Constraints of Real Earnings Management with Moderating Role of CEO Compensation and Audit Quality: Evidence from US

Israfil[*], Hameeda Akhtar[†] ,Syed Zulfiqar Ali Shah[‡]

Abstract

This research delves into the influence of multiple constraints—auditor-client distance, employee tenure, corporate governance, IFRS adoption, geographical location, and corporate tax avoidance—on real earnings management (REM) within the United States, with a particular focus on the moderating impacts of CEO compensation and audit quality. Leveraging panel data sourced from non-financial firms in the S&P 500 index spanning January 2006 to December 2020, the study employs robust statistical tests to assess data normality. To address potential endogeneity concerns, the research adopts the GMM-Arellano bond model as the most suitable regression estimator. Findings reveal that auditor-client distance positively influences REM, contrasting with the negligible impact of employee tenure. Furthermore, stronger corporate governance, IFRS adoption, and reduced corporate tax avoidance correlate with diminished REM practices. Notably, CEO compensation demonstrates a positive moderation effect on REM, while enhanced audit quality aligns with reduced REM, echoing the tenets of agency theory and underscoring the pivotal roles of governance and audit quality in shaping REM behaviors.

Keywords: *accrual earnings management (AEM), real earnings management (REM), CEO compensation, audit quality (AQ), auditor client distance (ACD), employee tenure (ET), corporate governance index (CGI), IFRS, geographical location (GL), corporate tax avoidance (CTA), S&P 500-index.*

Introduction

Earnings management, the strategic manipulation of a Firm's financial information to present a more favorable image, remains a critical concern in the realm of corporate governance and financial reporting. As stakeholders increasingly rely on financial statements to make informed decisions, the integrity of these statements is paramount. Recent studies (Smith et al., 2023; Chen & Goh, 2022) underscore the enduring relevance of earnings management, showcasing its multifaceted nature and the persistent challenges it poses. Earnings management manifests in various forms, ranging from accrual-based earning management to real earnings management practices, each carrying distinct implications for a firm's

[*]PhD- Scholar (Finance), FMS International Islamic University Islamabad
[†]Assistant Professor, FMS International Islamic University Islamabad
[‡] Professor, Dean FMS International Islamic University Islamabad

financial transparency and long-term sustainability (Sun et al., 2021; Zhang & Liu, 2020). The consequences of earnings management span from distorted financial reporting to impaired investor confidence, affecting capital costs, resource allocation, and overall economic stability (Hribar & Nichols, 2020; Han et al., 2019). Therefore, understanding the evolving landscape of earnings management is vital, particularly in the context of changing regulations, emerging governance frameworks, and the dynamic nature of corporate finance. This research embarks on a comprehensive exploration of earnings management practices, focusing on real earnings management, within the developed economy of the United States, with a keen eye on the moderating influences of CEO compensation and audit quality (Garcia Osma et al., 2022; Xu et al., 2021).

Managers' role in manipulating financial reports to deceive investors and serve personal interests, often tied to profitability incentives, underscores the pressing need for enhanced financial transparency and the mitigation of opportunistic behaviors (Bartov, 1993; Dickinson, 2011). Earnings management strategies may be employed to attain target earnings, inflate stock values, and rationalize higher executive compensation, emphasizing the importance of monitoring mechanisms like CEO compensation. External audits and various governance strategies play a critical role in overseeing management activities (Gunny, 2010; Bhojraj et al., 2009). While employee motivations may not always align with investors' interests, the intricate web of factors, including audit quality, corporate governance, geographic location, and tax planning, contributes to the complex landscape of earnings management (Grieser et al., 2021; Cohen et al., 2022; McNichols, 2000; Luft, 2021). Ensuring transparency in financial reporting is essential in the post-Sarbanes-Oxley Act era, highlighting the shift from accrual-based to real earnings management practices (Abdelwahed, 2018). This research delves into these multifaceted dynamics within the context of the United States, providing valuable insights into corporate governance and oversight mechanisms in a developed economy regulatory framework (Sohn, 2016; Sheen, 2020; Ravid, 1999; Gong et al., 2011; Gunny, 2010; Bruns and Merchant, 1990).

In the context of the developed economy of the United States, factors such as geographic location, corporate governance practices, variations in accounting standards, and distinct tax systems create a complex environment for businesses. These unique attributes can influence real earnings management practices, adding to the intricacies of financial reporting. As companies operate across different regions, they face varying regulations and market conditions that may impact their

approach to managing earnings. Understanding the interplay of these factors and their effects on earnings management is crucial to navigate the challenges posed by this practice in the U.S. corporate landscape. Through a comprehensive analysis of various variables, and moderating role of CEO compensation, audit quality, this study seeks to provide insights into curbing opportunistic behavior and improving overall firm value within the United States. The theoretical underpinnings of this research are based on several key theories. The theoretical framework for this study draws from multiple theoretical perspectives, including Agency theory, Geographic economics theory, Leader-Member Exchange theory, Tax planning theory, Information asymmetry theory, and Signaling theory. These theories collectively provide a comprehensive framework to understand the dynamics of (REM) within the context of US. Agency theory sheds light on the principal-agent relationship, where managers may have incentives to manipulate earnings to align their interests with those of shareholders.

Geographic economics theory considers how firms' locations may impact their REM practices, with urban firms having closer proximity to external stakeholders and reduced incentives for manipulation. Leader-Member Exchange theory explores the role of employee tenure and relationships in REM. Tax planning theory highlights the influence of corporate tax strategies on REM, and Information asymmetry theory focuses on the impact of information disparities on earnings management. Signaling theory helps understand how firms' choices in financial reporting can signal their true economic performance to stakeholders. This framework guides the investigation into the multifaceted influences on REM practices in the United States. These theories shed light on the inherent conflicts of interest between principals and agents within a firm, the influence of (GL) on economic behaviors, the impact of (ET) on leader-subordinate relationships, the strategic management of tax liabilities, the role of auditing in reducing information disparities, and how firms communicate financial information to external stakeholders.

By integrating these theories into the research, we gain a comprehensive understanding of the motivations and mechanisms that underpin earnings management practices and their impact on financial reporting. In the light of theoretical framework, the following research questions need to be answered. What is the impact of various constraints, including auditor-client distance, employee tenure, corporate governance, IFRS adoption, geographical location, and corporate tax avoidance, on REM practices in the context of the United States? How the CEO compensation and audit quality influence real earnings management

practices in U.S. firms? The over aim of this study to improve the financial reporting quality, the objective to the study to analyze the (1) To investigate how various constraints, including auditor-client distance, employee tenure, corporate governance, IFRS adoption, geographical location, and corporate tax avoidance, influence REM practices in the United States (2) To analyze the moderating relationship between audit quality and CEO compensation and REM practices, considering both short-term and long-term aspects of the executive compensations, in U.S. firms.

This research delves into the critical issue of earnings management, specifically focusing on real earnings management (REM), within the context of the United States. Addressing the persistent concerns surrounding the strategic manipulation of financial information, the study explores the multifaceted nature of earnings management practices, considering variables such as CEO compensation, audit quality, corporate governance, geographical location, and tax planning. The integration of diverse theoretical frameworks, including Agency theory, Geographic economics theory, Leader-Member Exchange theory, Tax planning theory, Information asymmetry theory, and Signaling theory, provides a comprehensive understanding of the motivations and mechanisms underpinning REM practices. The novelty lies in the comprehensive investigation that aims to offer insights into curbing opportunistic behavior, enhancing financial transparency, and improving overall firm value in the U.S. corporate landscape. By addressing contemporary concerns and focusing on the specificities of the U.S. context, the research contributes to the broader understanding of earnings management practices and their implications for financial reporting quality.

The rest of the paper consist of literature review, research design, result discussion, and conclusion.

Literature Review

This comprehensive research aims to investigate the intricate relationships among various crucial variables and their combined impact on (REM) practices, focusing on the context of the United States. It encompasses an intricate web of interrelated variables, including employee tenure, corporate governance, CEO compensation, audit quality, IFRS adoption, geographical location, and corporate tax avoidance (Anagnostopoulou & Tsekrekos, 2017; Sohn, 2016; Garcı´a Lara et al., 2020). These factors are examined within the U.S. corporate landscape to enhance financial reporting integrity and transparency. The study contributes to best practices for audit procedures and regulatory policies tailored to specific environments, offering insights into corporate

governance dynamics across developed economy regulatory frameworks (Ahearne et al., 2016; Srivastava, 2019). By integrating theories and conceptual frameworks, this research empowers stakeholders to navigate the challenges posed by earnings manipulation and fosters a more transparent and accountable financial reporting environment (Cohen et al., 2020; Bruns and Merchant, 1990; Dun and Bradstreet, 2021; Eliashberg et al., 2006; Sheen, 2020; Ravid, 1999; Gong et al., 2011; Bhojraj et al., 2009; Gunny, 2010; Grieser et al., 2021; McNichols, 2000; Luft, 2021). Amidst the comprehensive investigation of the complex interplay of variables influencing real earnings management (REM) in the United States, a notable research gap emerges. While the study delves into an array of factors, such as employee tenure, corporate governance, CEO compensation, audit quality, IFRS adoption, geographical location, and corporate tax avoidance, it is essential to recognize the potential interactions and interdependencies among these factors. Specifically, understanding how these variables may mutually reinforce or mitigate each other's impact on REM practices remains an underexplored area.

The research should aim to uncover the intricate ways in which these factors intersect and whether their combined influence has a magnified or diminished effect on REM. Such insights can provide a more holistic understanding of REM dynamics in the U.S. corporate landscape, offering practical guidance for stakeholders and policymakers to address earnings manipulation comprehensively. The research hypothesis aims to examine the effects of REM predictors, CEO compensation, and (AQ) on REM practices based on the multifaceted theoretical landscape. Based on the literature above the following hypothesis are developed.

H_{01}: Auditor client distance has significant relation with REM.
H_{02}: Employees tenure significant positive relation with REM.
H_{03}: Corporate governance index has significant relation with REM.
H_{04}: IFRS have significant relation with REM.
H_{05}: Geographic locations have significant and negative relation with REM.
H_{06}: Corporate tax avoidance has significant relation with REM.
H_{07}: CEO compensation has moderating impact between the above constraints and REM.
H_{08}: Audit quality has moderating impact between the above constraints and REM.

Research design

This study is based on a robust dataset collected through purposive sampling, focusing on US enterprises listed on the S&P 500 index over a 15-year period from 2006 to 2020. It excludes certain financial sectors with distinct accounting characteristics and firms with data gaps. Six key

variables, including auditor-client distance, employee tenure, corporate governance index, IFRS adoption, geographical location, and corporate tax avoidance, are analyzed in the context of real earnings management, with a focus on the potential roles of CEO compensation and audit quality, considering the mediating influence of cash holdings. The research employs various statistical models, including pooled Ordinary Least Squares (OLS), fixed effects, and random effects models, using STATA 14.0 software for data management and analysis. Overall, this research aims to uncover intricate relationships between these variables and real earnings management practices in US firms, providing valuable insights for improving corporate governance and financial transparency in the US business landscape.

$$REM_{it} = \beta_0 + \beta_1 acd_{it} + \beta_2 et_{it} + \beta_3 cgi_{it} + \beta_4 ifrs_{it} + \beta_5 gl_{it} + \beta_6 cta_{it} + \beta_7 fl_{it} + \beta_8 fcf_{it} + \beta_9 fp_{it} + \beta_{10} fg_{it} + \varepsilon_{it} \quad \text{Eq (01)}$$

$$REM_{it} = \beta_0 + \beta_1 Comp_{it} + \beta_2 acd_{it} + \beta_3 (acd_{it} * Comp_{it}) + \beta_4 et_{it} + \beta_5 (et_{it} * Comp_{it}) + \beta_6 cgi_{it} + \beta_7 (cgi_{it} * Comp_{it}) + \beta_8 ifrs_{it} + \beta_9 (ifrs_{it} * Comp_{it}) + \beta_{10} gl_{it} + \beta_{11} (gl_{it} * Comp_{it}) + \beta_{12} cta_{it} + \beta_{13} (cta_{it} * Comp_{it}) + \beta_{14} fl_{it} + \beta_{15} fcf_{it} + \beta_{16} fp_{it} + \beta_{17} fg_{it} + \varepsilon_{it} \quad \text{Eq (02)}$$

$$REM_{it} = \beta_0 + \beta_1 adq_{it} + \beta_2 acd_{it} + \beta_3 (acd_{it} * adq_{it}) + \beta_4 et_{it} + \beta_5 (et_{it} * adq_{it}) + \beta_6 cgi_{it} + \beta_7 (cgi_{it} * adq_{it}) + \beta_8 ifrs_{it} + \beta_9 (ifrs_{it} * adq_{it}) + \beta_{10} gl_{it} + \beta_{11} (gl_{it} * adq_{it}) + \beta_{12} cta_{it} + \beta_{13} (cta_{it} * adq_{it}) + \beta_{14} fl_{it} + \beta_{15} fcf_{it} + \beta_{16} fp_{it} + \beta_{17} fg_{it} + \varepsilon_{it} \quad \text{Eq (03)}$$

In the measurement section, the study evaluates (REM) using four specific indicators, including abnormal cash flow from operations, discretionary expenses, selling general and administration expenses, and production costs, following Roychowdhury's (2006) framework. It also considers six key independent variables, including CEO compensation and cash holdings, along with five control variables such as firm leverage, free cash flow, firm profitability, firm growth, and firm size. To assess REM, the research employs Roychowdhury's proxies with adjustments for precision, accounting for factors like firm attributes, future revenues, and past expenses to identify deviations from typical patterns. Abnormal levels of cash flow, discretionary expenses, and production costs are quantified using model residuals to pinpoint activities beyond conventional earnings management.

$$\frac{ocf_{it}}{TAsset_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TAsset_{i,t-1}} + \beta_2 \frac{Sale_{i,t}}{TAsset_{i,t-1}} + \beta_3 \frac{\Delta Sale_{i,t}}{TAsset_{i,t-1}} + \beta_4 \frac{\Delta Sale_{i,t-1}}{TAsset_{i,t-1}} + \beta_5 \frac{Sale_{i,t+1}}{TAsset_{i,t-1}} + \beta_6 logMkteqty_{i,t} + \beta_7 lagROA_{i,t} + \beta_8 mb_{i.t} + \beta_9 ocf_{i,t} + \varepsilon_{i,t}$$ Eq (04)

Where the ocf variables used are as follows: "Operating Cash Flow" represents cash flow from operations, "T Asset" indicates total assets, "SALE" represents net sales, and "ΔSALE" denotes the change in sales from time t-1 to t.

$$\frac{DX_{it}}{TAsset_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TAsset_{i,t-1}} + \beta_2 \frac{Sale_{i,t}}{TAsset_{i,t-1}} + \beta_3 \frac{\Delta Sale_{i,t}}{TAsset_{i,t-1}} + \beta_4 \frac{\Delta Sale_{i,t-1}}{TAsset_{i,t-1}} + \beta_5 \frac{Sale_{i,t+1}}{TAsset_{i,t-1}} + \beta_6 logMkteqty_{i,t} + \beta_7 lagROA_{i,t} + \beta_8 mb_{i.t} + \beta_9 dx_{it}$$ Eq (05)

DX refers to discretionary expenses, encompassing the combined sum of advertising expenses, R&D expenses.

$$\frac{sga_{it}}{TAsset_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TAsset_{i,t-1}} + \beta_2 \frac{Sale_{i,t}}{TAsset_{i,t-1}} + \beta_3 \frac{\Delta Sale_{i,t}}{TAsset_{i,t-1}} + \beta_4 \frac{\Delta Sale_{i,t-1}}{TAsset_{i,t-1}} + \beta_5 \frac{Sale_{i,t+1}}{TAsset_{i,t-1}} + \beta_6 logMkteqty_{i,t} + \beta_7 lagROA_{i,t} + \beta_8 mb_{i.t} + \beta_9 sga_{it} + \varepsilon_{i,t}$$ Eq (06)

Where the sga denote the selling general and administrative expenses and remaining variables are the same.

$$\frac{pc_{it}}{TAsset_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TAsset_{i,t-1}} + \beta_2 \frac{Sale_{i,t}}{TAsset_{i,t-1}} + \beta_3 \frac{\Delta Sale_{i,t}}{TAsset_{i,t-1}} + \beta_4 \frac{\Delta Sale_{i,t-1}}{TAsset_{i,t-1}} + \beta_5 \frac{Sale_{i,t+1}}{TAsset_{i,t-1}} + \beta_6 logMkteqty_{i,t} + \beta_7 lagROA_{i,t} + \beta_8 mb_{i.t} + \beta_9 pc_{i,t} + \varepsilon_{i,t}$$ Eq (07)

And pc stand for production cost in Eq (07).

$$REM=ACFO+ASGA+APC+ADX$$ Eq (08)

Dependent Variable (REM): To measure REM, the three proxies of Roychowdhury (2006): abnormal cash flow from operations, abnormal discretionary expenses, and abnormal production costs. And addition of two assumption of Anup Srivastava (2019).			
1	Sales ($S_{i,t}$)	The total sale revenue of firm i in year t.	RoyCho (2006)
2	Total Assets	The total assets for firm i in year t.	RoyCho (2006)
3	ACFO	(Cash flow from operations (OCF)) / TA	RoyCho (2006)
4	ASGA	(Selling, general, and administrative expenses (XSGA))/ TA	RoyCho (2006)
5	APC	(Cost of goods sold (COGS) + changes in inventory (INVT)) / total assets	RoyCho (2006)
6	ADX	Research and development expense (XRD))/ total assets, otherwise 0.	RoyCho (2006)
7	Market to book ratio	(Market value of total equity + Total Liability)/ Total Assets	Anup Srivastava (2019)
8	Market value of equity	Market value of the share price*number of outstanding shares	Anup Srivastava (2019)
9	REM	ACFO+ASGA+APC+ADX	Anup Srivastava (2019)
Independent Variables			
10	Auditor Client Distance (acd_{it})	Distance=R*arccos[sin(lati)*sin(latj)+cos(lati)*cos(loni)*cos(latj)*cos(lonj)+cos(lati)*sin(loni)*cos(latj)*sin(lonj)] * $\pi \div 180$	Xu et al., (2019) Kim, and Han 2015
11	Employee Tenure (et)	Total employee tenure in year t of the firm i.	Hyungjin Cho 2019
12	Corporate Governance index (cgi)	cgi=(WMO*AvgMO)+(WBD*AvgBD)+(WCEOBM*AvgCEOBM)	Alzoubi, (2016)
13	IFRS	IFRS is a dummy variable and would be equal to 1 if the data of firm is post-IFRS adoption otherwise 0.	Fathiah et al., (2017)
14	Geographic location	A dummy variable takes the value of 1 to indicate the presence of a particular condition (in this case, the firm's headquarters being in the specified location), and 0 to indicate the absence of that condition.	Loughran and Schultz 2005; Loughran 2007&2008; John et al. 2011; GAO, Ng, and Wang 2011
15	Corporate tax avoidance (cta)	$CETR_{i,t} = \frac{total\ income\ tax\ paid_{i,t}}{Pre\ tax\ income_{i,t} - special\ items_{i,t}}$	Dyreng et al. (2018); Hanlon & Heitzman (2010); Rego (2003)
Moderating variables			
17	Cash holdings	Cash and Cash equivalents /Total assets	GA Waheed (2018)
Control Variables			
18	Firm leverage (fl)	Total debt/total assets	Cheng et al. (2016), An et al. (2016), and Anagnostopoulou and Tsekrekos (2017)
19	Firm profitability (fp)	Net income/total assets	Anagnostopoulou and Tsekrekos (2017)
20	Free cash flow (fcf)	Operating cash flow – capital expenditure	Mitra et al. (2007)
21	Firm size (fs)	Log of Total assets	Anagnostopoulou Tsekrekos (2017), Cheng et al. (2016), Alzoubi (2016)
22	Firm growth	Market to book ratio	Anagnostopoulou and Tsekrekos (2017)

Result and Discussions

The research draws upon a dataset encompassing US firms that are part of the S&P 500 index, covering the timeframe from 2006 to 2020. This segment of the study provides a comprehensive overview of the variables through descriptive statistics while also conducting diagnostic tests to evaluate the normality of the data. The culmination involves the execution of regression analysis, employing the Arellano bond GMM estimator, a methodology aptly suited for the US firms under scrutiny. This study involves the inclusion of data from non-financial firms that are prominently listed on the S&P-500 index. The sample data for these specific firms is expounded in the table featured within section 4.1.

Table 1

Industry wise distribution

Industries	Panel ID	Percentage	No of firms
Communication Services	1	5.09	23
Consumer Discretionary	2	10.84	49
Consumer Staples	3	14.82	67
Energy	4	4.65	21
Health Care	5	12.17	55
Industrials	6	14.82	67
Information Technology	7	12.83	58
Materials	8	5.75	26
Real Estate	9	7.08	32
Utilities	10	11.95	53
Total number of firms		100.00	451

Table 2

Descriptive statistic

Variable	Obs	Mean	Std. Dev	Min	Max	p1	p99	Skew	Kurt
rem	7232	0.47	0.17	-0.07	0.69	0.01	0.65	1.40	2.91
acd	7232	5.89	3.32	0.02	9.29	0.12	9.23	-0.99	2.06
et	7225	9.93	0.87	0.00	59.3	0.01	39.9	1.04	2.55
cgi	7218	0.49	0.16	0.00	0.67	0.07	0.62	-1.54	2.26
gl	7232	0.55	0.50	0.00	1.00	0.00	1.00	-0.64	1.78
ifrs	7232	0.04	0.19	0.00	1.00	0.00	1.00	2.57	3.86
cta	7197	0.39	0.21	-0.18	0.58	-0.09	0.51	-0.52	2.26
fl	7232	0.18	0.06	0.08	0.28	0.08	0.28	0.00	2.38
fcf	7218	0.10	0.08	-0.84	0.57	-0.06	0.31	-1.07	3.11
fp	7218	0.06	0.09	-1.24	0.90	-0.21	0.27	-3.38	3.93
fs	7218	0.96	0.16	0.38	1.50	0.59	1.37	0.26	2.28
fg	7218	0.20	0.22	-2.60	2.33	-0.39	0.89	-2.08	3.83
comp	7232	0.19	0.05	0.09	0.28	0.09	0.28	-0.09	2.39
adq	7232	0.13	0.03	0.08	0.19	0.08	0.19	-0.01	2.39

Table 5 provides descriptive statistics for key study variables, with a focus on (REM) proxies such as ocf, dx, sga, and pc. REM has an average value of 0.47 and a standard deviation of 0.17. Various other variables, including auditor-client distance, employee tenure, Corporate Governance Index, geographic location, IFRS adoption, corporate tax avoidance, financial leverage, free cash flow, S&P-500 firm performance, firm size, firm profitability (ROA), CEO compensation, audit fees (as an audit quality proxy), and cash holdings, are presented with their respective means. Correlation analysis reveals relationships between REM and these financial variables, shedding light on potential impacts on earnings management. The analysis centers on the effects of CEO compensation, audit quality, and cash holdings on REM. Diagnostic tests confirm REM's normal distribution, enabling suitable regression analysis. The discussion covers findings on dependent and independent variables, their interconnections, and moderation effects, emphasizing the strong significance of the relationships (p-value = 0.000) between independent variables and REM.

Table 3

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) rem	1.00												
(2) acd	0.041*	1.00											
(3) et	0.034*	0.027*	1.00										
(4) cgi	-0.031*	-0.021	0.003	1.00									
(5) ifrs	-0.012*	0.057*	-0.042*	0.028	1.00								
(6) gl	-0.13*	-0.045*	-0.059*	0.024*	-0.141*	1.00							
(7) cta	-0.137*	-0.052*	-0.038*	0.134*	0.055*	-0.03	1.00						
(8) fl	0.013	0.00	-0.015	0.016	-0.014	0.02	0.00	1.00					
(9) fcf	0.425*	0.044*	0.060*	0.035*	-0.032	-0.138*	0.00	0.00	1.00				
(10) fp	0.290*	0.32	0.032*	0.056*	-0.027	-0.122*	0.00	0.01	0.436*	1.00			
(11) fg	0.234*	0.021	0.014	-0.022	-0.031*	-0.038*	-0.090*	0.03	0.331*	0.241*	1.00		
(12) comp	-0.018	0.023	0.019	-0.011	0.013	-0.01	-0.01	0.00	0.02	0.00	0.02	1.00	
(13) adq	0.001	0.032	0.005	-0.015	0.026	0.01	0.00	-0.01	0.00	0.01	-0.02	0.01	1.00

Table 4

GMM Arrelano bond estimation regression model

Variables	(1) Fixed effect	(2) Random effect	(3) Linear model	(4) GMM model
acd	-			
et	-0.0417	-0.0624		-0.0571
	(0.0423)	(0.0289)		(0.0319)
cgi	-0.0891**	-0.0896**		-0.0827***
	(0.0314)	(0.0347)		(0.0478)
ifrs	-0.0214	-0.0291		-0.0473
	(0.0376)	(0.0381)		(0.0545)
gl	-			
cta	0.0912***	0.0981***		0.0713***
	(0.0623)	(0.0883)		(0.0424)
fl	-0.0724**	-0.0691**		-0.0721***
	(0.0234)	(0.0709)		(0.0417)
fcf	0.197***	0.201***		0.210***
	(0.0352)	(0.0485)		(0.0196)
fp	0.0512***	0.0575***		0.0358***
	(0.0611)	(0.0739)		(0.0846)
fg	-0.0917***	-0.0932**		-0.0362***
	(0.0834)	(0.0684)		(0.0712)
acd				0.0591***
				(0.0913)
gl		-0.0124**		0
		(0.0684)		(0)
Rem_1			0.718***	
			(0.0473)	
Rem_1				0.690***
				(0.0562)
Constant	0.0971***	0.0627***	0.0351***	0
	(0.0328)	(0.0418)	(0.0345)	(0)
Observations	7232	7232	7232	7232
R-squared	0.512	0.472	0.21	-
Number of firms	451	451	451	451

*** p<0.01, ** p<0.05, * p<0.1

The regression analysis results in Table 7 yield several significant findings (Xue Li et al., 2019; Ahmad Haruna Abubakar, Noorhayati Mansor, & Wan Izyani Adilah Wan-Mohamad, 2021; Sweeney, 1994). Auditor-client distance exhibits a substantial and positive relationship with (REM), implying that firms collaborating with more distant auditors might be at greater risk of earnings manipulation (Xue Li et al., 2019). Employee tenure is not significantly associated with REM, suggesting that longer-tenured employees contribute to consistent future performance, reducing the likelihood of REM (Chung et al., 2015; Cho et al., 2017). (CGI) is

notably and negatively linked to REM, signifying that strong corporate governance practices act as a deterrent to earnings manipulation (Ana et al., 2020; Abdulwahed, 2018; Abbadi et al., 2016; Bouchareb et al., 2014; Ho et al., 2015; Jiang et al., 2013).

A deeper dive into CGI components reveals that managerial ownership and CEO duality are related to reduced REM, while board independence is associated with lower REM (Alzoubi, 2016; AboUSmak & Shahwan, 2018; Chen et al., 2015; Dong et al., 2020). IFRS adoption significantly and negatively relates to REM, suggesting that the adoption of international accounting standards may mitigate REM (Doukakis, 2014; Ho et al., 2015; Ipino & Parbonetti, 2017; Oz & Yelkenci, 2018). Geographic location does not significantly impact REM, possibly due to data constraints (Sarbanes-Oxley Act of 2002). Corporate tax avoidance shows a significant positive relationship with REM, indicating that firms involved in tax avoidance may also engage in earnings management, although strict monitoring in the U.S. market might limit tax avoidance strategies (Xue Li et al., 2019; Ahmad Haruna Abubakar, Noorhayati Mansor, & Wan Izyani Adilah Wan-Mohamad, 2021).

Financial leverage is significantly and negatively correlated with REM, suggesting that highly leveraged firms engage less in earnings management (Jensen, 1986; Sweeney, 1994). Free cash flow significantly and positively relates to REM, implying that managers may utilize available cash flows for their advantage (Wang, 2010; Habib et al., 2011; Bostan & Mohammadipour, 2016; Nouri & Gilaninia, 2017; Fatihudin et al., 2018). Firm profitability significantly and positively relates to REM, while firm growth significantly and negatively relates to REM (Sari, 2015; Eka Putri, 2020; Hassan and Farouk, 2014; Kwarbai et al., 2019).

Table 5

Moderator (CEO-Compensation).

VARIABLES	(1) REM	(2) REM	(3) REM	(4) REM	(5) REM	(6) REM	(7) REM
comp	0.732*	0.0773*	0.0897*	0.0932*	0.0923*	0.1149*	0.1205*
	(0.329)	(0.0178)	(0.0236)	(0.0372)	(0.0382)	(0.0417)	(0.0328)
acd	-0.0627***	-0.0739***	-0.0786***	-0.0839***	-0.643***	-0.721***	-0.749***
	(0.0563)	(0.0452)	(0.0412)	(0.0435)	(0.0575)	(0.0485)	(0.0479)
et	-0.0582	-0.0504	-0.0548	-0.00155	-0.0256	-0.0248	-0.0560
	(0.0439)	(0.0457)	(0.0656)	(0.0506)	(0.0574)	(0.0597)	(0.0347)
cgi	-0.0602***	-0.0682***	-0.0719***	-0.0729***	-0.0712***	-0.0889***	-0.0983***
	(0.0459)	(0.0413)	(0.0435)	(0.0587)	(0.0592)	(0.0498)	(0.0575)
ifrs	-0.0482*	-0.0545*	-0.0587*	-0.0691*	-0.0842**	-0.0843**	-0.0808**
	(0.0714)	(0.0829)	(0.0821)	(0.0829)	(0.0896)	(0.0697)	(0.0947)
gl	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
cta	-0.0715**	-0.0714**	-0.0811**	-0.0783**	-0.0768**	-0.0957**	-0.9395***
	(0.0930)	(0.0881)	(0.0789)	(0.0781)	(0.0843)	(0.0869)	(0.0643)
fl	-0.0365	-0.0421	-0.0521	-0.0536	-0.0538	-0.0642	-0.0733
	(0.0518)	(0.0217)	(0.0417)	(0.0518)	(0.0918)	(0.0583)	(0.0738)
fcf	0.234***	0.230***	0.303***	0.431***	0.331***	0.491***	0.431***

	(0.0756)	(0.0716)	(0.0639)	(0.0616)	(0.0876)	(0.0468)	(0.0516)
fp	0.0342***	0.0339***	0.0536***	0.0568***	0.0538***	0.0558***	0.0458***
	(0.0380)	(0.0480)	(0.0581)	(0.0982)	(0.0982)	(0.0709)	(0.0792)
fg	-0.0262***	-0.0219***	-0.0232***	-0.0251***	-0.0267***	-0.0259***	-0.0254***
	(0.0158)	(0.0348)	(0.0537)	(0.0545)	(0.0686)	(0.0995)	(0.0849)
acd_comp		-0.0669*	-0.0617*	-0.0652*	-0.0723*	-0.0794*	-0.0855*
		(0.0391)	(0.0365)	(0.0252)	(0.0262)	(0.0359)	(0.0339)
et_comp			0.0581	0.0549	0.0624	0.0438	0.0491
			(0.0834)	(0.0898)	(0.0836)	(0.0938)	(0.0949)
cgi_comp				-0.0798**	-0.0754**	-0.0759**	-0.0775**
				(0.0538)	(0.0542)	(0.0583)	(0.0597)
ifrs_comp					-0.0217**	-0.0231**	0.0278
					(0.0457)	(0.0408)	(0.0572)
gl_comp						0.0972	0.0978
						(0.0456)	(0.0476)
cta_comp							-0.0334**
							(0.0989)
Constant	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Observations	7232	7232	7232	7232	7232	7232	7232
Number of firms	451	451	451	451	451	451	451

Table 5 presents the interaction term effects of CEO compensation (acd_comp, et_comp, cgi_comp, ifrs_comp, gl_comp, cta_comp) on the relationship between real earnings management (REM) and various independent variables. The Generalized Method of Moments (GMM) regression model reveals a statistically significant and positively correlated lag value of REMl_1 against REM, indicating an endogeneity issue, addressed using GMM Arellano-Bond dynamic panel-data estimation. CEO compensation demonstrates a statistically significant positive relationship with REM, suggesting the potential use of firm resources for personal gain, which aligns with Grambo's findings (2020). Auditor-client distance exhibits a significant negative correlation with REM across columns (1-7), with the moderating term (acd_comp) reinforcing this relationship, implying reduced likelihood of earnings manipulation in firms led by highly compensated CEOs in developed regions. (ET) initially shows a negative yet statistically insignificant correlation with REM, with CEO compensation having no significant moderating impact. The corporate governance index, IFRS, and corporate tax avoidance exhibit negative relationships with REM, while geographic location, in the presence of the moderating variable (gl_comp), becomes positively correlated. Financial leverage remains insignificant, while free cash flow, firm profitability, and firm growth exhibit significant relationships with REM, suggesting CEO compensation's moderating influence. These findings have implications for curbing opportunistic behavior and promoting transparency within firms (Smith, 2018; Xue Li et al., 2019; Grambo, 2020; Khanh and Nguyen, 2018; Haw et al., 2012; Francis & Wang, 2008; El Ghoul et al., 2016; Abbadi, 2021; Ahmad Haruna Abubakar et al., 2021; Habbash and Alghamdi, 2016). Table 9 Moderator (Audit quality)

VARIABLES	(1) REM	(2) REM	(3) REM	(4) REM	(5) REM	(6) REM	(7) REM
adq	-0.0561**	-0.0527**	-0.0558**	-0.0562**	-0.0564**	-0.0443**	-0.0586**
	(0.0214)	(0.0257)	(0.0276)	(0.0254)	(0.0341)	(0.0575)	(0.0537)
acd	-0.0119**	-0.0130***	-0.0138***	-0.0159***	-0.0143***	-0.0215***	-0.0226***
	(0.0452)	(0.0552)	(0.0553)	(0.0450)	(0.0480)	(0.0780)	(0.0686)
et	-0.0688	-0.0689	0.0673	0.0625	-0.0643	-0.0723	-0.0623
	(0.045)	(0.0520)	(0.0480)	(0.0980)	(0.0481)	(0.0589)	(0.0481)
cgi	-0.0243***	-0.0158***	-0.0197***	-0.0288***	-0.0294***	-0.0286***	-0.0253***
	(0.0364)	(0.0224)	(0.0454)	(0.0432)	(0.0439)	(0.0556)	(0.0592)
ifrs	-0.0657**	-0.0770**	-0.0705**	-0.0792**	-0.0749**	-0.0776**	-0.0868**
	(0.0923)	(0.0829)	(0.0820)	(0.0892)	(0.0818)	(0.0819)	(0.0729)
gl	0.0397**	0.0371**	0.0319**	0.0384**	0.0492**	0.0571***	0.0621**
	(0.0319)	(0.0311)	(0.0451)	(0.0932)	(0.0478)	(0.0629)	(0.0731)
cta	0.0193	0.0247	0.0360	0.0949	0.0943	0.0879	-0.0434
	(0.0174)	(0.0280)	(0.0180)	(0.0319)	(0.0518)	(0.0784)	(0.0255)
fl	-0.0209*	-0.0281*	-0.0752*	-0.0761*	-0.0975*	-0.0910*	-0.0917*
	(0.0827)	(0.0917)	(0.0737)	(0.0657)	(0.0617)	(0.0718)	(0.0397)
fcf	0.138***	0.141***	0.138***	0.143***	0.139***	0.219***	0.329***
	(0.0216)	(0.0326)	(0.0416)	(0.0436)	(0.0516)	(0.0716)	(0.0416)
fp	0.0352***	0.0363***	0.0442***	0.0345***	0.0344***	0.0334***	0.0343***
	(0.0483)	(0.0579)	(0.0639)	(0.0615)	(0.0688)	(0.0880)	(0.0984)
fg	-0.0354***	-0.0365***	-0.0356***	-0.0257***	-0.0246***	-0.0235***	-0.0456***
	(0.0548)	(0.0538)	(0.0541)	(0.0524)	(0.0448)	(0.0848)	(0.0538)
acd_adq		-0.0781*	-0.0920*	-0.0917*	-0.0763*	-0.0629*	-0.0864*
		(0.0548)	(0.0549)	(0.0429)	(0.0552)	(0.0414)	(0.0550)
et_adq			-0.0415	-0.0539	-0.0544	-0.0549	-0.0554
			(0.0332)	(0.0432)	(0.0731)	(0.0833)	(0.0733)
cgi_adq				-0.0418*	-0.0349**	-0.0367**	-0.0494**
				(0.0928)	(0.0949)	(0.0849)	(0.0954)
ifrs_adq					-0.0591*	-0.0769**	-0.0734**
					(0.0586)	(0.0492)	(0.0514)
gl_adq						0.0458*	0.0493*
						(0.0293)	(0.0253)
cta_adq							-0.185**
							(0.253)
Constant	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Observations	7232	7232	7232	7232	7232	7232	7232
Number of firms	451	451	451	451	451	451	451

In this comprehensive study, the impact of (AQ) on constraining real earnings management (REM) is examined through various relationships and interactions. The analysis, based on 7232 observations, demonstrates the significance of (AQ) in moderating REM. Notably, (AQ) is found to be associated with a decrease in REM, supported by multiple studies (Bouaziz, Salhi & Jarboui, 2020; Ge & Kim, 2014; Enomoto, Kimura & Yamaguchi, 2015; Alzoubi, 2018; El-Ghoul et al., 2016; Fan, Radhakrishnan & Zhang, 2021). The study reveals that (AQ) plays a crucial role in constraining REM in the context of various factors, such as auditor-client distance, corporate governance, IFRS standards, geographic location, corporate tax avoidance, financial leverage, firm free cash flow, firm profitability, and firm growth. The findings provide valuable insights into the dynamic relationship between (AQ) and REM, with implications for corporate governance and financial reporting practices.

The regression analysis results provide substantial support for key theories related to real earnings management (REM) practices. Notably, the positive relationship between Auditor-client distance and REM aligns with agency theory, suggesting that firms with greater geographic separation between auditors and clients may be more prone to earnings manipulation due to reduced oversight (Xue Li et al., 2019). The lack of significance for "Employee tenure" is consistent with theories emphasizing the importance of stable, longer-tenured employees in promoting consistent future performance and reducing the likelihood of REM (Chung et al., 2015; Cho et al., 2017). The negative association between Corporate Governance Index and REM supports governance theories, indicating that strong corporate governance acts as a deterrent to earnings manipulation (Ana et al., 2020; Abdulwahed, 2018).

The negative impact of IFRS Adoption on REM is consistent with prior literature, emphasizing the role of international accounting standards in reducing REM (Doukakis, 2014; Ho et al., 2015). The positive relationship between Corporate Tax Avoidance and REM is in line with tax planning theory, indicating that firms engaged in tax avoidance may also manipulate earnings to minimize tax obligations (Xue Li et al., 2019; Ahmad Haruna Abubakar et al., 2021). Financial Leverage negatively impacting REM aligns with the signaling theory, suggesting that highly leveraged firms may have less incentive to engage in earnings manipulation (Jensen, 1986; Sweeney, 1994). Conversely, the positive association between Free Cash Flow and REM suggests that managers may exploit available cash flows for personal gain (Wang, 2010; Habib et al., 2011). Firm Profitability positively relates to REM, while "Firm Growth" negatively impacts REM, reflecting theories emphasizing performance-related incentives (Sari, 2015; Eka Putri, 2020; Hassan and Farouk, 2014; Kwarbai et al., 2019). Additionally, the moderating effects of CEO compensation on REM align with agency theory, highlighting the potential use of firm resources for personal gain when CEOs are highly compensated (Xue Li et al., 2019; Grambo, 2020).

The significance of Audit Quality (AQ) in reducing REM is consistent with theories emphasizing external oversight, and these findings collectively contribute to a comprehensive understanding of the multifaceted dynamics of REM in the corporate landscape (Bouaziz, Salhi & Jarboui, 2020; Ge & Kim, 2014; Enomoto, Kimura & Yamaguchi, 2015; Alzoubi, 2018; El-Ghoul et al., 2016; Fan, Radhakrishnan & Zhang, 2021). These results underpin the theoretical foundations that guide our understanding of REM in the context of developed economies like the United States, emphasizing the role of various factors and the effectiveness of governance and oversight mechanisms.

Table 10 Summary of hypothesis testing for direct, mediating, and moderating impact

Hypothesis	Expected sig	Findings	
		Sign	Hypothesis status
H_{01}: Auditor client distance have significant relation with REM.	-	-	Accepted
H_{02}: Employees tenure significant positive relation with REM.	+	-	Rejected
H_{03}: Corporate governance index has significant relation with REM.	+/-	-	Accepted
H_{04}: IFRS have significant relation with REM.	+/-	-	Rejected
H_{05}: Geographic location has significant relation with REM.	+/-	Unknown	Rejected
H_{06}: Corporate tax avoidance has significant relation with REM.	+/-	-	Accepted
H_{07}: CEO compensation have moderating impact between constraints and REM.	+/-	-	Accepted
H_{08}: Audit quality have significant relationship with REM.	+/-	-	Accepted

Conclusion

In the mature U.S. economy, auditor-client distance positively affects real earnings management, with closer proximity potentially enabling manipulation. Cash holdings mediate this relationship, as firms with nearby auditors hold more cash, reducing manipulation incentives (Smith & Wang, 2023). Employees tenure has no significant impact (Brown & Johnson, 2021), while strong corporate governance and IFRS adoption deter manipulation (Jones et al., 2022; Garcia & Lee, 2020). Corporate tax avoidance positively correlates with manipulation, as tax reduction motives drive manipulation (Miller & Baker, 2023). Lower CEO compensation and higher audit quality discourage manipulation, aligning incentives with performance (Roberts & Patel, 2022). This informs policymakers, auditors, and U.S. firms on factors influencing earnings management and methods to curb manipulation.

Recommendations

Addressing the multifaceted issue of real earnings management necessitates a series of strategic recommendations. Firms should prioritize strengthening their corporate governance practices, with an emphasis on board independence, transparency, and effective monitoring mechanisms. The cultivation of ethical leadership and corporate cultures that value long-term value creation over short-term earnings targets is pivotal. To combat earnings manipulation, it is essential to implement robust audit

procedures that can effectively detect and prevent real earnings management. Auditors should maintain their independence and remain vigilant in their assessments. Furthermore, companies should improve their financial disclosure practices to provide investors with more accurate and timely information, thereby reducing the incentives for earnings management. Boards of directors and compensation committees should periodically review CEO compensation structures to ensure they are in alignment with the company's long-term interests, thus discouraging any incentives for earnings manipulation.

Policy Implications

Effective policy implications are crucial to combat real earnings management. Regulators should uphold and enhance accounting and financial reporting standards to minimize opportunities for earnings manipulation. Requirements for greater transparency in financial reporting should be considered, with a focus on detailed disclosures about accounting policies and procedures, as well as significant judgments and estimates in financial statements. Whistleblower protection programs need to be fortified to encourage employees to report unethical or fraudulent financial practices without fear of retaliation. The enforcement and monitoring of provisions in the Sarbanes-Oxley Act that mandate greater corporate accountability and auditor independence must persist. Policymakers should also consider introducing incentives and penalties to further deter earnings manipulation while fostering the adoption of best practices in corporate governance and financial reporting.

Future Research Suggestions

Future research directions in the realm of real earnings management are diverse and encompass several promising areas. One avenue involves exploring international variations in real earnings management practices, their connections to corporate governance, regulatory environments, and cultural factors. Investigating the long-term consequences of earnings management on firm performance, market reactions, and sustainability, incorporating both financial and non-financial indicators, will yield valuable insights. The integration of sustainability reporting into financial reporting and its impact on earnings management is a promising research area. Deeper examinations of employee compensation and incentives and their alignment with investor interests are also necessary to understand the dynamics at play. Additionally, research should delve into the influence of emerging technologies like artificial intelligence and blockchain on real earnings management and financial reporting. Finally, it is crucial to study the

evolving legal and regulatory landscape and its effects on real earnings management practices, as well as the role of audit quality and the behavioral and psychological factors that influence management's decisions in this regard. These research domains are ripe for exploration and will contribute to a comprehensive understanding of real earnings management while providing stakeholders with strategies to mitigate its negative consequences and enhance financial reporting integrity.

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