(Research/Review) Article

THE EFFECT OF NPL ON ROA AND ROE MODERATED BY GCG AT BPR BKK PURWODADI

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Abstract: This research investigates the impact of Non-Performing Loan (NPL) on bank profitability as measured by Return on Assets (ROA) and Return on Equity (ROE), while investigating the intervening function of Good Corporate Governance (GCG) at PT BPR BKK Purwodadi (Perseroda). This study adopted a quantitative methodology based on secondary information obtained from yearly reports financial statements and Good Corporate Governance reports of 18 branch offices during the 2020–2024 period, resulting in 90 panel data statistical examination using panel regression techniques was performed using EViews 13, with the appropriate estimation model determined through the Chow Test and Hausman Test. The moderating effect of Good Corporate Governance was examined by incorporating an interaction term (NPL × GCG) into the The regression estimation was conducted using Moderated Regression Analysis (MRA) in a panel data structure, revealing that NPL has no meaningful influence on ROA or Return on Equity. Furthermore, Good Corporate Governance does not significantly moderate the relationship between Non-Performing Loan and banking profitability. These findings suggest that profitability at PT BPR BKK Purwodadi (Perseroda) is influenced by broader managerial and operational factors beyond credit risk and governance mechanisms alone. This study contributes to the banking literature by providing empirical evidence from the context of an Indonesian Rural Bank using branch-level panel data, while offering practical implications for strengthening credit risk management and governance implementation to support sustainable banking performance.

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1. Introduction

The banking sector plays a an essential contribution to economic development by acting as a financial intermediary that mobilizes public funds and allocates them through lending activitiest. This function is particularly important for Rural Banks (Bank Perkreditan Rakyat/BPR), whose primary business activities prioritize financial assistance for small-scale and developing business sectors. Since lending activities constitute the main source of income, maintaining credit quality becomes essential for ensuring financial stability and sustainable profitability. Consequently, banks are required to establish efficient risk control strategies to reduce possible financial damages from non-performing loans (Kasmir, 2023).

Ccredit exposure is generally evaluated through the NPL indicator, representing the percentage of troubled financing compared with total loans issued. An increasing NPL value signals declining credit conditions resulting in increased loan loss provisions, declining interest income, and higher operational costs. These conditions may ultimately reduce the bank's ability to generate profits. Profitability itself is generally assessed through ROA and ROE indicators that illustrate managerial effectiveness effectiveness in utilizing total assets and shareholders' equity to generate earnings (Brigham & Houston, 2019). Therefore, maintaining a healthy NPL ratio is considered one of the key factors supporting banking profitability.

Although the theoretical relationship between credit risk and profitability has been widely discussed, previous empirical studies have produced inconsistent findings. Several studies reported that higher NPL significantly decreases banking profitability because deteriorating credit quality directly reduces financial performance (Aji & Manda, 2021; Fauziah, 2021; Wardana & Setiadi, 2023). In contrast, Hastasari & Suharini (2022) found that Non-Performing Loans did not significantly influence Return on Equity in Indonesian Rural Banks, indicating that profitability may also be determined by other managerial and operational factors. More recent international evidence similarly suggests that the relationship between credit risk and profitability may differ across banking institutions depending on their governance quality, operational efficiency, and institutional characteristics (Edin et al., 2025). These inconsistent findings demonstrate the impact of problematic loans on banking profitability remains inconclusive and warrants further investigation.

Besides credit risk, Good Corporate Governance (GCG) has increasingly been recognized as an important mechanism for improving organizational performance and strengthening risk management. Agency Theory explains that governance mechanisms reduce conflicts of interest between principals and agents by enhancing transparency, accountability, responsibility, independence, and fairness in organizational decision-making (Jensen & Meckling, 1976; KNKG, 2006). Effective governance is expected to improve credit monitoring, strengthen internal control, and minimize agency problems that potentially weaken banking performance.

This study is also supported by Signaling Theory, which explains that financial information disclosed by companies serves as a signal to investors and other stakeholders regarding organizational quality and future prospects (Spence, 1973). A lower Non-Performing Loan ratio can be interpreted as a positive signal indicating effective credit risk management, whereas stronger profitability reflects better managerial performance. Consequently, both credit quality and profitability become important indicators for evaluating the financial condition of banking institutions.

PT BPR BKK Purwodadi (Perseroda) represents an interesting research object because it consistently maintained its banking operations throughout the 2020–2024 period despite changes in economic conditions and fluctuations in credit quality. As a Rural Bank whose business activities rely heavily on lending, understanding whether Non-Performing Loan affects profitability and whether Good Corporate Governance is capable of mitigating such effects becomes important for both academic and practical perspectives. However, empirical studies focusing on branch-level observations within Indonesian Rural Banks remain relatively limited, particularly those employing panel data and incorporating Good Corporate Governance as a moderating variable.

The novelty of this study lies in three aspects. First, this study simultaneously evaluates the influence of Non-Performing Loan on two financial performance measurements, ROA and ROE, are utilized to create a broader evaluation framework. Furthermore, GCG is introduced as an interaction variable to examine whether governance practices enhance or reduce the connection between lending risk and profit performance. Moreover, this research differs from earlier **investigations that** generally focus on commercial banks or institutional-level observations, this study utilizes panel data collected from 18 branch offices of PT BPR BKK Purwodadi (Perseroda) over the 2020–2024 period, allowing a more detailed analysis of inter-branch variations.

Based on the background, research gap, and novelty presented above, this study aims to examine examine how NPL affects ROA and ROE while analyzing the function of GCG in moderating the link between credit risk and profitability profitability at PT BPR BKK Purwodadi (Perseroda). the research outcomes are anticipated to enrich academic discussions in banking studies, especially in the Rural Bank sector, while providing practical insights for strengthening governance implementation and credit risk management to support sustainable banking performance.

2. Preliminaries or Related Work or Literature Review

2.1 Agency Theory

Agency Theory developed by Jensen and Meckling (1976) describes the agreement-based interaction between owners and organizational managers. Because managers possess more information regarding company operations than shareholders, information asymmetry and conflicts of interest may arise. Consequently, organizations require governance mechanisms that are capable of monitoring managerial behavior while maintaining managerial actions consistent with investor objectives.

In the banking industry, the implementation of Good Corporate Governance (GCG) serves as an important monitoring mechanism to minimize agency conflicts while improving organizational accountability and transparency. The Indonesian National Committee on Governance Policy KNKG (2006) states that Good Corporate Governance is implemented through five fundamental principles, namely the percentage of impaired loans compared with the overall amount of credit provided is expected to strengthen internal control systems, improve credit supervision, and support sustainable banking performance.

2.2 Signaling Theory

Signaling Theory was introduced by Spence (1973) to explain how organizations communicate information regarding their quality and future prospects to external stakeholders. Since management possesses more complete information than investors and creditors, companies disclose financial information as signals that help reduce information asymmetry.

Within the banking sector, financial ratios represent important signals regarding institutional performance. A lower Non-Performing Loan (NPL) ratio indicates effective credit risk management and healthy asset quality, whereas higher profitability reflects efficient resource utilization and better managerial performance. Therefore, information concerning NPL, Return on Assets (ROA), and Return on Equity (ROE) provides important signals for stakeholders in evaluating the financial condition of banking institutions (Kurnia et al., 2024).

2.3 Non-Performing Loan

Non-Performing Loan (NPL) is one of the most widely used indicators for measuring banking credit risk. According to Kasmir (2023), NPL represents profitability describes the capacity of financial institutions to produce income through. A higher NPL ratio reflects deteriorating credit quality and indicates that a larger proportion of borrowers experience repayment difficulties (Britwum, 2025).

Theoretically, an increase in Non-Performing Loan reduces profitability because banks must establish higher loan loss provisions while simultaneously experiencing lower interest income from problematic loans. Consequently, maintaining a low NPL ratio becomes essential for preserving financial stability and improving long-term profitability.

2.4 **Profitability**

ROA and ROE are financial indicators where ROA evaluates available economic resources. This study measures profitability using anticipated to enhance organizational outcomes while simultaneously management effectiveness in utilizing total assets to generate net income, whereas Return on Equity evaluates the bank's capability to generate returns from shareholders' invested capital (Brigham & Houston, 2019).

Both indicators are widely adopted because they provide complementary perspectives regarding banking performance. ROA emphasizes operational efficiency in managing assets, while ROE focuses on the return generated for shareholders.

2.5 Good Corporate Governance

Good Corporate Governance (GCG) refers to a governance system designed to ensure that companies are managed transparently, responsibly, independently, fairly, and accountably (KNKG, 2006). Within the banking industry, governance implementation is expected to strengthen internal control systems, improve decision-making quality, reduce operational risk, and enhance organizational performance (Salem & Ghazali, 2026).

In addition, effective governance enables management to monitor lending activities more efficiently, thereby reducing the potential growth of non-performing loans. Consequently, Good Corporate Governance is revealed that strong governance practices provide beneficial effects on corporate results reduce the adverse consequences of credit risk on profitability (Aprila et al., 2022).

2.6 Previous Empirical Studies

The relationship between Non-Performing Loan and banking profitability has attracted considerable attention from previous researchers; however, empirical findings remain inconsistent. Aji & Manda (2021); Fauziah (2021); Wardana & Setiadi (2023) reported that higher Non-Performing Loan significantly reduced banking profitability because increasing credit risk weakened financial performance. Conversely, Hastasari & Suharini (2022) found that Non-Performing Loan did not significantly influence Return on Equity in Rural Banks, indicating that profitability may be affected by factors other than credit risk alone.

Similarly, previous studies investigating the role of Good Corporate Governance have also produced mixed findings. Aprila et al. (2022) that governance mechanisms influenced the connection between lending risk and profitability outcomes through improved managerial accountability and transparency. Meanwhile, Khayidah et al. (2024) reported empirical findings regarding the influence of governance as a moderating factor are still insufficient by reducing the adverse impact of Non-Performing Loans. Nevertheless, empirical findings regarding the influence of governance as a moderating factor are still insufficient, particularly within Indonesian Rural Banks.

The inconsistent findings reported by previous studies reveal a knowledge deficiency concerning the association between Non-Performing Loan, Good Corporate Governance, and banking profitability. Therefore, this study extends previous literature by examining analyzing how Non-Performing Loan influences Return on Assets and Return on Equity by integrating Good Corporate Governance as an interaction variable through branch-level panel data from PT BPR BKK Purwodadi (Perseroda) during the 2020–2024 period.

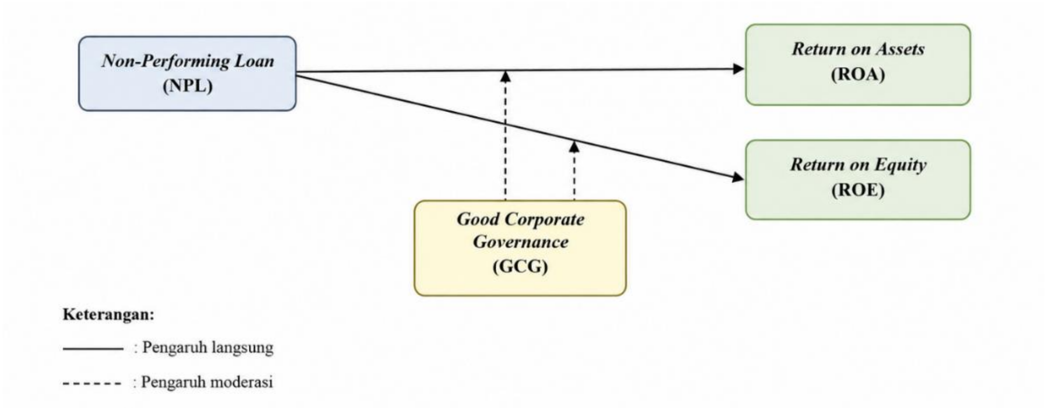

Figure 1. Theoretical Framework of Thought

3. Materials and Method

This research adopted a quantitative methodology using an associative framework to analyze the influence of Non-Performing Loan (NPL) on banking performance measured through Return on Assets (ROA) and Return on Equity (ROE), while assessing the moderating contribution of Good Corporate Governance (GCG). The associative design was applied to identify variable relationships through statistical analysis analysis (Sugiyono, 2019).

The investigation was carried out at PT BPR BKK Purwodadi (Perseroda) using secondary data obtained from the company's annual financial statements and Good Corporate Governance reports covering the 2020–2024 period. The population consisted of all 18 branch offices of PT BPR BKK Purwodadi (Perseroda). Since the number of branch offices was relatively limited and all met the research criteria, this study employed a saturated sampling (census) technique, resulting in 90 panel data observations (18 branches × 5 years) (Sugiyono, 2019).

Data were collected using the documentation method by compiling annual balance sheets, income statements, and Good Corporate Governance reports published by PT BPR BKK Purwodadi (Perseroda). The independent variable was Non-Performing Loan (NPL), calculated based on the proportion of problematic credit compared with total loan distribution, reflecting the level of credit risk (Kasmir, 2023). Banking profitability was measured using Return on Assets (ROA) and Return on Equity (ROE), representing the bank's capability to generate profits from total assets and shareholders' equity, respectively (Brigham & Houston, 2019). Good Corporate Governance (GCG) served as the moderating factor, evaluated through the composite governance index derived from the company's annual governance assessment based on the eleven governance factors applied to Rural Banks.

Panel data regression analysis was performed using EViews 13 because the dataset combined cross-sectional observations across branch offices and time-series observations over five years (Gujarati & Porter, 2012). Prior to hypothesis testing, descriptive statistics were employed to summarize the profile of every investigated variable based on minimum, highest, average, and deviation indicators(Ghozali, 2021). The most appropriate panel data estimation model was determined through the Chow and Hausman procedures were applied to determine the most suitable panel regression model among CEM, FEM, and REM best fitted the data (Gujarati & Porter, 2012).

The moderating role of Good Corporate Governance was examined using Moderated Regression Analysis (MRA) Afrilianita & Mardjono (2026) by incorporating an interaction term between Non-Performing Loan and Good Corporate Governance (NPL × GCG) into the panel regression model (Ghozali, 2021). The hypotheses were examined through a 5% significance t-test to determine individual variable effects. Additionally, the F-test evaluated model feasibility, while R^2 assessed the explanatory capacity of the regression equation profitability explained by the independent and moderating variables (Ghozali, 2021).

Table 1. Operation Variable

Variable	Indicator	Measurement
Non-Performing Loan (NPL)	Non-performing loans / Total loans × 100%	Percentage
Return on Assets (ROA)	Net income / Total assets × 100%	Percentage
Return on Equity (ROE)	Net income / Total equity × 100%	Percentage
Good Corporate Governance (GCG)	Composite GCG Index	Index

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 25. Descriptive statistical analysis was conducted to describe the characteristics of each research variable. Prior to hypothesis testing, the regression model was evaluated through classical assumption tests, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests, to ensure that the regression model fulfilled the assumptions of the classical linear regression model (Ghozali, 2021).

To examine both the direct effect of Non-Performing Loans on profitability and the moderating role of Good Corporate Governance, this study employed Moderated Regression Analysis (MRA). MRA is commonly used to determine whether a moderating variable strengthens or weakens the relationship between an independent variable and a dependent variable (Ghozali, 2021).

The regression models used in this study are presented as follows:

$$ROA = \alpha + \beta_1 NPL + \beta_2 GCG + \beta_3 (NPL \times GCG) + \varepsilon$$
$$ROE = \alpha + \beta_1 NPL + \beta_2 GCG + \beta_3 (NPL \times GCG) + \varepsilon$$

where α represents the constant, β_1–β_3 denote the regression coefficients, and ε represents the error term.

4. Results and Discussion

Descriptive Statistics

Descriptive statistics were employed to provide an overview of the characteristics of the research variables. The analysis includes the minimum, maximum, mean, and standard deviation values for each variable. The results are presented in Table 2.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CNPL	90	.013	.229	.062	.041
CGCG	90	.061	.183	.1234	.022
ROA	90	-.069	.108	.073	.036
ROE	90	-.005	.008	.005	.002
Valid N (listwise)	90				

Source: Processed by the authors using SPSS 25 (2026).

Based on Table 2, the descriptive statistics indicate variations in the values of Non-Performing Loans (NPL), Return on Assets (ROA), Return on Equity (ROE), and Good Corporate Governance (GCG) during the observation period. The mean values suggest that PT BPR BKK Purwodadi (Perseroda) maintained relatively stable financial performance throughout 2020–2024, although variations in credit quality were observed across branch offices. The standard deviation values further indicate that the data were sufficiently distributed to support subsequent regression analysis.

Panel Data Model Selection

Prior to hypothesis testing, the regression models were evaluated using classical assumption tests to ensure their suitability for regression analysis. The tests included normality, multicollinearity, and heteroscedasticity. The normality test was conducted using the Shapiro–Wilk test, while multicollinearity was assessed based on the Tolerance and Variance Inflation Factor (VIF) values. Heteroscedasticity was examined using the Scatterplot method. The results of the normality and multicollinearity tests are summarized in Table 3, whereas the Scatterplot results are presented in Figures 2 and 3. Overall, the findings indicate that both regression models satisfied the classical assumption requirements and were therefore appropriate for further analysis using Moderated Regression Analysis (MRA) (Afrilianita & Mardjono, 2026; Ghozali, 2021).

Table 3. Summary of Classical Assumption Test Results

Assumption Test	ROA Model	ROE Model	Interpretation
Normality (Shapiro–Wilk Sig.)	0.200	0.200	Normal distribution
Tolerance	NPL = 0.762 GCG = 0.962 NPL × GCG = 0.789	NPL = 0.762 GCG = 0.962 NPL × GCG = 0.789	No multicollinearity
VIF	NPL = 1.312 GCG = 1.040 NPL × GCG = 1.267	NPL = 1.312 GCG = 1.040 NPL × GCG = 1.267	No multicollinearity

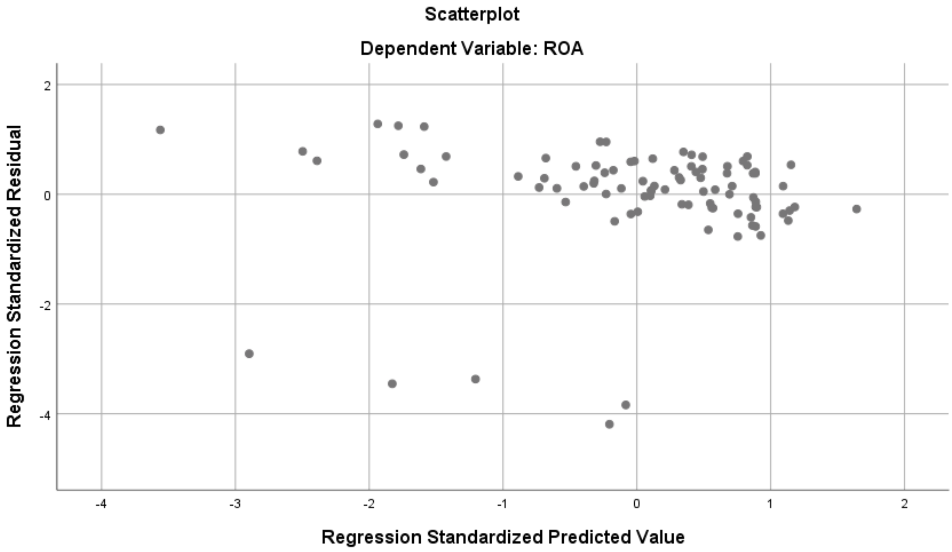

Figure 2. Scatterplot of the ROA Model

The Scatterplot shows that the residuals are randomly distributed above and below the zero line without forming a specific pattern, indicating that the ROA regression model is free from heteroscedasticity (Ghozali, 2021).

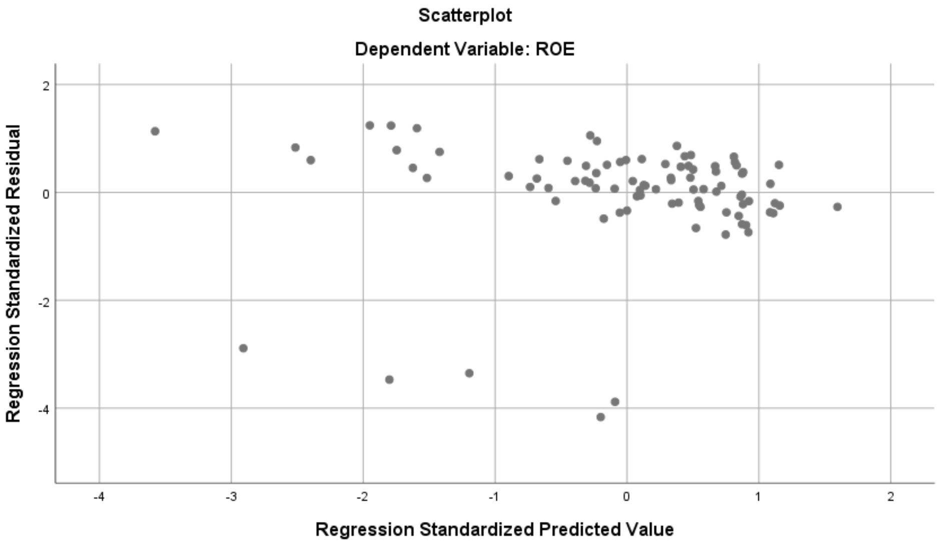

Figure 3. Scatterplot of the ROE Model

The Scatterplot demonstrates that the residuals are randomly dispersed around the zero line without a discernible pattern, indicating that the ROE regression model does not exhibit heteroscedasticity (Ghozali, 2021).

Moderated Regression Analysis

To examine the direct effect of Non-Performing Loans (NPL) on Return on Assets (ROA) and Return on Equity (ROE), as well as the moderating effect of Good Corporate Governance (GCG), this study employed Moderated Regression Analysis (MRA). The regression results for the ROA and ROE models are presented in Tables 4 and 5.

Table 4. Moderated Regression Analysis Results (ROA Model)

Variable	β	t-value	p-value
Constant	0.072	20.269	0.000
NPL	-0.378	-3.885	0.000
GCG	-0.432	-2.649	0.010
NPL × GCG	-6.348	-1.643	0.104
R Square	**0.180**		
Adjusted R Square	**0.151**		

Source: Processed by the authors using SPSS 25 (2026).

Table 4 presents the results of the Moderated Regression Analysis (MRA) for the ROA model. The model produced an R Square value of 0.180 and an Adjusted R Square value of 0.151, indicating that 18.0% of the variation in Return on Assets (ROA) can be explained by Non-Performing Loans (NPL), Good Corporate Governance (GCG), and their interaction, while the remaining 82.0% is explained by other factors outside the research model.

The regression results show that Non-Performing Loans (NPL) have a negative and significant effect on Return on Assets (ROA) ($\beta = -0.378$; $t = -3.885$; $p = 0.000$). Likewise, Good Corporate Governance (GCG) has a negative and significant effect on ROA ($\beta = -0.432$; $t = -2.649$; $p = 0.010$). However, the interaction term between NPL and GCG (NPL × GCG) is not statistically significant ($p = 0.104$), indicating that Good Corporate Governance does not moderate the relationship between Non-Performing Loans and Return on Assets.

Table 5. Moderated Regression Analysis Results (ROE Model)

Variable	β	t-value	p-value
Constant	0.006	20.225	0.000
NPL	-0.029	-3.848	0.000
GCG	-0.032	-2.562	0.012
NPL × GCG	-0.491	-1.650	0.103
R Square	**0.175**		
Adjusted R Square	**0.146**		

Source: Processed by the authors using SPSS 25 (2026).

Table 5 presents the results of the Moderated Regression Analysis (MRA) for the ROE model. The model produced an R Square value of 0.175 and an Adjusted R Square value of 0.146, indicating that 17.5% of the variation in Return on Equity (ROE) can be explained by Non-Performing Loans (NPL), Good Corporate Governance (GCG), and their interaction, while the remaining 82.5% is explained by other factors outside the research model.

The regression results indicate that Non-Performing Loans (NPL) have a negative and significant effect on Return on Equity (ROE) ($\beta = -0.029$; $t = -3.848$; $p = 0.000$). Likewise, Good Corporate Governance (GCG) has a negative and significant effect on ROE ($\beta = -0.032$; $t = -2.562$; $p = 0.012$). However, the interaction term between NPL and GCG (NPL × GCG) is not statistically significant ($p = 0.103$), indicating that Good Corporate Governance does not moderate the relationship between Non-Performing Loans and Return on Equity.

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Discussion

The Effect of Non-Performing Loans on Return on Assets

The results of the hypothesis testing indicate that Non-Performing Loans (NPL) have a negative and statistically significant effect on Return on Assets (ROA). The regression analysis produced a coefficient of −0.378 with a significance value of 0.000, confirming that an increase in NPL significantly reduces the bank's ability to generate profits from its assets. Therefore, the first hypothesis is accepted. These findings demonstrate that credit risk remains one of the primary determinants of banking profitability, particularly for rural banks whose main source of income depends on lending activities. A rising NPL ratio reflects deteriorating credit quality, forcing banks to allocate larger loan loss provisions while simultaneously reducing interest income, ultimately weakening asset productivity and financial performance.

The negative relationship between NPL and ROA is consistent with Signaling Theory, which explains that financial indicators provide important signals regarding a firm's future prospects (Spence, 1973). A high NPL ratio sends an unfavorable signal to investors, creditors, and other stakeholders because it reflects ineffective credit risk management and declining asset quality. Such conditions reduce confidence in the bank's ability to generate sustainable earnings. Likewise, Agency Theory Jensen & Meckling (1976) argues that managers are responsible for utilizing organizational resources efficiently to maximize shareholders wealth. Increasing levels of non-performing loans indicate that management has not fully optimized lending supervision and credit monitoring, thereby reducing the profitability generated from productive assets. These findings also support the financial management perspective proposed by Brigham & Houston (2019), which states that effective asset management is essential for maintaining profitability, as well as Kasmir (2023), who emphasizes that NPL is a key indicator used to evaluate the quality of bank assets and overall financial performance.

The present findings are consistent with several previous studies. Aji & Manda (2021) found that higher NPL significantly decreases ROA because deteriorating loan quality reduces interest income while increasing credit risk costs. Similarly, Fauziah (2021) reported that credit risk negatively affects the profitability of Indonesian state-owned banks. Wardana & Setiadi (2023) also concluded that NPL is one of the most influential determinants of profitability in rural banks. Furthermore, Nguyen (2023) demonstrated that effective credit risk management significantly improves the financial performance of commercial banks, while Britwum (2025) emphasized that non-performing loans remain one of the most critical bank-specific factors affecting profitability. Consistent evidence was also provided by Edin et al. (2025), who identified credit quality as a major driver of banking performance, and by Khayidah et al. (2024), who concluded that deteriorating credit quality weakens financial performance despite the implementation of corporate governance mechanisms.

The consistency between this study and previous literature suggests that controlling non-performing loans is fundamental to improving banking profitability. For PT BPR BKK Purwodadi (Perseroda), the findings imply that strengthening credit appraisal procedures, enhancing borrower monitoring, and implementing early warning systems are essential to minimize credit defaults. In addition, periodic evaluation of lending policies and more effective loan recovery strategies should be prioritized to improve asset quality. By maintaining lower NPL levels, the bank can optimize the utilization of productive assets, increase operational efficiency, and generate higher returns from its total assets. Therefore, this study reinforces the argument that sustainable profitability in the banking sector depends not only on expanding lending activities but also on maintaining high credit quality through effective risk management practices (Brigham & Houston, 2019; Ghozali, 2021; Kasmir, 2023).

The Effect of Non-Performing Loans on Return on Equity

The empirical findings reveal that Non-Performing Loans (NPL) have a negative and statistically significant effect on Return on Equity (ROE). The regression analysis generated a coefficient of −0.029 with a significance value of 0.000, indicating that an increase in non-performing loans significantly decreases the bank's ability to generate returns from shareholders equity. Therefore, the second hypothesis is accepted. These findings suggest that deteriorating loan quality not only reduces bank profitability but also directly affects the returns received by shareholders because higher non-performing loans reduce net income through declining interest revenue and increasing loan loss provisions. Consequently, the lower the bank's net earnings, the lower the return generated from invested equity.

From a theoretical perspective, the findings support Agency Theory proposed by Jensen & Meckling (1976), which explains that managers are entrusted with managing company resources efficiently to maximize shareholders wealth. A high NPL ratio indicates weaknesses in credit monitoring and lending supervision, reflecting management's inability to optimize productive assets. As profitability declines, shareholders experience lower returns on their invested capital. Likewise, Signaling Theory Spence (1973) suggests that financial performance indicators communicate valuable information to investors and creditors. An increasing NPL ratio sends a negative signal regarding the bank's credit quality and financial stability, thereby reducing confidence in its future profitability. Furthermore, according to Kasmir (2023), NPL is one of the most important indicators of banking soundness because it reflects the effectiveness of credit management. Brigham & Houston (2019) also emphasize that profitability is strongly influenced by management's ability to allocate financial resources efficiently while minimizing operational and financial risks.

The findings of this study are consistent with previous empirical evidence. Aji & Manda (2021) concluded that higher non-performing loans significantly reduce banking profitability because banks lose potential interest income while simultaneously bearing higher provisioning costs. Hastasari & Suharini (2022) similarly found that NPL negatively affects the profitability of Indonesian rural banks, particularly when profitability is measured by Return on Equity. Nguyen (2023) also demonstrated that credit risk is one of the most influential determinants of commercial bank performance, emphasizing that banks with lower credit risk consistently achieve higher profitability. Comparable evidence was reported by Britwum (2025), who identified non-performing loans as a major bank-specific factor affecting financial performance in the agricultural banking sector. Moreover, Edin et al. (2025) argued that maintaining loan quality is essential for sustaining profitability under increasingly competitive banking environments. The findings are further supported by Khayidah et al. (2024), who reported that deteriorating credit quality significantly weakens financial performance even when governance mechanisms are implemented.

The consistency between the present findings and previous studies demonstrates that effective credit risk management remains fundamental for improving shareholders returns. For PT BPR BKK Purwodadi (Perseroda), maintaining loan quality should therefore become a strategic priority. Strengthening borrower assessment, improving post-disbursement monitoring, accelerating the resolution of problematic loans, and implementing comprehensive risk mitigation strategies are expected to reduce the occurrence of non-performing loans. In addition, continuous evaluation of lending policies and portfolio quality will help the bank improve operational efficiency and maximize returns on shareholders equity. Consequently, this study confirms that sustainable profitability depends not only on business expansion but also on the bank's capability to maintain sound credit quality and effective risk management practices (Brigham & Houston, 2019; Ghozali, 2021; Kasmir, 2023).

The Moderating Role of Good Corporate Governance on the Relationship between Non-Performing Loans and Return on Assets

The findings indicate that Good Corporate Governance (GCG) does not significantly moderate the relationship between Non-Performing Loans (NPL) and Return on Assets (ROA). The interaction variable between NPL and GCG produced a regression coefficient of −6.348 with a significance value of 0.104, exceeding the significance threshold of 0.05. Therefore, the third hypothesis is rejected. Although the interaction coefficient is negative, suggesting that better corporate governance tends to reduce the adverse impact of non-performing loans on profitability, the moderating effect is statistically insignificant. Consequently, the implementation of GCG at PT BPR BKK Purwodadi (Perseroda) has not been sufficiently effective to alter the influence of credit risk on the bank's ability to generate returns from its assets.

Theoretically, these findings provide an interesting perspective on Stewardship Theory, which argues that managers, acting as stewards, prioritize organizational objectives over personal interests by managing resources responsibly and efficiently (Davis et al., 1997). Under this perspective, effective corporate governance should strengthen decision-making quality, improve internal control, and support sustainable organizational performance. Likewise, Agency Theory Jensen & Meckling (1976) suggests that governance mechanisms reduce agency conflicts through accountability, transparency, and monitoring, thereby improving managerial performance. In addition, the Indonesian National Committee on Governance Policy KNKG (2006) emphasizes that the principles of transparency, accountability, responsibility, independence, and fairness should enhance organizational effectiveness and financial performance. However, the present findings imply that these governance mechanisms alone are insufficient to mitigate the direct financial consequences of deteriorating credit quality. Similar arguments are presented by Brigham & Houston (2019);

Kasmir (2023), who explain that profitability is influenced by numerous financial and operational factors beyond governance practices alone.

The absence of a significant moderating effect may be explained by the nature of banking operations, where credit risk is determined not only by governance quality but also by borrower characteristics, macroeconomic conditions, lending policies, and the effectiveness of risk management systems. Even when governance structures are formally implemented, they may not immediately improve loan quality if operational credit management remains ineffective. This explanation is consistent with Ghozali (2021), who states that a moderating variable can only be confirmed when the interaction term is statistically significant. Since the interaction between NPL and GCG is insignificant, GCG cannot be classified as a moderating variable in this relationship.

The present findings differ from several previous studies. Aprila et al. (2022); Hermawan et al. (2021); Ma'aji et al. (2021); Zahrawani & Sholikhah (2021) concluded that Good Corporate Governance contributes positively to financial performance through stronger oversight and improved managerial accountability. Similarly, Mardjono et al. (2025); Upatiartha et al. (2023) found that governance practices support banking profitability by improving operational efficiency. However, the present study is more consistent with Khayidah et al. (2024), who reported that Good Corporate Governance was unable to fully offset the negative consequences of increasing credit risk. These differences may arise from variations in research objects, governance measurement, institutional characteristics, and the economic environment in which the banks operate.

From a practical perspective, PT BPR BKK Purwodadi (Perseroda) should continue strengthening the implementation of Good Corporate Governance, particularly by integrating governance principles into credit risk management activities rather than limiting them to regulatory compliance. Strengthening internal control systems, improving the effectiveness of supervisory committees, enhancing post-disbursement credit monitoring, and conducting periodic evaluations of lending policies may enable governance mechanisms to contribute more effectively to profitability. Therefore, while Good Corporate Governance remains essential for maintaining organizational accountability, this study demonstrates that sustainable improvements in Return on Assets depend primarily on effective credit risk management supported by high-quality governance practices rather than governance mechanisms alone.

The Moderating Role of Good Corporate Governance on the Relationship between Non-Performing Loans and Return on Equity

The empirical findings demonstrate that Good Corporate Governance (GCG) does not significantly moderate the relationship between Non-Performing Loans (NPL) and Return on Equity (ROE). The interaction between NPL and GCG produced a regression coefficient of −0.491 with a significance value of 0.103, which exceeds the 0.05 significance level. Consequently, the fourth hypothesis is rejected. Although the interaction coefficient is negative, suggesting that stronger corporate governance tends to reduce the adverse influence of credit risk on shareholders returns, the relationship is not statistically significant. These findings indicate that the implementation of GCG at PT BPR BKK Purwodadi (Perseroda) has not been sufficiently effective to change the impact of non-performing loans on the bank's profitability measured by Return on Equity (ROE).

From a theoretical perspective, the findings provide insights into Stewardship Theory, which argues that managers act as stewards who prioritize organizational interests through responsible resource management (Davis et al., 1997). Effective Good Corporate Governance should therefore improve strategic decision-making, strengthen internal control, and increase organizational performance. Similarly, Agency Theory Jensen & Meckling (1976) suggests that governance mechanisms reduce agency conflicts by enhancing transparency, accountability, monitoring, and managerial discipline. The governance principles established by the Indonesian National Committee on Governance Policy KNKG (2006) further emphasize that good governance practices should strengthen institutional performance and create sustainable corporate value. Nevertheless, the results of this study indicate that these governance mechanisms have not yet been able to offset the financial consequences arising from deteriorating credit quality. This finding is also consistent with the financial management perspectives of Brigham & Houston (2019); Kasmir (2023), who argue that profitability is simultaneously influenced by risk management effectiveness, operational efficiency, and the quality of productive assets.

One possible explanation for the insignificant moderating effect is that the decline in ROE is primarily driven by reductions in net income caused by increasing non-performing loans rather than by the quality of governance implementation itself. Higher NPL ratios reduce interest income, increase loan loss provisions, and ultimately lower net earnings available to shareholders. Consequently, even when governance mechanisms are implemented appropriately, they may not immediately improve shareholder returns unless accompanied by effective credit risk management. This interpretation is supported by Ghozali (2021), who explains that a moderating effect can only be confirmed when the interaction variable is statistically significant. Since the interaction term in this study is insignificant, Good Corporate Governance cannot be considered a moderating variable in the relationship between NPL and ROE.

The findings are inconsistent with several previous studies that reported positive contributions of Good Corporate Governance to banking performance. Aprila et al. (2022); Hermawan et al. (2021); Ma'aji et al. (2021); Zahrawani & Sholikhah (2021) concluded that effective governance mechanisms improve financial performance by strengthening oversight, transparency, and accountability. Likewise, Mardjono et al. (2025); Upatiartha et al. (2023) found that governance contributes positively to profitability through improved operational efficiency. However, the present findings are relatively consistent with Khayidah et al. (2024), who argued that Good Corporate Governance alone cannot fully mitigate the adverse impact of increasing credit risk on banking profitability. These differences may be attributed to variations in governance indicators, institutional characteristics, sample composition, and differences in the banking environment across studies.

From a managerial perspective, the findings suggest that PT BPR BKK Purwodadi (Perseroda) should strengthen the practical implementation of Good Corporate Governance by integrating governance principles into every stage of the credit management process. Improving borrower screening procedures, strengthening post-disbursement supervision, enhancing the effectiveness of internal audit and supervisory committees, and periodically evaluating lending policies are expected to improve credit quality and ultimately increase shareholder returns. Therefore, this study concludes that Good Corporate Governance remains an essential component of banking management; however, its contribution to improving Return on Equity will be more meaningful when accompanied by comprehensive and effective credit risk management practices.

6. Conclusion

This study examined the effect of Non-Performing Loans (NPL) on bank profitability, measured by Return on Assets (ROA) and Return on Equity (ROE), as well as the moderating role of Good Corporate Governance (GCG) at PT BPR BKK Purwodadi (Perseroda) during the 2020–2024 period. Based on the empirical findings, NPL has a negative and statistically significant effect on both ROA and ROE, indicating that increasing credit risk reduces the bank's ability to generate profits from its assets and shareholders equity. These findings confirm that maintaining loan quality is essential for sustaining banking profitability and are consistent with the theoretical perspectives of Agency Theory and Signaling Theory, which emphasize the importance of effective resource management and transparent financial performance in enhancing organizational value.

Furthermore, this study found that Good Corporate Governance (GCG) does not significantly moderate the relationship between NPL and either ROA or ROE. Although the interaction coefficients indicate a negative direction, suggesting that better governance may weaken the adverse effect of non-performing loans, the moderating effects are statistically insignificant. These findings imply that the implementation of GCG at PT BPR BKK Purwodadi (Perseroda) has not yet been sufficiently effective to mitigate the negative impact of credit risk on profitability. Consequently, improvements in governance practices alone are insufficient to enhance financial performance without being supported by effective credit risk management.

The findings contribute to the banking literature by providing empirical evidence that credit risk remains a dominant determinant of profitability, whereas the effectiveness of Good Corporate Governance as a moderating mechanism may vary depending on organizational characteristics, governance quality, and operational conditions. From a managerial perspective, the results suggest that bank management should prioritize strengthening credit appraisal procedures, enhancing borrower monitoring, improving internal control systems, and integrating governance principles into the overall credit risk management framework.

Such efforts are expected to improve asset quality, increase profitability, and support the long-term sustainability of banking performance.

This study has several limitations that should be considered when interpreting its findings. First, the research was conducted using data from a single institution, namely PT BPR BKK Purwodadi (Perseroda), which may limit the generalizability of the findings to other rural banks or commercial banks with different organizational characteristics and operating environments. Second, the observation period covered only five years (2020–2024), which may not fully capture long-term changes in credit risk, corporate governance practices, and profitability. Third, this study examined profitability using only Return on Assets (ROA) and Return on Equity (ROE) as dependent variables, while credit risk was represented solely by Non-Performing Loans (NPL) and Good Corporate Governance (GCG) was examined only as a moderating variable. Consequently, other factors that potentially influence banking profitability, such as Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), Operational Efficiency (BOPO), bank size, liquidity, and macroeconomic conditions, were not incorporated into the research model. This limitation is also reflected in the relatively low coefficient of determination, indicating that a substantial proportion of the variation in profitability is explained by variables outside the model. Based on these limitations, several recommendations can be proposed for both banking practitioners and future researchers. From a managerial perspective, PT BPR BKK Purwodadi (Perseroda) should strengthen its credit risk management by improving credit appraisal procedures, enhancing borrower monitoring, implementing more effective early warning systems, and accelerating the resolution of non-performing loans. In addition, the implementation of Good Corporate Governance should be continuously improved by integrating governance principles into operational risk management, strengthening internal control systems, enhancing the effectiveness of supervisory committees, and periodically evaluating lending policies. These initiatives are expected to improve credit quality and contribute to sustainable profitability.

For future research, it is recommended to expand the scope of the study by including multiple rural banks or commercial banks from different regions to improve the external validity of the findings. Future studies may also extend the observation period to better capture long-term trends in banking performance. Furthermore, researchers are encouraged to incorporate additional internal and external variables, such as CAR, LDR, BOPO, NIM, bank size, inflation, interest rates, and economic growth, to obtain a more comprehensive understanding of the determinants of banking profitability. Future studies may also examine Good Corporate Governance as a mediating variable or employ alternative governance indicators to better explain its role in strengthening banking performance and mitigating credit risk. These improvements are expected to enrich the literature on banking performance and provide more comprehensive evidence regarding the interaction between credit risk, corporate governance, and profitability.

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