THE EFFECT OF CREDIT RISK ON FINANCIAL PERFORMANCE OF CONVENTIONAL PEOPLE'S BANKS IN INDONESIA
(Comparative Study between Privately Owned and Local Government Owned BPRs)

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Abstraction

People's Economic Banks (BPR) have a strategic role in supporting the local economy through financial intermediation, particularly in the Micro, Small, and Medium Enterprises (MSMEs) sector. This study aims to analyze the effect of Non-Performing Loans (NPL), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Firm Size on Return on Assets (ROA) in Private BPRs and Regional Government BPRs in Indonesia. The research method used is quantitative with a multiple regression approach, using secondary data from the annual financial reports of Private BPRs and Regional Government BPRs for the 2019-2024 period. Sample selection was carried out using a stratified random sampling method based on data published by the Financial Services Authority (OJK). From the total population, 92 Private BPRs and 92 Regional BPRs were obtained with a total of 1100 initial observations. Then outlier trimming was performed to increase validity, resulting in 302 observations of Private BPRs and 488 observations of Regional BPRs for analysis. Data processing was carried out using SPSS software version 26.0 The results of the study indicate that in Private BPRs, the NPL variable has a significant negative effect on ROA, CAR has a significant positive effect on ROA, LDR has a significant positive effect on ROA, while Firm Size has no significant effect on ROA. In Regional BPRs, the results show that NPL has a significant negative effect on ROA, CAR has a significant positive effect on ROA, LDR has no significant effect on ROA, while Firm Size has a significant positive effect on ROA. The coefficient of determination (Adjusted R^2) is 0.209 or 20.4% for Private BPRs and for Regional BPRs it is 0.204 or 20.4%, the independent variables are able to explain variations in ROA. The implications of this study emphasize the importance of controlling non-performing loans (NPLs), strengthening capital (CAR), and effectively channeling quality credit (LDR) in improving the financial performance of rural banks (BPR). Furthermore, asset scale management (firm size) needs to be optimized, particularly in regional BPRs, to contribute more significantly to increased profitability. This study provides theoretical contributions to the banking literature on factors influencing BPR profitability and provides practical input for bank management and regulators in formulating regional banking policies.

Keywords: *Non Performing Loan (NPL), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Firm Size, Return on Assets (ROA)*

INTRODUCTION

Indonesian banking legislation is regulated by Law No. 10 of 1998, which authorizes banking institutions, as intermediaries, to collect funds from citizens and distribute them in the form of loans to improve their welfare. While the banking industry plays a crucial role in driving the economy, it is also a risky sector due to its role in managing public funds, which are then allocated to various forms of investment. In general, a bank's financial performance reflects the extent of success achieved in carrying out its operational activities. This financial performance is a key aspect in assessing the bank's overall performance, including assessments of assets, liabilities, liquidity, and other factors. According to Kasmir (2021), the profitability ratio, often referred to as business profitability, is used to assess the level of business efficiency and the results achieved by the bank. Munawir (2018) also stated that profitability is a financial ratio that functions to assess a company's effectiveness in generating profits. In other words, this ratio illustrates a company's ability to generate profits from its business activities, including banks, as measured by the Return on Assets (ROA) ratio.

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Banks are exposed to various risk factors, as their structures are highly volatile and influenced by the complex economic environment in which they operate. According to Koch and MacDonald (2015), referring to the Federal Reserve Board, banks face six risk categories. These include operational, credit, liquidity, market, legal, and reputational risks. Commercial banks in Indonesia implement risk management in accordance with Financial Services Authority Regulation No. 18 of 2016, which classifies eight risks: liquidity, operational, credit, legal, market, reputational, compliance, and strategic. Meanwhile, for Rural Banks (BPR), regulated in Financial Services Authority Regulation No. 13 of 2015, the risks faced by BPRs are divided into six categories: liquidity, operational, credit, compliance, reputational, and strategic risks. ROA, particularly at conventional rural banks (BPRs) in Indonesia, is showing a downward trend. This trend is observed in both private and regional government-owned BPRs. A sustained decline in profits indicates a bank's health and potential difficulty in surviving amidst economic competition. Conversely, the greater a bank's ability to generate profits or profitability, the greater its resilience in the face of intense economic competition. The average ROA and several other ratios for Indonesian BPRs can be seen in the following table:

Table 1. Gap Phenomenon

BPR Ratio	Private						Local government					
	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
NPL	8.07	8.80	7.82	8.09	9.70	11.80	7.11	6.76	6.03	6.36	7.96	9.57
CAR	41.35	46.95	47.96	47.00	46.08	47.60	43.74	44.86	44.10	43.43	42.18	40.83
Long Distance Relationship	76.54	73.32	71.81	73.06	101.29	111.64	77.58	75.99	75.60	77.27	100.85	113.07
ROA	3.19	2.34	2.06	2.39	1.95	1.87	2.60	2.08	2.33	2.41	1.76	1.69

Source: OJK BPR Publication Report 2019-2024

Based on the table above, the gap phenomenon shows rThe CAR ratio of private rural banks in 2019-2024 was higher than that of regional government-owned rural banks, indicating stronger capitalization. Furthermore, during this period, the CAR and ROA ratios of private rural banks showed an inverse relationship, as in the study of Avrita and Pangestuti (2016) on non-public banks. On the other hand, regional government-owned rural banks showed a concomitant downward trend. This demonstrates a positive relationship between the CAR and ROA ratios, as in the research of Hamza (2017) and Kurniawan et al. (2020). On the other hand, there was an opposite direction between NPL and ROA, so the empirical data is interesting for further study. This research is also to fill**research gap**or research gaps in the literaturethat there is stillcontradictions between the influences of the variables studied, presentedas follows.

Table 2.*Research Gap*

Topics Researched	Researchers	Research Object	Conclusion
The influence of credit risk on commercial bank performance.	Ekinci and Poyraz	The study refers to 26 commercial banks (state, private and foreign owned) in Türkiye for the period 2005 – 2017.	NPL has a negative and substantial correlation with ROA, so if NPL increases it reduces income.
Consequences of credit risk management on bank profitability.	Hamza	Research on 13 commercial banks in Pakistan for the period 2005 – 2014.	Credit risk management has an inverse and significant relationship with bank performance.
The Relationship between Credit Risk Management and BPR Profitability.	Afriyie and Akotey	Research on 10 of the 20 rural banks in the Brong Ahafo province, Ghana for the period 2006 – 2010.	NPL has a relationship Positive and significant impact on BPR profitability.
Non-Performing Loans and Bank Profitability.	Laryea et al.	A study of 22 banks in Ghana during the period 2005-2010.	NPL affects ROE and ROA negatively and significantly.
Analyze the impact of credit risk on profitability.	Saeed MS and Zahid N	Research on 5 large commercial banks in the UK from 2007 to 2015.	Credit risk indicators have a positive but not substantial relationship to bank profitability.

The influence of CAR, NPL, LDR on ROA.	Kurniawan et al.	Research on Book Four Banks for the period 2014 to 2018 in Indonesia.	NPL affects ROA inversely and substantially.
Impact of Credit Risk on Profitability.	Herlina et al.	Research on Private Foreign Exchange Commercial Banks for the period 2010 to 2014 in Indonesia.	NPL affects ROA negatively and significantly.
Elements that impact Financial Performance.	Vishnu Mawardi	Research on Commercial Banks. (Assets < 1 Trillion)	NPL has a significant effect on ROA and is negatively correlated.
Examining the Impact of CAR, NPL, LDR, NIM, BOPO on the Profitability of Public Banks.	Avrita and Pangestuti	General Bank (Go Public and Non-Go Public) in Indonesia for the period 2011 to 2014.	NPL has a relationship Positive and significant impact on profitability. (Go Public)

Source: Previous research, processed

The research gap table above shows research inconsistencies regarding the impact of credit risk on bank financial performance. Most studies, such as those conducted by Ekinci and Poyraz (2019) in Turkey, Hamza (2017) in Pakistan, Laryea et al. (2016) in Ghana, and studies in Indonesia by Mawardi (2005), Kurniawan et al. (2020), and Herlina et al. (2016), found that credit risk, as measured by Non-Performing Loans (NPLs), has a negative and significant impact on Return on Assets (ROA). These findings confirm that increased credit risk can reduce bank profitability. However, contradictory results have also been found in several other studies. Studies by Afriyie and Akotey (2013) on rural banks in Ghana, Saeed and Zahid (2016) on five major commercial banks in the UK, and Avrita and Pangesturi (2016) on publicly traded banks in Indonesia show that NPLs actually have a positive effect on ROA. These differing results indicate empirical inconsistencies (mixed findings) regarding the direction of the relationship between credit risk and bank financial performance.

This study's novelty lies in its comparative approach, which analyzes the impact of credit risk on financial performance at conventional Rural Banks (BPR) in Indonesia based on ownership structures: privately owned BPRs and regional government-owned BPRs. Unlike most previous studies, which focus on commercial banks, this study offers a new perspective by examining whether the relationships between credit risk (NPL), capital adequacy ratio (CAR), liquidity ratio (LDR), and bank size (SIZE) on profitability (ROA) differ across BPR ownership types. Furthermore, this study utilizes the most recent data period, encompassing post-pandemic dynamics, and takes into account differences in governance and operational characteristics between private BPRs and regional government BPRs, which have not been extensively studied empirically.

FORMULATION OF THE PROBLEM

This study's problem formulation is to investigate the impact of credit risk management on the profitability of conventional rural banks (BPRs) in Indonesia for the period 2019 to 2024. The theory suggests that non-performing loans lead to reduced profitability for commercial banks, consistent with several previous studies, particularly in European, African, and Asian countries. However, there is an anomaly in the research on commercial banks in the UK and rural banks in Ghana, which found a positive relationship between NPL and profitability. Based on these considerations, the researcher aims to determine whether the similarity between BPRs in Ghana and Indonesia occurs in Indonesia by analyzing several variables that influence BPR financial performance (ROA): NPL, CAR, LDR, size, and ownership. In light of the above, this study will address the following issues:
1. Are BPR performance indicators measured using the ROA ratio influenced by the NPL indicator in privately owned BPRs?
2. Are BPR performance indicators measured using the ROA ratio influenced by the NPL indicator in BPRs owned by the local government?
3. Are BPR performance indicators measured using the ROA ratio influenced by the CAR indicator in privately owned BPRs?
4. Are BPR performance indicators measured using the ROA ratio influenced by the CAR indicator in BPRs owned by the local government?

5. Are BPR performance indicators measured using the ROA ratio influenced by the LDR indicator in privately owned BPRs?
6. Are BPR performance indicators measured using the ROA ratio influenced by the LDR indicator in BPRs owned by the local government?
7. Are BPR performance indicators measured using the ROA ratio influenced by the SIZE indicator in privately owned BPRs?
8. Are BPR performance indicators measured using the ROA ratio influenced by the SIZE indicator in BPRs owned by the local government?
9.

LITERATURE REVIEW
Relationship between Variables and Hypothesis Development
The effect of NPL on ROA

Mawardi's (2005) research proxies NPL as credit risk, a ratio found in a bank's published financial statements. NPL also represents the credit risk management of commercial banks, which is the subject of research by Ekinci and Poyraz (2019) in Turkey, Hamza (2017) in Pakistan, Laryea et al. (2016) in Ghana, and several studies in Indonesia, such as those conducted by Kurniawan et al. (2020), Herlina et al. (2016), which show a significant inverse/negative correlation between credit risk and ROA, meaning that any increase in NPL will cause a decrease in ROA. These studies imply a link between credit risk management and income. According to Stuart (2015), the causes of this increase in the non-performing loan ratio include irregular or inadequate credit collateral, ineffective credit risk management, and excessive intervention in the lending process. An increase in these factors negatively impacts bank profitability. The following hypotheses can be formulated regarding the impact of NPL on ROA:
  H1a: NPL is negatively correlated with ROA of Private BPRs
  H1b: NPL is negatively correlated with ROA of Regional Government BPRs

The Effect of CAR on ROA
CAR can be calculated by adding the BPR's core capital to its supplementary capital, then dividing it by the total risk-weighted assets (RWA), with a minimum limit of 12% of the total RWA. A higher CAR reflects the bank's ability to better accept emerging risks and further enhance public trust (Mawardi, 2005). Research by Hamza (2017), Kurniawan et al. (2020), and Mahardian (2018) concluded that CAR has a significant impact on ROA. Furthermore, the regression coefficient showed a positive sign, indicating a positive relationship between CAR and ROA. On the other hand, research by Mawardi (2015), Afriyie, and Akotey (2013) showed different results, namely that CAR had no effect on ROA despite its positive value. The following hypotheses can be formulated regarding the impact of CAR on ROA:
  H2a: CAR is positively correlated with ROA of Private BPRs
  H2b: CAR is positively correlated with ROA of Regional Government BPRs

The Effect of LDR on ROA
The LDR (Low Debt to Deposit) can be used to assess the extent of third-party funds (savings or time deposits) channeled by a bank into credit (Kasmir, 2021). This indicator is crucial for assessing the liquidity and efficiency of bank fund distribution. Unlike commercial banks, rural banks (BPRs) are prohibited from collecting public funds in the form of demand deposits and are not permitted to engage in foreign exchange transactions, resulting in a simpler liquidity structure. Therefore, LDR management in BPRs is crucial for maintaining operational stability and customer trust. Research by Kurniawan et al. (2020), Hamza (2017), and Irman (2019) concluded that LDR has a significant impact on ROA. Furthermore, the regression coefficient showed a negative sign, indicating a negative relationship between LDR and ROA. On the other hand, research by Avrita and Pangestuti (2016), specifically on non-public banks, and Laryea et al. (2016), showed different results, namely a positive correlation between LDR and ROA but no impact on ROA. The following hypotheses can be formulated regarding the impact of LDR on ROA:
  H3a: LDR is positively correlated with ROA of Private BPRs
  H3b: LDR is positively correlated with ROA of BPR Pemda

The Effect of Size on ROA
Banks with large assets tend to be able to build more diversified portfolios. Thus, they have the opportunity to reduce risk and increase profits. On the other hand, due to economies of scale and scope, banks gain lower cost

advantages and can increase their profitability according to Ekinci and Poyraz (2019). This study uses total assets as a measure of the size of a rural bank. Research by Ekinci and Poyraz (2019), Hamza (2017), Laryea et al. (2016), and Rika et al. (2024) concluded that size has a significant impact on ROA. Furthermore, the regression coefficient showed a positive sign, indicating a positive relationship between size and ROA. On the other hand, research by Saeed MS and Zahid N (2016) showed different results, namely that size had no effect on ROA but had a positive value. The hypothesis that can be formulated regarding the impact of size on ROA is:

  H4a: Size is positively correlated with ROA of Private BPRs
  H4b: Size has a positive correlation with the ROA of Regional Government BPRs

Theoretical Framework

Based on several references from the literature review, the following is the research framework below..
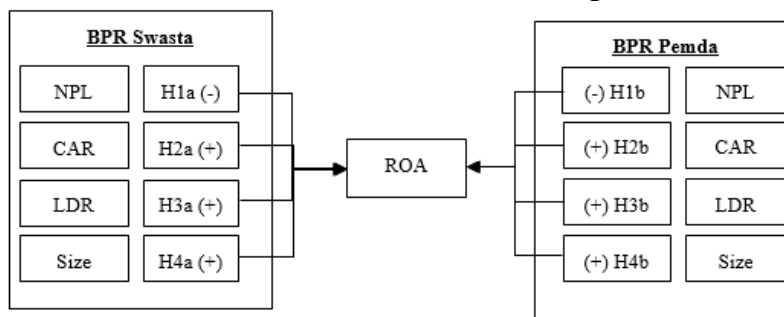

Figure 1. Framework of Thought

RESEARCH METHODS

Types and Sources of Research Data

In general, research in economics and finance tends to be quantitative, with analysis conducted on numerical data. The secondary data used will be historical BPR financial reports, which have been reported to the Financial Services Authority (OJK) in the form of quarterly reports and made public. The historical secondary data used in this study is sourced from BPR quarterly reports submitted to the Financial Services Authority (OJK) online using the OJK Online Reporting Application, commonly known as APOLO. The time periods and positions examined are the time series for December 2019, 2020, 2021, 2022, 2023, and 2024.

Population and Sample

The rural bank (BPR) population used in this study comprises all conventional rural banks (BPRs) in Indonesia. Based on the data obtained, the total population is 1,356. However, available data indicates 1,183 units registered with the Financial Services Authority (OJK) for the period 2019 to 2024. This population is further categorized into three strata based on total assets:

1. Small BPRs, namely BPRs with total assets < Rp. 20 billion, number 141 units (125 owned by the private sector and 16 owned by the local government).
2. Medium BPR, namely BPR with total assets between IDR 20 billion and IDR 500 billion, totaling 970 units (837 owned by the private sector and 133 owned by the local government).
3. Large BPRs, namely BPRs with total assets > IDR 500 billion, totaling 72 units (42 owned by the private sector and 30 owned by the local government).

The sample in this study was conducted using a Stratified Random Sampling technique, which was chosen because the BPR population has diverse characteristics, particularly in terms of private and local government ownership and asset size strata: small, medium, and large. The sample size was determined using the Slovin formula with a margin of error of 10%, considering the relatively large population and the research objectives focused on obtaining an overview and conducting comparative tests. The calculation is as follows:

$$n = \frac{N}{1 + N \cdot (e)^2}$$

$$n = \frac{1.183}{1 + 1.183 \cdot (0,1)^2}$$

$$n = 92$$

Based on this formula, a research sample of 92 BPRs was obtained and to show the representation of each group stratum, the Stratified Random Sampling technique was used.

Table 3. Sample Distribution Table Summary

Asset Strata	Private BPR (Pop. 1,004)	Private Samples (92)	Regional Government BPR (Pop. 179)	Local Government Samples (92)
Small (< Rp. 20 M)	125	11	16	8
Intermediate (20-500 M)	837	77	133	68
Large (> Rp. 500 M)	42	4	30	16
Total	**1,004**	**92**	**179**	**92**

Thus, the total sample used in this study was 184 BPRs, namely 92 private BPRs and 92 local government BPRs, which were randomly selected proportionally from each stratum.

Method of collecting data

The data collected is secondary, so the data collection method used is non-participant observation. Therefore, the steps taken were to record all data required for this study as stated in the BPR Publication Report submitted to the Financial Services Authority (OJK) through APOLO. The time period and positions to be tested are the time series for December 2019, 2020, 2021, 2022, 2023, and 2024.

Data Analysis Techniques

This study uses a quantitative data analysis approach, using a quantitative data analysis methodology with multiple regression test methods, normality tests, multicollinearity tests, heteroscedasticity, and autocorrelation., as well as model feasibility tests, tests of the influence between research variables.

RESEARCH RESULTS AND DISCUSSION
Research result
Descriptive Data

This study uses secondary data obtained from the annual financial reports of 92 private rural banks (BPR) and 92 regional rural banks (BPR) in Indonesia over a six-year observation period, from 2019 to 2024. With a sample of 184 BPRs and a six-year observation period, the total observation data used in this study is 1,104 observations. Descriptive statistics of each variable will be explained in detail to provide a general overview of the data characteristics, including the trend of average values, variations in distribution, and fluctuations in minimum and maximum values during the observation period.

Table 4. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Private BPR					
Non-Performing Loan (X1)	302	0.05	17.19	6,0866	3.93260
Capital Adequacy Ratio (X2)	302	4.77	69.60	33,3896	13,10918
Loan to Deposit Ratio (X3)	302	49.96	110.91	80,0947	12.22363
Firm Size (X4)	302	16.10	19.55	17,8567	,73098
Return on Assets (Y)	302	-1,110	6,310	2.62315	1.580012
Regional Government BPR					
Non-Performing Loan (X1)	488	0.11	24.45	6,0447	5,03877
Capital Adequacy Ratio (X2)	488	6.15	109.24	37,6851	19,77338
Loan to Deposit Ratio (X3)	488	31.17	205.18	81,0873	17,98860
Firm Size (X4)	488	15.79	21.15	18,5742	1,20843
Return on Assets (Y)	488	-3,000	7,330	2,11723	1.449395

a. *Non-Performing Loan*

In Private Rural Banks, based on the results of data processing by removing outliers, the observation data amounted to 302, the Non-Performing Loan (NPL) value ranged from 0.05 to 17.19, with an average value of 6.0866 and a standard deviation of 3.93260. These results indicate that in general, Private Rural Banks have a

fairly high level of non-performing loans, with differences between banks that are still moderate. A minimum value of 0.05 reflects the presence of Rural Banks that are able to maintain good credit quality, while a maximum value of 17.19 indicates that Rural Banks face serious challenges in managing credit risk. In BPR Pemda, the data processing results after outliers produced 488 observation data, with NPL values ranging from 0.11 to 24.45, an average value of 6.0447, and a standard deviation of 5.03877. This indicates that in general BPR Pemda also faces quite significant non-performing loans, with greater variation than private BPR. The minimum value of 0.11 indicates that BPR Pemda is relatively able to control credit risk, while the maximum value of 24.45 reflects BPR Pemda with a very high level of credit risk. When compared, the average NPLs in private rural banks (6.0866) and regional rural banks (6.0447) are not significantly different, so in general, both face almost the same problem credit conditions. However, the standard deviation of regional rural banks (5.03877) is greater than that of private rural banks (3.93260), which means that the variation or inequality in NPL conditions between regional rural banks is higher. Thus, although the average NPLs of the two groups are relatively similar, the distribution of data indicates that credit risk in regional rural banks is more diverse and uneven than in private rural banks.

b. *Capital Adequacy Ratio*

In Private BPRs, based on the results of data processing by removing outlier data, the observation data amounted to 302, the Capital Adequacy Ratio (CAR) value ranged from 4.77 to 69.60, with an average of 33.3896 and a standard deviation of 13.10918. This indicates that the capital adequacy level of Private BPRs varies relatively, but is generally at a fairly high level. A minimum value of 4.77 indicates a BPR with low capital that is at risk of facing limitations in absorbing losses, while a maximum value of 69.60 reflects a BPR with very large capital adequacy so that it is stronger in facing potential risks. In BPR Pemda, based on the results of data processing by removing outlier data, the observation data amounted to 488, the CAR value was in the range of 6.15 to 109.24, with an average of 37.6851 and a standard deviation of 19.77338. The higher average value compared to Private BPR indicates that BPR Pemda generally has better capitalization. The minimum value of 6.15 indicates that there are BPR Pemda with very low capitalization, while the maximum value of 109.24 indicates that there are BPR Pemda with a very strong capital structure, even far exceeding the minimum provisions required by the regulator. In comparison, the average CAR of local government-owned rural banks (37.6851) is higher than that of private rural banks (33.3896), thus concluding that local rural banks tend to be stronger in terms of capital adequacy. However, the standard deviation of CAR of local government-owned rural banks (19.77338) is also greater than that of private rural banks (13.10918), indicating higher variation among local government-owned rural banks. This indicates that although local government-owned rural banks are superior in capitalization on average, there is a larger gap among local government-owned rural banks compared to the more homogeneous private sector banks.

c. *Loan to Deposit Ratio*

In Private BPRs, based on the results of data processing by removing outlier data, the observation data amounted to 302, the Loan to Deposit Ratio (LDR) value was in the range of 49.96 to 110.91, with an average of 80.0947 and a standard deviation of 12.22363. This indicates that Private BPRs generally have a relatively moderate level of credit distribution to third-party funds. The minimum value of 49.96 indicates that Private BPRs tend to be conservative, while the maximum value of 110.91 indicates that Private BPRs are quite aggressive in distributing credit compared to the funds they have successfully collected. In BPR Pemda, based on the results of data processing by removing outlier data, the observation data amounted to 488, the LDR value was recorded in the range of 31.17 to 205.18, with an average of 81.0873 and a standard deviation of 17.98860. The minimum value of 31.17 indicates that there are BPR Pemda that are very cautious in distributing credit, while the maximum value of 205.18 indicates that there are BPR Pemda that are very aggressive with credit distribution more than double the funds collected, thus increasing liquidity risk. In comparison, the average LDR of local government-owned rural banks (81.0873) is slightly higher than that of private rural banks (80.0947). However, the standard deviation of local government-owned rural banks (17.98860) is greater than that of private rural banks (12.22363), indicating wider variation among local government-owned rural banks. Therefore, although the average LDR of both banks is almost the same, local government-owned rural banks are more heterogeneous in their credit distribution strategies, while private rural banks are more consistent in maintaining a balance between fundraising and credit distribution.

d. *Firm Size*

In Private BPRs, based on the results of data processing by removing outlier data, the observation data amounted to 302, the Firm Size (SIZE) value proxied by the natural logarithm of total assets was in the range of 16.10 to 19.55, with an average of 17.8567 and a standard deviation of 0.73098. This indicates that most Private BPRs have relatively homogeneous company sizes, with not too wide variations between units. The minimum value of 16.10 reflects the existence of Private BPRs with relatively small assets, while the maximum value of 19.55 indicates BPRs with larger assets, although still within the scope of the BPR scale. In BPR Pemda, based on the results of data processing by removing outlier data, the observation data amounted to 488, the SIZE value was recorded in the range of 15.79 to 21.15, with an average of 18.5742 and a standard deviation of 1.20843. The minimum value of 15.79 indicates the presence of BPR Pemda with relatively small assets, while the maximum value of 21.15 indicates the presence of BPR Pemda with quite large assets. The higher average compared to Private BPR illustrates that BPR Pemda in general has a larger business scale. In comparison, the average SIZE of local government-owned rural banks (18.5742) is higher than that of private rural banks (17.8567), indicating that local rural banks tend to have larger assets. Furthermore, the standard deviation of SIZE of local government-owned rural banks (1.20843) is also larger than that of private rural banks (0.73098), indicating a wider variation in company size among local government-owned rural banks. Therefore, although local government-owned rural banks are larger in terms of assets on average, the level of heterogeneity among local government-owned rural banks is also higher compared to private rural banks, which are relatively more uniform.

e. *Return on Assets* (ROA)

In Private BPRs, based on the results of data processing by removing outlier data, the observation data amounted to 302, the Return on Assets (ROA) value was in the range of -1.110 to 6.310, with an average of 2.62315 and a standard deviation of 1.580012. This indicates that the profitability of Private BPRs tends to be positive and stable, with most BPRs being able to generate profits from their total assets. The minimum value of -1.110 indicates that there are Private BPRs that are experiencing losses, while the maximum value of 6.310 reflects that there are Private BPRs that are very effective in utilizing assets to generate profits. In BPR Pemda, based on the results of data processing by removing outlier data, the observation data amounted to 488, the ROA value was in the range of -3,000 to 7,330, with an average of 2.11723 and a standard deviation of 1.449395. The lower average compared to Private BPR indicates that in general the profitability of BPR Pemda tends to be lower. The minimum value of -3,000 reflects the existence of BPR Pemda with a fairly problematic financial condition due to significant losses, while the maximum value of 7,330 indicates that there are BPR Pemda that are able to achieve a high level of profitability.

In comparison, the average ROA of private rural banks (2.62315) is higher than that of local government-owned rural banks (2.11723). This indicates that private rural banks are generally more efficient in utilizing assets to generate profits than local government-owned rural banks. However, the standard deviation of private rural banks (1.580012) is slightly higher than that of local government-owned rural banks (1.449395), indicating greater variation in profitability performance among private rural banks. Therefore, it can be concluded that although private rural banks tend to be more profitable, the level of profitability stability is actually better among local government-owned rural banks.
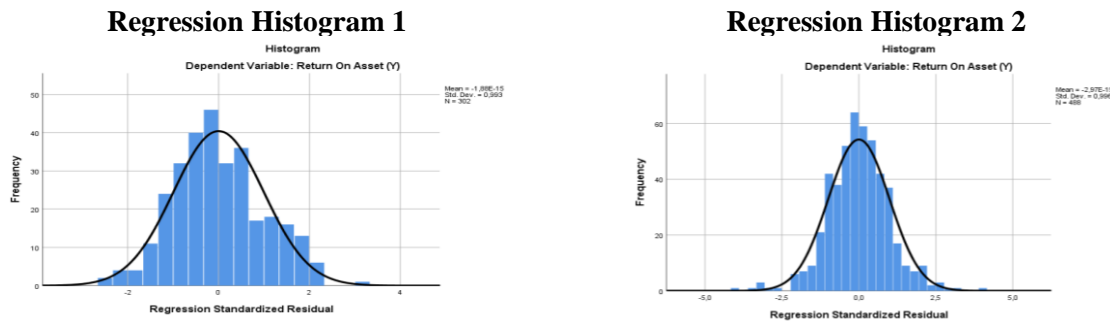
Data Normality TestAfter Outlier

The results of the first and second regression normality tests are presented as follows.
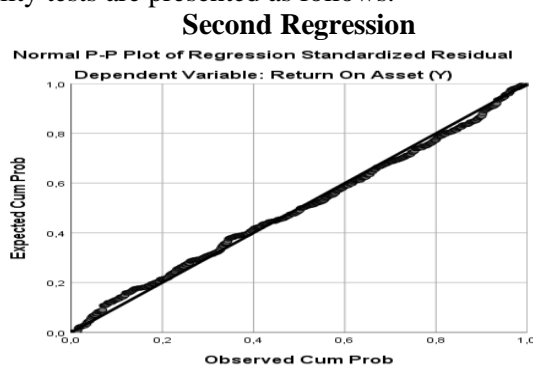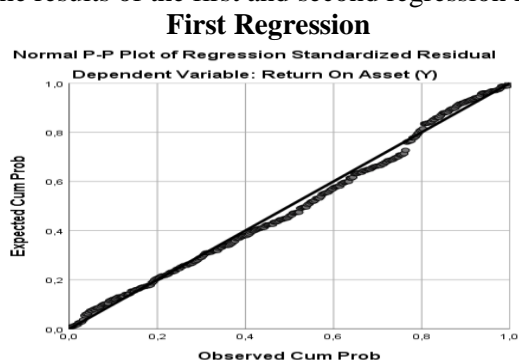
First Regression	Second Regression

Regression Histogram 1

Regression Histogram 2

Source: processed data, 2025

Figure 2. PP Plot and *Histogram Normality Test*

Table 5. Kolmogorov-Smirnov Normality Test

First Regression

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		302
Normal Parametersa,b	Mean	,0000000
	Standard Deviation	1.40540070
Most Extreme Differences	Absolute	,049
	Positive	,049
	Negative	-,033
Test Statistics		,049
Asymp. Sig. (2-tailed)		,081c

Second Regression

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		488
Normal Parametersa,b	Mean	,0000000
	Standard Deviation	1,29318524
Most Extreme Differences	Absolute	,039
	Positive	,037
	Negative	-,039
Test Statistics		,039
Asymp. Sig. (2-tailed)		,077c

Source: processed data, 2025

In Figure 2. above, the results of the normality test for the first regression of Private BPRs and the second regression of Regional BPRs show that the histogram graph forms a bell-shaped pattern, and the Normal PP Plot graph shows residual points spread along a diagonal line. This pattern indicates that the residuals from both regression models tend to be normally distributed after removing outliers. The results of this test are strengthened by the Kolmogorov-Smirnov statistical test as presented in Table 5. For the first regression, a significance value of 0.081 was obtained, while the second regression was 0.077. Both significance values are greater than 0.05, so it can be concluded that the residuals of both regression models are normally distributed. Thus, it can be concluded that after removing outliers, the first regression model for Private BPRs and the second regression model for Regional BPRs meet the normality assumption. This indicates that the regression models are suitable for use in hypothesis testing in the next analysis stage.

Multiple Regression Test

The results of multiple regression analysis to determine the extent of influence of the independent variables on the dependent variable by observing the coefficient values. The results of the first and second regressions are presented below.

Table 6. Multiple Regression Analysis First Equation

Variables	B	Std. Error	t	Sig.
(Constant)	-1,328	2,342	-,567	0.571
Non-Performing Loan (X1)	-,104	0.021	-4,906	0,000
Capital Adequacy Ratio (X2)	,025	0.007	3,561	0,000
Loan to Deposit Ratio (X3)	,048	0.007	7,165	0,000
Firm Size (X4)	-,006	0.123	-,053	0.958
R Square 0.457 F count 19.596				
Adjusted R2 0.209 Probability F 0.000				

Table 6 shows the results of the multiple regression test of the first equation with the dependent variable Return on Assets (ROA) and the independent variables Non-Performing Loans (NPL), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Firm Size. The regression model obtained is as follows.

First Equation;

ROA = - 1.328 - 0.104 NPL + 0.025 CAR + 0.048 LDR - 0.006 SIZE + e

a. The constant value (α = -1.328) is negative. This means that if all independent variables, NPL, CAR, LDR, and SIZE, are considered constant or zero, then the ROA of private rural banks for the 2019-2024 period has a baseline value of -1.328. This negative value indicates that without the influence of the independent variables, ROA tends to be low.

b. It is known that Non-Performing Loans (X1) show a negative regression coefficient value (-) of 0.104. This result indicates that at a significance level of 5% (0.05), Non-Performing Loans have a negative and significant effect on ROA in Private BPRs. The direction of the negative relationship indicates that the higher the NPL, the lower the profitability (ROA).

c. The Capital Adequacy Ratio (X2) is known to have a regression coefficient value of 0.025 with a significance value of 0.000 < 0.05. These results indicate that CAR has a positive and significant effect on ROA. The direction of this relationship means that the influence is directly proportional, SThe higher the CAR, the higher the financial performance of private BPRs as measured by ROA.

d. The Loan to Deposit Ratio (X3) is known to have a regression coefficient of 0.048 with a significance value of 0.000 < 0.05. This means that the LDR has a positive and significant effect on ROA. The direction of this relationship means that the influence is directly proportional., shows that the higher the LDR, the greater the profitability generated by Private BPRs.

e. It is known that Firm Size (X4) shows a negative regression coefficient of -0.006 with a significance level of 5%. The direction of this relationship indicates that the effect is inversely proportional. Although the coefficient is negative, this relationship is not significant because the sig. value of 0.958 is >0.05. This result means that company size does not significantly influence ROA, so the SIZE variable cannot be used as a determining factor in reducing ROA of Private BPRs.

After discussing the multiple regression results for the first model (private rural banks), the next analysis focuses on the second model, which uses a sample of regional government-owned rural banks. This model aims to examine the effect of non-performing loans (NPLs), capital adequacy ratio (CAR), loan-to-deposit ratio (LDR), and firm size on return on assets (ROA) in regional government-owned rural banks, as follows.

Table 7 Multiple Regression Analysis of the Second Equation

Variables	B	Std. Error	t	Sig.
(Constant)	-3,663	1,135	-3,228	0.001
Non-Performing Loan (X1)	-0.095	0.012	-8,078	0,000
Capital Adequacy Ratio (X2)	0.023	0.003	6,696	0,000
Loan to Deposit Ratio (X3)	0.002	0.003	0.721	0.471
Firm Size (X4)	0.285	0.056	5,085	0,000

R Square 0.452 F count 30.934
Adjusted R2 0.204 F probability 0.000

a. Dependent Variable: Return On Assets (Y2)
Source: processed data, 2025

From table 7, the results of the second model regression equation are as follows.

Second Equation;

ROA= -3.663 - 0.095 NPL + 0.023 CAR + 0.002 LDR + 0.285 SIZE + e

a. The constant value (α = -3.663) is negative. This indicates that if all independent variables (NPL, CAR, LDR, and SIZE) are held constant or equal to zero, the ROA of BPR Pemda will be at a baseline of -3.663. This negative value indicates a low baseline for profitability without any contribution from the independent variables.

b. It is known that Non-Performing Loans (X1) have a regression coefficient of -0.095 with a significance value of 0.000 < 0.05. This means that NPLs have a negative and significant effect on ROA. This negative relationship

indicates an inverse relationship, meaning that the higher the level of non-performing loans, the lower the level of profitability of BPR Pemda.

c. The Capital Adequacy Ratio (X2) is known to have a regression coefficient of 0.023 with a significance value of 0.000 < 0.05. These results indicate that CAR has a positive and significant effect on ROA. The direction of this positive relationship means a direct correlation, meaning that the higher the level of capital adequacy, the higher the profitability of the Regional BPR.

d. The Loan to Deposit Ratio (X3) shows a regression coefficient of 0.002 with a significance value of 0.471 > 0.05. This indicates that the LDR has a positive but insignificant effect on ROA. This positive relationship indicates a direct correlation, but because it is insignificant, an increase in the LDR does not have a significant impact on the profitability of local government-owned rural banks.

e. Firm Size (X4) shows a regression coefficient of 0.285 with a significance value of 0.000 < 0.05. These results indicate that firm size has a positive and significant effect on ROA. The direction of this positive relationship means a direct correlation, meaning that the larger the BPR Pemda's asset size, the higher the bank's ability to generate profitability.

Research Hypothesis Testing
t-test (Partial Regression Test)

The t-test was conducted to determine the influence between research variables and to prove the hypothesis formed, by paying attention to the p-value (Siq.) if <0.05, it can be interpreted that there is a significant influence of the independent variable on the dependent variable. The results of the first and second regression t-tests are presented below.

Table 8. First Regression t-Test

Variables	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t-statistic	Sig.
(Constant)	-1,328	2,342		-,567	0.571
Non-Performing Loan (X1)	-,104	0.021	-,259	-4,906	0,000
Capital Adequacy Ratio (X2)	,025	0.007	,207	3,561	0,000
Loan to Deposit Ratio (X3)	,048	0.007	,373	7,165	0,000
Firm Size (X4)	-,006	0.123	-,003	-,053	0.958

Dependent Variable: Return On Assets (Y1)

In table 8 above, the t-test will be explained below.

1. Non-Performing Loan (X1)
   Based on the t-test results, the Non-Performing Loan (NPL) variable has a t-value of -4.906 and a significance value of 0.000 <0.05. These results indicate that NPL has a negative and significant effect on ROA of Private BPRs. The higher the NPL ratio, the lower the level of profitability (ROA). Therefore, hypothesis H1a, which states that NPL has a negative effect on ROA of Private BPRs, is accepted.

2. Capital Adequacy Ratio (X2)
   The Capital Adequacy Ratio (CAR) variable has a t-value of 3.561 and a significance level of 0.000 <0.05. This indicates that CAR has a positive and significant effect on ROA of private rural banks. An increase in CAR will be followed by an increase in ROA. Therefore, hypothesis H2a, which states that CAR has a positive effect on ROA of private rural banks, is accepted.

3. Loan to Deposit Ratio (X3)
   The test results show that the Loan to Deposit Ratio (LDR) variable has a regression coefficient of 0.048 with a t-test of 7.165 and a significance level of 0.000 <0.05. This indicates that the LDR has a positive and significant effect on the ROA of private rural banks. The higher the LDR, the greater the resulting profitability. Therefore, hypothesis H3a, which states that the LDR has a positive effect on the ROA of private rural banks, is accepted.

4. Firm Size (X4)
   The Firm Size variable has a t-value of -0.053 and a significance level of 0.958 > 0.05. These results indicate that firm size does not significantly influence the ROA of private rural banks. The negative direction of the relationship indicated by the coefficient actually indicates an inverse relationship, but because the significance value is greater than 0.05, the relationship is not statistically proven. Thus, hypothesis H4a, which states that

Firm Size has a positive effect on the ROA of private rural banks, is rejected.

Next, the second regression t-test with the dependent variable Firm Size will be explained as follows.

Table 9. Second Equation t-Test

Variables	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t-statistic	Sig.
(Constant)	-3,663	1,135		-3,228	,001
Non-Performing Loan (X1)	-,095	,012	-,330	-8,078	,000
Capital Adequacy Ratio (X2)	,023	,003	,311	6,696	,000
Loan to Deposit Ratio (X3)	,002	,003	,029	,721	,471
Firm Size (X4)	,285	,056	,238	5,085	,000

a. Dependent Variable: Return On Assets (Y2)
Source: processed data, 2025

In table 9. above, the t-test for the second equation will be explained below.

1. Non-Performing Loan (X1)
   The statistical test results show that NPL significantly influences the ROA of BPR Pemda. This is indicated by a significance value of 0.000 < 0.05 and a t-value of -8.078, which means it falls within the hypothesis acceptance criteria. The negative direction of the relationship indicates an inverse relationship, meaning that the higher the non-performing loans, the lower the bank's profitability. Therefore, hypothesis H1b is accepted.

2. Capital Adequacy Ratio (X2)
   The statistical test results show that CAR significantly influences the ROA of BPR Pemda. This is indicated by a significance value of 0.000 < 0.05 and a t-value of 6.696. The positive direction of the relationship indicates a direct proportional relationship, meaning that the higher the capital adequacy level, the higher the bank's profitability. Therefore, hypothesis H2b is accepted.

3. Loan to Deposit Ratio (X3)
   The statistical test results indicate that LDR has no significant effect on the ROA of local government-owned rural banks. This is indicated by a significance value of 0.471 > 0.05 and a t-value of 0.721, which falls outside the hypothesis acceptance criteria. Although the direction of the relationship is positive or directly proportional, its effect is not statistically proven. Therefore, hypothesis H3b is rejected.

4. Firm Size (X4)
   Statistical test results show that firm size significantly influences the ROA of local government-owned rural banks. This is indicated by a significance value of 0.000 < 0.05 and a t-value of 5.085. This positive relationship indicates a direct proportional relationship, where the larger the bank's asset size, the higher the resulting profitability. Therefore, hypothesis H4b is accepted.

F Test (Simultaneous Effect)

The results of the F test for the first and second regressions are presented in the following table.

Table 10. First Regression F Test

Model	F count	Sig.
Regression 1 Residual Total	19,596	0,000

Source: processed data, 2025

Table 10. above shows an F-count value of 19.596 with a significance value of 0.000 < 0.05. The results of this statistical test indicate that simultaneously, the four independent variables, namely Non-Performing Loan (NPL), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Firm Size, have a significant effect on Return on Assets (ROA) in Private BPRs.

Next, the second regression f-test will be explained with the dependent variable ROA at BPR Pemda as follows.

Table 11. Regression F TestSecond

Model	F count	Sig.
Regression 2 Residual Total	30,934	0,000

Source: processed data, 2025

Table 11. above shows the F-count value of 30.934 with a significance value of 0.000 < 0.05. The results of this test indicate that simultaneously, the four independent variables, namely Non-Performing Loan (NPL), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Firm Size, have a significant effect on Return on Assets (ROA) at BPR Pemda. A significance value smaller than 0.05 indicates that the second regression model can be declared suitable for use to explain the relationship between the independent variables and ROA.

Model Determination Coefficient

In this study, the determination test was conducted in the first regression on private rural banks. The results of the determination test are as follows.

Table 12. First Regression Determination Coefficient

Model	R Square	Adjusted R Square
Regression 1	0.209	0.198

Source: processed data, 2025

Table 12 shows that in the first regression, the R Square value was 0.209 and the Adjusted R Square value was 0.198. This indicates that approximately 20.9% of the variation in Return on Assets (ROA) in Private BPRs can be explained by the independent variables used in the model, namely Non-Performing Loans (NPL), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Firm Size. Meanwhile, the lower Adjusted R Square value, namely 0.198, reflects an adjustment to the number of independent variables used in the model.

Next, the determination of the second regression will be explained with the dependent variable ROA at BPR Pemda as follows.

Table 13. Coefficient of Determination of the Second Equation

Model	R Square	Adjusted R Square
Regression 2	0.204	0.197

Source: processed data, 2025

Table 13 shows that in the second regression, the R Square value is 0.204 and the Adjusted R Square value is 0.197. This means that approximately 20.4% of the variation in Return on Assets (ROA) at BPR Pemda can be explained by the independent variables used in the model, namely Non-Performing Loan (NPL), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Firm Size. Meanwhile, the Adjusted R Square value of 0.197 shows an adjustment to the number of variables used in the model, which provides a more realistic estimate of the model's ability to explain variations in ROA.These results indicate that although the independent variables influence the ROA of local government-owned rural banks, their contribution is relatively limited, as the Adjusted R-square value is still below 0.20. Therefore, most of the variation in ROA in local-owned rural banks is likely influenced by factors outside this research model, such as operational efficiency, governance quality, or external macroeconomic factors. Compared to the first regression, the determination value in the second regression ($R^2 = 0.204$) is slightly lower than the first regression ($R^2 = 0.209$). This indicates that the NPL, CAR, LDR, and Firm Size variables have a greater ability to explain variations in ROA in private rural banks compared to regional government rural banks. In other words, the financial performance of private rural banks is more sensitive to these internal factors compared to regional government rural banks, which may be more influenced by external factors and the role of regional government policies.

THE EFFECT OF CREDIT RISK ON FINANCIAL PERFORMANCE OF CONVENTIONAL PEOPLE'S BANKS IN INDONESIA (Comparative Study between Privately Owned and Local Government Owned BPRs)
Reza Surya Akdiwidjaya and Wisnu Mawardi

DISCUSSION OF RESEARCH RESULTS

The Effect of Non-Performing Loans on Return on Assets (ROA) of Private BPRs

The results of the study indicate that Non-Performing Loans (NPLs) have a negative and significant effect on Return on Assets (ROA), both in Private and Regional Government-owned BPRs. This is evident from the significance value of $0.000 < 0.05$ with a negative coefficient direction. This finding confirms that the higher the non-performing loan ratio, the lower the bank's profitability due to reduced interest income and increased provisioning costs. This condition aligns with the results of research by Silpiani & Kusumawardani (2025) which shows that NPLs have a negative relationship to ROA in banks listed on the IDX, and is reinforced by Cendani & Puspitasari (2025) who emphasize that NPLs are an important indicator of profitability stability. From a risk perspective, this negative relationship is also consistent with the concept of risk-return trade-off, as explained by Denanti & Syarief (2025) that increasing NPLs reflect weak credit risk management and reduce bank competitiveness. Therefore, strengthening the credit analysis function, debtor monitoring, and portfolio diversification are strategic steps to reduce NPLs so that ROA performance is maintained.

The Effect of Non-Performing Loans on Return on Assets (ROA) of Regional Government BPRs

The analysis results show that Non-Performing Loans (NPLs) also have a negative and significant effect on ROA (p-value $0.000 < 0.05$). This indicates that a high non-performing loan ratio reduces the financial performance of Regional Government BPRs. This finding supports research by Silpiani & Kusumawardani (2025) and Cendani & Puspitasari (2025), which found that high NPLs depress bank net profits due to increased loss provision expenses. In the context of Regional Government BPRs, increasing NPLs are often associated with credit distribution policies that are more oriented towards empowering the local community's economy than solely profit-oriented. Therefore, improvements in the quality of credit analysis and risk monitoring systems are needed.

Capital Adequacy Ratio to Return on Assets (ROA) of Private BPRs

The Capital Adequacy Ratio (CAR) has a positive and significant effect on ROA (p-value $0.000 < 0.05$). This means that high capital adequacy improves the ability of private rural banks to bear risks and strengthens public trust. These results support the findings of Silpiani & Kusumawardani (2025) that CAR contributes positively to bank profitability. Suryanto & Rasmini (2025) also emphasized that strong capital expands credit distribution capacity and strengthens resilience to financial shocks. However, Handayani & Sopian (2025) cautioned that the positive effect of CAR on ROA will be effective if capital is used efficiently for productive activities.

Capital Adequacy Ratio to Return on Assets (ROA) of Regional Government BPRs

The Capital Adequacy Ratio (CAR) has a positive and significant effect on ROA (p-value $0.000 < 0.05$). This means that the higher the capital adequacy ratio, the stronger the ability of regional government-owned rural banks to bear risk and strengthen public trust. This finding is consistent with Dewi & Prasetyo (2022) and Rahman & Abdullah (2024), who emphasized that CAR is a key factor in maintaining the financial stability of regional banks. Furthermore, an increase in CAR strengthens banks' ability to expand financing and mitigate potential non-performing loan risks.

The Influence of Loan to Deposit Ratio on Return on Assets (ROA) of Private BPRs

The Loan to Deposit Ratio (LDR) study results show a positive and significant effect on ROA (p-value $0.000 < 0.05$). This means that the greater the third-party funds disbursed as productive loans, the greater the profit generated. These results support research by Fauzi & Setyawan (2022) and Wijayanti et al. (2023), which assert that a high LDR indicates good intermediation capacity and contributes to increased profitability. However, balance is still needed to ensure liquidity is not disrupted.

The Influence of Loan to Deposit Ratio on Return on Assets (ROA) of Regional Government BPRs

Unlike private rural banks (BPR), the Loan to Deposit Ratio (LDR) variable in regional government-owned rural banks (BPR Pemda) did not significantly impact ROA (p-value $0.471 > 0.05$). This result indicates that although third-party funds are channeled in the form of credit, this has not significantly impacted profitability. This finding aligns with research by Kusuma & Rachman (2023) and Putri & Lestari (2021), which explains that regional BPRs tend to be oriented towards social and regional development, rather than simply pursuing profit. This results in suboptimal credit distribution efficiency in generating profits.

The Effect of Size on Return on Assets (ROA) of Private BPRs

Firm Size did not significantly impact ROA (p-value 0.958 > 0.05), with a negative correlation. This means that increasing assets does not necessarily lead to increased profitability. This suggests that a large business scale does not necessarily guarantee efficiency. This finding aligns with the findings of Rahmawati & Hidayat (2021) and Ningsih & Pratiwi (2022), which explain that company size does not always reflect operational effectiveness, especially if management is not optimal in managing resources. Therefore, private rural banks (BPRs) need to improve operational efficiency so that asset growth can directly contribute to profitability.

The Effect of Size on Return on Assets (ROA) of Regional Government BPRs

Firm size has a positive and significant effect on ROA (p-value 0.000 < 0.05). This means that the greater the total assets of a local government-owned rural bank, the higher its profit-generating capacity. This aligns with research by Putri & Santoso (2022) and Chowdhury & Ahmed (2022), which states that large company size provides a competitive advantage through scale efficiency and product diversification. However, as Hendri & Yuliana (2023) point out, increased profitability can only be achieved if supported by good governance and effective managerial strategies in utilizing assets.

CONCLUSION

This study concludes that credit risk, capital, liquidity, and bank size have different effects on financial performance (ROA) at conventional People's Economic Banks (BPR) in Indonesia based on ownership structure. In privately owned rural banks (BPR), Non-Performing Loans (NPLs) have been shown to have a negative and significant effect on ROA, indicating that the higher the level of non-performing loans, the lower the bank's profitability. Conversely, the Capital Adequacy Ratio (CAR) and the Loan-to-Deposit Ratio (LDR) have a positive and significant effect on ROA, indicating that capital adequacy and optimization of the intermediation function can improve financial performance. However, bank size (Firm Size) does not significantly affect ROA, indicating that asset size does not always reflect profit-generating ability.

Meanwhile, in regional government-owned rural banks (BPRs), NPL also had a negative and significant effect on ROA, confirming that non-performing loans are a major factor in declining profitability. CAR and Firm Size had a positive and significant effect on ROA, indicating that strong capitalization and large asset size can strengthen the financial performance of regional BPRs. Unlike private BPRs, LDR did not have a significant effect on ROA, indicating that effective credit distribution has not yet fully translated into increased profitability. The results of this study confirm that ownership structure moderates the relationship between risk factors and financial performance, where private BPRs are more sensitive to operational efficiency and intermediation, while local government BPRs are more dependent on capital strength and asset scale in achieving profitability.

RESEARCH LIMITATIONS

This study has several limitations that should be noted. First, the variables used only cover NPL, CAR, LDR, and Firm Size, so other factors such as operational efficiency (BOPO), NIM, or governance have not been analyzed. Second, the observation period is limited to 2019-2024, so it does not fully reflect long-term dynamics. Third, the use of secondary data and the outlier removal process can reduce data variation. Fourth, this study only focuses on conventional rural banks (BPRs) based on ownership (private and local government), so the results cannot be generalized to other types of financial institutions.

FUTURE RESEARCH AGENDA

Based on the limitations outlined above, several suggestions for further research are available. First, it is recommended to add other variables such as Net Interest Margin (NIM), BOPO (Opportunity to Operating Income), managerial efficiency, or governance quality to make the analysis of BPR financial performance more comprehensive. Second, the observation period should be extended to more than 10 years to capture long-term dynamics and regulatory changes. Third, future research could compare BPRs with other financial institutions, such as commercial banks, Islamic BPRs, or savings and loan cooperatives, to broaden the analytical perspective. Fourth, external factors such as inflation, interest rates, and economic growth should also be considered to ensure the research results are more representative of the macroeconomic conditions that influence BPR performance.

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