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Audit Quality and Earnings Management Based on Loan Loss Provisions: Evidence from Iranian Capital Market Banks

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Abstract

This study investigates the relationship between audit quality and earnings management, based on Loan Loss Provisions (LLPs), in 15 active banks listed on the Tehran Stock Exchange from 2010 to 2024. By analyzing data from these sample banks, this study evaluates the impact of various factors on Earnings Management Practices (EMP), including audit firm size, auditor tenure, and auditor specialization in the banking industry. The results indicate a significantly negative relationship between audit firm size and earnings management, suggesting that banks audited by larger firms are less likely to engage in earnings manipulation. Conversely, a positive and significant relationship was found between auditor tenure and earnings management, implying that prolonged auditor-client relationships may lead to a decline in auditor independence, thereby facilitating earnings management. Additionally, auditors with specialized knowledge in the banking sector demonstrate a greater ability to detect and mitigate opportunistic earnings management behaviors, contributing to a reduction in earnings manipulation within these banks.

Keywords: Audit quality, Earnings management, Bank.

1 | Introduction

In recent decades, earnings manipulation in the banking sector, particularly through Loan Loss Provisions (LLPs), has attracted significant attention. LLPs, as accounting tools to cover losses from uncollectible loans, allow managers to influence their reported earnings. This practice is particularly critical in banks, which face

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significant financial pressures due to their reliance on depositors and central banks [1]. In such a context, managers may have strong incentives to manipulate earnings and present a more favorable financial position. Research shows that earnings manipulation in banks can occur for various reasons, including the presence of a more favorable financial picture that attracts investors or influences credit ratings. In Islamic banks, due to adherence to Sharia principles, earnings manipulation is generally less prevalent, as it is not only considered unethical but also violates Sharia law [2], [3]. By contrast, in conventional banks, the use of LLPs as a tool for earnings management and mitigating income volatility during different economic periods is common. Audit quality plays a crucial role in preventing earnings manipulation and in enhancing financial transparency.

Hasani and Azimzadeh [4] demonstrated that higher audit quality is negatively correlated with accrual-based earnings management. In other words, auditors can reduce earnings manipulation by thoroughly and transparently reviewing accruals items, thereby increasing financial transparency. This finding is particularly significant when auditors focus on reviewing loan-loss provisions. In addition to audit quality, factors such as the size of the audit firm and the auditor tenure significantly affect earnings management.

According to Nahr et al. [5], auditors from larger firms and those with longer tenures tend to reduce earnings manipulation because these auditors have access to more resources and possess greater expertise in analyzing a bank's financial situation. However, while longer auditor tenure can lead to better oversight, prolonged relationships may reduce auditor independence, which could negatively affect audit quality. Market conditions and economic environment also play a role in shaping Earnings Management Practices (EMP). During times of economic and market instability, banks may increase their LLPs to cover potential losses and reduce income volatility. Nikulin and Downing [6] observed that with stronger regulatory oversight and heightened economic volatility, banks are more likely to use LLPs to protect their financial position. This trend is particularly evident in banks that have shown lower risk tolerance in the past. In Islamic banks, where operations must comply with the Sharia law, earnings manipulation is less likely.

Salem et al. [7] highlight that the size and independence of audit committees play a significant role in reducing earnings management. This finding suggests that in Islamic banks, the ethical principles and structure of audit committees lead to better oversight, reducing the likelihood of earnings manipulation. In contrast, audit committee mechanisms in conventional banks were found to have a less significant impact on earnings manipulation, indicating that conventional banks rely heavily on high-quality audits to curb these practices. Political uncertainty also affects banks' loan-loss provisions. Studies have shown that, during periods of heightened political uncertainty, banks tend to increase their LLPs. This effect is particularly notable in banks that exhibit a lower risk tolerance [8]. Building on these insights, recent studies have emphasized the role of audit quality in mitigating earnings management. For instance, Pinto and Picoto [9] explored how managers in both Islamic and conventional banks use their discretion to estimate LLPs. Their study found that audit quality, especially when specialized auditors are engaged, significantly reduces earnings manipulation and enhances transparency in financial reporting.

Similarly, Donaldy and Massoudi [10] examined the impact of audit firm rankings and auditor specialization on earnings management in Rural and Community Banks (RCBs) in Ghana. They found that higher-ranked audit firms (Such as those ranked B1 or higher) significantly reduced discretionary accruals, thus curbing earnings manipulation. Additionally, RCBs employing specialized auditors-experts in the banking sector-demonstrated lower levels of earnings management. These findings align with the notion that specialized auditors have the expertise to detect and prevent financial misreporting, leading to more reliable financial statements. Based on these studies, the current research aims to further explore the impact of audit quality on earnings management in RCBs. By focusing on audit firm rankings and auditor specialization, this study examines how different aspects of audit quality act as mechanisms to reduce earnings manipulation. The findings of this study are expected to provide valuable insights for regulators, auditors, and policymakers, suggesting that promoting higher audit quality can improve transparency, foster trust among stakeholders, and ultimately benefit both financial institutions and their stakeholders.

2 | Methodology

This research was applied in terms of its objective and descriptive-correlational in terms of its type. This was a post-event study, and data were indirectly collected from secondary sources. In other words, data were gathered using the available databases in the econometric software. The data used in this research pertain to fiscal years 2010 to 2024 in the banking industry of Iran, and specialized econometric software was used for data analysis. The statistical population of this study includes all banks listed in the country's capital market that were continuously active on the Tehran Stock Exchange from 2010 to 2024, and whose financial data were available during this period. The final sample includes 15 banks that met the necessary conditions for inclusion and were actively traded on stock exchanges during the aforementioned period. Statistical software such as EViews and other economic data analysis tools were used to analyze the relationships between the variables and test the hypotheses. These software tools were employed for correlation analysis, hypothesis testing, and the modeling of relationships between variables. To test the above hypotheses, the following regression models derived from Salem et al. [7] were used:

$$\mathrm{EMP}_{i,t} = \beta_0 + \beta_1 \mathrm{AQ}_{i,t} + \beta_2 \mathrm{Size}_{i,t} + \beta_3 \mathrm{Growth}_{i,t} + \beta_4 \Delta\mathrm{Lev}_{i,t} + \beta_5 \mathrm{Prof}_{i,t} + \beta_6 \mathrm{Liq}_{i,t} + \beta_7 \mathrm{CAP}_{i,t} + \varepsilon_{i,t} \quad (1)$$

Audit quality is measured using three proxies as follows:

- *BIG: If the audit firm is the Audit Organization, a value of 1 is assigned, and 0 is assigned to other firms.*
- *Auditor specialization: This is calculated as the square root of the sum of the book value of assets of the clients of the audit firm in that industry, divided by the square root of the sum of the book value of assets of all clients of that audit firm.*
- *Audit tenure (AT): The number of years the independent auditor has audited the financial statements of a particular client.*

The control variables are as follows:

- *Firm size (Bank-S): The natural logarithm of the total book value of the company's assets in the research year.*
- *Asset growth (Growth): The change in assets divided by the assets at the beginning of the period.*
- *Leverage (Lev): The ratio of assets to the bank's liabilities.*
- *Profitability (Prof): The ratio of net profit to assets.*
- *Liquidity (Liq): The ratio of current assets to current liabilities.*
- *Capital Adequacy Ratio (CAP): The ratio of legal capital to total assets.*

In the above model, EMP is the dependent variable representing earnings management, which is derived from the residuals of the following regression model adapted from the study by Jin et al. [11]:

$$\mathrm{LLP}_{i,t} = \beta_0 + \beta_1 \Delta\mathrm{NPL}_{i,t+1} + \beta_2 \Delta\mathrm{NPL}_{i,t} + \beta_3 \Delta\mathrm{NPL}_{i,t-1} + \beta_4 \Delta\mathrm{NPL}_{i,t-2} + \beta_5 \mathrm{SIZE}_{i,t} + \beta_6 \Delta\mathrm{LOAN}_{i,t} + \beta_7 \Delta\mathrm{ST\_GDP}_{i,t} + \beta_8 \Delta\mathrm{ST\_HPI}_{i.t} + \beta_9 \Delta\mathrm{ST\_UR}_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

In the model, the following variables are used:

LLP: Loan loss provision (the provision for loan losses).

NPL: Change in non-performing loans (change in non-performing facilities).

SIZE: Bank size.

LOANΔ: Change in loans.

ST_GDPΔ: Change in GDP.

ST_HPIΔ: Change in the bank price index.

ST_URΔ: Change in the unemployment rate.

3|Descriptive Statistics

In this section, descriptive statistics of the research data are presented. *Table 1* includes information such as the mean, median, maximum, minimum, standard deviation, skewness, and kurtosis for each studied variable. These statistics help examine the key characteristics and distribution of the data and provide insights into the trends and patterns present in the variables. The detailed descriptive statistics for each variable are shown in the table below.

Table 1. Descriptive Statistics of the Research Data.

	LIQ	PROF	LEV	GROWTH	SIZE	BIG	AT	SPEC	EMP
Mean	0.138	-0.015	0.980	0.212	19.87	0.363	4.000	0.021	-5.38E-17
Median	0.012	0.004	0.947	0.173	19.85	0.000	4.000	0.006	0.028
Maximum	0.952	0.041	0.215	0.821	21.94	1.000	4.000	0.220	1.601
Minimum	0.0001	-0.516	0.847	-0.114	18.17	0.000	4.000	0.001	-0.915
Std. Dev.	0.299	0.086	0.190	0.196	0.977	0.484	0.000	0.038	0.285
Skewness	1.992	-4.138	4.931	1.323	0.247	0.566	NA	3.314	1.984
Kurtosis	5.129	21.15	29.92	4.903	1.866	1.321	NA	14.73	18.11

Based on the descriptive statistics, a comprehensive analysis of the variables was performed. First, the EMP variable, which represents earnings management, has a mean very close to zero, suggesting little variation in EMP across banks on the Tehran Stock Exchange. However, the maximum and minimum values showed considerable diversity, with a minimum value of -0.915 and maximum value of 1.601. This finding indicates that some banks engage in either negative or highly positive earnings management. The relatively high standard deviation (0.285) further confirmed the substantial dispersion of the data.

For the SPEC variable, referring to the AC features of the audit committee, the mean value of 0.021 suggests a relatively low presence of these features across banks. The positive skewness (1.984) indicates that the data tend to be more concentrated around higher values, implying that some banks have stronger audit committees. Because the mean and median values were quite close, the distribution appeared to be fairly balanced.

The AT variable, representing total assets, has a mean of 4, indicating that banks have similar asset sizes. The median was 4, further supporting this conclusion. With a standard deviation of 0.285, the variation in asset size across banks was minimal.

For BIG, which represents the size of the audit committee, the mean value of 0.364 suggests that audit committees are generally small. The minimum and maximum values of 0 and 1 show significant differences in committee size across banks, reflecting the varying structures of audit committees.

The SIZE variable, which refers to bank size, has a mean of 19.87, indicating that most banks in the study are relatively large. The standard deviation of 0.978 suggests some variation, although most banks are similar in size. The range of values for this variable includes both large and small banks.

For the GROWTH variable, representing the growth rate of banks, a mean of 0.212 suggests moderate growth across banks. However, the range of values from -0.114 to 0.821 indicates significant fluctuations in growth rates. The positive skewness value of 1.323 indicates that data points are more concentrated towards the higher end of the growth scale.

The LEV variable, which measures leverage, has a mean of 0.981, indicating a relatively high level of leverage across banks. A standard deviation of 0.299 confirms a significant variation in the degree of leverage used by banks. The high skewness (4.932) and kurtosis (29.921) indicate that the distribution is highly asymmetric, with a concentration of values in the lower leverage range but with few banks using very high levels of leverage.

For PROF, which measures profitability, a mean of -0.015 indicates negative profitability across banks. The standard deviation of 0.299 suggests notable variability in profitability among banks. A negative skewness of -4.138 indicates that most of the data points are concentrated in the negative profitability range, with a few banks having more positive profitability figures.

Finally, the LIQ variable, which represents liquidity, has a mean of 0.139, indicating a moderate level of liquidity across banks. The standard deviation of 0.013 confirms the minimal variation in liquidity levels. The skewness value of 5.130 suggests an asymmetric distribution, with a concentration of higher liquidity values and a few banks with much lower liquidity.

The conclusion from the descriptive statistics analysis indicates that banks on the Tehran Stock Exchange exhibit significant differences in various characteristics including earnings management, audit committee features, assets, bank size, growth rate, leverage, profitability, and liquidity. These differences may stem from variations in the managerial structures, financial strategies, and audit methods across banks. Specifically, Earnings Management (EMP), with its wide range of maximum and minimum values, shows substantial volatility that could impact financial reporting quality. Moreover, audit committee features (SPEC) and bank size (SIZE) are relatively stable, Whereas Growth Rate (GROWTH) and Profitability (PROF) exhibit considerable fluctuations in some banks. The high dispersion in Leverage (LEV) and Liquidity (LIQ) variables also suggests significant differences in financial leverage usage and liquidity positions across banks. Overall, these findings imply that wide variations in banks' financial and managerial characteristics can significantly affect the quality of their financial reporting.

Table 2. Results of the Regression.

Variables	Model 1	Model 2	Model 3
BIG	-0.0544***		
Spec		-5.02***	
AT			-4.02***
SIZE	-0.022*	-0.138***	-0.024***
GROWTH	-0.219***	-0.245***	-0.208***
LEV	2.705***	2.229***	2.652***
PROF	6.53***	-5.382***	6.350***
LIQ	-0.012	-0.001	-0.015
CAP	0.639	2.09***	0.796***
C	-2.07***	0.502	-2.11***
Adj R^2	0.23	0.47	0.75
F-test	27.14***	76.86***	52.64***

The results of the statistical analysis indicate that audit firm size (BIG), auditor industry Specialization (Spec), and AT have significant effects on IMP in banks. Initially, audit firm size had a negative and significant impact on earnings management, with a coefficient of -0.0544*** in *Model (1*). This suggests that larger audit firms, which typically have more resources and experience, may play a crucial role in preventing earnings management. In other words, larger auditors are likely to provide more accurate financial reporting and prevent earnings manipulation by the companies they audit. Additionally, auditor industry specialization has a negative and significant effect on earnings management [12]. The negative coefficient of -5.02 in *Model (2)* indicates that auditors with industry expertise can enhance the quality of financial reporting by leveraging their in-depth knowledge of the specific industry's characteristics and conditions, thereby reducing earnings management. This result implies that auditors specializing in a specific industry are more likely to carefully review and verify their financial figures. The impact of AT is weaker than that of the other variables, but it still negatively influences earnings management. The negative coefficient of -4.02 in *Model (3)* suggests that changes in the audit team or audit firm rotation could lead to a reduction in earnings manipulation in banks. This could be due to management innovations or changes in auditing practices that enhance financial reporting quality. Overall, these results show that audit firms' characteristics, including size, industry

specialization, and audit firm rotation, can play a significant role in either reducing or increasing earnings management. Auditors with specific characteristics are likely to provide more transparent and accurate financial reporting, thus preventing earnings manipulation.

4 | Conclusion

This study explores the relationship between audit quality and earnings management based on banks' LLPs. The primary goal of this study was to assist stakeholders in making more informed decisions and accurate judgments regarding financial information, especially in the banking sector, where transparency and accuracy in financial reporting are of utmost importance. The statistical analysis results reveal a significantly negative relationship between audit quality and EMP in banks. The first analysis shows a significantly negative relationship between audit firm size and earnings management. Specifically, banks that engage large and reputable auditing firms are less likely to manipulate earnings. This can be attributed to the greater resources, expertise, and credibility of larger audit firms, which are better positioned to detect and prevent opportunistic management behavior. Large audit firms, owing to their high reputation and extensive experience, face stronger pressure to comply with auditing standards and ensure transparency, which in turn reduces the likelihood of earnings manipulation within these banks. The second key finding indicated a negative and significant relationship between AT (i.e., length of the auditor-client relationship) and earnings management. This suggests that longer auditor-client relationships are associated with an increased likelihood of earnings management. Over time, the prolonged relationship between an auditor and client may reduce the auditor's independence and increase dependence, thus creating an opportunity for the bank to influence financial reporting. To mitigate this risk, it is crucial to implement periodic auditor rotations to preserve auditor independence and maintain quality.

Finally, the third finding confirms a significant negative relationship between auditor specialization in the banking sector and earnings management. Auditors with specialized knowledge and experience in the banking industry are more capable of identifying earnings management behaviors because of their in-depth understanding of the industry-specific characteristics and complexities. Such auditors can more effectively detect and control any attempts by the management to manipulate financial statements, particularly when banks seek to inflate their reported profits. Based on these findings, it is recommended that regulatory bodies such as the Securities and Exchange Organization implement policies to encourage banks to hire larger and more specialized audit firms. These measures should emphasize the importance of selecting auditors with expertise in the banking sector and enforcing periodic auditor rotations to maintain auditor independence and reduce earnings management opportunities. Given the significant impact of audit quality on the accuracy and reliability of financial reporting, these actions can enhance transparency, safeguard the integrity of financial information, and improve public trust in the banking system. This study provides a comprehensive analysis of the relationship between audit quality and earnings management in banks, contributing to a deeper understanding of this relationship and its dimensions. The findings can assist decision makers, regulators, and bank managers in making more informed decisions, improving financial reporting quality, and ultimately reducing the risks of earnings manipulation. Future studies should explore additional factors affecting earnings management and audit quality across different industries, provide a more comprehensive view of this phenomenon, and offer solutions to improve financial practices in other sectors.

Conflict of Interest

The authors declare no conflict of interest. Both authors reviewed and approved the final manuscript.

Data Availability

All data are included in the text.

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