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Impact of ifrs 9 applications and earnings management; The new expected loss models

Impacto de la NIIF 9 en la gestión del resultado; evidencia desde el modelo de pérdida esperada

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Abstract

Various criticisms of International Accounting Standard 39 have demanded that the IASB develop IFRS 9, which is considered better at recognizing credit losses, by changing the incurred loan loss model to expected credit loss so that credit risk can be calculated at the outset. This research investigates the impact of implementing IFRS 9 on earnings management using financial data of banks listed on the Indonesian stock exchange from 2017 to 2022. Regression analysis is used to assess earnings management using LLP, compare IFRS 9 adoption and assess the role of Big4 auditors and gender diversity. The research results describe that management carries out accrual earnings management using LLP, especially income smoothing. The adoption of IFRS 9 has been proven to improve earnings management because IFRS 9 provides management discretion in recognizing expected credit losses. Furthermore, Big4 audit companies can reduce the potential for earnings management, as with gender diversity, because female directors have higher ethical standards.

JEL Code: M41, G21, J16
Keywords: IFRS 9; IAS 39; earnings management; big4; gender diversity

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Resumen

Diversas críticas a la Norma Internacional de Contabilidad 39 (NIC 39) impulsaron al IASB a desarrollar la NIIF 9, considerada más adecuada para el reconocimiento de pérdidas crediticias al reemplazar el modelo de pérdida incurrida por el de pérdida crediticia esperada, permitiendo así estimar el riesgo de crédito desde el inicio. Esta investigación examina el impacto de la implementación de la NIIF 9 sobre la gestión del resultado, utilizando datos financieros de bancos que cotizan en la Bolsa de Valores de Indonesia durante el período 2017–2022. Se emplea un análisis de regresión para evaluar la gestión del resultado mediante las provisiones por pérdidas crediticias (LLP), comparar los efectos de la adopción de la NIIF 9 y analizar el papel de las firmas auditoras Big Four y la diversidad de género. Los resultados revelan que la dirección recurre a la gestión del resultado mediante provisiones discrecionales (LLP), especialmente con fines de suavización de ingresos (income smoothing). La adopción de la NIIF 9 se asocia con un incremento en la gestión del resultado, debido a que otorga mayor discrecionalidad a la administración en el reconocimiento de pérdidas crediticias esperadas. Asimismo, las firmas auditoras pertenecientes a la Big Four y la presencia de mujeres en la alta dirección contribuyen a reducir el grado de manipulación contable, dado que las directoras tienden a mostrar estándares éticos más elevados.

Código JEL: M41, G21, J16
Palabras clave: NIIF 9; NIC 39; gestión del resultado; big four; diversidad de género

Introduction

Indonesia effectively implemented International Financial Reporting Standards (IFRS 9) or Indonesia Financial Accounting Standards (Pernyataan Standar Akuntansi Keuangan – PSAK 109) on January 1 2020. IFRS 9 is a new standard developed by the International Accounting Standards Board (IASB) to replace International Accounting Standard 39 (IAS 39), which regulates financial instruments (Norouzpour et al., 2023). The fundamental difference between IAS 39 and IFRS 9 is that in recognizing loan losses, IAS uses the Incurred Loan Loss (ILL) model, which recognizes impairment if it has obtained clear evidence that the loss occurred; therefore, it is categorized as "too little, too late" (Gebhardt, 2016; Giner & Mora, 2019). Furthermore, ILL is considered to have weaknesses in national and global financial crisis conditions (Camfferman, 2015). IFRS 9 recognizes loan losses using the Expected Credit Loss (ECL) method, which is seen as a forward-looking approach because it not only recognizes losses that have occurred but estimates future credit losses through three stages, with the Loan Loss Allowance (LLA) being a contra-asset in balance sheet (Salazar et al., 2023). LLA usually depends on the loan classification provided by the Bank. Stage 1, ECL is recognized in loans for a maximum of 12 months with productive loan conditions (assets do not default), where credit risk does not increase. Stage 2, ECL is recognized over the loan term if there is evidence of a significant increase in credit risk (including default and non-default assets). Stage 3, ECL is recognized during the credit period with non-performing loans (similar to ILL IAS 39) (Du et al., 2016).

IFRS 9 was first developed in 2009 and became effective in 2018 to replace IAS 39 (Deloitte's IASPlus, 2020). This approach has significant differences in the recognition of credit loan losses, and the Bank uses IFRS 9 to overcome the adverse impact of inappropriate recognition of credit losses in the statement of financial position, which is the impact of the financial crisis of the previous period (Gómez-Ortega et al., 2022). Furthermore, IFRS 9 makes it possible to conduct credit risk assessments periodically by considering various conditions and using Indications of Significant Increased Risk (SIRC) for ECL changes (Novotny-Farkas, 2016). In addition, the ECL method has advantages in predicting future bank risks compared to ILL, so banks can prepare themselves for various economic conditions (crises), smoothing the financial cycle. According to (Onali et al., 2017), ECL conceptually shows a high-quality accounting model for all companies to reduce the use of IAS 39 discretionary Loan Loss Provisions (LLP) and, of course, avoid procyclicality in determining loss recognition. Empirically, several studies explain that IFRS 9 is less procyclical compared to IAS 39 but more procyclical compared to US GAAP, which is based on the Current Expected Credit Losses Model (CECL) (Olszak et al., 2017).

IFRS 9 has the advantage of a forward-looking approach that increases transparency by allowing companies to proactively predict future losses, reduce procyclicality, and accelerate loss recognition, thereby strengthening risk management (Bushman & Williams, 2012; Kyiu & Tawiah, 2023). However, the flexibility in estimation and subjectivity provided by IFRS 9 also opens up opportunities for management to use such discretion in earnings management practices, which can hinder external monitoring and increase the risk of moral hazard in the banking sector (Novotny-Farkas, 2016). Thus, although IFRS 9 is designed to strengthen the quality of financial reporting, the discretion permitted in this approach can be challenging in maintaining accountability and market confidence. A study Novotny-Farkas (2016) and Giner & Mora (2019) explains that increasing ECL is an accrual earnings management strategy for management, especially in the income smoothing model. In addition, LLP is an ideal tool for earnings manipulation because it is the most oversized accrual item, and more importantly, LLP offers significant incentives for its discretionary actors (Greenawalt & Sinkey, 1988; Krüger et al., 2018). The study Giner & Mora (2019) describes IFRS 9 as increasing the potential for accrual earnings management by financial institutions due to the impact of changes in credit loss recognition. Therefore, IFRS 9 is fertile ground for earnings management and incredible income smoothing to meet profit targets.

Previous researchers have widely researched adopting and implementing IFRS 9 Novotny-Farkas (2016), testing the relationship between ECL in IFRS 9 and cloud regulations and its implications for financial stability by comparing it with IAS 39. Another study tested the interaction of IAS 39 and IFRS 9 with value relevance and investor protection, incurred credit loss (ICL), and disposal of available-for-sale (AFS) (Guo et al., 2023; Mechelli & Cimini, 2021). Onali et al (2017) conducted an IFRS 9 implementation study event by investigating market reactions with high information asymmetry. Gómez-

Ortega et al (2022), Salazar et al (2023), Nurcahyono & Purwanto (2024) and Neisen & Schulte-Mattler (2021) We tested the application of IFRS 9 and its implications from the regulatory, supervisory, and auditing points of view, banking risk, and COVID-19. However, few studies still use audit quality and consider the role of gender as a variable used to predict earnings management using LLP. We use audit quality as a moderating variable because high audit quality will limit management behaviour, thereby minimizing earnings management post-adoption of IFRS 9. Second, studies of earnings management in the financial industry in Indonesia are still challenging to find because Indonesia has effectively implemented IFRS 9 in 2020 by issuing PSAK 71. Therefore, we carried out pre and post-adoption testing of IFRS 9 (PASK 71).

This study aims to explore whether the adoption of IFRS 9 increases the risk of earnings management. Additionally, this paper examines the role of gender diversity and audit quality in mitigating potential earnings management under the new standard. Gender diversity is considered to significantly influence managerial decision-making, particularly concerning accounting practices and transparency. Previous studies have shown that boards with greater gender diversity tend to be more independent, ethical, and cautious in their decision-making processes (Adams & Ferreira, 2009; Zalata et al., 2022), thereby reducing opportunities for earnings management. Gender diversity contributes to improved corporate governance and more effective oversight of opportunistic managerial actions.

On the other hand, high audit quality plays a crucial role as an external control mechanism that limits discretionary management policies, including excessive recognition of LLPs (DeFond et al., 2011). In this context, we investigate how gender diversity and audit quality synergistically reduce the risk of earnings management post-adoption of IFRS 9. High audit quality is expected to act as an influential moderating factor, strengthening the impact of gender diversity in curbing earnings management and contributing to better financial reporting quality.

This study focuses on the banking sector in Indonesia, which performed relatively well during the COVID-19 pandemic. In 2020, the banking market grew by 3.7%, followed by a significant increase of 21.14% in 2021, despite a decline of 7.33% in 2022 (Bursa Efek Indonesia, 2022). Adopting IFRS 9 has posed new challenges for the banking sector in preparing financial statements, particularly regarding loan loss recognition under the Expected Credit Loss (ECL) model. Furthermore, these changes open opportunities for earnings management, primarily through the discretionary use of Loan Loss Provisions (LLPs). Therefore, this study is critical in understanding the implications of IFRS 9 on earnings management while exploring how governance mechanisms, such as gender diversity and audit quality, can mitigate these risks.

This study offers important contributions both theoretically and practically. Theoretically, it enhances the accounting literature on IFRS 9 adoption, focusing on its unique implementation in

Indonesia, which began in 2020, and extends prior research by examining the use of Expected Credit Loss (ECL) in Loan Loss Provisions (LLPs) as a critical area for accrual-based earnings management practices. Additionally, it provides a new perspective by integrating gender diversity and audit quality into the discourse on earnings management under IFRS 9, highlighting their complementary roles in mitigating managerial opportunism and contributing to corporate governance theory by emphasizing how these factors influence financial reporting quality. Practically, the findings offer valuable insights for regulators and standard setters in designing policies to enhance IFRS 9's effectiveness in limiting earnings management practices. For auditors, this study underscores the critical role of high audit quality in curbing opportunistic behaviors, while for banking practitioners, it emphasizes the importance of promoting gender diversity in governance structures to strengthen internal controls and reduce financial reporting risks. Ultimately, this study provides actionable insights to support the development of robust financial reporting systems, particularly in emerging economies.

Literature review and hypothesis development

IFRS 9 was first published in July 2014 by the International Accounting Standards Board, effective January 1, 2018 (IFRS, 2014). IFRS was issued due to the criticisms of IAS 39, especially after the 2007 financial crisis, which highlighted deficiencies in accounting for financial instruments under IAS 39. The ILL loss model previously used by IAS 38 was considered “too little, too late” in recognition of credit losses that caused excessive losses, thus triggering the 2007 crisis (Gebhardt, 2016; Giner & Mora, 2019). Available literature explains that credit losses under IAS 39 are procyclical and detrimental to financial stability (Salazar et al., 2023). Therefore, IFRS 9 is a solution as a proactive and robust accounting standard for financial instruments by combining future information and estimates of credit loss recognition (IASB, 2014). The main differences between IFRS 9 and IAS 39 are in the classification criteria, loss recognition, measurement in financial instruments, and hedge accounting (Jeanjean & Stolowy, 2008; Krüger et al., 2018; Orazalin & Akhmetzhanov, 2019; Salazar et al., 2023; Nurcahyono et al., 2023). Indonesia implemented IFRS 9 by issuing PSAK 71, developed by the Indonesian Institute of Accountants (IAI) to replace PSAK 55, which was adopted from IAS 39. Changes in the fundamental recognition of impairment from previously calculated using the incurred loss method were backwards-looking to forward-looking. Therefore, with forward-looking, banks must determine expected loss by estimating the risk of financial instruments since initial recognition using information such as projected economic growth, inflation, unemployment rates and commodity price indexes at each reporting date (IAI) (Gonçalves et al., 2021; Sarah Yasser & Mohamed Soliman, 2018; Wali & Masmoudi, 2020). ECL calculation in PSAK 71/IFRS 9 has three stages: (1) Stage 1 (performing): There is no increase in credit

and financial asset risk; (2) Stage 2 (under-performing): Credit and financial asset risks increase significantly; (3) Stage 3 (non-performing): loans and financial assets that have experienced a sharp decline in value with a history of late payments (Kanagaretnam et al., 2010).

IFRS 9 and earnings management

IFRS 9, in its implementation, has advantages compared to IAS 39, where IFRS 9 will take into account risks that will occur in the future, and the existence of stochastics provides much greater freedom so that bank managers can use it to carry out earnings management (Ahmed et al., 1999; Niskanen et al., 2011; Peni & Vähämaa, 2010). Therefore, implementing IFRS 9 will improve earnings management (Krüger et al., 2018; Ozili, 2023). On the other hand, Bushman & Landsman (2010) argue that the wisdom possessed by management is like two sides of a knife, where managers obtain credible information for risk management and business mitigation during business. On the other hand, discretion is used for opportunistic gains such as earnings management. The potential for earnings management in LLPs in financial sector companies is because the most significant item is related to accrual accounting in financial reporting, so it will influence accrual variability and bank risk in the short term and the future (Beatty & Liao, 2014). Studies Greenawalt & Sinkey (1988), Neisen & Schulte-Mattler (2021) and Pucci & Skærbæk (2020) report that through their discretion, bank managers can increase LLP in high-profit periods to reduce earnings volatility. Several studies have compared IAS 39 and IFRS 9 regarding credit impairment/losses, concluding that the unconditional conservatism of IFRS 9 was higher, thus opening up opportunities for opportunistic management behaviour (Groff & Mörec, 2021; Norouzpour et al., 2023). Earnings management actions will increase if information asymmetry increases, so investors have a more significant gap with management. Therefore, in this section, we confirm two hypotheses, which aim to confirm whether management uses LLP to manage earnings and whether implementing PSAK 71/IFRS 9 affects earnings management. Based on these statements, a hypothesis is developed.

H1a: Banking companies carry out earnings management using the LLP Expected Credit Loss (ECL) method.

H1b: Implementation of PSAK 71/IFRS9 increase earnings management in Indonesia.

Audit quality and earnings management

A high-quality audit is a form of control system that seeks to ensure that the financial information disclosed meets the requirements for reliability, integrity, and quality (Orazalin & Akhmetzhanov, 2019). From an agency theory perspective, quality audits can reduce information asymmetry, thereby reducing

agency costs and minimizing the opportunistic behaviour of managers and controlling shareholders (Jensen & Meckling, 1976; Watts & Zimmerman, 1983). Thus, high audit quality can limit earnings management practices because it can detect accounting manipulation and reporting errorscompared to lower audit quality (Krüger et al., 2018). According to DeAngelo (1981), audit quality can be seen from the size of the audit company. Large audit companies have many incentives to build and maintain their reputation in providing audit services, so the more significant the audit company, the higher the audit quality (Imen & Anis, 2020; Inaam & Khamoussi, 2016; Salem et al., 2021). An audit is said to be of quality if it can prevent earnings management (Becker et al., 1998). Several studies that have been conducted relevant to this statement report that audit quality is negatively related to earnings management (Houqe et al., 2017; Inaam & Khamoussi, 2016). Studies conducted by Francis and Krishnan (1999), Bradshaw et al (2001), Lopes (2018) and Alzoubi (2016) state that earnings management is lower in companies audited by Big4 than those audited by non-Big4 audit companies. Based on this statement, a hypothesis is developed.

H2: Banks that KAP Big4 audits can reduce earnings management in banking companies.

Gender diversity and earnings management

The gender perspective is an exciting topic for some academics, they argue that differences in behaviour influence the decision-making process (Du et al., 2016). Based on empathy theory, women have a higher level of emotional and cognitive empathy than men, so women are more easily disturbed by their emotions and tend to show desired behaviour (Onali et al., 2017). Someone with a high level of empathy is usually easy to communicate and get along with, so they have good relationships with other people, but on the other hand, they may have weaknesses, namely being less assertive and easily influenced by other people, and having the intention to compromise (Hasan et al., 2020; Hoang & Nguyen, 2018; Zalata et al., 2022). Differences in empathy between men and women are influenced by brain structure and physiology as well as social gender roles, so women are considered to have higher ethical standards, and they are very risk averse. Therefore, gender diversity will reduce the risk of earnings management. The study Zalata et al (2022) and Du et al (2016) reports that companies with female directors show lower earnings management with high accrual quality compared to companies that do not have female directors. Female directors can also understand various detailed matters, especially in finance. Previous studies also explained that women have highly ethical behaviour, so their orientation is towards business sustainability (Elzahar et al., 2022). Based on this statement, a hypothesis is developed.

H3: Women in top management have a negative effect on earnings management.

Research methods

This research was conducted on banking companies listed on the Indonesia Stock Exchange, and data was taken from the Bloomberg database. We investigated all banks in Indonesia for six years, which were analyzed in two periods: pre-adoption of IFRS 9 (2017-2019) and post-adoption (2020-2022) of IFRS 9. The unit of analysis for this research was 288 company financial reports. They were investigating financial sector companies because adopting IFRS 9 gives management discretion and freedom in carrying out policies, thereby increasing the opportunistic behaviour of management and controlling shareholders (Bradshaw et al., 2001; Inaam & Khamoussi, 2016; Wahasusmiah & Indriani, 2022). Therefore, this research tries to confirm various findings regarding the impact of implementing IFRS 9. The measurements of the research variables are shown in Table 1.

Regression analysis

In the initial part of the test, we investigated whether banks carried out earnings management using LLP. We adopted the equation model developed by Riahi-Belkaoui (1999) dan Leventis (2011) to carry out this test. The model used is as follows:

$$LLPA_i = \beta 0_i + \beta_1 \text{ x } EBTPA_i + \beta_2 \, NIIA_i + \beta_3 \text{ x } \Delta NPLA_i + \beta_4 \text{ x } NPLTL_i + \beta_5 \text{ x } LnTA_i + \beta_6 \text{ x } \Delta GDP_i + \beta_7 \text{ x } IFRS9_i + \beta_8 \text{ x } EBTPA_i + (YEAR\ CONTROL) + \varepsilon_i \quad (1)$$

After ensuring that the company carries out earnings management with LLP, our next step is to test the relationship between IFRS 9 and earnings management by testing before and after adopting IFRS 9, the model used is:

$$LLPA_i = \beta 0_i + \beta_1 \text{ x } EBTPA_i + \beta_2 \, NIIA_i + \beta_3 \text{ x } \Delta NPLA_i + \beta_4 \text{ x } NPLTL_i + \beta_5 \text{ x } LnTA_i + \beta_6 \text{ x } \Delta GDP_i + (YEAR\ CONTROL) + \varepsilon_i \quad (2)$$

Earnings management models in developing and developed countries may differ; therefore, because our sample is a developing country, we add to the test by adopting the equation of Barth et al (2008) equation using earnings volatility to assess earnings volatility in developing countries and predict manager opportunistic behaviour.

$$\Delta NI_i = \beta 0_i + \beta_1 \text{ x } Size_i + \beta_2 \text{ x } Growth_i + \beta_3 \text{ x } Eissu_i + \beta_4 \text{ x } Leverage_i + \beta_5 \text{ x } NPLBA_i + \beta_6 \text{ x } \Delta GDP_i + (YEAR\ CONTROL) + \varepsilon_i \quad (3)$$

Next, to test the relationship between audit quality and gender, we adopted the model developed by Kanagaretnam et al (2010) by conducting a two-step test, namely:

$$LLP_i = \beta 0_i + \beta_1 \text{ x } BEGLLA_i + \beta_2 \text{ x } CHLOANS_i + \beta_3 \text{ x } LOANS_i + \beta_4 \text{ x } Big4_i + \beta_5 \text{ x } Dissue_i + \beta_6 \text{ x } Turn_i + \beta_7 \text{ x } CF_i + (YEAR\ CONTROL) + \varepsilon_i \quad (4)$$

Then, the following equation tests the discretionary nature of LLP

$$|DLLP| = \beta 0_i + \beta_1 \text{ x } EBTP_i + \beta_2 \text{ x } L1.LLPA_i + \beta_3 \text{ x } TTLTA_i + \beta_4 \text{ x } LnTA_i + \beta_5 \text{ x } GDP + (YEAR\ CONTROL) + \varepsilon_i \quad (5)$$

Table 1
Variable measurements

LLPA	Ratio of LLP to total assets;
EBTPA	Earnings before tax and provision weighted by total assets
NIIA	Non-interest income weighted by total assets
ΔNPLA	Change in NPL weighted by total assets
NPLTL	Ratio of NPL to total loans
LnTA	Natural logarithm of total assets
ΔGDP	Change in gross domestic product
IFRS9	Dummy variable [1 if bank adopted IFRS9 (generally 2020 and after), 0 if not]
ΔNI	Change of net income weighted by total assets;
Size	Natural logarithm of total equities
Growth	Percentage change in sales
Eissue	Percentage change in common stock
Leverage	Total liabilities divided by total equities
Dissue	Percentage change in liabilities
Turn	Sales divided by total assets
CF	Net cash flow divided by total assets
|DLLP|	Absolute value of discretionaryLLP
TTLTA	Total loan weight by total assets
L1.LLPA	Lagged value of LLPA

Research result

Table 2 explains the descriptive statistics of the research variables and how all LLP values increased after IFRS adoption. LLP's total assets increased from 0.104 to 0.127; this explains the increase in profit before tax and provisions. In addition, the LLP value also increased by 0.600 to 0.799, so after the implementation

of IFRS 9, there was an increase in income and the risk of earnings management with income smoothing. Several variables are indicators for assessing bank risk, namely NPLA and NPLTL, to assess non-performing loans and their decline after adopting IFRS 9. The NIIA variable explains greater diversification of bank income, especially non-interest income; NIIA shows an increase of 0.02, reflecting good bank conditions. Before and after IFRS 9, most banking companies were audited by audit companies affiliated with Big4 audit companies (80% and 78%), then had relatively high gender diversification (44% and 50%). The correlation matrix shown in Table 3 explains the positive correlation of LLPA and EBTP (0.191). This illustrates that earnings management by banks increases profitability by reducing LLPA when EBTP is low. LnTA negatively correlates with LLPA (-0.354), explaining that large banks have the same risk as small banks when implementing IFRS 9. This is also confirmed by the positive correlation of LnTA with NPLTL (0.113). Furthermore, the positive correlation between Big4 and IFRS9 (0.038) shows that after IFRS adoption, most banks changed audit companies from non-Big4 to Big4. TTLTA is negatively correlated with LLP (-0.399), indicating a more significant proportion of assets than credit and allows LLP as a management tool to carry out income smoothing.

Table 2
Descriptive Statistics

Variable	Post IFRS9		Pre IFRS9	
	Mean	Std. Deviation	Mean	Std. Deviation
LLPA	0.127	0.299	0.104	0.339
LLP	0.799	0.230	0.600	1.040
EBTP	0.005	0.031	0.009	0.031
NIIA	0.100	0.037	0.080	0.037
NPLA	3.708	4.335	0.689	3.738
NPLTL	4.627	5.859	0.404	1.419
LnTA	31.251	1.841	30.892	1.885
GDP	2.743	4.315	2.710	4.272
IFRS9	0.939	0.240	0.939	0.240
ΔNI	-4.028	4.988	-0.903	7.160
Size	29.559	1.602	29.083	1.732
Growth	28.651	1.937	28.547	1.894
Eissu	28.253	1.087	27.879	1.158
Leverage	3.569	2.244	4.398	2.411
Dissue	0.254	1.145	0.157	0.487
Big4	0.800	0.037	0.780	0.037
Gender	0.440	0.026	0.500	0.025

Table 4 explains model 1 and model 2. Model 1 explains whether banks carry out earnings management by managing LLP. The results show that EBTP and NPLTL have a positive effect (0.196 and 0.051); this shows that managers will manage earnings with LLP when EBTP is high to reduce income variability. NIIA has a positive effect on LLP (0.185), this shows that non-interest income increases as a

variation in income, as a mitigation for earnings management actions. Then, the interaction of IFRS9 with EBTP (IFRS9*EBTP) shows a positive influence; this explains that earnings management is increased after adopting IFRS 9, and it is confirmed that earnings management is carried out by managers using LLP. Based on these results, hypothesis 1a is accepted. Positive EBTP results illustrate that income after tax and increased provisions encourage management to manage earnings with income smoothing. Apart from that, the LLP instrument is used by management as an accrual earnings management tool (Beatty & Liao, 2014). Neisen & Schulte-Mattler (2021) and Pucci & Skærbæk (2020) management manipulated financial reports using LLP to reduce high-profit volatility. LLP is a management tool because regulations allow management to use discretion in decision-making. Therefore, it causes high management discretion. This study's results differ from most studies, which explain that NIIA has a negative effect, whereas we found a positive effect. These results explain that NIIA may increase along with the potential for earnings management with LLP. However, on the other hand, positive NIIA can increase the variability of the company's earnings.

Table 4
Correlation Matrix

Variable	LLPA	DLLP	EBTP	NIIA	NPLA	NPLTL	LnTA	GDP	DeltaNI	IFRS9	TTLTA	Big4	Gender
LLPA	1												
DLLP	0.439**	1											
EBTP	0.191**	0.236**	1										
NIIA	0.351**	0.392**	0.352**	1									
NPLA	-0.009	-0.026	-0.113*	-0.109*	1								
NPLTL	-0.005	-0.023	0.092	-0.076	-0.004	1							
LnTA	-0.354	0.079	0.276**	-0.045	-0.087	0.113*	1						
GDP	-0.127	-0.008	0.004	0.014	-0.038	-0.036	0.012	1					
DeltaNI	0.020	0.025	0.113*	0.053	0.003	0.003	0.025	0.036	1				
IFRS9	0.058	0.091	0.049	0.098	-.215**	0.014	0.140*	-0.151**	-0.015	1			
TTLTA	-0.399**	-0.016	0.014	-0.066	-0.108	-0.268**	0.502**	-0.043	-0.016	0.124*	1		
Big4	-0.010	-0.065	-0.022	0.003	0.033	0.029	-0.089	0.026	-0.032	0.038	-0.109*	1	
Gender	0.439**	.070**	0.236**	0.392**	-0.026	-0.023	0.079	-0.008	0.025	0.091	-0.016	-0.065	1

Significance: 0.01:***, 0.05**, 0.1*

Table 5
Regression results of earnings management with LLP and earnings management pre and post-adoption of IFRS9

Variable	Model 1		Model 2			
	LLP		Post-IFRS 9		Pre-IFRS 9	
	Notation	Sig	Notation	Sig	Notation	Sig
Intercept	β_0	1.800	β_0	2.355	β_0	1.801
EBTP	β_1	0.196***	β_1	0.253***	β_1	0.170***
		3.998		3.504		2.163
NIIA	β_2	0.185***	β_2	0.309***	β_2	0.282
		3.889		4.509		3.748
NPLA	β_3	0.013	β_3	0.003	β_3	-0.042
		0.300		0.053		-0.623
NPLTL	β_4	0.051*	β_4	-0.102*	β_4	0.085
		-1.163		-1.535		1.170
LnTA	β_5	-0.359***	β_5	-0.478***	β_5	-0.348***
		-7.683		-7.014		-4.500
IFRS9	β_6	0.030**				
		0.660				
IFRS9xEBTP	β_7	0.368***				
		8.263				
LnGDP	β_8	-0.084**	β_6	-0.078***	β_6	-0.191***
		-1.931		-1.206		-2.794
R-Square	0.420			0.343		0.268

Significance: 0.01:***, 0.05**, 0.1*

Table 6
Comparison of net profit volatility

	Post Addoption IFRS 9	Pre Addoption IFRS 9	Diffrence in Diffrence
Variability	0.025	0.192	0.167*
N	164	164	

Model 2 proves whether adopting IFRS 9 will improve earnings management. The results show that EBTP has a positive effect (0.253***, 0.170***) before and after the implementation of IFRS 9; this explains that, so far, the company has carried out earnings management using LLP. Then, it was confirmed by the NPLTL being significantly positive post-implementation of IFRS 9. On the other hand, NIIA before adoption was not significant, but after implementing IFRS 9, it became significantly positive. Therefore, this result confirms hypothesis 1b. These findings prove that after implementing IFRS 9, earnings management in banks increased because managers used the wisdom provided by the standard to carry out earnings management, thereby increasing business risk (Krüger et al., 2018; Ozili, 2023). Table 6 compares earnings volatility before and after the implementation of IFRS 9, and the results show that there was a decrease in earnings volatility after adoption. This result confirms equation 3, explained by Lang et al (2006) , where management will have more freedom to manage earnings if earnings volatility is lower than the previous period.

Table 7
Regression of audit quality and gender diversity and earnings management

Variable	Post-IFRS 9		Pre-IFRS 9	
	Notation	Sig	Notation	Sig
Intercept	β_0	-1.6161	β_0	-3.2971
EBTP	β_1	0.087**	β_1	0.151**
		0.778		0.559
L1.LLPA	β_2	0.632***	β_2	0.359***
		8.070		4.214
TTLTA	β_3	0.022	β_3	-0.174
		0.107		-0.846
LnTA	β_4	-0.091	β_4	-0.040
		-0.105		-0.031
LnGDP	β_5	0.016**	β_5	0.118
		0.247		1.667
Big4	β_6	0.086**	β_6	-0.138***
		0.660		-0.961
Growth	β_7	0.692*	β_7	1.968***
		1.728		3.390
IFRSxBig4	β_8	-0.074**	β_8	0.040
		-0.569		0.277
IFRSxGender	β_9	-0.434**	β_9	-1.474***
		-0.587		-1.367
R-Square		0.418228		0.303937

Significance: 0.01:***, 0.05**, 0.1*

Table 7 explains the regression results of audit quality and gender diversity on earnings management. This test uses the absolute value of discretionary LLP|DLLP|to measure earnings management. The research results show that in the model after IFRS 9 adoption, companies that use Big4 audit companies will reduce earnings management risk (Alyaarubi et al., 2021; Elzahar et al., 2022; Li et al., 2020). However, in contrast to before the adoption of IFRS 9, the use of Big4 does not affect earnings management, hypothesis 2 is accepted. These results confirm previous research, which explains that before the implementation of IFRS 9, banks used IAS 39 to recognize LLP, where this standard was stricter and did not give management the opportunity to use discretion in decision making, but was very vulnerable during a crisis (Giner & Mora, 2019). In contrast to adopting IFRS 9, management can use discretion in recognizing LLP with Expected Credit Loss (ECL) (Giner & Mora, 2019; Novotny-Farkas, 2016). Therefore, Big4 audit companies will have higher intentions, and their credibility will help reduce the potential for earnings management by managers (Francis & Krishnan, 1999; Houqe et al., 2012; Inaam & Khamoussi, 2016). The research results align with Krüger et al (2018) and Orazalin & Akhmetzhanov (2019) found that audit quality negatively affects earnings management.

Viewed from a gender perspective, the test results before and after IFRS 9 adoption show a significant adverse effect (-0.434**, -1.474***) on earnings management. These results indicate that

women in the board structure influence the decision-making process. The women's council will encourage companies to improve business sustainability by increasing ethical behaviour and minimizing earnings management, which will be detrimental to the company in the long term (Du et al., 2016). This research's results align with Zalata et al (2022) reported that female directors showed low earnings management with high accrual quality. A study Elzahar et al (2022) explains that women have high ethical behaviour to maintain. The results of this research differ from Utami et al (2023) elaborated on empathy theory with female directors, finding that women have a high sense of empathy, are less assertive and easily compromise. However, this study finds that women in the board structure can reduce earnings management, hypothesis 3 is accepted.

Robustness test

This test aims to confirm the previous table's research results to test their consistency. Researchers developed equation 4 to test the consistency of results with two-way interactions by finding the extent of the impact of IFRS 9 adoption on NIIA, NPLA and NPLTL. Table 9 explains that the results of the two-way interaction are no different from the previous regression test. We found that the interaction between IFRS and EBTP had a positive effect (0.417***), the interaction between IFRS and NIIA had a positive effect (0.745**), the interaction with NPLA had a positive effect (0.025*), and the interaction with NPLA had a negative effect (-0.007*).

Table 8
Robustness Test

Variable	Notation	Beta
Intercept	β_0	0.337
EBTP	β_1	0.071*(1.426)
NILA	β_2	-0.401(-1.203)
NPLA	β_3	-0.028(-0.493)
IFRS9	β_4	-0.336**(-2.005)
IFRS9xEBTP	β_5	0.417***(8.744)
LnGDP	β_6	-0.095**(-2.010)
IFRS9xNIIA	β_7	0.745**(1.963)
IFRS9xNPLA	β_8	0.025*(0.538)
IFRS9xNPTL	β_9	-0.007*(0.150)
R-Square		0.522

Significance: 0.01:***, 0.05**, 0.1*

Discussion

The findings of this study provide significant insights into the impact of IFRS 9 adoption on earnings management, as well as the roles of audit quality and gender diversity in mitigating such risks. The analysis indicates a notable increase in discretionary loan loss provisions (LLPs) post-IFRS 9 adoptions, confirming that the managerial discretion permitted by the new standard has been utilized for income smoothing. This aligns with prior studies, such as those by Beatty & Liao (2014), which identified LLPs as a critical tool for earnings management due to their inherent flexibility. The positive interaction between IFRS 9 and earnings before tax and provisions (EBTP) further highlights the intensification of earnings management post-implementation, suggesting that managers exploit the forward-looking nature of Expected Credit Loss (ECL) to reduce income variability, thereby achieving stability in financial reporting (Hansen et al., 2024; Kim et al., 2023; Wheeler, 2021).

Interestingly, the findings also reveal differences in non-interest income (NIIA), which became significantly positive post-IFRS nine adoptions. Banks increasingly diversify their revenue sources, which could be a dual-edged sword. While NIIA reflects stronger financial health, it also opens potential avenues for earnings manipulation through discretionary practices, a deviation from previous research suggesting a negative relationship between NIIA and earnings management.

Regarding audit quality, the results demonstrate that firms audited by Big4 auditors post-IFRS 9 exhibit reduced earnings management, confirming hypothesis 2. This underscores the critical role of reputable audit firms in enhancing financial reporting integrity, mainly when accounting standards grant greater managerial discretion. Prior studies support this conclusion, emphasizing that Big4 auditors provide stringent oversight, mitigating opportunistic behaviours (Francis & Krishnan, 1999; Lopes, 2018). The findings also reflect several banks' transition from non-Big4 to Big4 auditors, highlighting a shift towards greater credibility and reliability in financial reporting.

Gender diversity emerges as a significant factor in reducing earnings management, as evidenced by the negative association between female board representation and discretionary LLPs. This supports hypothesis 3, aligning with previous research which identified women on boards as promoters of ethical decision-making and higher accrual quality (Elzahar et al., 2022; Elzahar & Hussainey, 2012; Zalata et al., 2022). These findings challenge previous arguments, such as those that report that women may lack assertiveness but instead demonstrate their effectiveness in fostering ethical governance and long-term sustainability (Yang et al., 2018).

However, the study also highlights discrepancies, such as the unexpected positive relationship between NIIA and LLPs, which warrants further investigation. It raises questions about the interplay between non-interest income diversification and earnings management in the context of IFRS 9.

Furthermore, while this study confirms that IFRS 9 increases managerial discretion, it also emphasizes the necessity of robust governance mechanisms, such as audit quality and gender diversity, to counterbalance potential risks.

In summary, the findings contribute to the ongoing discourse on IFRS 9 by demonstrating its dual impact: enhancing transparency through forward-looking provisions and creating opportunities for earnings management. The study underscores the importance of effective governance practices, such as engaging Big4 auditors and fostering gender diversity on boards, in safeguarding financial reporting quality post-IFRS 9 adoptions. Future research should explore these dynamics further, particularly in different regulatory and economic contexts, to provide a more comprehensive understanding of the standard's implications.

Conclusions

IFRS 9 was implemented in Indonesia on January 1, 2020, through PSAK 71, replacing PSAK 55, which previously adopted IAS 39. This change was driven by criticism of IAS 39, which was considered "too little, too late" in assessing losses, thus increasing credit risk, especially in crisis conditions. The Incurred Loan Loss (ILL) model in IAS 39 needs to improve in dealing with this situation. As a replacement, IFRS 9, with the Expected Credit Loss (ECL) method, is able to estimate future credit losses through a forward-looking approach using the Loan Loss Allowance (LLA).

The study results show that banking companies in Indonesia carry out earnings management by utilizing the wisdom provided by IFRS 9 in recognizing Loan Loss Provisions (LLP). LLP is used by management for accrual manipulation, especially in income smoothing practices. This finding is consistent with previous studies in the US and Europe, which show that post-adoption of IFRS 9, there has been an increase in accrual earnings management. In addition, companies audited by auditors affiliated with Big4 show a negative influence on earnings management. Big4 auditors, with high reputations, are more effective as external control mechanisms to limit opportunistic management behaviour. Gender diversity in the board structure also has a negative effect on earnings management, where the presence of women on the board of directors improves accrual quality and minimizes income smoothing practices.

Theoretically, this study extends the accounting literature by showing that IFRS 9, although increasing transparency through the Expected Credit Loss (ECL) approach, also provides room for earnings management through Loan Loss Provisions (LLP). This confirms the importance of corporate governance, where audit quality and gender diversity are proven effective in limiting opportunistic management behaviour. Practically, these results provide insights for regulators to increase supervision

of the implementation of IFRS 9, encourage companies to strengthen gender diversity on the board of directors, and emphasize the role of Big4 auditors in maintaining the quality of financial reporting.

This study is limited to the banking sector in Indonesia and has a limited analysis period, so the results may not be fully applicable to other sectors or countries. Further research is suggested to expand the scope to non-banking sectors, explore different regulatory contexts, and examine the long-term impact of IFRS 9 adoption. In addition, further research can explore the specific dynamics of gender diversity in boards of directors to understand its strategic role in corporate governance.

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