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Audit Committee Effectiveness and Earnings Management in Pakistani Banks

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ABSTRACT

Commercial banks are the core banking institutions in Pakistan, contributing to the economy through capital mobilization. The research study examines the audit committee significance in curtailing earnings management activities in this important sector. The impact of size, independence, and meeting frequency of the audit committee is analysed in relation to earnings management practices. The study measures earnings management through discretionary loan loss provisions. The panel data set, from the years 2005 to 2023, is obtained from the scheduled Pakistani commercial banks which are listed on the Pakistan Stock Exchange. The findings indicate that committees with a high degree of independence and those which meet frequently tend to control discretionary provisioning. In contrast, large committees are not found effective to curtail earnings management. These findings suggest that regulators and banks may enhance the integrity and faithfulness of financial reporting by emphasising on the independence of the audit committee and by ensuring a suitable frequency of its meetings.

1. Introduction

Financial statements are compiled to show a true and fair view of an entity's financial health. This faithful representation enhances the confidence of stakeholders and helps them to make informed decisions. Some managerial discretions in preparing these financial statements, as allowed by accounting standards, are sometimes misused by management. Thus, these discretionary powers create avenues for managers to engage in earnings management.

The flow of misinformation, through earnings management, can mislead stakeholders and may distort their ability to make informed decisions (Burlacu et al., 2024). Therefore, it has become an area of considerable focus in financial reporting literature, particularly after high-profile corporate scandals that shifted the emphasis toward the fragility of financial transparency. The term is defined by Healy and Wahlen (1999) as: "*Earnings Management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers*".

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Schipper (1989) stated that earnings management is purely done by corporations to obtain their private benefits. Dechow and Skinner (2000) asserted that earnings management is typically facilitated through the accounting discretion provided by accounting standards. However, earnings management is not considered illegal, rather it lies in the grey area between opportunistic manipulation and ethical discretion. Strategies, such as loan loss provisions, provide managers substantial discretion, thereby increasing the need for effective monitoring mechanisms. In the banking sector, loan loss provisions are widely regarded as a primary channel through which managers exercise discretion over reported earnings, making discretionary loan loss provisions a suitable proxy for earnings management. Given these concerns about managerial discretion and to restrain managers from indulging in such practices, the literature suggests the corporate governance mechanism as a means of control.

The Organization for Economic Cooperation and Development defines corporate governance as, "*a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined*" (OECD, 1999).

Researchers divide the corporate governance mechanism into internal and external mechanisms. External mechanisms cover the country's legal systems to enhance the credibility of financial statements, whereas, to keep investors' trust and to discourage opportunistic behaviours, strong internal mechanisms, for example, an independent board, a transparent ownership structure and effective audit committees are indispensable (Man & Wong, 2013). Research suggests that strong internal corporate governance mechanisms serve as key instruments for mitigating managerial discretion and promoting ethical financial reporting. Several studies found that earnings management practices are significantly reduced by strengthening these mechanisms (Biswas et al., 2022; Puni & Anlesinya, 2020). Specifically, audit committee is expected to serve as the most important internal monitoring mechanism, as it oversees the entire financial reporting process. Certain audit committee attributes, size, independence, and meeting frequency, are theoretically linked to the effective oversight and control over opportunistic managerial behaviours leading to earnings management practices. While these mechanisms are relevant across sectors, their importance becomes more pronounced in the financial and specially in banking sector where risk exposure and public confidence are particularly high.

Banks have a central role in the economic system as all other economic sectors are linked to banks for monetary activities to be performed. Due to this unique position, banks are highly leveraged organizations and thus may jeopardize the whole economic system because of this position (Lassoued et al., 2017). Therefore, if managers in the banking sector indulge in earnings management, this may further erode investor distrust. As banks are the central point of the economic system, this will force the investors to invest their money outside the country, thus negatively impacting the financial sector's stability. A similar phenomenon, that is, capital flight, was observed in the 1997 Asian financial crisis. These considerations emphasize the importance of effective internal governance mechanisms in safeguarding transparency and trust in the banking sector.

Early studies on the financial sector show that banks are engaged in earnings manipulation (Anandarajan et al., 2007), but this phenomenon is highlighted after the financial crisis of 2008, when the banks came under the limelight (Acharya & Richardson, 2009). This crisis attracted the focus of researchers on the trustworthiness of financial institutions, and especially of banks, financial records. Compared to the non-financial firms, banks had a greater motive for managing earnings as economic volatility is high, therefore, banks are under pressure to smooth out earnings (C.-H. Wu et al., 2018). Due to this phenomenon, the users found it difficult to accurately predict the bank's performance based on issued financial statements (Hakim Ben Othman, 2016). Thus, such practices need to be detected and curtailed as they create hindrance to

communication between present and potential investors and hence influencing the sustainability of the banks at stake (Quttainah et al., 2013).

Despite the vast literature on audit committees and earnings management, much of the current evidence is drawn from developed economies or non-financial sectors. The application of theory related to corporate governance mechanisms in emerging banking markets, particularly Pakistan, remains relatively under-explored. Pakistan's banking sector operates under the dual oversight of Securities & Exchange Commission of Pakistan and State Bank of Pakistan. This regulatory environment and ownership structures differ from those in developed markets and, thus, may influence how audit committee function as the monitoring mechanism. This limited empirical validation in Pakistan's banking sector shows a critical gap for context-specific evidence on the audit committee effectiveness in Pakistan's emerging financial market.

Thus, in line with the earnings management debate and considering internal corporate governance mechanisms as well as banks' unique risk profile, the study focuses on three issues. First, to explore whether audit committee size has any role in constraining the earnings management practices in Pakistan's commercial banks. Secondly, it investigates the impact of audit committee independence in constraining these practices. Finally, it analyses whether the frequency of audit committee meetings may enhance the effectiveness of oversight in reducing these practices.

Hence, this study makes the following key contributions to the existing literature:

- First, consistent with prior banking literature, it employs discretionary loan loss provisions as a banking-specific measure of earnings management for Pakistan's commercial banking sector.
- Second, it provides empirical evidence on the significance impact of audit committee attributes on earnings management practices in the context of an emerging market, i.e., Pakistan's commercial banking sector, which remains less explored in prior studies.

2. Literature Review

2.1 Agency Theory

The theory, proposed by Jensen and Meckling (1976), explains conflicts of interest arising from the separation of ownership and control of a firm. It provides the theoretical foundation for corporate governance mechanisms by describing the linkage between *principal* (shareholders) and *agent* (management). The *principal-agent* issue occurs when managers, expected to act in shareholders' interests, act in their own interests. Because ownership and control are separated, managers have both the authority and the discretion to make decisions that may prioritize personal gains over shareholder value. The situation worsens when there is misalignment of goals and unequal access to information.

2.2 Positive Accounting Theory

This theory provides an explanation for earnings management behaviour. Watts & Zimmerman (1978) assert that managers are given contracts, and those contracts are linked with accounting numbers. This theory argues that managers are motivated to alter accounting information by adopting different accounting methods to increase their contract dependent bonuses or to achieve some financial reporting goals (Watts & Zimmerman, 1990). Managers may, for example, report positive earnings as a means of avoiding default risk, thereby complying with debt contract requirements. As such, this theory helps explain managerial incentives for indulging in earnings management practices.

2.3 Proxy for Earnings Management

Several proxies are used in literature to analyse earnings management practices. These proxies reveal patterns of earnings management and indicate the extent of managerial discretion in preparing the financial statements. Commonly, discretionary accruals are used to measure earnings management in non-banking firms. In banks, accrual-based models may fail to adequately capture

managerial discretion as their applicability in the banks is limited because of distinct nature balance sheets and revenue structures of the banks. For the earnings management practices in banks, in contrast, a substantial body of literature uses discretionary loan loss provisions (*DLLP*) as a primary proxy. These provisions reflect managerial discretion in estimating loan losses. Such discretion is judgment-based, and without proper monitoring may increases the risk of misreporting of financial statements of the banks.

Based on empirical evidence, Ahmed et al. (1999) stated that in banks *DLLP* are not only used to manage earnings but also to inflate the capital adequacy. Anandarajan et al. (2003) derived the same conclusion by pointing out that *DLLP* are strategically employed for this purpose. Their study also revealed that the condition aggravates when banks are operating in emerging markets. Cornett et al. (2009) reveal that *DLLP* are frequently used for earnings management in U.S. commercial banks. Kanagaretnam et al. (2004) discussed in detail that in addition to smooth earnings, *DLLP* are also used to positively signal a firm's financial health. Recent evidence further highlights that bank managers' individual attributes influence how *DLLP* reflect underlying credit risk (Bischof & Rudolf, 2025).

In summary, prior research consistently documents the use of *DLLP* to capture managerial discretion in financial reporting (e.g. Beccalli et al., 2013; DeBoskey & Jiang, 2012; Desta, 2017; El Sood, 2012; Elnahass et al., 2018; Grassa, 2017; Kilic et al., 2013; Lassoued et al., 2018; Leventis et al., 2011; Ozili & Arun, 2018; Pinto et al., 2018 and Ujah et al., 2017). Based on this extensive and ubiquitous use in the literature, this study employs DLLP as the proxy for measuring earnings management in banks.

2.4 Audit Committee and its Impact on Earnings Management

Although the principal-agent paradigm is foundational base of corporate governance, the global and local developments in corporate governance frameworks reflect a broader response to financial crises, corporate misconduct, and the growing complexity of modern business environments.

Prior research has explored the function of audit committees as an essential internal corporate governance mechanism for reducing earnings management. In Pakistan, the Code of Corporate Governance emphasizes the significance of audit committee in promoting the integrity and quality of financial reporting. This study also investigates the connection between earnings management and the audit committee.

In the earnings management framework, the audit committee occupies a crucial place. It is responsible for the oversight of the reporting process. It also ensures compliance with legal and regulatory requirements and facilitates the smooth coordination between internal and external audit functions. Researchers found that the mere existence of the audit committee constrains earnings management behaviour of the managers (Hakim Ben Othman, 2016; Moumen et al., 2016). The same conclusions were reached by Carcello & Neal (2000), and, Klein (2002). Regional evidence from Saudi Arabia, UAE and Ghana confirms that greater audit committee independence and active engagement are associated with higher reporting quality and reduced earnings management (Algrady et al., 2025; Bawuah, 2024). In Pakistan, recent revision in the code for corporate governance has made it *mandatory* that the board must provide authority and resources to the audit committee to enable it to review interim and annual financial statements before presenting it to the board for approval (Securities and Exchange Commission of Pakistan, 2019). Consistent evidence from emerging market settings also suggests that stronger audit quality is associated with lower earnings management through loan loss provisioning. Using data from Iranian banks, Kaviani and Jafari (2025) report that improved audit quality is linked to reduced discretionary behaviour in loan loss provisions. Key attributes, such as audit committee independence, its size and the frequency of its meetings, have been identified as crucial determinants of committee effectiveness.

2.4.1 Audit Committee Size

One dimension of audit committee effectiveness frequently examined in the literature is committee size, with larger committees argued to enhance monitoring capacity. Kent et al. (2010) suggest that the committee's size is the key mechanism associated with the quality of earnings. A committee with more members may benefit from an extensive range of knowledge, experience, and viewpoints which can strengthen its capability in the monitoring of financial statements and detect irregularities therein.

Earlier studies also found that the size of audit committee adversely impacts earnings management. Xie et al., (2003) are of opinion that the firms having larger audit committees were less inclined to earnings manipulation. Jameel et al. (2024) also found a statistically significant inverse relationship between audit committee size and earnings manipulation. An opposing point of view is that large audit committees may result in poor coordination among members and ultimately weaken their oversight role. Yang and Krishnan (2005) also argued in the same way that the relationship is not that simple, and the mere number of members does not guarantee effectiveness. The impact of other variables such as independence of members and their financial expertise must also be considered while interpreting the results. Based on the discussion and recent advancements in code of corporate governance, the first hypothesis of the study, thus, is presented as:

H_1: *An increase in the size of audit committee is negatively associated with level of earnings management in Pakistan's commercial banks.*

2.4.2 Audit Committee Independence

Audit committee independence represents another critical governance attribute, as independent members are expected to provide objective oversight and reduce managerial influence over financial reporting decisions. The argument that an independent audit committee can restrict earnings management is supported by García-Meca and Sánchez-Ballesta (2009); Jameel et al. (2024); Kent et al. (2010); and Klein (2002). Studies from emerging markets also report that audit committee independence reduces earnings management (Ibrahimi, 2025). The introductory corporate governance code in Pakistan focused on audit committee independence by recommending that, "*audit Committee chairman is preferred to be a non-executive director*" (Securities and Exchange Commission of Pakistan, 2002). It was more specific in next code "*the audit committee Chairman should be an independent director, and the Chairman of the audit and board can't be the same*" (Securities and Exchange Commission of Pakistan, 2012). This condition, that an independent director should be the chairman of the committee, was made compulsory in the next revised code (Securities and Exchange Commission of Pakistan, 2017). Prudential regulations also directed the banks to have an audit committee consisting of at least one non-executive director and invariably chaired by an independent director (State Bank of Pakistan, 2015). Latest corporate governance code has made more elaborated provisions for the audit committee. It has made it *mandatory* that the board shall constitute an audit committee comprising of *at least three non-executive directors and at least one independent director*. The independent director shall be the chairman of the committee, but it should not also be the chairman of the board (Securities and Exchange Commission of Pakistan, 2019). These regulatory advancements highlight a growing recognition of the independent audit committee's critical role in enhancing financial oversight (Securities and Exchange Commission of Pakistan, 2017; Securities and Exchange Commission of Pakistan, 2019; State Bank of Pakistan, 2015).

However, the relationship of committee's independence and earnings management is not simple. Many studies challenged the argument that independence alone is effective enough to curtail earning management. Alghizzawi et al. (2024), in their research work found a direct association between audit committee independence and earnings management. Hamdan (2020) argued that independence alone does not guarantee effectiveness. The literature thus suggests that mere independence without suitable actions such as financial expertise or active engagement may

not be equally effective in curbing managerial discretion as usually assumed. Independence needs to team up with many other governance attributes to get its desired impact (García-Meca & Sánchez-Ballesta, 2009). Therefore, the second hypothesis of the study is given as:

H_2: *An increase in the proportion of independent directors in the audit committee is negatively associated with level of earnings management in Pakistan's commercial banks.*

2.4.3 Frequency of the Audit Committee Meetings

The frequency of audit committee meetings reflects the intensity of monitoring activities, with more frequent meetings indicating greater diligence and engagement in overseeing financial reporting processes. Researchers tried to investigate the extent to which frequent audit committee meetings contribute to the reduction of earning manipulation (Jameel et al., 2024; Sharma et al., 2009; Xie et al., 2003). In developing financial markets, the combined effect of audit committee effectiveness with high audit quality is observed that ultimately served to curtail earnings management behaviours (Nurjanah et al., 2025). The regulatory binding as mentioned in the latest version of code also makes it *mandatory* that the audit committee shall meet at least once quarterly each financial year (Securities and Exchange Commission of Pakistan, 2019). Therefore, an actively engaged audit committee has an important role in enhancing the credibility of financial reports. Therefore, the last hypothesis of the study is given as:

H_3: *An increase in the frequency of audit committee meetings is negatively associated with level of earnings management in Pakistan's commercial banks.*

3. Methodology

This research applies panel data regression analysis to study the relationship between audit committee characteristics and earnings management in Pakistan's commercial banks. The target population consists of all commercial banks listed on Pakistan Stock Exchange (PSX) and classified as scheduled banks by the State Bank of Pakistan. Accordingly, this empirical design is employed to test hypotheses H_1-H_3 concerning the relationship between audit committee characteristics and earnings management in commercial banks.

Rather than selecting a subset of banks, the research uses a census approach by including all listed scheduled commercial banks. This approach is appropriate as there are only 20 such banks, and each bank plays its important role in Pakistan's economic system. Also, by adopting census approach, the analysis provides a more comprehensive assessment by avoiding the bias associated with selective sampling.

The disclosure of audit committee variables, through annual reports, became structured after the introduction of the Code of Corporate Governance in 2002, and it became more consist after 2005. Therefore, the final sample period covers the period from *2005 to 2023* covering *20 commercial banks* over *19 years*, resulting in a total of *380 bank-year* observations. The data is extracted from annual reports, as loan loss provisioning and audit committee characteristics are disclosed on an annual basis. Bank years with incomplete information were excluded to ensure consistency of the empirical analysis.

The banks have to maintain loan loss provisions as regulatory compliance for the risk management. This is further categorized in discretionary and non-discretionary loan loss provisions (Gray & Clarke, 2004). Discretionary loan loss provisions (*DLLP*) capture the portion of provisioning decisions that reflects managerial judgment rather than underlying credit risk, making them particularly suitable for examining earnings management in banks. Following Abdelsalam et al., 2016; Beatty et al., 2002; Cohen et al., 2014; Cornett et al., 2009; Fan et al., 2019; Grougiou et al., 2014; & Leventis and Dimitropoulos, 2012, *DLLP* is used as a proxy for earnings management, *EM*, calculated as residual of *Eq. (1)*:

$$LLP_{it} = \beta_0 + \beta_1 NPA_{it} + \beta_2 LLA_{it} + \beta_3 READV_{it} + \beta_4 DIADV_{it} + \beta_5 AGRIADV_{it} + \beta_6 CONADV_{it} + \beta_7 CIADV_{it} + \beta_8 SIZ_{it} + \varepsilon_{it} \dots (1)$$

Where:

LLP: The amount that is added to the allowance for loan losses in the current reporting period deflated by gross advances.

NPA: Non-performing advances as a ratio to gross advances.

LLA: A contra-asset account that appears on the balance sheet as an offset to loans receivable as a ratio to gross advances.

READV: Advances given in the real estate and construction sector during the year as a ratio to gross advances.

DIADV: Advances given to depository institutions during the year as a ratio to gross advances.

AGRIADV: Advances provided to the agriculture sector during the year as a ratio to gross advances.

CONADV: Advances provided to individuals during the year as a ratio to gross advances.

CIADV: Advances given to commercial and industrial sector during the year as a ratio to gross advances.

SIZ: The natural log of year-end assets.

ε_{it}*:* The residual term from Eq. (1), representing discretionary loss provisions (*DLLP*) and used as a proxy for earnings management (*EM*).

The inclusion of explanatory variables in *Eq. (1)* is intended to capture non-discretionary determinants of loan loss provisions. Asset quality indicators, such as non-performing advances and loan loss allowances, reflect underlying credit risk and expected losses. Sector-wise advances are included to account for differences in credit risk arising from loan portfolio composition, as sectoral exposure influences provisioning behaviour independent of managerial discretion. Bank size, *SIZ,* is used as a control variable here. It is calculated as the *natural logarithm of total assets* and is commonly used as a key indicator that influences earnings management practices in banks. Masihi (2013) argues that large banks possess more robust internal control mechanisms and face reputational risks that deter misreporting and, therefore, are less likely to engage in earnings manipulation. However, prior empirical evidence on the relationship between bank size and earnings management is mixed, suggesting that size may also be associated with greater complexity and discretion in reporting (Kanagaretnam et al., 2010; Cornett et al., 2009). Collectively, these variables help isolate the discretionary component of loan loss provisions.

The econometric model to check the impact of audit committee characteristics on earnings management is presented in *Eq. (2).* This model is adopted from Cornett et al. (2009). This specification allows direct testing of hypotheses H_1-H_3 relating to audit committee size, independence, and meeting frequency to earnings management. The study takes EM as dependent variable and finds out the impact:

$$EM_{it} = \gamma_0 + \gamma_1 AUDSIZ_{it} + \gamma_2 AUDIND_{it} + \gamma_3 AUDMET_{it} + \gamma_4 \sum_{j=4}^{7} Z_j + e_{it} \dots (2)$$

Where:

AUDSIZ: Total number of directors in the audit committee.

AUDIND: Number of independent directors in the audit committee as a ratio of *AUDSIZ.*

AUDMET: Frequency of audit committee meetings per year.

Z: It represents the vector of control variables (bank size, market-to-book value, leverage, and capital adequacy).

Drawing on prior empirical banking literature, the following bank-specific control variables, along with *bank size*, are included in the estimation:

- Higher value of *market to book value of equity* is associated with lower earnings management, therefore this is considered as second control variable in this model.
- Following Leventis and Dimitropoulos (2012), leverage, measured by the *ratio of total debt to total common equity*, is used as third control variable.
- According to Ahmed et al. (1999), capital adequacy is negatively related to discretionary accruals, highlighting its role as a deterrent to earnings management. Cornett et al. (2009) found that banks with stronger capital positions (capital adequacy ratio) engage less in earnings management. On the, contrary, research also suggests that well-capitalized banks may strategically use discretionary provisions for income smoothing, highlighting the need for empirical examination (Collins et al., 1995). *Capital adequacy ratio* is the fourth bank-specific control variable in this model.

As the data has a panel structure, the models are evaluated by using relevant diagnostic tests to check for multicollinearity, serial correlation, and heteroscedasticity issues to establish the robustness of the estimates. The *Breusch–Pagan LM*, *Wooldridge*, and *Hausman specification* tests help in the selection of the most appropriate estimation technique. By applying these diagnostics, the study aims to validate that the findings are statistically robust and the results are dependable. Based on these tests, the appropriate panel estimation technique is selected to ensure consistent and efficient parameter estimates.

4. Results and Discussion

4.1 Calculating Discretionary Loan Loss Provisions

We start with the following six steps from cleaning the variables used in *Eq. (1)* to finding the residuals of this equation to be used as primary proxy of earnings management:

- Step 1: To reduce the influence of extreme outliers, a common phenomenon in financial data, and to obtain robust statistical inference, winsorisation is applied to continuous variables following established econometric practices (Tukey, 1962; Wilcox, 2021). The winsorisation preserves the overall distribution of the data. The continuous variables are winsorised at the 5^{th} and 95^{th} percentiles. Table-1 reports the descriptive statistics after winsorisation is applied.

Table-1: Descriptive Statistics-Variables Eq. (1)-After Winsorisation

Variable	Obs	Mean	Std. Dev.	Min	Max
llp	374	0.01	0.01	-0.05	0.04
npa	374	0.10	0.08	0	0.33
lla	374	0.08	0.05	0.01	0.18
readv	374	0.03	0.03	0	0.10
diadv	374	0.02	0.02	0	0.08
agriadv	374	0.03	0.04	0	0.14
conadv	374	0.10	0.06	0	0.22
ciadv	374	0.67	0.13	0.43	1
siz	378	26.62	1.26	24.14	29.53

Note: The table reports descriptive statistics after winsorisation at the 5^{th} and 95^{th} percentiles. Differences in the number of observations reflect data availability across banks and years.

- Step 2: The dataset is then further analysed, by using *studentized residuals*, *leverage values*, and *Cook's distance*, for identifying and excluding influential observations (Belsley et al., 1980; Cook, 1977; Fox, 2020). Table-2 reports the output of linear regression after this procedure.

Table-2: Linear Regression-Eq. (1)-After Cleaning of Data

llp	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
npa	0.02	0.02	1.08	0.28	-0.02	0.06	
lla	0.01	0.03	0.30	0.77	-0.05	0.07	
readv	-0.04	0.02	-2.10	0.04	-0.08	-0.00	**
diadv	-0.03	0.02	-1.51	0.13	-0.07	0.01	
agriadv	-0.02	0.01	-1.78	0.08	-0.05	0.00	*
conadv	0.01	0.01	1.58	0.11	-0.00	0.03	
ciadv	-0.01	0.00	-2.31	0.02	-0.02	-0.00	**
siz	-0.00	0	-2.01	0.05	-0.00	0	**
constant	0.04	0.01	3.19	0.00	0.01	0.06	***

Mean dependent var	0.01	SD dependent var	0.01
R-squared	0.17	Number of obs	315
F-test	7.96	Prob > F	0.00
Akaike crit. (AIC)	-2223.88	Bayesian crit. (BIC)	-2190.10

*** *p<.01,* ** *p<.05,* * *p<.1*

- Step 3: Variance inflation factor analysis revealed substantial multicollinearity between the variables *lla* and *npa* (VIF > 8). To resolve this issue, a composite index (*comp_index*) is constructed and substituted for the two variables (Jolliffe & Cadima, 2016). This approach preserves the informational content of asset quality indicators while mitigating multicollinearity. Table-3 reports the VIF after substituting *comp_index* for the variables *lla* and *npa*.

Table-3: VIF-Eq. (1)-After replacing LLA and NPA with *comp_index*

Variable	VIF	Tolerance (1/VIF)
ciadv	1.72	0.58
agriadv	1.56	0.64
siz	1.44	0.69
conadv	1.41	0.71
diadv	1.23	0.82
readv	1.08	0.93
comp_index	1.06	0.95
Mean VIF	**1.36**	

Note: All values are below conventional thresholds, indicating no serious multicollinearity concerns.

- Step 4: Given the panel structure of the dataset, several specification tests were employed. The *Wooldridge test* (F (1,19) = 30.09, p = .0000) rejected the null hypothesis of no autocorrelation and the *likelihood-ratio test* (χ^2 (19) = 38.45, p = 0.01) indicated heteroskedasticity (Wooldridge, 2010). For these issues, cluster-robust standard errors at the bank level are applied (Petersen, 2009). After that, following Breusch and Pagan (1980), the *Breusch–Pagan LM test* was applied which supported the use of a random effects (RE) model over pooled OLS (χ^2 = 5.40, p = 0.01) . The *Hausman test* (Hausman, (1978)) failed to reject the null hypothesis, suggesting that RE estimation is appropriate and efficient relative to fixed effects (χ^2 (7) = 10.86, p = 0.15) for the estimation of Eq. (1). Table-4 reports the output of regression.

Table-4: Random Effects Regression-Eq. (1)

llp	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
comp_index	0.00	0	3.79	0	0.00	0.00	***
readv	-0.03	0.02	-1.55	0.12	-0.07	0.01	
diadv	-0.03	0.02	-1.76	0.08	-0.06	0.00	*
agriadv	-0.03	0.02	-1.70	0.09	-0.06	0.00	*
conadv	0.01	0.01	1.02	0.31	-0.01	0.04	
ciadv	-0.01	0.01	-1.47	0.14	-0.02	0.00	
siz	-0.00	0.00	-2.16	0.03	-0.00	0	**
constant	0.05	0.01	3.96	0	0.02	0.07	***

Mean dependent var	0.01	SD dependent var	0.01
Overall r-squared	0.17	Number of obs	315
Chi-square	225.35	Prob > chi2	0.00
R-squared within	0.19	R-squared between	0.28

*** *p<.01,* ** *p<.05,* * *p<.1*

- Step 5: The regression results (Table 4) confirm the explanatory role of *comp_index* (β = 0.00, p <0 .01), highlighting the strong association between the composite asset quality measure and *llp*. The overall explanatory power of the model is modest (overall $R^2 = 0.17$), consistent with prior literature that recognizes loan loss provisions as being influenced not only by observable credit and bank characteristics but also by discretionary managerial choices (Beatty & Liao, 2014).
- Step 6: Residuals from the final regression were saved as the first proxy for earnings management (Kanagaretnam, Krishnan, & Lobo, 2010).

4.2 Audit Committee and its Impact on Earnings Management

The impact of audit committee related variables is analysed as per *Eq. (2)*. Again, the variables were winsorised, and data cleaned before estimating final regression. To have an overview descriptive statistics are computed for the audit committee and control variables.

Table-5 presents these variables after applying winsorisation. These help to better understand the characteristics of the variables before proceeding to regression analysis. The Audit committee characteristics (*audsiz*, *audin*, and *audmet*) are analysed on *EM*. Again, by applying *studentized residuals*, *leverage values*, and *Cook's distance*, influential observations are identified and excluded (Belsley, Kuh, & Welsch, 1980).

Table-5: Descriptive Statistics of Variables-Eq. (2)-After Winsorisation

Variable	Obs	Mean	Std. Dev.	Min	Max
audsiz	301	3.63	0.77	3	6
audin	279	0.39	0.25	0	0.75
audmet	305	5.47	2.67	4	28
siz	315	26.86	1.15	24.14	29.53
mkbk	304	1.08	0.65	-.42	2.62
lever	315	13.15	4.83	5.53	22.02
cap	315	2.65	1.89	.67	8.96

This table reports descriptive statistics after winsorisation at the 5th and 95th percentiles. Differences in the number of observations reflect data availability across banks and years.

The VIF values (Table 6) for all explanatory variables range between 1.28 and 1.49, with a mean VIF of 1.34. These values are well below the commonly accepted thresholds of 5

or 10, indicating that multicollinearity is not a concern in the estimated model. Therefore, the regression estimates can be considered reliable with respect to the issue of multicollinearity.

The diagnostic tests are conducted. The *Wooldridge test* yielded an F (1,17) = 3.87, p = 0.06, indicating that the null hypothesis of no autocorrelation cannot be rejected at the conventional 5% level. Similarly, the *likelihood-ratio test* for heteroskedasticity produced an insignificant result (LR χ^2 (19) = 23.68, p = 0.21), confirming that the null hypothesis of homoskedasticity cannot be rejected. Taken together, these results provide reasonable assurance that the model residuals do not suffer from major violations of the classical linear regression assumptions, thereby supporting the robustness of the reported estimates.

The *Breusch–Pagan LM test* (χ^2 = 0.00, p = 1.00) and the *F-test* (F (19, 22) = 1.59, p = 0.06) again point towards the pooled OLS model being the most appropriate estimation approach for analysing *EM* in this dataset.

Table-6: VIF-EM & Audit Committee Characteristics

Variable	VIF	1/VIF
siz	1.49	0.67
lever	1.36	0.74
audmet	1.32	0.76
cap	1.32	0.76
audin	1.31	0.77
audsiz	1.30	0.77
mkbk	1.28	0.78
Mean VIF	**1.34**	.

All values are below conventional thresholds, indicating no serious multicollinearity concerns.

The final regression (Table-7) reports the regression results examining the association between earnings management (*EM*) and audit committee characteristics, namely audit committee size (*audsiz*), independence (*audin*), and meeting frequency (audmet), after controlling for bank-specific factors. The negative and significant coefficient of *audin* (γ = –4.20, p < 0.01) indicates that higher independence effectively constrains *EM* through discretionary loan loss provisions (*DLLP*). These results are consistent with the research works carried out by García-Meca & Sánchez-Ballesta, 2009; Kent et al., 2010; Klein, 2002. They support the postulate that independent members improve the quality of check and balance by restricting managerial discretion. Keeping in mind the banking sector in Pakistan, where the propagation of independent opinion is encouraged by regulatory authorities (Securities and Exchange Commission of Pakistan, 2019), this result aligns with the empirical confirmation of the desired impact of these governance provisions. Accordingly, this finding provides strong empirical support for H_2, which posits a negative association between audit committee independence and earnings management.

The frequency of *audmet* is significantly but inversely related to earnings management (γ = –0.47, p < 0.05). From this, it may be concluded that more active committees are vigilant enough to detect and encourage critical measures to limit discretionary modifications. This adds strength to the findings related to the argument that frequent meetings reinforce monitoring quality and enhances the ability of the committee to oversee complex reporting decisions (Sharma et al., 2009; Xie et al., 2003; Jameel et al., 2024). It may be due to the engagement that allows committee members to stay informed about provisioning policies and deviations from normal reporting patterns, thereby reducing opportunities for discretionary

smoothing. This result is consistent with H_3, supporting the view that more frequent audit committee meetings enhance monitoring effectiveness and constrain earnings management.

Table-7: Pooled OLS Regression-EM & Audit Committee Characteristics

EM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
audsiz	0.87	0.47	1.83	0.07	-0.06	1.80	*
audin	-4.20	1.53	-2.75	0.01	-7.20	-1.20	***
audmet	-0.47	0.21	-2.21	0.03	-0.89	-0.05	**
siz	0.81	0.35	2.31	0.02	0.12	1.49	**
mkbk	-2.02	0.58	-3.51	0.00	-3.14	-0.89	***
lever	0.03	0.08	0.41	0.68	-0.12	0.18	
cap	0.77	0.28	2.72	0.01	0.21	1.32	***
constant	-21.70	8.59	-2.53	0.01	-38.53	-4.87	**

Mean dependent var	-0.87	SD (dependent var.)	5.32
Overall r-squared	0.12	# of obs	245
Chi-square	32.18	Prob > chi2	0.00
R-squared within	0.14	R-squared between	0.12

*** *p<.01,* ** *p<.05,* * *p<.1*

The results of Table-7, suggest a positive association between *audsiz* and *EM* (γ=0.87, $p < 0.10$). From this it may be suggested that adding more members may not necessarily improve oversight. Therefore, H_1 is not supported in the context of Pakistan's commercial banking sector. Yang and Krishnan (2005) also concluded the same by pointing out that large committees may face the risk of low coordination among members, weaker internal dynamics and unwanted diffusion of responsibility. However, not all research works support the same. In literature, the results are mixed; an inverse relationship was also reported (Xie et al., 2003; Jameel et al., 2024). In Pakistani banking context the present findings show that this deviation from the conventional expectation highlights the importance of committee composition and functionality over mere numerical strength.

Given that the dependent variable captures discretionary behaviour, taken together, the findings provide robust evidence that audit committee independence and meeting frequency are economically relevant mechanisms that are systematically associated with lower levels of earnings management, thereby lending support to H_2 and H_3, but not to H_1.

Considering the control variables, bank size has a significantly strong positive influence ($\gamma = 0.81$, $p < 0.05$) on *EM*. These results raise questions about the argument that larger banks are strict in their scrutiny and less prone to *EM* (Masihi, 2013; Kanagaretnam et al., 2010). However, in Pakistan, banks having large size may provide more discretion or develop complex portfolios that hinder external oversight. Interestingly market-to-book ratio is strongly negative, ($\gamma = -2.02$, $p < 0.01$). This strengthens the idea that better market valuations lead to less earnings manipulation and well-performing institutions face less incentives to smooth earnings (Leventis & Dimitropoulos, 2012). The positive relation of capital adequacy ($\gamma = 0.77$, $p < 0.01$) with *EM*, is in line with the results of earlier studies that suggest that strategic manipulation is done in those banks that have stronger capital buffers. They use *DLLP* for income smoothing (Ahmed et al., 1999; Collins et al., 1995).

Overall, 12% of the variation in *EM* (overall $R^2 = 0.12$) is explained by the proposed model. The chi-square statistic ($\chi^2 = 32.18$, $p < 0.001$) confirms the joint significance of the predictors. Taken together, it is found that earning management can be effectively curtailed when audit committee is independent and more vigilant. However, the characteristics specific

to banks, like size and capitalization can participate in opportunistic behaviour. The findings reinforce the argument as mentioned in the literature that regulatory and institutional context must be considered while assessing monitoring mechanism (Cornett et al., 2009; Man & Wong, 2013).

Recent evidence from emerging banking markets also supports these findings that independent and active audit committees strengthen internal control effectiveness and improve the financial reporting credibility (Algrady et al., 2025; Bawuah, 2024). On the contrary, the positive association between *audsiz* and *EM* suggests that the expansion in numbers without focussed competence may dilute accountability and weaken collective decision-making, a concern highlighted in recent governance discussions (Hamdan, 2020; Nurjanah et al., 2025). These results reinforce the argument that effectiveness of internal corporate governance mechanisms depends not merely on formal structures, but on how these monitoring mechanisms operate in practice within a given institutional and regulatory context, which helps explain why H_2 and H_3 are supported, while H_1 is not, in Pakistan's banking sector.

5. Conclusion

The study findings are consistent with the theoretical explanation of agency theory, which highlights the importance of effective oversight in restricting managerial discretion, specifically in highly risk-sensitive banking sector. This study examines the role of certain audit committee attributes (size, independence, and the meeting frequency) on earnings management practices (proxied through discretionary loan loss provisions) in Pakistan's commercial banks. The study employs panel data from 2005 to 2023 to provide empirical evidence on how these attributes influence managerial discretion in the financial reporting process of this important sector.

The results indicate a mixed pattern. The number of the audit committee members (*audsiz*) seems to influence earnings management (*EM*) positively. This may lead to the conclusion that large audit committees result in higher discretionary loan loss provisions (*DLLP*). Some reasons behind this pattern may be coordination problems among the members, or reduced responsibility that allow greater discretion in provisioning. Audit committee independence (*audin*) is associated with a negative impact on *EM*, showing that greater independence reduces discretionary provisioning, consistent with the role expected of independent members. The meeting frequency of audit committee (*audmet*) also exerts a constraining effect on *EM*, indicating that more frequent meetings reduce provisioning-based discretion, again the results are consistent with active monitoring. Collectively, the study supports the argument that different aspects of the audit committee significantly curtail earnings management. With respect to the proposed hypotheses, the empirical evidence provides support for H_2 and H_3, indicating that *audin* and *audmet* effectively constrain *EM*, while H_1 is not supported, as *audsiz* is positively associated with *DLLP*.

Summarizing the findings, this study tends to suggest that the audit committee effectiveness depends both on how it operates as well as on its structural attributes. It highlights that certain characteristics of the audit committee, particularly independence and active involvement, remain vital in discouraging opportunistic reporting behaviour, consistent with the proposed hypotheses of this study.

The study is practically useful for multiple stakeholders within the banking sector of Pakistan. For the State Bank of Pakistan and the Securities and Exchange Commission of Pakistan, the regulators, these findings provide empirical support for continuous emphasis on independence and active engagement of audit committee. Regulatory guidelines may therefore focus more on these areas. For banks, the results highlight the need to move beyond just a numerical increase in audit committee members and instead emphasize independence, regular interaction, and effective coordination among members. Bank management and boards may

use these findings to review audit committee composition, especially in relation to monitoring *DLLP* practices. From a broader perspective, the study also offers guidance for researchers by demonstrating the relevance of institutional context in shaping the effectiveness of corporate governance mechanisms. This reinforces the need for context-specific research in emerging markets, particularly within the regulated banking sector.

6. Limitations of the Study and Directions for Future Research

The following limitations should be considered while interpreting and generalizing the results:

i. The qualitative aspects of the committee, such as the expertise of audit committee members, their knowledge and skills, and decision-making quality, were not considered in this study. The current analysis only relies on data obtained from published financial reports. Although such information is standardized and allows for consistent comparison across banks, it does not fully capture the qualitative dimensions. These mechanisms, though central to committee effectiveness, are outside the scope of this study's data.
ii. The study used only one proxy, i.e., *DLLP* as the measure for earnings management. For more accurate and precise analysis, adding other measures of earnings management practices may help to generalize the results.
iii. The generalization of the results poses a major constraint in this scenario as sample is confined only to scheduled commercial banks in Pakistan. The research conclusion no doubt serves its purpose to explain this mechanism in the local regulatory framework. However, the results may deviate from the current study due to the difference in governance and supervisory frameworks in other countries. Extending the scope to cross-country data or regional comparisons may provide deeper insights into whether similar patterns hold under different institutional settings.
iv. Finally, there may be some exceptional factors that indirectly influence earnings management practices and are out of the scope of the study. Although several bank-specific control variables are included in the model, unobservable factors may still influence earnings management behaviour. Data of such factors may not be directly obtained from available financial statements and need deeper investigation, making them difficult to quantify.

The limitations of the study could also help pave the way for future research if addressed with refined objectives. To enhance the rigor and reliability of future research, incorporating a few additional audit committee variables is recommended. The other aspects of audit committee composition, such as the tenure and diversity of its members, could be examined as potential factors influencing monitoring effectiveness. These changes may contribute to interpret results more accurately. Similarly, by using alternative proxies for earnings management or adopting hybrid methodologies, such as surveys or interviews with board members could unfold the complexity of the audit committee working mechanisms and its operations. Such avenues would help in refining the evidence base. More comprehensive studies in other financial sectors will further enhance our understanding of how audit committees may contribute to improving the quality of financial reporting in the economy.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data Fabrication/Falsification Statement
The author(s) declare that no data have been fabricated, falsified, or manipulated in this study.

Participant Consent
This study is based on secondary data obtained from publicly available sources and did not involve any human participants. Therefore, no participant consent was required, and all data were used in accordance with ethical standards for secondary data research.

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