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External Financing, Earnings Management, and Audit Quality

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ABSTRACT

This study investigates the relationship between external financing and accrual earnings management (AEM). In examining this association, this study distinguishes external financing through debt and equity financing, which are more associated with AEM. In addition, this study also explores how audit quality moderates this relationship. This study employed a sample of non-financial companies from 2015 to 2019. We find that external financing is positively associated with AEM. This positive association is more pronounced with debt financing rather than equity financing. In addition, this study does not find that audit quality can mitigate AEM motivated by external and debt financing. Our results are robust after examining another EM measurement, real earnings management (REM).

Keywords:
Accrual earnings management, Audit quality, External financing, and Real earnings management

INTRODUCTION

Preparers may distort the financial information because they have a motivation to do so. Positive accounting theory (PAT) predicts that when preparers have the motivations of bonuses, debt covenant, and political costs, the qualitative characteristics of financial statements (i.e., faithful representation) may be distorted (Watts and Zimmerman, 1986, 1990). Further studies document that firms may distort the earnings quality to avoid loss (Burgstahler and Dichev, 1997). This distortion is identified as earnings management (EM), purposeful interventions in financial reports to earn private gains (Schipper, 1989). It has consequences, such as litigation, audit opinion, and market valuation (Dechow, Ge and Schrand, 2010).

Although the literature has investigated the debts as the determinants of EM for nearly four decades, recent research still investigates it in different fashions and settings. For example, EM is more (less) pervasive in firms with more (less) debts in emerging or developed countries (Cohen and Zarowin, 2010; Kothari, Mizik and Roychowdhury, 2016; Bui et al., 2022; Hong et al., 2023; Alsaadi, 2024). However, another studies report that creditors can constrain EM and managerial shirking because the creditors have the resources to tightly monitor and can serve as a mechanism of corporate governance (Naz and Sheikh, 2023; Chung, Joo and Kang, 2024). Furthermore, prior studies have built models that can predict that the accounting number-related covenants can provide incentives to managers to work harder if the accounting environment is strict, but cannot provide those if otherwise (Laux, 2022). We argue that the conflicting findings may be explained by the auditor quality. For example, although firms have higher debt, EM may be pervasive (not pervasive) if they are audited by (non) Big Four. In other words, the relationship between debt and EM depends on the audit quality.

Using international data, Zhang et al. (2020) develop new measures to capture the comparison between debt and equity financing to EM and find that the latter is more positively associated with triggering EM if compared to the former. However, their sample tends to be dominated by developed countries, and they do not consider audit quality, which may come into play to affect the association between external financing and EM. A different setting in Indonesia could provide different results since Indonesia remains weak in terms of regulatory enforcement and investor protection, potentially leading to differences in earnings management behavior (Habib et al., 2017). For example, PT Garuda Indonesia and its auditor (non-big four) have been sanctioned by regulators because they are engaging in AEM (OJK, 2019). After this, PT Garuda has increased its governance, such as hiring the Big Four to audit its financial reports in 2019. Therefore, we examine the practice of AEM in Indonesia, focusing on the motivation of external financing.

We contribute to the literature by comparing internal and external financing (debt and equity financing) in explaining the AEM and whether audit quality moderates this relationship. Prior studies have compared internal and external financing (debt and equity financing) in explaining the EM using data from 43 countries (Zhang et al., 2020), but their sample does not include Indonesia and does not investigate the factors that have the potential to alleviate the effect of external financing on EM. Prior studies find that debt financing (Alsaadi, 2024) and audit quality (Saleem and Alzoubi, 2018) are associated with EM. However, they focus on the direct effect of debt financing and audit quality on EM. Closely related to our study, prior studies explore the corporate governance in moderating the relationship between external financing and earnings management (Hong et al., 2023). However, their studies do not focus on the efficacy of audit quality in weakening the relationship between high debt and EM.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Financing and Earnings Management

Pecking order theory suggests that firms will tend to prefer internal financing to finance their investment opportunities using external financing (Myers & Majluf, 1984). This theory implies that market imperfections (information asymmetry) impose a higher cost of capital on firms that rely on external financing because the insider (managers) have higher knowledge about the projects that will be financed than outsiders (potential creditors and investors). Therefore, the cost of capital is lower in

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internal financing than external financing (Fazzari et al., 1988).

Earnings information will influence investors' perceptions of fundamental company performance (Ball and Brown, 1968; Barth, Li and McClure, 2023). As a result, firms issuing new equity are more likely to manage their reported earnings to increase their financing (Rangan, 1998; Cohen and Zarowin, 2010; Kothari, Mizik and Roychowdhury, 2016). Similarly, firms issuing debt will manage their earnings to decrease interest rates (Caton et al., 2011). Contracts between creditors and companies also provide incentives for insiders to engage in AEM (Watts and Zimmerman, 1986, 1990). Therefore, external financing, either debt or equity financing, may trigger the AEM. Previous research shows external financing increases the EM in emerging or developed countries (Cohen and Zarowin, 2010; Kothari, Mizik and Roychowdhury, 2016; Zhang, Uchida and Dong, 2020; Bui et al., 2022; Hong et al., 2023; Alsaadi, 2024). Based on the argumentation and empirical evidence, we propose the hypothesis as follows:

H1: External financing is more likely to engage in AEM more aggressively than internal financing.

External Financing and Earnings Management

Literature provides conflicting arguments about debt or equity financing, which is more associated with AEM. Debt covenant hypothesis, conditional conservatism, and prospect theory predict that debt financing increases AEM if compared to equity financing, but information asymmetry and payoff asymmetry predict otherwise. On the one hand, debt covenants in the US are mainly designed based on earnings (Rhodes, 2016). Because of this design, the debt covenant hypothesis predicts that earnings are manipulated to avoid violating the contract (Watts and Zimmerman, 1986, 1990; DeFond and Jiambalvo, 1994; Jaggi and Lee, 2002). In a similar vein, recent studies also document that the more debt financing, the more EM (Alzoubi, 2018; Orazalin and Akhmetzhanov, 2019; Draief and Chouaya, 2022). Moreover, contracting theory suggests that conditional conservatisms are needed to create the efficient contracts of compensation and debt (Scott, 2015). They are associated with the reduction of information asymmetry in equity financing (investors) more than in debt financing (creditors), suggesting that investors require the reliable financial information more than creditors (Goh et al., 2016). Therefore, debt financing is associated with EM more than equity financing.

In emerging countries, characterized by a lack of transparency and weak corporate governance, firms are more likely to use debt financing compared to equity financing (Sony and Bhaduri, 2021). Debt and equity financing have different concerns. Prospect theory suggests that debt financing focuses on loss or downside potential and equity financing on gains or upside potential. Prospect theory suggests that managers have more motivation if they face loss than gains (Kahneman and Tversky, 1979). Debt financing creates the debt covenants focusing on loss (downside potential), and equity financing generates compensation contracts focusing on gains (upside potential). Equity financing is more risk-tolerant to the uncertainty of projects than debt financing using international data (Zhang et al., 2019). In this situation, managers may engage in AEM aggressively if they breach the debt covenant (debt financing) than if they reap the bonus from the compensation contract (equity financing).

On the other hand, information asymmetry and payoff asymmetry predict that debt financing is less likely to increase AEM than equity financing. Regarding information asymmetry, the firms cannot explain the potential project to the investors in a seasoned equity offering in order to avoid the private information of the project that may be known by competitors, but they can explain it to the creditors (Myers and Majluf, 1984; Fazzari et al., 1988). If the projects have a higher potential for success, firms may prefer to choose debt rather than equity because managers may not want to share the profits with investors, but they are willing to pay the cost of debt. Therefore, the projects that are financed by debt are more likely to succeed than equity, so firms using debt financing may engage in AEM to obscure bad projects, lower than those using equity financing. Literature shows that equity financing is more risk-tolerant to the uncertainty of projects than debt financing using international data from 35 countries (Zhang et al., 2019).

Creditors have a payoff asymmetry with investors. Unlike the latter, the former has limited gains if firms perform well, but it has similar losses if firms go bankrupt (Scott, 2015). Therefore, lenders focus on the reliability of financial reports and require conditional conservatism to protect the downside potential (Basu, 1997) compared to the

investor. In this case, debt financing may alleviate the AEM if compared to equity financing. Using data from 43 countries, prior studies report that debt financing is less likely to increase AEM than equity financing (Bui et al., 2022; Zhang et al., 2020).

Although there are inconclusive arguments, this study argues that AEM is more prevalent in firms relying on debt financing compared to equity financing due to two reasons. First, this study relies on the positive accounting theory that predicts debt financing increases AEM. Second, we employ the data from Indonesia. Unlike the US and UK, investors in Indonesia are dominated by individual investors compared to more sophisticated institutional investors (OECD, 2022). Individual investors are susceptible to the cognitive biases that are less rational (Kartini and Nahda, 2021). In a similar vein, Lu et al. (2021) note that (less sophisticated) individual investors dominate the trading volume (85%) in the mainland Chinese stock market, and they are not fixated on earnings, so they do not motivate the firm to engage in EM. Prior research finds that debt financing increases AEM, but equity financing does not (Cho, 2017). Based on two reasons, we propose the hypothesis as follows:

H2: Debt financing is more likely to be positively associated with AEM than external financing with equity.

Auditor Quality, External Financing, and Earnings Management

Agency theory suggests that auditing could curb the moral hazard of insiders and adverse selection between insiders and outsiders (Jensen and Meckling, 1976). However, literature documents that only high audit quality can alleviate those problems (Rajgopal et al., 2021). Audit quality is defined as the ability of external auditors to detect misstatements in the financial reporting (DeAngelo, 1981). There is no single characteristic for audit quality because it is multifaceted (Bamber & Bamber, 2009; Francis, 2004). It can be achieved when an audit is performed by competent people who apply the testing procedures rigorously and in conducive environments (firm culture and regulatory), which encourage high standards (Francis, 2023). In line with this, investors see competent and well-trained auditors as audit quality based on the field evidence (Christensen et al., 2016)

Although audit quality can be measured by various measurement, recent study focuses on measuring audit quality and documents big four auditors are less likely to experience the violations of an inadequate planning and supervision, inadequate audit-evidence allegation, inadequate planning and supervision Using the measurement of the audit quality using data from the Accounting and Auditing Enforcement Realese and class action lawsuits in US (Rajgopal, Srinivasan and Zheng, 2021). Firms in Indonesia are more likely to choose the non-big four accounting firm if they engage in tunneling and rent-seeking activities (Habib, Muhammadi and Jiang, 2017a). Prior studies document that Big Four accounting firms are associated with the audit quality (Nursiam et al., 2021)

Literature suggests that audit is related to external financing. Prior studies document that auditor selection is positively associated with the need for external financing (He et al., 2014; Knechel et al., 2008). Firms may hire high auditor quality to enhance the credibility of financial reports while accessing the debt or equity financing because it can curb the moral hazard and information asymmetry (Alhadab and Clacher, 2018; Habib, Wu and Sun, 2019; Kurt et al., 2024). Therefore, they can gain the lower cost of capital (Houqe, Ahmed and Zijl, 2017; Le and Moore, 2023).

While we hypothesized in the previous section that external financing and debt financing are positively associated with AEM, we suspect this relationship depends on the audit quality. For example, external or debt financing may trigger firms to manipulate the financial information because they window-dress financial reports using AEM in order to get external financing or avoid debt covenants. However, AEM may be alleviated by the Big Four accounting firms because they tend to provide high audit quality. Therefore, we propose the following hypothesis:

H3a: Auditor quality weakens the positive relationship between external financing and AEM.

H3b: Auditor quality weakens the positive relationship between debt financing and AEM.

RESEARCH METHODS

Hypothesis 1 predicts that firms relying on external financing are more likely to use earnings

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management aggressively than those relying on internal financing. Earnings management is measured using accrual earnings management (AEM). The equation for estimating AEM is as follows:

$$Accruals_{it}/Assets_{it-1} = \alpha_0 (1/Assets_{it-1}) + \beta_1 (\Delta Revenue_{it}/Assets_{it-1}) + \beta_2 (Fixed\ Assets_{it}/Assets_{it-1}) + \varepsilon_{it} \quad (1)$$

$$AEM = Accruals_{it} / Assets_{it-1} - [(1/Assets_{it-1}) + [(\Delta Revenue_{it} - \Delta Receivable_{it} / Assets_{it-1})] + (Fixed\ Assets_{it} / Assets_{it-1})] \quad (2)$$

AEM is accrual earnings management estimated by a cross-sectional model, which is calculated annually for each industry classified into eight industries, except the financial industry (Cohen & Zarowin, 2010). To test hypotheses 1-3, this study uses the ordinary least squares regression analysis with the following equation:

Model 1 for testing H1

$$AEM_{it} = \beta_0 + \beta_1 EXFIN_{it} + \beta_2 AUD + \beta_3 SALGROW_{it} + \beta_4 ROA_{it} + \beta_5 DIVIDEND_{it} + \beta_6 LN\_SIZE_{it} + Industry\ Dummy + Year\ Dummy + \varepsilon \quad (3)$$

Model 2 for testing H2

$$AEM_{it} = \beta_0 + \beta_1 DEBTFIN_{it} + \beta_2 EQUITYFIN_{it} + \beta_3 AUD + \beta_4 SALGROW_{it} + \beta_5 ROA_{it} + \beta_6 DIVIDEND_{it} + \beta_7 LN\_SIZE_{it} + Industry\ Dummy + Year\ Dummy + \varepsilon \quad (4)$$

Model 3 for testing H3a

$$AEM_{it} = \beta_0 + \beta_1 EXFIN + \beta_2 AUD + \beta_3 EXFIN*AUD + \beta_4 SALGROW_{it} + \beta_5 ROA_{it} + \beta_6 DIVIDEND_{it} + \beta_7 LN\_SIZE_{it} + Industry\ Dummy + Year\ Dummy + \varepsilon \quad (5)$$

Model 4 for testing H3b

$$AEM_{it} = \beta_0 + \beta_1 DEBTFIN_{it} + \beta_2 AUD + \beta_3 DEBTFIN_{it}*AUD + \beta_4 EQUITYFIN_{it} + \beta_5 SALGROW_{it} + \beta_6 ROA_{it} + \beta_7 DIVIDEND_{it} + \beta_8 LN\_SIZE_{it} + Industry\ Dummy + Year\ Dummy + \varepsilon . \quad (6)$$

AEM represents accrual earnings management estimated in equations 2. The main independent variable for testing H1 in Equation 3 is external financing (EXFIN), measured by total interest-bearing long-term debt plus common stock divided by retained earnings. This variable represents a comparison between external (long-term debt and common stock) and internal financing (retained earnings). Equation 4 is employed to test H2. DEBTFIN is debt financing, measured by total interest-bearing long-term debt divided by retained earnings. EQUITYFIN is equity financing, measured by common stock divided by retained earnings. H3a and H3b are tested by Equations 5 and 6, respectively. AUD is auditor quality, measured using a dummy variable, one for the Big Four accounting firms and zero otherwise.

Other independent variables are control variables, expected to absorb the different firm characteristics. SALGROW is sales growth measured by current sales minus previous sales divided by previous sales (Zhang, Uchida and Dong, 2020; Le and Moore, 2023). ROA is net income divided by total assets (Saleem and Alzoubi, 2018; Le and Moore, 2023). DIVIDEND is total dividends divided by net income (Salah & Jarboui, 2024; He et al., 2017). LN_SIZE is the natural logarithm of total assets (Zhang, Uchida and Dong, 2020; Le and Moore, 2023). This study includes industry and year dummies to control for year and industry differences.

RESULTS AND DISCUSSION

This study uses data from all non-financial companies from 2015 to 2019. We limit observation until 2019 because March 2020 to June 2023 is the COVID-19 pandemic that affects the firm's strategy for expansions that require external financing. Financial data was obtained from BvD Osiris, and qualitative data related to audit quality was obtained from the Indonesia Stock Exchange Fact Book (IDX Fact Book). The initial sample consisted of 3,545 company-years. This study drops the financial industry because it has distinct characteristics from other industries. Furthermore, it also removes firms using non-Rupiah currency and having incomplete

data. After applying these criteria, the final sample consisted of 1,158 observations, as presented in Table 1.

Table 1. Sample Selection

Initial sample from 2015-2019	3545
Eliminating financial firms	825
Delete observations that do not have an SIC code	20
Deleting observations that use non-Rupiah currency	460
Deleting observations with incomplete data	1082
Final sample	**1158**

Descriptive statistics, which are displayed in Table 2, show that the mean value of AEM is -0.012. This suggests that the sample in this study is dominated by companies that engage in income-decreasing earnings management rather than companies that engage in income-increasing earnings management. Regarding external financing (EXFIN), companies use external financing approximately 9 times more than internal financing. This is indicated by the average ratio of external financing of 9.957. If external financing is split into financing through debt (DEBTFIN) and financing through equity (EQFIN), debt financing is used more than equity financing, indicated by its average of 0.500 and 0.315, respectively. In addition, most firms are audited more by non-big four accounting firms (64 percent).

Table 2. Descriptive Statistics

	Obs.	Mean	Dev. Std.	Min.	Max.
Continuous Variable					
AEM	1158	-0.012	0.089	-0.236	0.204
REM	1158	-0.003	0.185	-0.445	0.436
EXFIN	1158	9.957	34.446	-51.957	155.448
DEBTFIN	1158	0.500	1.475	-3.634	4.345
EQFIN	1158	0.315	2.236	-5.151	8.093
SIZE (in million)	1158	2.839	4.826	8	351.958
SALGROW	1158	0.062	0.224	-0.422	0.751
DIVIDEND	1158	0.071	0.147	0.000	0.546
ROA	1158	0.022	0.065	-0.182	0.150
Discrete Variable		Zero		One	
AUD	1158	802	69.26%	356	30.74%

Table 3 shows the Pearson Correlation to all variables. The AEM variable is positively and significantly associated with external financing (EXFIN) and debt financing (DEBTFIN), with correlation levels of 0.09 and 0.07, respectively. This provides initial evidence that external financing and debt financing increase the likelihood of AEM. Furthermore, there is no correlation greater than 0.7 among the independent variables, indicating serious multicollinearity (Hair *et al.*, 2014). To address the autocorrelation and heteroscedasticity, we apply robust standard errors when running regressions.

Table 3. Pearson Correlation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
AEM	1									
REM	0.30***	1								
EXFIN	0.09***	0.06**	1							
DEBTFIN	0.07**	0.01	0.15***	1						
EQUITYFIN	0.05	-0.04	0.23***	0.60***	1					
AUD	-0.02	-0.14***	-0.02	0.05*	-0.02	1				
LNSIZE	0.03	-0.06**	0	0.20***	0	0.40***	1			
SALGROW	0.04	-0.10***	0.02	0.08***	0.06*	0.03	0.073**	1		
DIV	0.11***	-0.15***	-0.04	0.04	0.05	0.22***	0.22***	0.10***	1	
ROA	0.34***	-0.39***	0.07**	0.15***	0.21***	0.20***	0.24***	0.29***	0.34***	1

Notes. The *, **, *** signs indicate significance at the 10%, 5%, and 1% levels, respectively, with two-tailed testing, and the sample size is 1158.

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Main results

Table 4 reports the test results for the first hypothesis. External financing (EXFIN) in Model 1 has a positive coefficient (0.000) and is significant at the 1 percent level for the AEM. Thus, H1 is supported, which states that firms that rely on external financing are more likely to engage in AEM aggressively than those that rely on internal financing.

External financing triggers information asymmetry (Myers and Majluf, 1984; Fazzari et al., 1988). In capital markets where information asymmetry exists, investors and creditors use earnings information to assess a firm's fundamental performance (Ball and Brown, 1968; Barth, Li and McClure, 2023). Therefore, they will attempt to demonstrate good performance by engaging in AEM. These results support the previous studies (Wang et al., 2018; Zhang et al., 2020), which find that external financing tends to engage in AEM.

Earnings information significantly influences investors' perceptions of a company's fundamental performance (Ball and Brown, 1968; Barth, Li and McClure, 2023). As a result, firms issuing new equity are more likely to manage their reported earnings to increase their financing (Rangan, 1998; Cohen and Zarowin, 2010; Kothari, Mizik and Roychowdhury, 2016). Similarly, firms issuing debt will manage their earnings to decrease interest rates (Caton et al., 2011). Therefore, external financing may trigger the AEM.

Table 4. Main results from testing H1-H3

Variables	Dependent variabel= AEM			
	Model 1 (H1)	Model 2 (H2)	Model 3 (H3a)	Model 4 (H3b)
EXFIN	0.000***		0.000***	
	(2.97)		(3.37)	
DEBTFIN		0.005*		0.003
		(1.70)		(1.28)
EQUITYFIN		-0.002		-0.002
		(-1.16)		(-1.08)
EXFIN*AUD			0.000	
			(-1.03)	
DEBTFIN*AUD				0.005
				(0.82)
AUD	-0.014**	-0.014**	-0.012*	-0.017**
	(-2.11)	(-2.15)	(-1.80)	(-2.32)
SALGROW	-0.033**	-0.034**	-0.033**	-0.034**
	(-2.21)	(-2.26)	(-2.19)	(-2.27)
ROA	0.557***	0.569***	0.553***	0.572***
	(10.94)	(11.00)	(10.84)	(11.05)
DIV	-0.034*	-0.033*	-0.033*	-0.033*
	(-1.89)	(-1.88)	(-1.87)	(-1.88)
LNSIZE	-0.003	-0.004*	-0.002	-0.004*
	(-1.23)	(-1.74)	(-1.19)	(-1.71)
CONSTANT	0.0731	0.099**	0.070	0.097**
	(1.60)	(2.12)	(1.56)	(2.10)
Industry dummy	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes
Observation	1158	1158	1158	1158
R-Square	0.217	0.214	0.218	0.215

Notes. The *, **, *** signs indicate significance at the 10%, 5%, and 1% levels, respectively, with two-tailed testing. We report t-statistics in parentheses.

Model 2 of Table 4 shows the results of the second hypothesis (H2) testing. On the one hand, the coefficient of debt financing (DEBTFIN) is (0.005) positively associated with AEM at the 5 percent level. On the other hand, equity financing (EQUITYFIN) is not significantly related to EM, with a coefficient of -0.002. Therefore, H2 is supported, which states that debt financing is more likely to be positively associated with AEM than equity financing. These results align with recent studies, which also document that debt financing increases AEM (Alzoubi, 2018; Orazalin and Akhmetzhanov, 2019; Draief and Chouaya, 2022). Moreover, from a contracting perspective, investors require more conditional conservatism than creditors, suggesting that investors require the reliable financial information more than creditors (Goh et al., 2016). Conditional conservatisms in implementing accounting policy make contracts more efficient (Scott, 2015).

Our results are consistent with prospect theory (Kahneman and Tversky, 1979), suggesting that debt financing focuses on loss (downside potential) and equity financing on gains (upside potential). Equity financing is more risk-tolerant to the uncertainty

of projects than debt financing using international data (Zhang et al., 2019). In this situation, managers may engage in AEM aggressively if they breach the debt covenant (debt financing) than if they reap the bonus from the compensation contract (equity financing). Sony & Bhaduri (2021) note that countries experiencing high levels of information asymmetry tend to use debt financing in emerging countries, characterized by a lack of transparency and weak corporate governance. Therefore, firms that rely on debt financing are more likely to be associated with AEM than those that rely on equity financing.

Model 3 of Table 4 provides the results of hypothesis 3a (H3a). The interaction variable between external financing and auditor quality (EXFIN*AUD) has a coefficient of 0.000 and is not significant. Thus, the results do not support H3a, which states that auditor quality weakens the positive relationship between external financing and AEM. In line with this, Model 4 of Table 4 shows that the interaction variable between external financing and auditor quality (DEBTFIN*AUD) is not significantly associated with AEM. Thus, the results do not support H3b. A possible explanation is that the characteristics of Big Four accounting firms are insufficient to guarantee higher audit quality, as non-Big Four accounting firms also face similar risks in the event of audit failure. Therefore, they also provide the audit quality. Using data from Indonesia, previous studies have documented that Big Four accounting firms are not associated with audit quality and cannot mitigate EM (Suwarno et al., 2020; Suwarno et al., 2021). EM does not decrease while there is a change from a Big Four to a non-Big Four accounting firm (Ismail et al., 2015). Recent studies report that audit fees and specialist auditors represent higher audit quality than Big Four and non-Big Four measurement (Rajgopal, Srinivasan and Zheng, 2021), suggesting that Big Four may not represent higher audit quality.

Sensitivity analysis

Our results show that, compared to internal financing, external financing is more likely to engage in AEM. External financing through debt increased EM more than that through equity. However, these results may be affected by certain measurements of EM. Prior studies document that AEM is more likely to be implemented than real earnings manipulation (REM) when firms have poor financial conditions, have strict monitoring, and have higher current tax expenses (Zang, 2012). Therefore, our results may be different if using another EM measurement. In line with this, prior studies find that managers replace the AEM with REM to decrease the likelihood of being exposed (Naz and Sheikh, 2023), and corporate governance can mitigate the latter, but cannot mitigate the former (Hong et al., 2023). Therefore, we use REM to replace REM as the dependent variable.

REM is estimated using a model developed by Roychowdhury (2006) to estimate abnormal discretionary expenditures (ABDISEXP), abnormal operating cash flow (ABCFO), and abnormal production costs (ABPROD). These three proxies are combined into one measurement to represent real earnings management (REM), consistent with prior research (Sohn, 2016), as follows:

$$REM_{it} = (ABDISEXP_{it}*-1) + (ABCFO_{it}*-1) + ABPROD_{it} \quad (7)$$

After getting the REM, we replace AEM with REM in Equation 3-6. Table 5 shows the results of using REM as the dependent variable. The coefficient of EXFIN is positive and significant at the 1 percent level. In line with this, DEBTFIN is positively associated with REM at 5 percent levels. The interaction between EXFIN and AUD has negative and significant coefficients at the 10 percent level. These results are qualitatively similar to our main results, using AEM as the dependent variable. Therefore, our results may not be affected by another EM measurement.

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Table 5. Sensitivity test for H1-H3

Variables	REM	REM	REM	REM
EXFIN	0.001***		0.001***	
	(3.88)		(4.48)	
DEBTFIN		0.010**		0.009*
		(2.02)		(1.80)
EQUITYFIN		0.000		0.000
		(0.04)		(0.06)
EXFIN*AUD			-0.001*	
			(-1.93)	
DEBTFIN*AUD				0.002
				(0.24)
AUD	-0.042**	-0.041**	-0.036**	-0.042**
	(-2.41)	(-2.37)	(-1.99)	(-2.32)
SALGROW	-0.005	-0.006	-0.005	-0.006
	(-0.20)	(-0.25)	(-0.18)	(-0.25)
ROA	-1.109***	-1.112***	-1.122***	-1.110***
	(-8.70)	(-8.55)	(-8.79)	(-8.55)
DIV	-0.061	-0.062	-0.061	-0.062
	(-1.42)	(-1.47)	(-1.40)	(-1.46)
LNSIZE	0.009	0.006	0.009	0.006
	(1.52)	(1.07)	(1.57)	(1.07)
CONSTANT	-0.163	-0.105	-0.17	-0.106
	(-1.26)	(-0.79)	(-1.32)	(-0.80)
Industry dummy	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes
Observation	1158	1158	1158	1158
R-Square	0.231	0.228	0.233	0.228

Notes. The *, **, *** signs indicate significance at the 10%, 5%, and 1% levels, respectively, with two-tailed testing. We report t-statistics in parentheses.

CONCLUSION

This study investigates whether external financing is more aggressive in engaging in AEM than internal financing. Furthermore, we ask whether this relationship can be moderated by audit quality. Using a sample of non-financial companies from 2015-2019, this study finds that external financing increases AEM. This positive association is stronger for firms relying on debt financing than for those relying on equity financing. Furthermore, this study does not find that audit quality can mitigate AEM triggered by external financing or external financing through debt financing. In addition, our results are qualitatively similar when EM measurements are implemented in robustness tests.

This research can be developed in at least two ways. First, this study used auditor quality as a good governance variable. Future research could use other governance variables that might reduce EM, such as the percentage of independent commissioners or the strength of internal auditors. Second, this study only used AEM and REM. Future research could use classification shifting as this method is less risky than AEM and REM (Anagnostopoulou and Malikov, 2024; Vernando and Mustakini, 2025). Thus, EM through the classification shifting can improve core earnings, which could be used as a requirement in debt financing.

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