1 \quad \text{.....4}$$

The independent variables used are financial expertise and CAE tenure. CAE financial expertise follows Lobo et al. [2022] based on three criteria: [1] whether the CAE has CIA, CPA, CA, and QIA certifications [Certification]; [2] whether the CAE has served in a finance or accounting unit such as finance, accounting, or internal audit director at another firm or manager at a public accounting firm [Outside Leader]; [3] whether the CAE works in an accounting or finance unit within the firm [Inside Leader]. Each criterion was assigned a score of 1 for each criterion the CAE meets and 0 otherwise. The scores then add up for the three criteria to measure the CAE's financial expertise [CAE_finqual]. The following independent variable was the tenure of the CAE as measured by the natural logarithm of the number of years the CAE served during the observation period.

This study uses control variables for company financial conditions and external audit quality as predictors of REM. Leverage [LEV] was a significant factor affecting REM, where managers will try to achieve a certain level of profit influenced by high debt levels (Anagnostopoulou & Tsekrekos, 2016). Following Roychowdhury (2006), ROA is also used to control firm performance, which impacts REM. Previous research shows that the sales growth rate [SALGRO] is positively correlated with REM (Lyu et al., 2014), therefore several previous studies related to REM use SALGRO as one of the control variables (Ghaleb et al., 2020; Li et al., 2021). Capital intensity [CAP] is also a determinant of REM, where companies with high capital intensity are less likely to manage earnings (Khalil et al., 2022). Company losses [LOSS] also determine earnings management (Li et al., 2021) . Previous research shows a trade-off between REM and AEM (Chowdhury & Eliwa, 2021; Cohen et al., 2008; Lenard et al., 2016; Rennekamp et al., 2019), the variable absolute value of discretionary accruals [ABDA] is included in the control variable. Lastly, audit quality with the BIG4 proxy negatively influenced accrual earnings management (Lin & Hwang, 2010). However, in the context of REM, it was only significant in discretionary expense manipulation and sales (Chowdhury & Eliwa, 2021). Table 2 provides an overview of the explanation of the variables. To test the effect of financial expertise and CAE tenure on REM using the model 5:

$$REMit = \beta_0 + \beta_1 CAE\_finqualit + \beta_2 CAE\_tenit + \beta_3 LEVit + \beta_4 ROAit + \beta_5 SGit + \beta_6 CAPit + \beta_7 LOSSit + \beta_8 ABDAit + \beta_9 BIG4it + \varepsilon \quad \text{.....5}$$

From model 5, the focus of H1 analysis is the coefficient 1, which is supposed to be negative to suggest that CAE financial expertise is associated with lower aggregate REM. Based on the formulation of the hypothesis wit-

Table 2. Variable's definitions

Variable	Description of Variables
REM	The sum of the standardized three real earnings management proxies: abnormal of cash flows from operation [ACFO], abnormal production [APRO] and abnormal discretionary expenditures [ADIS] (Cohen et al., 2008; Cohen & Zarowin, 2010; Harris et al., 2019; Huang et al., 2019; Zang, 2011).
REM1	The sum abnormal discretionary expenses [ADIS] by negative one and add it to abnormal production [APRO] (Cohen & Zarowin, 2010; Zang, 2011).
REM2	The sum abnormal discretionary expenses [ADIS] by negative one and add it to abnormal cash flows from operations [ACFO] (Cohen & Zarowin, 2010; Zang, 2011).
CAE_certif	Indicator variable that equals 1 if the CAE is CPA, CIA, CA, QIA, and 0 otherwise (Lobo et al., 2022).
Outside Leader	Indicator variable that equals 1 if the CAE was person-in-charge of the finance or the accounting group or manager of an auditing firm, and 0 otherwise (Lobo et al., 2022).
Inside Leader	Indicator variable that equals 1 if the CAE worked at the finance or accounting department of the firm, and 0 otherwise (Lobo et al., 2022).
CAE finqual	The level of financial expertise of the CAE, calculated as sum of CAE certif, Outside Leader, and Inside Leader (Lobo et al., 2022).
CAE ten	Natural logarithm of the number of years of the CAE served during the observation period.
LEV	The ratio of total debt to total assets.
ROA	Return on Asset.
SG	The difference between the current year's sales and the preceding year's sales over the preceding year's.
CAP	Capital assets intensity measured as net property, plant and equipment divided by total assets.
LOSS	Indicator variable that equals 1 if the company reports losses during a year, 0 otherwise.
BIG4	Indicator variable that equals 1 if the auditor is one of the big 4 accounting firms.
ABDA	Accruals earnings management modified by Dechow et al. (1995).

hout direction, the significant coefficient 2 is the focus of study for H2.

A series of diagnostic tests were conducted to investigate estimation problems such as normality, heteroscedasticity, and multicollinearity. Firstly, the winsorization of all variables with extreme values at 1 and 5% top and bottom was done to mitigate outliers. The results of the heteroscedasticity test with the modified Wald test showed an indication of heteroscedasticity. An autocorrelation test was also conducted, and the results confirmed these results. To overcome these two problems, researchers use feasible generalised least square [FGLS] as a precise and more reliable estimator in the presence of autocorrelation and heteroscedasticity (Al-Duais et al., 2021; Ghaleb et al., 2020; Wooldridge, 2010).

RESULTS AND DISCUSSIONS

The descriptive statistics of the research variables are summarised in table 3. The mean value of REM is 0.000 as it is the standardized residual value as reported by Cohen et al. (2008), mean value of REM indicates manufacturing companies listed on the Indonesia Stock Exchange for upward and downward REM. The financial expert CAE has a mean [median] value of 1.120 [0.728], where the CAE has at least served in the finance or accounting unit within the company. The tenure of CAEs ranged from 5 years, and some CAEs held the position of CAE for a long period up to 31 years during the observation time. Table 4 reports the pairwise correlation coefficients between the dependent variable and all predictor variables. As predicted, CAE financial expertise is negatively correlated with REM. CAE tenure, LEV, LOSS, and ABDA are positively correlated with REM. ROA, CAP, and SG are negatively correlated with REM providing preliminary evidence of incentive reduction determinants for REM. BIG4 is negatively correlated with REM. The coefficients range from 0 to 0.70, so there is no multicollinearity issue in the estimation. In addition, the authors also diagnose multicollinearity in the regressions using variance inflation factor [VIF] for all variables shown in Table 5. The highest VIF in the regressions is around 1.68, these results indicate that multicollinearity is not a problem in this model.

Main Analysis

Table 6 reports the results of FGLS regressions between CAE financial expertise and tenure and REM by separately testing each independent variable in column 1 and column 2 and jointly testing in column 3. As expected, CAE_finqual is significantly negatively associated at the 1% level with REM in both separate and joint tests. This

Table 3. Descriptive statistics of variables

Variable	Mean	SD	Median	Minimum	Maximum
REM	0.000	2.331	0.036	-8.148	11.942
CAE_finqual	1.120	0.728	1	0	3
CAE_Title	0.161	0.491	0	0	1
CAE_Inside	0.568	0.495	1	0	1
CAE_Outside	0.407	0.491	0	0	1
CAE_ten	5.176	4.036	4	1	31
LEV	0.474	0.200	0.491	0.144	0.843
ROA	0.064	0.111	0.043	-0.170	0.555
SG	0.677	0.195	0.058	-0.500	0.822
CAP	0.104	0.118	0.063	0.002	0.630
LOSS	0.203	0.403	0	0	1
ABDA	0.005	0.009	0.002	0.000	0.119
BIG4	0.410	0.492	0	1	2

Source: The Processed Primary Data (2022)

result supports H1 that the financial expertise of CAEs has a negative association with REM practices. This result extends the findings of Ghaleb et al. (2020) that not only is internal audit investment in the firm negatively associated with REM, and appointing CAEs with better financial expertise can direct internal audit practices to mitigate fraud risk. This result also supports the findings of Lobo et al. (2022) regarding the importance of financial expertise for CAEs in maintaining the quality of financial statements and internal controls.

The results of further analysis of CAE's tenure, CAE_ten has a positive and significant association with REM at the 1% level. This result supports H2 with a positive direction, indicating that longer CAE tenure can affect CAE objectivity and independence in mitigating REM. This result is in line with the findings of Chi et al. (2011) that auditors' tenure within a specific period can damage their independence. Roussy (2013) suggests that internal auditors can be in a position of "grey independence" especially if management decisions are framed in the context of better company interests. Cho et al. (2019) found that employees can participate in REM to build the company's credibility in the capital market by signaling better performance. The analysis of the control variables shows that LEV has a significant effect at the 1% level on the high REM for all models. These results are consistent with Anagnostopoulou and Tsekrekos (2016), who show that the level of LEV affects the incentive to REM to show better performance. ROA [LOSS] has a negative and significant coefficient indicating that companies that perform well [poorly] are less likely to perform REM. ABDA has a positive and significant coefficient indicating in the context of public companies in Indonesia that they perform both earnings management practices. BIG4 is only marginally significant in column 1, and none of the subsequent models are significant. This result suggests the inability of BIG4 to mitigate REM (Choi et al., 2016; Chowdhury & Eliwa, 2021; Kim & Park, 2014).

Alternative REM measurement

The primary analysis follows Cohen et al. (2008) using aggregate measures from Roychowdhury (2006) three measurement models. However, according to Cohen and Zarowin (2010) and Zang (2011), adding APRO to the

Table 4. Correlation matrix

Variables	REM	CAE_finqual	CAE_ten	LEV	ROA	CAP	SG	LOSS	ABDA	BIG4
REM	1									
CAE_finqual	-0.15***	1								
CAE_ten	0.09***	-0.09***	1							
LEV	0.22***	-0.08**	-0.01	1						
ROA	-0.43***	0.08**	-0.00	-0.34***	1					
CAP	-0.20***	0.10***	0.14***	-0.51***	0.32***	1				
SG	-0.07**	0.01	0.00	0.07**	0.18***	-0.02	1			
LOSS	0.18***	-0.09**	-0.02	0.27***	-0.52***	-0.23***	-0.26***	1		
ABDA	0.08**	-0.00	0.02	0.12***	0.02	-0.02	0.08**	-0.01	1	
BIG4	-0.13***	0.27***	-0.03	-0.12***	0.26***	0.01	0.00	0.01	-0.10***	1

Notes: ***significant at 0.01 level; **significant at 0.05 level; *significant at 0.10 level

Source: The Processed Primary Data (2022)

Table 5. Variance Inflaction Factor [VIF] – test of multicollinearity

Variables	VIF
CAE_finqual	1.12
CAE_ten	1.04
LEV	1.50
ROA	1.68
CAP	1.47
SG	1.11
LOSS	1.52
ABDA	1.04
BIG4	1.24

ACFO and ADIS calculations may result in the duplication of activities. APRO is considered part of the calculation in ACFO. As a result, Cohen and Zarowin (2010) and Zang (2011) suggest that the value of the three residual models be divided into two measurements, namely REM1 and REM2. REM1 is the sum of APRO and ADIS, and REM2 is the sum of ADIS and ACFO.

Table 7 shows the results of the analysis. The results show consistency with the results of the REM aggregate measurement, which indicates that CAE financial expertise is negatively associated with REM, while CAE tenure is positively associated with CAE. The control variables also show consistent results, although there are differences in significance for ABDA and BIG4.

Regression results by breaking down CAE's financial expertise indicator

The further analysis attempts to break down the indicators of CAE financial expertise, namely CAE's professional certification [Certif], having served in a financial position within [Inside Leader] or outside the company [Outside Leader] . Each indicator illustrates how the attributes of CAEs relate to REM practices. As previously argued, the competence of the CAE, based on the degree or certification obtained, can influence the internal audit program he/she manages. Abdolmohammadi (2009) found a positive association between internal audit certification on conformance of internal audit standard. Islam et al. (2018) found an association between IT certification by CAEs with cybersecurity audit practices. Professional certification also indicates a commitment to professional ethics. As a result, the authors expect that CAE certification has a great influence in mitigating REM practices. CAE's experience as inside leader within company also support the idea that CAEs who have been involved in the company's operational activities for a long time have more sensitivity to identifying fraudulent behavior. For people from outside companies, it may still be difficult to understand the company's business processes and still have an

Table 6. CAE's financial expertise and CAE's tenure in REM

	Column 1	Column 2	Column 3
CAE_finqual	-0.431***		-0.401***
CAE_ten		0.286***	0.245***
LEV	1.294***	1.176***	1.209***
ROA	-11.106***	-10.676***	-10.951***
SG	-0.423	-0.417	-0.423
CAP	-0.247	-0.888	-0.562
LOSS	-0.750***	-0.643***	-0.732***
ABDA	14.965*	13.507*	14.636*
BIG4	0.270*	0.076	0.257
Constant	0.424	-0.076	0.115
Year dummies	YES	YES	YES
Industry dummies	YES	YES	YES
N	797	797	797
Waldh chi^2	280.16	268.69	289.05
Prob > chi^2	0.0000	0.0000	0.0000

Notes: ***significant at 0.01 level; **significant at 0.05 level; *significant at 0.10 level

Source: The Processed Primary Data (2022)

Table 7. CAE's financial expertise and CAE's tenure on alternatives REM measurement

	REM 1	REM 2
CAE_finqual	-0.354***	-0.261***
CAE_ten	0.167**	0.166***
LEV	1.112***	0.839***
ROA	-5.239***	-5.743***
SG	-0.662*	-0.594**
CAP	-0.496	-0.539
LOSS	-0.409**	-0.412***
ABDA	6.201	16.938***
BIG4	0.441***	0.141
Constant	-0.303	-0.112
Year dummies	YES	YES
Industry dummies	YES	YES
N	797	797
Waldh chi^2	118.42	244.01
Prob > chi^2	0.0000	0.0000

Notes: ***significant at 0.01 level; **significant at 0.05 level; *significant at 0.10 level

Source: The Processed Primary Data (2022)

information disadvantage like external auditors, but still have better independence and objectivity. Hoitash and Mkrtchyan (2022) and Chen et al. (2017) have shown the importance of access to internal information to mitigate REM practices.

Table 8 shows the results of the analysis. As expected, the coefficients of Certif are the largest at -0.612 [column1] and -0.623 [column4], followed by Inside Leader with coefficients of -0.404 [column1] and -0.516 [column4], which both have significance at the 1% level. Outside Leader, although it has a negative coefficient, it is not significant. The results of the other variables remain significant. These results indicate that the professional certification of CAEs binds them to the professional code of ethics so that they strive to maintain their credibility by not

Table 8. Relationship between CAE's financial expertise indicators and REM

	Column 1	Column 2	Column 3	Column 4
Certif	-0.612***			-0.623***
Inside Leader		-0.404***		-0.516***
Outside Leader			-0.115	-0.254
CAE_ten	0.266***	0.253***	0.288***	0.228***
LEV	1.208***	1.204***	1.172***	1.236***
ROA	-10.718***	-10.507***	-10.798***	-10.772***
SG	-0.384	-0.477	-0.410	-0.444
CAP	-0.854	-0.867	-0.812	-0.659
LOSS	-0.674***	-0.670***	-0.653***	-0.733***
ABDA	13.423*	13.141*	13.947*	13.923*
BIG4	0.198	0.107	0.088	0.268*
Constant	-0.264	-0.016	-0.233	0.144
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
N	797	797	797	797
Waldh chi^2	277.95	278.83	269.49	293.17
Prob > chi^2	0.0000	0.0000	0.0000	0.0000

Notes: ***significant at 0.01 level; **significant at 0.05 level; *significant at 0.10 level

Source: The Processed Primary Data (2022)

engaging in manipulative practices such as REM. CAEs who have served in the company also show the importance of understanding the company to plan an appropriate audit program to mitigate REM.

CONCLUSIONS

Research related to REM began to emerge when companies were indicated to have switched from AEM to REM practices. REM is considered to have a greater chance of success because it is difficult to detect through accounting standards or from external auditors because it is camouflaged in the form of corporate strategy. This study aims to examine the financial expertise of CAEs and CAEs tenure toward REM practices. In practice, CAEs have various advantages in obtaining information from the company's operational activities. They can develop various types of supervision programs according to suggestions from management and the audit committee. The results of this study indicate that CAE's financial expertise is negatively associated with REM practices. Meanwhile, CAE's tenure is positively associated with REM practices. These results are robust to the use of alternative REM measures as suggested by Cohen and Zarowin Cohen and Zarowin (2010) and Zang (2011). By separately examining indicators of CAE financial expertise, this study shows that professional certification of CAEs and experience of serving in the finance department in the firm have associations with lower REM.

The results of this study imply the importance of encouraging CAEs to have qualifications, especially professional certification. A professional certification binds CAEs to the internal audit code of ethics so that they can provide more independent and objective supervision. Although it is not yet regulated, this study shows the signs of establishing CAE tenure that can be effective. Agree with Lobo et al. (2022) that CAEs need continuity in office to maintain the quality of internal controls and financial statements. However, it is necessary to anticipate the career concerns of CAEs as they approach retirement age and how the CAEs' attachment to management during the CAE's tenure may affect their independence and objectivity.

Finally, the authors realize that this study has various limitations that can be an opportunity for future research. First, the sample is used in manufacturing companies, so it cannot be generalized to the entire sector. Generalization can be made only in the same sector and institutional setting, where Indonesia has required an internal audit function for public companies with the flexibility of the internal audit function even if one internal auditor only fills it. Second, this study did not treat endogeneity, so it is necessary to be careful in interpreting the results of this study. Third, this study cannot control the internal audit variable due to the limited data that can be obtained. Previous research can identify the institutional setting even if it can use exogenous events that are not endogenous to analyze the causal effect of CAE on REM.

REFERENCES

Abdolmohammadi, M. (2009). Factors Associated with the Use of and Compliance with the IIA Standards: A Study of Anglo Culture CAEs. International Journal of Auditing, 13, 27-42.

Al-Duais, S. D., Malek, M., Abdul Hamid, M. A., & Almasawa, A. M. (2021). Ownership structure and real earnings management: evidence from an emerging market. Journal of Accounting in Emerging Economies, ahead-of-print(ahead-of-print). https://doi.org/10.1108/jaee-01-2021-0008

Anagnostopoulou, S. C., & Tsekrekos, A. E. (2016). The effect of financial leverage on real and accrual-based earnings management. Accounting and Business Research, 47(2), 191-236. https://doi.org/10.1080/00014788.2016.1204217

Baatwah, S. R., Omer, W. K., & Aljaaidi, K. S. (2021). Outsourced internal audit function and real earnings management: The role of industry and firm expertise of external providers. International Journal of Auditing, 25(1), 206-232. https://doi.org/10.1111/ijau.12217

Bills, K. L., Huang, H.-W., Lin, Y.-H., & Wood, D. A. (2020). Chief Audit Executive Turnover Market Reactions, Financial Reporting Quality, and Audit Risk Assessment. Working Paper.

Burton, F. G., Emett, S. A., Simon, C. A., & Wood, D. A. (2012). Corporate Managers' Reliance on Internal Auditor Recommendations. AUDITING: A Journal of Practice & Theory, 31(2), 151-166. https://doi.org/10.2308/ajpt-10234

Carcello, J. V., Eulerich, M., Masli, A., & Wood, D. A. (2020). Are Internal Audits Associated with Reductions in Perceived Risk? AUDITING: A Journal of Practice & Theory, 39(3), 55-73. https://doi.org/10.2308/ajpt-19-036

Chen, J. Z., Cussatt, M., & Gunny, K. A. (2017). When Are Outside Directors More Effective Monitors? Evidence From Real Activities Manipulation. Journal of Accounting, Auditing & Finance, 35(1), 26-52. https://doi.org/10.1177/0148558x17692691

Chi, W., Lisic, L. L., & Pevzner, M. (2011). Is Enhanced Audit Quality Associated with Greater Real Earnings Management? Accounting Horizons, 25(2), 315-335. https://doi.org/10.2308/acch-10025

Cho, H., Choi, S., & Kwon, D.-H. (2019). Employee tenure and earnings management through real activities manipulation. Asia-Pacific Journal of Accounting & Economics, 28(3), 387-410. https://doi.org/10.1080/16081625.2019.1694953

Choi, A., Sohn, B. C., & Yuen, D. (2016). Do auditors care about real earnings management in their audit fee decisions? Asia-Pacific Journal of Accounting & Economics, 25(1-2), 21-41. https://doi.org/10.1080/16081625.2016.1231580

Chowdhury, S. N., & Eliwa, Y. (2021). The impact of audit quality on real earnings management in the UK context. International Journal of Accounting & Information Management, 29(3), 368-391. https://doi.org/10.1108/ijaim-10-2020-0156

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre- and post-sarbanes-oxley periods. The Accounting Review, 83(3), 757-787.

Cohen, D. A., & Zarowin, P. (2010). Accrual-based and real earnings management activities around seasoned equity offerings. Journal of Accounting and Economics, 50(1), 2-19. https://doi.org/10.1016/j.jacceco.2010.01.002

Commerford, B. P., Hermanson, D. R., Houston, R. W., & Peters, M. F. (2016). Real Earnings Management: A Threat to Audi-

tor Comfort? AUDITING: A Journal of Practice & Theory, 35(4), 39-56. https://doi.org/10.2308/ajpt-51405
Dal Mas, L. O., & Barac, K. (2018). The influence of the chief audit executive's leadership style on factors related to internal audit effectiveness. Managerial Auditing Journal, 33(8/9), 807-835. https://doi.org/10.1108/maj-12-2017-1741
Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting Earnings Management. The Accounting Review, 70(2), 193-225.
Ghaleb, B. A. A., Kamardin, H., & Al-Qadasi, A. A. (2020). Internal audit function and real earnings management practices in an emerging market [Article]. Meditari Accountancy Research, 28(6), 1209-1230. https://doi.org/10.1108/MEDAR-02-2020-0713
Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. Journal of Accounting and Economics, 40(1-3), 3-73. https://doi.org/10.1016/j.jacceco.2005.01.002
Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. Academy of Management Review, 9(2), 193-206.
Harris, O., Karl, J. B., & Lawrence, E. (2019). CEO compensation and earnings management: Does gender really matters? Journal of Business Research, 98, 1-14. https://doi.org/10.1016/j.jbusres.2019.01.013
Hoitash, U., & Mkrtchyan, A. (2022). Internal governance and outside directors' connections to non-director executives. Journal of Accounting and Economics, 73(1). https://doi.org/10.1016/j.jacceco.2021.101436
Huang, S., Roychowdhury, S., & Sletten, E. (2019). Does Litigation Deter or Encourage Real Earnings Management? The Accounting Review, 95(3), 251-278. https://doi.org/10.2308/accr-52589
Islam, M. S., Farah, N., & Stafford, T. F. (2018). Factors associated with security/cybersecurity audit by internal audit function. Managerial Auditing Journal, 33(4), 377-409. https://doi.org/10.1108/maj-07-2017-1595
Jiang, L., Messier, W. F., & Wood, D. A. (2020). The Association between Internal Audit Operations-Related Services and Firm Operating Performance. AUDITING: A Journal of Practice & Theory, 39(1), 101-124. https://doi.org/10.2308/ajpt-52565
Khalil, M., Harianto, S., & Guney, Y. (2022). Do political connections reduce earnings management? Review of Quantitative Finance and Accounting, 59(1), 273-310. https://doi.org/10.1007/s11156-022-01062-y
Kim, Y., & Park, M.-S. (2014). Real Activities Manipulation and Auditors Client Retention Decisions. The Accounting Review, 89.
Lenard, M. J., Petruska, K. A., Alam, P., & Yu, B. (2016). Internal control weaknesses and evidence of real activities manipulation. Advances in Accounting, 33, 47-58. https://doi.org/10.1016/j.adiac.2016.04.008
Li, X., Than, E. T., Ahmed, R., Ishaque, M., & Huynh, T. L. D. (2021). Gender diversity of boards and executives on real earnings management in the bull or bear period: Empirical evidence from China. International Journal of Finance & Economics. https://doi.org/10.1002/ijfe.2562
Lin, J. W., & Hwang, M. I. (2010). Audit Quality, Corporate Governance, and Earnings Management: A Meta-Analysis. International Journal of Auditing, 14(1), 57-77. https://doi.org/10.1111/j.1099-1123.2009.00403.x
Lobo, G. J., Lyu, M., Wang, B., & Zhang, J. H. (2022). Do Chief Audit Executives Matter? Evidence from Turnover Events [Article]. Auditing, 41(2), 165-190. https://doi.org/10.2308/AJPT-2020-112
Lyu, C., Yuen, D. C. Y., Zhang, X., & Zhang, N. (2014). The Impact of IFRS Adoption on Real Activities Manipulation: Evidence from China. The Journal of Applied Management Accounting Research, 12(2), 17-40.
Norman, C. S., Rose, A. M., & Rose, J. M. (2010). Internal audit reporting lines, fraud risk decomposition, and assessments of fraud risk. Accounting, Organizations and Society, 35(5), 546-557. https://doi.org/10.1016/j.aos.2009.12.003
Rennekamp, K., Rupar, K., & Seybert, N. (2019). Short Selling Pressure, Reporting Transparency, and the Use of Real and Accruals Earnings Management to Meet Benchmarks. Journal of Behavioral Finance, 21(2), 186-204. https://doi.org/10.1080/15427560.2019.1663853
Roussy, M. (2013). Internal auditors' roles: From watchdogs to helpers and protectors of the top manager. Critical Perspectives on Accounting, 24(7-8), 550-571. https://doi.org/10.1016/j.cpa.2013.08.004
Roychowdhury, S. (2006). Earnings management through real activities manipulation. Journal of Accounting and Economics, 42(3), 335-370. https://doi.org/10.1016/j.jacceco.2006.01.002
Sarens, G., De Beelde, I., & Everaert, P. (2009). Internal audit: A comfort provider to the audit committee. The British Accounting Review, 41(2), 90-106. https://doi.org/10.1016/j.bar.2009.02.002
Wood, D. A., Prawitt, D. F., & Glover, S. M. (2008). Internal Audit Sourcing Arrangement and the External Auditor's Reliance Decision. Contemporary Accounting Research, 25(1), 193-213. https://doi.org/10.1506/car.25.1.7
Wooldridge, J. M. (2010). Econometric Analysis of Cross Section and Panel Data (2nd ed.). MIT Press.
Zang, A. Y. (2011). Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management. The Accounting Review, 87(2), 675-703. https://doi.org/10.2308/accr-10196
Zeng, H., Yang, L., & Shi, J. (2021). Does the supervisory ability of internal audit executives affect the occurrence of corporate fraud? Evidence from small and medium-sized listed enterprises in China [Article]. International Journal of Accounting and Information Management, 29(1), 1-26. https://doi.org/10.1108/IJAIM-02-2020-0020