

**FUNDING STRUCTURE, CORPORATE GOVERNANCE AND EARNINGS
MANAGEMENT AMONG LISTED COMMERCIAL BANKS IN SUB-SAHARAN
AFRICA**

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ABSTRACT

This study examined the influence of corporate governance practices and funding structure on the earnings management of listed commercial banks in Sub-Saharan Africa (SSA). The study pooled 64 listed commercial banks during the period 2012-2018 within a panel data analytic framework. Using Driscoll-Kraay's standard errors estimation approach, the study found that commercial banks with large board sizes and those with more presence of non-executive board members show contracted levels of earnings management. Also, profitable banks and those with large sizes are deemed not inclined to earnings management. Again, the study found that the funding structure of listed commercial banks influences their earnings management. The study recommends continuous improvement in the corporate governance structures as well as financial market development and efficiency in order to tighten the monitoring effort of key stakeholders in their effort to stem earnings manipulation by listed commercial banks in SSA. Furthermore, efforts should also be made to strengthen the institutional quality environment in stemming the tide of earnings management in listed SSA.

Key words: *Earnings management, funding structure, Corporate Governance, Sub-Saharan Africa*

JEL: G21, G32, 28

1. Introduction

Earnings of financial and non-financial firms have become one of the significant channels of measuring the success and competency of managers by stakeholders. Companies with increasing growth in earnings are considered as being successful while those with low reported earnings are perceived to be less profitable and unattractive to investors (Gras-Gil, Manzano & Fernández, 2016; Mahrani & Soewarno, 2018). Earnings are thus, a barometer for measuring the financial stability, health, strength and success of firms as well as the wealth of stockholders (Gras-Gil et al., 2016; Tabassum, Kaleem & Nazir, 2014). However, the information provided in the financial statements by management to shareholders and other stakeholders in respect of earnings may not always be true, as there is a tendency for manipulation of financial reported figures (Healy & Wahlen, 1999).

Thus, earnings management is defined as the "active manipulation of accounting information to create an altered impression of the firm's financial performance, as measured by its earnings" (Amidu et al., 2019 p.238). Therefore, there is no guarantee that information disclosed in annual reports of firms reflects the actual financial condition of the company (Amidu, Coffie & Acquah, 2019; Mahrani & Soewarno, 2018).

In the banking literature, existing scholars underscore the existence of earnings management practices and their consequential effect on bank's performance (Anandarajan et al. 2003; El Sood, 2012; Ahmed et al., 1999; Kanagaretnam et al., 2015). Bornemann et al. (2012) disclosed the process and intension behind manipulation of earnings by German bank managers in that bank managers manipulate net income by removing loan loss provisions in order to achieve a reduced outcome variability (avoid a fall in current and previous net income, avoid a decrease in net income compared to a peer group, and to achieve stable net income over time). Bank managers can manipulate earnings based on two approaches: accruals based approach supported by generally accepted accounting convention (GAAP) and real based approach which emanates from managers' intentional efforts to influence the structure of a firm's transactions in order to affect reported financial outcomes that show good performance (Waseemullah and Shehzadi, 2015; Roychowdhury, 2006; Zang, 2011).

Moreover, banks are largely funded from retail and wholesale deposits (Huang & Ratnovski, 2011; Van den End & Tabbae, 2012) with varied risk-return characteristics. For instance, whereas retail deposit funding is relatively inexpensive and stable source of long-term funds (Huang & Ratnovski, 2011), it has a fixed size in terms of depositor base and thus its extension could be expensive (Flannery, 1982; Billett & Garfinkel, 2004). Also, Jin, Kanagaretnam and Liu (2018) argued that banks' retail financiers are less difficult and possess low capacity and motivation to acquire relevant information on bank managers' risk propensity and loss reduction.

Also, an attempt to supplement insufficient retail deposits requires borrowing from wholesale fund market (Demirguc- Kunt & Huizinga, 2009; Huang & Ratnovski, 2011) by

bank managers. Unlike retail depositors, typically, wholesale funding is sourced on a short-term rollover basis, and lenders in the wholesale market can provide market discipline that can potentially influence earnings management by banks due to their relative sophistication (Calomiris, 1999). However, wholesalers are influenced by market-wide liquidity shocks, more volatile, and lenders in wholesale funds market with insufficient information may activate inefficient bank liquidations (Huang & Ratnovski, 2011; Dagher & Kazimov, 2015). From the above discussion, banks with different funding structures may have different earnings quality and incentives to supply high-quality accounting information (Jin, Kanagaretnam & Liu, 2018). Therefore, it is conceivable to hypothesize that a bank's earnings quality is likely to be influenced by its funding structure.

Another issue that influences bank earnings management is effective corporate governance structure (Xie, Davidson III, & DaDalt, 2003). Whereas a large body of evidence (Mersni & Othman, 2016; Quttainah, Song, & Wu, 2013; Khalil & Ozkan, 2016, Thinh & Tan, 2019; Chouaibi et al., 2018) identified board size as key determinants of earnings management, Gallery et al. (2008), noticed that the level of board independence also enhances the quality of financial reporting.

From the foregoing evidence, it is clear that funding strategy and corporate governance of a bank play a significant role in earnings management on account that managers who take a discretionary decision on the sources of funding are mostly part of the board of directors. Funding strategy being one of the decision-making avenues that incorporates dynamics in defining value-maximizing expectations cannot be explained without considering the role of corporate governance. Managers of banks are in the business of switching between retail and wholesale sources of funding (Jin et al., 2018). Thus, there is a need for good corporate governance for the most efficient funding strategy. Managers are expected to undertake the most appropriate funding strategies that guarantee optimal value while minimizing risk to partly serve the interest of shareholders in the agency framework. Moreover, the possibility of earnings management in highly regulated listed

entities such as banks cannot be underestimated since regulatory oversight may not avoid self-serving accounting options by managers (Mayers & Smith, 2004). For managers of listed banks, the opportunistic avenue of executive stock option acquisition as a compensation may likely make earnings management a sure and unavoidable incentive (Jensen *et al.*, 2004; Burns and Kedia, 2006; Efendi *et al.*, 2007).

This study, therefore, seeks to examine the relationship between funding strategy, corporate governance, and earnings management of banks in SSA. In this way, the current study makes some contribution to the banking literature on earnings management in Africa and public policy debate. In the first place, empirical literature on banks' earnings management in Africa is limited to few scholars such as Amidu *et al.*, (2019) and Peterson (2017). Thus, the current study focuses on the effect of corporate governance and funding structures on earnings management with particular interest in listed banks due to special role banks play in developing economy compared to non-bank financial firms. Moreover, the nature of uncertainty relating to banking business, its highly leverage nature and being highly regulated account for such investigation. Given a bank's special role in facilitating efficient allocation of funds to propel inclusive growth and poverty alleviation, it is essential for policy makers and regulators to know the sustainability of banking operations and profitability. The funding structure and huge leverage nature of banks give rise to increase information asymmetry between managers and investors and this give managers more discretionary opportunities to manage earnings. In terms of its funding suppliers, depositors and shareholders have varied interest-whereas shareholders are primarily concerned about their bank engaging in high-risk business operations to maximize their wealth, depositors are not interested. This diverse interests create opportunistic for bank managers to explore earnings management.

The rest of the study is organized as follows: section two discusses the theoretical and empirical literature including hypotheses, section three focuses on the data and methodology and section four relates to the empirical findings and discussions and section five provides the conclusion and policy implications.

2. Theoretical Literature

The Signal Theory

The existence of information asymmetry between management and shareholders and other stakeholders in general creates greater information imperfection among stakeholders in the financial market (Myers & Majluf, 1984). The signal theory explains that due to information asymmetry between managers and stakeholders in general, managers can influence (either decrease or increase) reported earnings to deliver a deserving signal to investors and other stakeholders since they are well-informed of the future gains of the firm (Norman & MacDonald, 2004). Firms with positive expectations in terms of growth turn to manipulate such information to communicate good market signals to hoodwink stakeholders, particularly investors. The existing literature (Flannery, 1986) identified two kinds of signals: information and opportunist signals. The information signal helps in the reduction of information asymmetric between the firm and the market players (Flannery, 1986). Based on the information signal, managers are in the right position to communicate the prospects of their firms accordingly to boost values. According to Ahmed et al. (1999), firms with positive prospects turn to manage their earnings to signal such investment opportunities to investors. The opportunist signal, on the other hand, enables managers to smokescreen investments that are not profitable by misleading investors using earnings manipulation for job security and wealth maximization.

The Agency Theory

The agency theory in finance seeks to explain the relationship between an agent and a principal with regards to varied objectives and interests (Arthurs & Busenitz, 2003). The theory, explains that a relationship where one party (principal) delegates responsibility to the other party (agent) is likely to be associated with conflicting interests between the principal and the agent and for that reason, the principal who delegated the responsibility to the agent has to incur an expensive risk averting investment in order to monitor the agent (Eisenhardt, 1989; Jensen, 1994). Thus, in an attempt to enhance the value of their firms and job security, agents (managers) may purposely influence the structure of a firm's transactions in order to affect reported financial outcomes that show good performance (Waseemullah and Shehzadi, 2015; Roychowdhury, 2006; Zang, 2011).

Closely related to the signal theory is the efficiency market theory. The efficiency market theory, according to Botsari (2010), is premised on the fact that the effect of earnings management on financial report is dependent on the level of information efficiency in the market. In the capital market, investors base their decisions on financial analysis conducted on accounting figures. Consequently, there is the need for these figures to be genuine, to give investors a correct signal of market trends as well as a true assessment of a firm's value. When managers indulge in earnings management based on information asymmetry between managers of the firm and potential investors (Xu et al., 2021), the latter is likely to be led to making decisions based on misleading financial information.

2.1 Empirical Literature & Hypotheses Development

One of the institutional arrangements that could possibly constrain opportunistic behaviour and decision making of managers in respect of earnings manipulation is effective corporate governance. Firms with strong level of corporate governance structures are more likely to minimize the agency problem between managers and shareholders and consequently limit the discretionary powers of managers in engaging in earnings management (Shen & Chih 2007). Existing studies provided further evidence on the role of corporate governance structures in constraining managers' opportunistic behaviour regarding accounting choices (Shen & Chih, 2007; Cornett et al. 2009) thereby impacting firm value (Leung & Cheng, 2014). Two cardinal features of effective corporate governance structure likely to influence bank's earnings management are board size and board independence.

With respect to board size, the ability of board size (number of executive directors on a board) to influence management decision including earnings management depends on effective monitoring of the management actions. Existing arguments have it that, larger corporate boards are more effective in exercising their monitoring roles more than smaller boards (Mersni & Othman, 2016). This may be due to the fact that larger board size is likely to commit more efforts and resources into monitoring management better and also distribute such functions among members effectively. Mersni and Othman (2016)

investigated the effect of corporate governance mechanisms on the reporting of loan loss provisions by managers in Islamic banks in the Middle East region. Their finding demonstrates that board size has a negative effect on the earnings management of Islamic Banks. Similarly, earlier evidence (Quttainah et al., 2013) and later evidence (Khalil & Ozkan, 2016; Thinh & Tan, 2019; Chouaibi et al., 2018) supported the negative and significant relationship between board size and earnings management of banks. According to Mersni and Othman (2016), a large number of board of directors offer the knowledge and experience required to handle managers' activities and thus, control earnings management practices. Therefore, we propose the following hypothesis regarding the relationship between board size and earnings management:

H₁: Board size has an effect on earnings management of banks

Similar to board size influence on management decision making, the number of outside executive directors on a board is expected to play a significant check and balance monitoring role on the board's effective monitoring mechanisms. Thus, firms with more independent outside directors are less likely to engage in earnings management. Kolsi and Grassa (2017) examined the effect of corporate governance mechanisms on earnings management practice of Gulf Cooperation Council Islamic Banks using a sample of 26 Islamic Banks in Saudi Arabia, Qatar, United Arab Emirates, Bahrain, and Kuwait from 2004 to 2012. They found that board independence has a negative effect on the earnings management of Islamic Banks. According to Gallery et al. (2008), high level of board independence enhances the quality of financial reporting. On the contrary, Kankanamage (2016) assessed the effect of board characteristics on earnings management in Sri Lanka and found that board size and board independence have a positive effect on earnings management of listed firms in Sri Lanka. According to him, a company with a small board size but has independent non-executive directors is capable of constraining the earnings management practices of the managers of the companies and promoting financial reporting quality. Based on the above evidence we formulate the following hypothesis:

H₂: Board Independence has an impact on earnings management of banks

Banking operations are financed with wholesale or retail funding sources. Empirically, Jin et al. (2018) investigated how funding structure influences banks' earnings quality. Their findings suggest that the ratio of core deposits to total liabilities as a measure for bank reliance on retail deposits is negatively and significantly related to earnings management. They also show that banks with greater core deposits to total liabilities are not so prone to excessive non-performing loans. Amidu and Kuipo (2015) investigated the effects of funding and diversification strategy on earnings management of 330 banks in 29 African countries. They found that the ratio of customer deposits to total assets has a negative effect on earnings management. According to Amidu and Kuipo (2015), banks that finance their assets using deposits engage less in discretionary loan loss provisions. That is, managers tend to manage earnings to meet the contractual obligation of wholesale funds. Based on the foregoing evidence we offer the following testable hypothesis:

H₃: Banks' core deposit share in total funding influences earnings management of banks

In addition to corporate governance and funding covariates, this study included other control variables which relate to bank-specific and general financial market efficiency dynamics. The level of the development of the financial market efficiency generally affects information flow and investors' decision making in a timely manner. Efficient markets are able to readily transmit information on firms to the market and that limits information asymmetry and the extent of earnings manipulation. Jo and Kim (2007) indicate that transparency-increasing disclosure reduces managers' incentive to manage earnings. Enomoto, Kimura, and Yamaguchi (2018) examined the relationship between earnings management and financial development and their results show that managers are more restrained from using both accrual-based Earnings Management (AEM) and Real Earnings Management (REM) in countries with higher financial development. Similar evidence in respect of an inverse relationship between financial development and earnings management was found by Degeorge et al. (2013). Therefore, one can conclude that financial market development and efficiency impact earnings management. With

respect to the firm-specific determinants of earnings management, this study used return on assets as a proxy for a firm's profitability. We expect profitable firms to be less engaged in earnings management.

3. Data and methodology

Dependent Variable

The data for this study was obtained from Osiris dataset of listed firms. This database is recognized globally for all listed firms. This study obtained annual financial statements of 64 commercial banks that have relevant data of interest in Africa. In addition, World Bank Governance indicators and Financial Development Indicators were used. The dependent variable used in this study is the earnings management of listed commercial banks measured by loan loss provisions following the steps of existing scholars (Bhattacharya, Daouk, & Welker, 2003; Cornett, McNutt, & Tehranian, 2009; Leuz, Nanda, & Wysocki, 2003).

Independent Variables

The independent variables include corporate governance indicators which were represented by board size and board independence and funding structure indicators also measured by a ratio of customer deposit to asset and customer deposit to total deposits ratio (Amidu & Kuipo, 2015; Jin et al., 2018).

Control Variables

These control variables were used: bank size, financial development, financial market development, financial market efficiency, financial institution efficiency, control of corruption, regulatory quality, business freedom, return on assets, and cost/income ratio. Table1 shows the measurement and description of the variables.

Table 1. Description and Measurement of Variables

Variable	Measurement	Description
<i>Dependent Variable</i>		
LLP	$\frac{\text{Loan Loss Provision}}{\text{Lagged Total Loans}}$	loan loss provision scaled by lagged total loans
<i>Independent Variables</i>		
Size	Total assets	The natural log of total assets
BS	Board Size	The number of board members
BI	Board Independence	Percentage of independent (non-executive) directors on the board
ROA	Return on Assets	The ratio of earnings after interest and tax to total assets
CDA	Customer deposit/asset	The ratio of customer deposit to total assets
CDTD	Customer deposit/total deposits	The ratio of customer deposit to total deposits
BF	Business Freedom	Index of economic freedom ranging from 0 to 100, higher values more business freedom
RQ	Regulatory Quality	World Bank regulatory quality index ranging from -2.5 to 2.5
CC	Control of Corruption	World Bank control of corruption index ranging from -2.5 to 2.5
FD	Financial Development	Financial development index (ranging from 0 to 1)
FIE	Efficiency	Financial institutions efficiency index (ranging from 0 to 1)
FMD	Financial Market Development	Financial market development index (ranging from 0 to 1)
FME	Financial Market Efficiency	Financial market efficiency index (ranging from 0 to 1)

Source: Authors' work (2021). FD, FIE, FMD & FME are from Katsiaryna Svirydzhenka (2016). Introducing a New Broad-based Index of Financial Development, WP/16/5

3.1 Model Specification and Estimation

Model Specification

In the bank management literature, bank managers are keen on taking an advantage of diverge from their normal loan loss provisioning status, especially, when they find it possible to engage in loan loss provisioning above the normal level in order to enhance earnings management (Kanagaretnam et al., 2010; Kanagaretnam et al., 2015). The abnormal loan loss provisioning is called discretionary loan loss provisioning (DLLP). The DLLP is a proxy for earnings management (Beatty & Liao, 2014). To estimate DLLP, two

steps are implemented. In the first step, normal loan loss provision (LLP) is regressed on its key determinants.

Based on the studies by Bushman and Williams (2012), Beatty and Liao (2014) and Jin et al., (2018), we formulate the LLP model and its determinants as in equation 1:

$$LLP_{it} = \alpha_0 + \alpha_1 NPL_{it+1} + \alpha_2 \Delta NPL_{it} + \alpha_3 \Delta NPL_{it-1} + \alpha_4 NPL_{it-2} + \alpha_5 Size_{it-1} + \alpha_6 \Delta Loan_{it} + \varepsilon_{it} \quad (1)$$

Where LLP is normal loan loss provision, NPL is non-performing loans ratio, ΔNPL is change in NPL, Size indicates total bank assets, $\Delta Loan$ is change in total loans and ε is the error term.

Equation 1 was estimated using Ordinary Least Square (OLS) approach. In the second step, the residual from equation 1 represents the DLLP. We further take the absolute value of the DLLP and regress it on corporate governance, funding structure, firm-specific and control variables. Following Damak (2018), we specified the following relationship between the variables of interest:

$$EM_{it} = BS_{it} + BI_{it} + CDA_{it} + CDTD_{it} + ROA_{it} + SIZE_{it} + CIR_{it} + BF_{it} + RQ_{it} + CC_{it} + FD_{it} + FIE_{it} + FMD_{it} + FME_{it} + \alpha_i + \mu_{it} \quad (2)$$

Where EM= absolute value of earnings management, SIZE= Bank size, BS= Board size, BI=Board Independence, CSA=Customer deposit/asset, CDTD=Customer deposit/total deposits, ROA=Return on Assets, CIR=Cost/income ratio, BF=Business freedom, RQ=Regulatory quality, CC=Control of corruption, FD=Financial development, FIE=Financial institutions efficiency, FMD=Financial market development, and FME=financial market efficiency.

3.2 Empirical Estimation

This study employed the Driscoll-Kraay regression analysis. The Driscoll-Kraay standard errors was chosen due to its robustness against autocorrelation, heteroscedasticity, and

cross-sectional dependence (Driscoll & Kraay, 1998) as compared to ordinary least squares in the presence of the above issues. Studies by Olaoye and Aderajo (2020), Olaoye et al. (2020) and Hashemizadeh et al. (2021) adopted Driscoll and Kraay's nonparametric covariance matrix estimator. According to Hoechle (2007), Driscoll and Kraay's nonparametric covariance matrix estimator adjusts for the use of both balanced and unbalanced panels. Driscoll and Kraay's nonparametric approach eliminates the deficiencies of other large T consistent covariance matrix estimators associated with the Panel Corrected Standard Error (PCSE) approach (Driscoll & Kraay, 1998). For robustness check, this study employed regression analysis with the FGLS estimator. The FGLS is selected to permit error correlations across individuals, with independence over time for a given individual.

4. Empirical Findings and Discussions

Descriptive Analysis

Table 2 presents the summary statistics such as mean, standard deviation, minimum and maximum values used in the study. From Table 2, the earnings management of banks has a mean of 0.498 and a standard deviation of 0.625. This means that, on average, commercial banks in SSA are involved in 49.8% of earnings management. The mean and standard deviation of the size of the board of banks is 10 persons and 8 persons respectively. In terms of the number of outside directors on the board of banks, on average, banks in SSA have at least one person who is a non-executive director on the board. Also, in terms of the funding structure of banks used in this study, the results show that banks in SSA fund their assets from customer deposits on average by 67.6% while customer deposits accounts for large share (87.4%) in total bank deposits on average.

Table 2 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Earnings Management (EM)	250	0.498	0.625	0.210	4.021
Log Assets (SIZE)	512	18.053	2.442	12.469	22.508
Board size (BS)	512	10	7.253	9	31
Board independence (BI)	383	0.374	0.277	0.012	0.895
Customer deposit/asset (CDA)	512	0.676	0.163	0.001	1.563
Customer deposit/total deposits (CDTD)	512	0.874	0.173	0.002	0.987

Source: Author's estimation (2021)

Correlation Matrix Analysis

Table 3 presents the results of Pearson correlation analysis which test the relationship among the variables and the presence of multicollinearity. Essentially, the coefficients of the covariates display no evidence of the presence of multicollinearity amongst the variables. This then gives a good indication to implement the regression analysis using the variables of interest.

Table 3 Pairwise correlations Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) Earnings Management (EM)	1.00														
(2) Log Assets (SIZE)	-0.15	1.00													
(3) Board size (BS)	-0.14	0.20	1.00												
(4) Board independence (BI)	-0.08	0.20	0.01	1.00											
(5) Customer deposit/asset (CDA)	-0.06	0.11	-0.18	-0.17	1.00										
(6) Customer deposit/total deposits (CDTD)	0.00	0.17	-0.16	0.03	0.78	1.00									
(7) ROA	-0.27	0.03	0.08	0.06	-0.03	0.06	1.00								
(8) Cost/income ratio (CIR)	0.20	-0.04	0.05	0.02	-0.15	-0.08	-0.57	1.00							
(9) Business freedom (BF)	-0.16	-0.45	-0.12	-0.04	-0.01	-0.07	-0.15	-0.18	1.00						
(10) Regulatory quality (RQ)	-0.23	-0.29	0.15	-0.04	-0.14	-0.25	0.32	-0.31	0.73	1.00					
(11) Control of corruption (CC)	-0.13	-0.48	0.10	-0.09	-0.09	-0.27	0.17	-0.15	0.72	0.82	1.00				
(12) Financial Development (FD)	-0.24	0.18	0.37	0.39	-0.01	0.05	-0.23	-0.03	0.45	0.12	0.26	1.00			
(13) Financial Institutions Efficiency (FIE)	-0.30	0.11	0.24	0.13	0.12	0.03	-0.24	-0.17	0.31	0.10	0.21	0.65	1.00		
(14) Financial market Development (FMD)	-0.22	0.24	0.32	0.39	-0.05	0.00	-0.12	0.01	0.29	0.22	0.24	0.87	0.40	1.00	
(15) Financial market Efficiency (FME)	-0.10	-0.06	0.27	0.18	0.09	0.12	-0.13	-0.17	0.36	0.10	-0.13	0.65	0.61	0.53	1.00

Source: Author's estimation (2021)

4.1 Regression Results Analysis

To ensure that the estimators do not suffer from heteroscedasticity and serial correlation, Breusch-Pagan/Cook-Weisberg test for heteroskedasticity and Wooldridge test for autocorrelation in panel data were conducted. Thus, a chi-square test conducted has a value of 75.91, $\text{prob} > \chi^2 (0.000)$ showing a significant presence of heteroscedasticity at 1% level but we fail to reject the null hypothesis of no first-order serial correlation with $\text{prob} > F (0.1329)$. Hence this study implemented the Driscoll-Kraay estimator. Table 4 shows the results obtained from the regression with Driscoll Kraay's standard error estimator.

Table 4, in Model 1, shows that, bank size, ROA, and cost/income ratio, bank board size show a statistically significant negative effect on earnings management of banks in SSA which suggests that banks with bigger board size are less inclined or motivated to pursue earnings management. Furthermore, it also suggests that banks with bigger board sizes can exercise their supervisory and monitoring roles better and this militates against the tendency by bank management to engage in any earnings management thereby enhancing the quality of reported earnings. This is consistent with studies by Quttainah et al. (2013), Mersni and Othman (2016), Khalil and Ozkan (2016), Thinh and Tan (2019), and Chouaibi et al. (2018) who identified a negative and significant effect of board size on earnings management of banks. This finding may also imply that a large number of board of directors offer the knowledge and experience required to handle managers' activities and thus, control earnings management practices (Mersni & Othman, 2016). Similarly, from Table 4, controlling for financial market efficiency, bank size, ROA, and cost/income ratio, board independence shows a statistically significant negative effect on earnings management of listed banks in SSA. This implies that an increase in the number of an independent board of directors is associated with lower levels of discretionary accruals. This is consistent with a study by Kolsi and Grassa (2017) who identified a negative and significant effect of board independence on earnings management of banks. This may also suggest that high level of board independence enhances the quality of financial reporting (Gallery et al., 2008).

With respect to bank funding strategy and earnings management, customer deposit/asset shows a statistically significant negative effect on earnings management of listed banks in SSA. This also suggest that banks that finance their activities with more of their assets with customer deposits are likely to engage in lower levels of discretionary accruals. This is consistent with a study by Amidu and Kuipo (2015) who identified a negative and significant effect of customer deposit/asset on earnings management of banks. The logical reasoning behind this is that, the implied contractual conditions behind customer deposits compel managers to management earnings so as to meet those obligations.

Also, with the rest to the control variables, the findings show that improvement in the financial market development and efficiency as well as institutional quality that borders on control of corruption and regulatory quality are instrumental in restraining discretionary earnings management behaviour of listed banks in SSA. This is consistent with studies by Enomoto Kimura, and Yamaguchi (2018) and Degeorge et al. (2013) who identified a negative and significant effect of financial development on earnings management of banks. According to Enomoto Kimura, and Yamaguchi (2018), financial development is likely to intensify the monitoring and inspection of accounting numbers because of reinforced investor protection laws and regulations. Leuz et al. (2003) stated that earnings management is limited in countries with higher levels of investor protection.

Furthermore, bank size and ROA have a statistically significant negative effect on earnings management of banks in SSA. The inverse relationship between ROA and earnings management shows that profitable banks do not seem to be engaging in earnings management compared with unprofitable banks. Again, the inverse relationship between bank size and earnings management of listed commercial banks in SSA shows that bigger banks are less inclined to earnings manipulation to safeguard their reputation and brand name. Furthermore, this implies that large banks have lower information asymmetry, better control system and are more efficient than small banks leading to a decrease in earnings management (Watts & Zimmerman, 1986). It might also indicate that bigger banks are more pressed by analysts to beat investors' expectations. Finally,

this study found that the cost/income ratio has a negative effect on earnings management of commercial banks in SSA. That is, an increase in cost/income ratio will decrease earnings management of commercial banks in SSA.

Table 4 Regression with Driscoll-Kraay standard errors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	EM	EM	EM	EM	EM	EM	EM
Log Assets (size)	-.0509*	-.0634**	-.0595*	-.0508*	-.1592**	-.1332**	-.11***
	(.0203)	(.0211)	(.028)	(.0207)	(.0426)	(.0347)	(.024)
Board size	-.0202***	-.0244***	-.0104**	-.0122***	.0006	-.0015	-.0109*
	(.003)	(.0035)	(.0026)	(.0024)	(.0049)	(.006)	(.0051)
Board independence	-.1533	-.2843**	-.0437	-.0211	-.3832**	-.3296*	-.1277**
	(.1058)	(.0831)	(.0775)	(.0905)	(.1395)	(.1288)	(.0488)
Customer deposit/asset	-1.6152**	-1.6111**	-.9057**	-1.5061**	-.9695	-.9723	-1.098*
	(.498)	(.4195)	(.3398)	(.4735)	(.6568)	(.6704)	(.5314)
Customer deposit/total deposits	1.1535*	1.2432**	.9031	1.1862*	.8606	.8665	.8178
	(.4861)	(.4661)	(.4636)	(.5017)	(.684)	(.7119)	(.5411)
ROA	-.1328***	-.1407***	-.204***	-.1538***	-.1888***	-.1653***	-.1565***
	(.0302)	(.0288)	(.0347)	(.0316)	(.0346)	(.0323)	(.0307)
Cost/income ratio	-.0087	-.0107**	-.017**	-.0109*	-.0212**	-.0182**	-.0132**
	(.0044)	(.004)	(.0047)	(.0044)	(.0055)	(.005)	(.0044)
Financial market Development (fmd)	-.6479***						
	(.0504)						
Financial market efficiency		-.7497***					
		(.1033)					
Financial institutions efficiency (fie)			-2.8434***				
			(.4728)				
Financial Development				-1.5592***			
				(.2084)			
Control of Corruption					-.5146***		
					(.0824)		
Regulatory quality						-.6404***	
						(.0977)	
Business freedom							-.0272***
							(.0029)
_cons	2.846***	3.2478***	4.8923***	3.0441***	5.2162***	4.5046***	5.5881***
	(.6733)	(.6423)	(.9557)	(.6701)	(1.0139)	(.8278)	(.7962)
Observations	206	206	206	206	143	143	206
R-squared	.2522	.24	.3612	.2812	.3129	.3241	.3067

Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$, Source: Author's estimations (2021)

4.2 Robustness Analysis

To check the validity of the regression with Driscoll Kraay's standard error estimator results, the study also employs regression analysis with the Feasible Generalized Least Squares (FGLS) estimator and the results presented in Table 5. The FGLS is selected to permit error correlations across individuals, with independence over time for a given individual. From Table 5, the corporate governance measures comprising board size and board independence have a statistically significant negative effect on earnings management of listed banks in SSA. Also, the funding strategy measure comprising customer deposit/asset shows a statistically significant negative effect on earnings management of listed banks in SSA. A comparison of the models in both Table 4 and Table 5 indicate that the results of the Driscoll-Kraay estimator are close to FGLS estimators, which also increases the reliability of the regression results.

Table 5 Feasible Generalized Least Square Estimations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Earnings Management	Earnings Management	Earnings Management	Earnings Management	Earnings Management	Earnings Management	Earnings Management
Log Assets (size)	-.0382***	-.038***	-.0407***	-.0407***	-.0991***	-.0932***	-.0775***
Board size	-.0155***	-.0176***	-.0105***	-.0132***	-.0026	-.0008	-.0078***
Board independence	-.2334**	-.3889***	-.1754*	-.148	-.2726**	-.1973	-.1735***
Customer deposit/asset	-1.4159***	-1.1178***	-.6808**	-1.3384***	-1.2983***	-1.167**	-1.2661***
Customer deposit/total deposits	.9066***	.6703**	.5028*	.8956***	.9062**	.882**	.8444***
ROA	-.0619***	-.0427**	-.1126***	-.0801***	-.1313***	-.1048***	-.0797***
Cost/income ratio	-.0005	-.0001	-.0068***	-.002	-.0117***	-.0095**	-.0049**
Financial market Develop (fmd)	-.3909***						
Financial market efficiency		-.1994					
Financial institutions efficiency (fie)			-1.6043***				
Financial Development				-.7937***			
Control of Corruption					-.3011***		
Regulatory quality						-.4171***	
Business freedom							-.0156***
_cons	1.8621***	1.8442***	3.1011***	2.0831***	3.5283***	3.0969***	3.5808***
Observations	206	206	206	206	143	143	206
Wald chi2(8)/Prob > chi2	129.91/0.000	129.91/0.000	129.91/0.000	129.91/0.000	129.91/0.000	129.91/0.000	129.91/0.000

*** $p < .01$, ** $p < .05$, * $p < .1$, Source: Author's work (2021)

5. Conclusion and Policy Implications

The general objective of this study is to examine the relationship between funding structure, corporate governance and earnings management of listed commercial banks in Sub-Saharan Africa. The findings emanating from the study underscore the important influence of corporate features on earnings manipulations among listed banks. More specifically, the study concludes that corporate board size and board independence have a negative influence on earnings management of listed commercial banks in Sub-Saharan Africa. Similarly, banks that rely more on customer deposits in their funding structure show high tendency to reduce earnings management. Bigger and more profitable banks are also found to engage in less earnings management. Again, an improvement in the financial market development as well as efficiency is also reported to influence listed banks' earnings negatively.

The findings arising from this study have implications for market participants such as bank regulators and managers of banks. For regulators and bank managers, the study recommends for continuous improvement in the corporate governance structures as well as financial market development and efficiency in order to tighten the monitoring effort of key stakeholders in their effort to stem earnings manipulation by listed commercial banks in SSA. Furthermore, efforts should also be made to strengthen the institutional quality environment in stemming the tide of earnings management in listed SSA.

Declaration of Competing Interest

We, the authors of this paper do hereby declare that we have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

- Ahmed, A. S., Takeda, C., & Thomas, S. (1999). Bank loan loss provisions: a reexamination of capital management, earnings management and signaling effects. *Journal of accounting and economics*, 28(1), 1-25.\
- Amidu, M., Coffie, W., & Acquah, P. (2019). Transfer pricing, earnings management and tax avoidance of firms in Ghana. *Journal of Financial Crime*, 26(1), 235-259
- Amidu, M., & Kuipo, R. (2015). Earnings management, funding and diversification strategies of banks in Africa. *Accounting Research Journal*, 28(2), 172–194.
- Anandarajan, A., Hasan, I., & Lozano-Vivas, A. (2003). The role of loan loss provisions in earnings management, capital management, and signaling: the Spanish experience. *Advances in International Accounting*, 16, 45-65.
- Arthurs, J. D., & Busenitz, L. W. (2003). The Boundaries and Limitations of Agency Theory and Stewardship Theory in the Venture Capitalist/Entrepreneur Relationship *Entrepreneurship Theory and Practice*, 28(2), 145–162.
- Beatty, A., & Liao, S. (2014). Financial accounting in the banking industry: A review of the empirical literature. *Journal of Accounting and Economics*, 58(2-3), 339-383.
- Bhattacharya, U., Daouk, H., & Welker, M. (2003). The World of Earnings Opacity. *The Accounting Review*, 78(3), 641–678.
- Billett, M. T., & Garfinkel, J. A. (2004). Financial flexibility and the cost of external finance for US bank holding companies. *Journal of Money, Credit and Banking*, 827-852.
- Bornemann, S., Kick, T., Memmel, C., & Pfingsten, A. (2012). Are banks using hidden reserves to beat earnings benchmarks? Evidence from Germany. *Journal of Banking and Finance*, 36(8), 2403-2415.
- Botsari, A. (2010): Earnings Management and Market Efficiency: Re-examining the PostMerger Performance Puzzle, University of Piraeus, EFMA Conference Paper, 2010.
- Burns, N., & Kedia, S. (2006). The impact of performance-based compensation on misreporting. *Journal of Financial Economics*, 79(1), 35-67.
- Bushman, R. M., & Williams, C. D. (2012). Accounting discretion, loan loss provisioning, and discipline of banks' risk-taking. *Journal of accounting and economics*, 54(1), 1-18.
- Calomiris, C. W. (1999). Building an incentive-compatible safety net. *Journal of Banking & Finance*, 23(10), 1499-1519.

- Chouaibi, J., Harres, M., & Brahim, N. B. (2018). The effect of board director's characteristics on real earnings management: Tunisian-listed firms. *Journal of the Knowledge Economy*, 9(3), 999-1013.
- Cornett, M. M., Marcus, A. J., & Tehranian, H. (2008). Corporate governance and pay-for-performance: The impact of earnings management. *Journal of financial economics*, 87(2), 357-373.
- Cornett, M. M., McNutt, J. J., & Tehranian, H. (2009). Corporate Governance and Earnings Management At large U.S. Bank Holding Companies. *J Corp Finan*, 15, 412–430.
- Dagher, J., & Kazimov, K. (2015). Banks' liability structure and mortgage lending during the financial crisis. *Journal of Financial Economics*, 116(3), 565-582.
- Damak, S. T. (2018). Gender diverse board and earnings management: evidence from French listed companies. *Sustainability Accounting, Management and Policy Journal*, 9 (3), 289-312.
- Damak, S.T (2018), "Gender diverse board and earnings management: evidence from French listed companies", *Sustainability Accounting, Management and Policy Journal*, Vol. 9 No. 3, pp. 289-312. <https://doi.org/10.1108/SAMPJ-08-2017-0088>
- Degeorge, F., Ding, Y., Jeanjean, T., & Stolowy, H. (2013). Analyst coverage, earnings management and financial development: An international study. *Journal of Accounting and Public Policy*, 32(1), 1-25.
- Demirguc-Kunt, A., & Huizinga, H. (2009). *Bank activity and funding strategies: The impact on risk and returns*. The World Bank.
- Driscoll, J. C., & Kraay, A. C. (1998). Consistent covariance matrix estimation with spatially dependent panel data. *Review of economics and statistics*, 80(4), 549-560.
- Efendi, J., Srivastava, A., & Swanson E.P. (2007). Why do corporate managers misstate financial statements? The role of option compensation and other factors. *Journal of Financial Economics*, 85(3), 667-708.
- El Sood, H. A. (2012). Loan loss provisions and income smoothing in US banks pre and post the financial crisis. *International Review of Financial Analysis*, 25, 64–72. <https://doi.org/10.1016/j.irfa.2012.06.007>
- Enomoto, M., Kimura, F., & Yamaguchi, T. (2018). A cross-country study on the relationship between financial development and earnings management. *Journal of International Financial Management & Accounting*, 29(2), 166-194.

- Flannery, M. J. (1982). Deposit insurance creates a need for bank regulation. *Business Review*, (Jan/Feb), 17-31.
- Flannery, M. J. (1986). Asymmetric information and risky debt maturity choice. *The Journal of Finance*, 41(1), 19-37.
- Fortin, N. M., Bell, B., & Böhm, M. (2017). Top earnings inequality and the gender pay gap: Canada, Sweden, and the United Kingdom. *Labour Economics*, 47, 107-123.
- Gallery, N., Hutchinson, M. R., Percy, M., & Erkurtoglu, L. (2008). An investigation of the association between corporate governance, earnings management and the effect of governance reforms. *Accounting Research Journal*, 21(3):239-262.
- Gras-Gil, E., Manzano, M.P. and Fernandez, J.H. (2016) Investigating the Relationship between Corporate Social Responsibility and Earnings Management: Evidence from Spain. *Business Research Quarterly*, 19, 289-299.
<https://doi.org/10.1016/j.brq.2016.02.002>
- Hashemizadeh, A., Bui, Q., & Kongbuamai, N. (2021). Unpacking the role of public debt in renewable energy consumption: New insights from the emerging countries. *Energy*, 224, 120187.
- Huang, R., & Ratnovski, L. (2011). The dark side of bank wholesale funding. *Journal of Financial Intermediation*, 20(2), 248-263.
- Jensen, M. C. (1994). Self-interest, altruism, incentives, and agency theory. *Journal of applied corporate finance*, 7(2), 40-45.
- Jensen, M., Murphy, K., & Wruck, E. (2004). *Remuneration: where we've been, how we got to here, what are the problems and how to fix them*. ECGI Working Paper Series in Finance, No. 44
- Jiang, L., Levine, R., & Lin., C. (2016). Competition and Bank Opacity. *Review of Financial Studies*, 29(7), 1911–1942.
- Jin, J. Y., Kanagaretnam, K., & Liu, Y. (2018). Banks' Funding Structure and Earnings Quality. *International Review of Financial Analysis*, 59, 2–34.
- Jo, H., & Kim, Y. (2007). Disclosure frequency and earnings management. *Journal of Financial Economics*, 84(2), 561-590.
- Kanagaretnam, K., Lim, C. Y., & Lobo, G. J. (2010). Auditor reputation and earnings management: International evidence from the banking industry. *Journal of Banking & Finance*, 34(10), 2318-2327.

- Kanagaretnam, K., Lobo, G. J., & Wang, C. (2015). Religiosity and earnings management: International evidence from the banking industry. *Journal of Business Ethics*, 132(2), 277-296.
- Kankanamage, C. A. (2016). The relationship between board characteristics and earnings management: Evidence from Sri Lankan listed companies. *Kelaniya Journal of Management*, 4(2), 11-23.
- Khalil, M., & Ozkan, A. (2016). Board independence, audit quality and earnings management: Evidence from Egypt. *Journal of Emerging Market Finance*, 15(1), 84-118.
- Kolsi, M. C., & Grassa, R. (2017). Did corporate governance mechanisms affect earnings management? Further evidence from GCC Islamic banks. *International Journal of Islamic and Middle Eastern Finance and Management* 10 (1), 2-23.
- Lasisi, T. I. (2017). *The Relationship between corporate governance and organizational performance in Nigerian companies. (Doctoral Dissertation)*. Walden University.
- Leung, N. W., & Cheng, M. A. (2014). Corporate governance mechanisms and auditor choice: evidence from China. *International Journal of Business and Management*, 9(9), 41-58.
- Leuz, C., Nanda, D., & Wysocki, P. (2003). Earnings Management and Investor Protection: an International Comparison. *Journal of Financial Economics*, 69(3), 505–527.
- Levine, R. (1997). Financial development and economic growth: views and agenda. *Journal of economic literature*, 35(2), 688-726.
- Mahrani, M. and Soewarno, N. (2018), "The effect of good corporate governance mechanism and corporate social responsibility on financial performance with earnings management as mediating variable", *Asian Journal of Accounting Research*, Vol. 3 No. 1, pp. 41-60. <https://doi.org/10.1108/AJAR-06-2018-0008>
- Mayers, D., & Smith Jr, C. W. (2004). Incentives for Managing Accounting Information: Property-Liability Insurer Stock-Charter Conversions. *Journal of Risk and Insurance*, 71(2), 213-251.
- Mersni, H., & Othman, H. B. (2016). The impact of corporate governance mechanisms on earnings management in Islamic banks in the Middle East region. *Journal of Islamic*

- Accounting and Business Research*, 7 (4), 318-348.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, 13(2), 187-221.
- Nissanke, M., & Aryeetey, E. (2008). Institutional analysis of financial market fragmentation in sub-Saharan Africa: a risk-cost configuration approach. In *Domestic Resource Mobilization and Financial Development* (pp. 112-145). Palgrave Macmillan, London.
- Norman, W., & MacDonald, C. (2004). Getting to the bottom of" triple bottom line". *Business ethics quarterly*, 243-262.
- Olaoye, O., & Aderajo, O. (2020). Institutions and economic growth in ECOWAS: an investigation into the hierarchy of institution hypothesis (HIH). *International Journal of Social Economics*, 47 (9), 1081-1108.
- Olaoye, O. O., Orisadare, M., Okorie, U. U., & Abanikanda, E. (2020). Re-examining the government expenditure–growth nexus in ECOWAS countries. *Journal of Economic and Administrative Sciences*, 36 (4), 277-301.
- Peterson K Ozili, (2017) "Bank earnings smoothing, audit quality and procyclicality in Africa. The case of loan loss provisions", *Review of Accounting and Finance*, Vol. 16 Issue:2, pp. -, doi: 10.1108/RAF-12-2015-0188
- Quttainah, M. A., Song, L., & Wu, Q. (2013). Do Islamic banks employ less earnings management? *Journal of International Financial Management & Accounting*, 24(3), 203-233.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335-370.
- Shen, C., & Chih, H. (2007). Earnings Management and Corporate Governance in Asia's Emerging Markets. *Corporate Governance*, 15(5), 999–1021.
- Svirydzenka, K. (2016). Introducing a New Broad-based Index of Financial Development. In *IMF Working Paper* (No. WP/16/5). Washington D. C.
- Tabassum, N., Kaleem, A., Nazir, M.S. (2015). "Real earnings management and future performance". *Global business review*, 16(1), 1-14.
- Thinh, T. Q., & Tan, N. N. (2019, January). Corporate governance factors impact on the

- earnings management—evidence on listed companies in Ho Chi Minh stock exchange. In *International Econometric Conference of Vietnam* (pp. 719-725). Springer, Cham.
- van den End, J. W., & Tabbae, M. (2012). When liquidity risk becomes a systemic issue: Empirical evidence of bank behaviour. *Journal of Financial Stability*, 8(2), 107-120.
- Waseemullah, I., & Shehzadi, A. (2015). Earnings management and firm's performance: A case of Karachi stock exchange listed firms in Pakistan. *International Journal of Economics and Empirical Research*, 3(6), 278-285.
- Watts, R., & Zimmerman, J. (1986). Positive accounting theory. New Jersey: Prentice-Hall Inc. <http://ssrn.com/abstract=928677>
- Xie, B., Davidson III, W. N., & DaDalt, P. J. (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of corporate finance*, 9(3), 295-316.
- Xu, C., Zhang, H., Hao, J., & Guo, L. (2021). Real Earnings Management in Bankrupt Firms. *Journal of Corporate Accounting & Finance*, 32(2), pp. 22-38. Wiley.
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial economics*, 40(2), 185-211.
- Yu, F. F. (2008). Analyst coverage and earnings management. *Journal of financial economics*, 88(2), 245-271.
- 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.