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The role of BI rate in moderating the effect of NPL, NIM, ROA, on bank credit distribution: Study on banking companies listed on the LQ45 index from 2020 to 2024

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ABSTRACT

The purpose of this study to analyze the effect of Non Performing Loans (NPL), Net Interest Margin (NIM) and Return on Asset (ROA) on credit distribution, with the BI Rate serving as a moderating variabel. The population in this study includes all banking companies listed in the LQ45 index for the 2020-2024 period. This research was conducted by taking secondary data including financial reports, annual reports, and banking statistical data. The data analysis method used is panel data regression with a random effect model, processed with Eviews 13 software. The results of this study showed that simultaneously, NPL, NIM and ROA significantly influenced credit distribution. However, partially, the NPL and NIM had insignificant effect on credit distribution, while ROA had a significant positive effect on credit distribution. Futhermore, the BI Rates able to moderate the effect of NPL on credit distribution, but unable to moderate the effect of NIM and ROA on credit distribution in LQ45 index banking companies for the 2020 – 2024 period.

Keywords: credit distribution; net perfomance loan (NPL); NIM (net interest margin); return on asset (ROA); BI rate.

1. INTRODUCTION

Indonesia's economy grew by 5.11 percent in 2025. This figure is higher than the economic growth in 2024, which increased by 5.03 percent. The main sectors contributing to the Gross Domestic Product (GDP) include manufacturing, trade, agriculture, construction, mining, and other service sectors (Badan Pusat Statistik, 2026). During the first half of 2025, Indonesia's economy slowed down due to global economic uncertainty stemming from trade wars, conflicts in the Middle East, and geopolitical tensions, including the imposition of import tariffs by the United States. These conditions weighed on global trade and slowed economic growth in various countries, including Indonesia. However, in the second half of 2025, the pressure began to ease as the geopolitical situation improved and the United States, along with a number of partner countries, agreed to reduce import tariffs.

One sector that plays a significant role in boosting national economic growth is the banking industry. In this context, banking stability serves as the cornerstone for sustaining national economic growth. As financial intermediaries, banks serve to mobilize funds from the public in the form of deposits and channel them back to the public in the form of loans (Eltania, 2022). Banking activities involving the disbursement of loans in the form of working capital loans and investment loans can have a direct multiplier effect on economic development. Bank lending can also stimulate economic activity in the form of consumption, investment, and imports and exports. According to Kusumawardani (2023) bank's ability to extend credit to the public requires consideration of factors related to the bank's financial health and stability.

Banking stability is directly correlated with the confidence of the public, investors, and the business sector—such as SMEs—that rely on bank financing. If banking stability is disrupted, it can impact access to financing. To maintain sound banking stability, bank management applies the principle of prudence and strict risk management. This is also inseparable from the role of the government through Bank Indonesia, which collaborates with the Financial Services Authority (OJK) and the Deposit Insurance Corporation (LPS) to conduct supervision with the aim of creating a financial system that is adaptive, inclusive, and resilient to external pressures. To mitigate potential risks, Bank Indonesia has implemented various new policies designed to support the banking sector in maintaining competitive growth and stimulating credit growth. These policies have had a positive impact, as shown in Figure 1

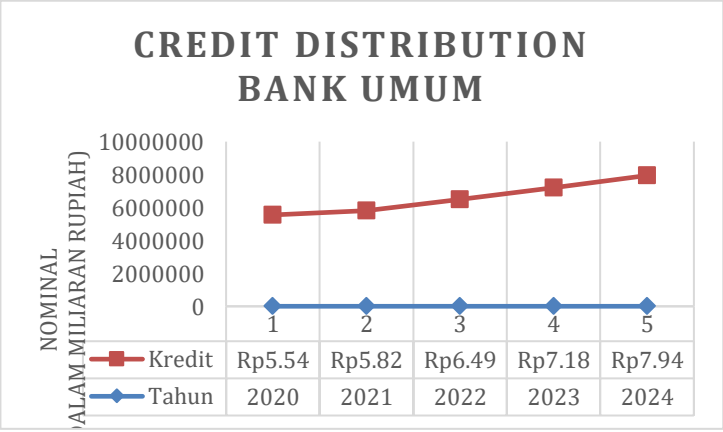

Figure 1. Data Credit Distribution in Bank Umum in period 2020-2024

Source: Indonesian Banking Statistic Data (data processed by researcher 2025)

Figure 1 shows that credit disbursement increased from 2020 to 2024. Since March 2020, Bank Indonesia has implemented the Macroprudential Liquidity Incentive Policy (KLM), aimed at encouraging bank lending or financing while adhering to the principle of prudence. As a result, following the pandemic in 2021, credit disbursement began to gradually improve, though it remained insufficiently robust due to

unstable global interest rates, which continued to affect demand for credit. Post-pandemic developments continued. In 2022, the economy began to recover, market demand grew, and this drove credit demand. In 2023, Bank Indonesia strengthened the KLM to expand credit access for financing in the downstream sector, affordable housing, financial inclusion, and the green economy. In 2024, banking credit growth increased by 10.39% year-over-year, higher than in 2023. This credit growth was bolstered by increases in investment credit, consumer credit in the form of mortgages, working capital loans, and the disbursement of the People's Business Credit (KUR) in 2024.

Bank credit growth throughout 2025 slowed to 9.69 percent year-over-year. This figure is lower than in 2024 but remains within Bank Indonesia's target range of 8–11 percent. However, amid global dynamics throughout 2025, Indonesia's banking sector remained stable despite a slowdown in credit growth in line with the economic cycle. Banking sector health, as measured by the Non-Performing Loan (NPL) ratio in the second quarter of 2025, remained at 2.28 percent. The reduction in the benchmark interest rate (BI Rate) influenced bank lending and deposit rates. Based on Keynes' liquidity preference theory, interest rates can drive an increase in the demand for money, particularly bank credit, as firms or households incur only minimal costs for such loans (Eltania, 2022). Additionally, increased government deposits in the banking sector boost credit growth and reduce banks' funding costs.

An analysis of bank credit disbursement is essential to determine the extent to which banks are able to extend credit to the public. According to Setyawan (2016), a bank's ability to disburse credit is influenced by various factors, both internal and external. Internal factors affecting banks include NPL, NIM, and ROA. Non-Performing Loans (NPL) indicate the level of risk associated with problem loans. A high NPL rate indicates that the bank's management is not optimally managing non-performing credit risk, which affects a decline in credit disbursement and vice versa. Net Interest Margin (NIM) is a financial ratio derived from comparing interest income to total assets, representing the difference between deposit interest rates and loan interest rates (Purnama & Cahyono, 2019). Meanwhile, Return on Assets (ROA) reflects a company's ability to maximize asset management to generate profits. In addition to internal factors, macroeconomic conditions such as interest rates also play a role in moderating the influence of internal factors on credit disbursement. High interest rates can increase banking revenue but suppress credit demand. Meanwhile, a decrease in interest rates can stimulate credit demand but increase credit risk. Therefore, the interaction between credit interest rates and internal factors influencing credit disbursement is a crucial aspect of this study.

Based on the above discussion, research on the internal and external factors influencing bank lending needs to be revisited. There are several previous studies related to this topic; for instance, the study conducted by Bahrul et al. (2011) showed that NPL and NIM do not affect lending. This finding is inconsistent with studies by Stefanus et al. (2023), Kusumawardani (2023), and Sigit et al. (2025), which indicate that NPL has a significant effect on credit disbursement. Other studies conducted by Haryanto & Widyarti (2017) and Purnama & Cahyono (2019) indicate that NIM has a significant effect on credit disbursement. This study aligns with research conducted by Qulby (2023), which indicates that NIM has a significant effect on credit disbursement. Other studies by Putri & Akmalia (2016) and Setyawan (2016) show that ROA influences credit disbursement. This study is consistent with research conducted by Stefanus et al. (2023), who stated that ROA has a significant effect on credit disbursement. However, research conducted by Nungki et al., (2024) shows that ROA does not have a significant effect on credit disbursement.

Another study conducted by Eltania (2022) shows that credit interest rates have a significant negative effect on the disbursement of consumer credit, investment credit, and working capital credit. The results of this study indicate that when credit interest rates decline, credit demand increases. This aligns with the study by Butar-butar & Silaen (2025), which states that credit interest rates have a significant negative effect on credit disbursement. Research by Martin et al., (2014) indicates that credit interest rates can moderate the effects of DPK, NPL, and CAR on credit disbursement. A similar study by Azzahra & Riftiasari (2025) indicates that interest rates can moderate the relationship between CAR and NPL on ROA. Meanwhile, interest rates do not moderate the relationship between LDR and ROA.

Based on the above discussion, there remains a research gap in previous studies. Therefore, this study was conducted to re-examine several factors previously studied using different analytical methods and testing tools than those in prior research. This study focuses on banking companies listed on the Indonesia Stock Exchange (IDX) that are included in the LQ45 index, as banks in this category are considered to have high capabilities and relatively stable financial performance. The researcher considers these banks eligible to represent the national banking sector. This study analyzes the hypothesis regarding the influence of NPL, NIM, and ROA on credit disbursement, with interest rates serving as a moderating variable. Research examining credit interest rates as a moderating variable remains limited. Thus, one novelty of this study is the inclusion of credit interest rates as an external factor in credit disbursement. This study is expected to provide a deeper understanding of the factors influencing credit disbursement in banks listed on the LQ45 index for the 2020–2024 period. Based on the background outlined above, the author is interested in conducting research titled "The Influence of Internal and External Factors on Credit Disbursement in the Banking Sector for the 2020–2024 Period.

2. METHOD

This study is a quantitative study using a descriptive approach. The objective of descriptive quantitative research is to evaluate stated hypotheses by studying a specific population or sample to test specific hypotheses Grilseda & Riyadi (2021). The research data used in this study consists of secondary data in the form of financial and annual reports from banking companies listed on the Indonesia Stock Exchange (IDX) within the LQ45 index for the period 2020–2024. These data documents can be downloaded from the official website of the Indonesia Stock Exchange (IDX) at www.idx.co.id, the official websites of the relevant companies, and banking statistical data released by the Financial Services Authority (OJK). The population of this study consists of all banks listed on the Indonesia Stock Exchange (IDX) and included in the LQ45 index from 2020 to 2024. The sampling technique used in this study is purposive sampling. Purposive sampling is a sampling technique based on criteria established by the researcher. The sampling criteria for this study are as follows: (1) Banks that have gone public on the Indonesia Stock Exchange (IDX) and were included in the LQ45 index from 2020 to 2024, (2) Banks that have published financial and annual reports for the five-year period from 2020 to 2024 (3) The financial ratios required for this study are available in the banks' financial and annual reports for the 2020–2024 period.

Based on the established criteria, there are 5 banking companies that meet the requirements, with a total of five observation periods from 2020 to 2024. The operational variables in this study consist of a dependent variable (dependent), namely credit disbursement, and independent variables (independent), namely Net Performing Loans (NPL), Net Interest Margin (NIM), and Return on Assets (ROA). To strengthen the research results, the researcher added the credit interest rate (BI rate) as a moderating variable. The measurement scales of the variables are presented in Table 1 below:

Table 1 Measurement Scale of Variable

Variabel	**Rumus**	**Skala**
Credit Distribution	Credit distribution = Total Credit provided	Nominal
***Net Performance Loan* (NPL)**	$NPL = \frac{Total\ Bad\ Debt}{Total\ kredit} \times 100\%$	Ratio

Net Interest Margin **(NIM)**	$NIM = \frac{Income\ Revenue - Interest\ Expenses}{Produktive\ Asset} \times 100\%$	Ratio
Return on Asset **(ROA)**	$ROA = \frac{Net\ Profit}{Total\ Asset} \times 100\%$	Ratio
Suku Bunga Kredit (BI *rate*)	BI Percentage Interest Rate	Percentage

Source: Data processed by researcher 2025

The data analysis method used in this study is panel data regression analysis. Panel data is a combination of time-series data and cross-sectional data. Data analysis in this study was conducted using Eviews 13. The regression equation for the panel data analysis in this study is as follows:

$$INKREDIT = a + \beta 1NPL + \beta 2NIM + \beta 3ROA + \varepsilon$$

Panel data regression analysis can employ several models, including the Common Effects Model (CEM), the Fixed Effects Model (FEM), and the Random Effects Model (REM). To select the appropriate model, the researcher conducted model selection tests using the Chow test, the Hausman test, and the Lagrange Multiplier test.

Additionally, this study employs Moderated Regression Analysis (MRA) to understand the role of loan interest rates in the relationship between NPL, NIM, and ROA on credit disbursement. According to Ghozali (2018) in Pratika et al. (2023), Moderated Regression Analysis (MRA) is a specific interaction test in panel data regression analysis where the regression equation contains the interaction of two or more independent variables. The test was conducted to determine whether the lending rate could strengthen or weaken the influence of NPL, NIM, and ROA on credit disbursement. The equation in the Moderated Regression Analysis (MRA) test is as follows:

$$INKREDIT = a + \beta 1NPL + \beta 2NIM + \beta 3ROA + \beta 4BIRATE + \beta 5NPL_B + \beta 6NIM_B + \beta 7ROA_B + \varepsilon$$

3. RESULT AND DISCUSSION

3.1. Research Result

Table 2 Analysis Descriptive Statistic

	NPL	NIM	ROA	INKREDIT	*BI_RATE*
Mean	2.66	5.09	2.40	787195444.28	4.95
Median	2.81	4.93	2.60	761550303.00	5.50
Maximum	4.37	7.74	4.03	1573861967.00	6.00
Minimum	0.97	2.86	0.50	247053220.00	3.50
Std. Dev.	0.90	1.17	1.12	367806793.19	1.12

Source: Output Eviews 13, processed by researcher 2025

Based on Table 2, the data processing above, the descriptive analysis results show that the average value of the Net Performing Loan (NPL) variable is 2.66% with a minimum value of 0.97% and a maximum value of 4.37%. The standard deviation of the NPL variable is 0.90. For the Net Interest Margin (NIM) variable, the average value is 5.09% with a minimum value of 2.86% and a maximum value of 7.74% with a standard deviation of 1.17. The results of the descriptive analysis of the Return on Assets (ROA) variable show that the average value of the ROA variable is 2.40% with a minimum value of 0.50% and a maximum value of 4.03%. The standard deviation of the ROA variable is 1.12. The results of the analysis of the credit distribution variable show that the average value is IDR 787,195,444.28 with a

minimum value of IDR 247,053,220.00 and a maximum value of IDR 1,573,861,967.00. The standard deviation in this study is IDR 367,806,793.19. The average value of the BI Rate moderation variable is 4.95%, with a minimum value of 3.50% and a maximum value of 6.00%. The standard deviation of the BI Rate variable is 1.12.

3.1.1. Result Assumption Classical Test

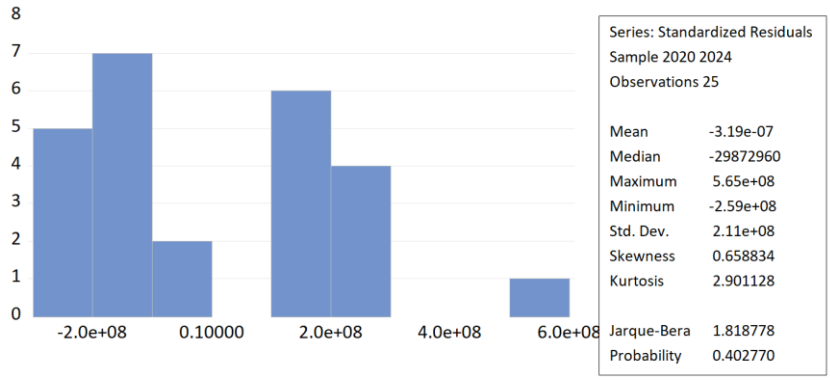

Figure 2 Normalitas Test Result

Source: Output Eviews 13. Data processed by researcher 2025

Figure 2 above shows that the Jarque-Bera probability value is 0.402770, which is greater than the significance level (0.402770 > 0.05). The results of this normality test indicate that the samples in this study are normally distributed.

Table 3 Mulicollinearity Test Result

	NPL	NIM	ROA
NPL	1.0000	-0.282241	-0.819980
NIM	-0.282241	1.0000	0.695686
ROA	-0.819980	0.695686	1.000000

Source: Output Eviews 13, processed by researcher 2025

The results of the multicollinearity test in Table 3 show that all correlations between independent variables are still below 0.85, which means that there is no multicollinearity between independent variables. It can be concluded that there is no multicollinearity in the data in this study.

Table 4 Heteroskedastisitas Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.37E+08	2.46E+08	0.963369	0.3469
NPL	-75540713	49514392	-1.525631	0.1428
NIM	44904073	41075736	1.093202	0.2873
ROA	-61916156	58300124	-1.062024	0.3009
BI_RATE	13403724	23475810	0.570959	0.5744

Source: Output Eviews 13, processed by researcher 2025

Based on Table 4, the results of the heteroscedasticity test show that all independent variables and moderating variables have a probability level above the significance value of 0.05. This indicates that the research data is free from heteroscedasticity.

Table 5 Autocorelation Test Result

Model	Durbin watson
1	1,073

Source: Output Eviews 13, processed by researcher 2025

Based on the results of the autocorrelation test in Table 5, the Durbin Watson value is 1.073, which, according to the provisions, means that there is no autocorrelation if the Durbin Watson value is between -2 and +2. Therefore, it can be concluded that the research data is free from autocorrelation.

3.1.2. Selection of Panel Data Regression Analysis Models

Table 6 Chow Test Result

Effects Test	**Statistic**	**d.f**	**Prob.**
Cross – section F	15.946547	(4.16)	0.0000
Cross – section Chi-Square	40.169042	4	0.000

Source: Output Eviews 13, processed by researcher

Based on Table 6, the Chow test results show a probability value of 0.0000. This indicates that the p-value is smaller than the significance value of 0.05. These test results show that the selected model is the fixed effect model.

Table 7 Hausman Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.580548	4	0.2327

Source: Output Eviews 13, processed by researcher

Based on Table 7, the Hausman test results show that the probability value (p-value) is 0.2327. This value indicates that the p-value is greater than the significance value of 0.05. These test results show that the selected model is the Random Effect Model (REM).

Table 8 Langrage Multiplier Test

	Test Hypothesis		
	Cross-section	**Time**	**Both**
Breusch-Pagan	22.79468	1.094438	23.88911
	(0.0000)	(0.2955)	(0.0000)

Source: Output Eviews 13, processed by researcher 2025.

Based on the results of Table 8 the Langrage multiplier test, the cross section value is 0.0000, which is smaller than the significance value of 0.05. These results indicate that the selected model that can be

used is the Random Effect Model (REM), which means that H0 is rejected and H1 is accepted. Based on the results of the Chow test, Hausman test, and Lagrange multiplier test, it can be concluded that the appropriate panel data regression model for this study is the random effect model.

3.1.3. Panel Data Regression Analysis Results

Table 9 Panel Data Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.68E+08	2.97E+08	0.563586	0.5790
NPL	-16000043	62128103	-0.257533	0.7993
NIM	39302814	57137848	0.687860	0.4991
ROA	1.92E+08	68183404	2.820579	0.0102

Source: Output Eviews, processed by researcher 2025

In Table 9 The results of panel data regression analysis can be entered into the equation as follows:

$$INKREDIT = 167626624.404 - 16000043.1374NPL + 39302813.9913NIM + 192316668.228ROA + \varepsilon$$

Table 10 F Test Result

F-statistic	14.68098
Prob (F-statistic)	**0.000022**

Source: Output Eviews 13, progression by researcher 2025

Based on the test results in Table 10, it shows that the F-count of 14.68098 is greater than the F-table of 2.61 (14.68098 > 2.61) and the probability value of 0.000022 is smaller than the significance level of 0.05 (0.000022 < 0.05). Therefore, it can be concluded that the variables NPL, NIM, and ROA together have a significant effect on the credit distribution variable.

Table 11 Determination Test Result

R-squared	0.677136
Adjusted R-squared	0.631013

Source: Output Eviews 13, data prosessed by researcher 2025

Based on the results of the determination test in Table 11, the R-Squared value is 0.677136 or 67.71%. This value indicates that the variables of Net Performing Loan (NPL), Net Interest Margin (NIM), and Return on Asset (ROA) are able to explain 67.71% of credit distribution, with the remaining 32.33% explained by other variables outside the scope of this study.

Table 12 Moderating Regression Analysis (MRA) Test Result

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	-5.13E+09	2.36E+09	-2.179144	0.0437

NPL	1.57E+09	6.36E+08	2.467946	0.0245
NIM	-3.25E+08	3.53E+08	-0.921115	0.3699
BI_RATE	9.95E+08	4.40E+08	2.263897	0.0235
NPL_B	-3.44E+08	1.38E+08	-2.487485	0.0235
NIM_B	1.12E+08	81912282	1.371298	0.1881
ROA_B	-2.62E+08	1.46E+08	-1.792920	0.0908

Source: Output Eviews 13, data processed by researcher 2025

The results of the MRA analysis in Table 12 can be entered into the equation as follows:

$$INKREDIT = -5132987271{,}13 + 1570613205{,}68NPL - 324828616{,}574NIM + 1349378122{,}42ROA + 995405259{,}547BI_{RATE} - 343549171{,}603NPL_B + 112326153{,}297NIM_B - 262428708{,}079ROA_B$$

The results of the Moderating Effect Test of the Net Performing Loan (NPL) Variable can be seen in Table 13

Table 13. First Results of the Moderating Effect Test of the Net Performing Loan (NPL) Variable

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	6.14E+08	3.21E+08	1.914661	0.0686
NPL	-79111600	55363743	-1.428942	0.1671
BI_RATE	77564502	31651219	2.450601	0.0227

Source: Output Eviews 13, data progressed by researcher 2025.

The second results of the Moderating Effect Test of the Net Performing Loan (NPL) Variable can be seen in Table 14

Table 14. Results of the Second Moderation Test of the Net Performing Loan (NPL) Variable

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	-4.13E+08	4.79E+08	-0.862786	0.3980
NPL	2.81E+08	1.39E+08	2.022634	0.0560
BI_RATE	2.81E+08	78837951	3.565234	0.0018
NPL_B	-74040467	27243198	-2.717760	0.0129

Source: Output Eviews 13, data progressed by researcher 2025.

The results of the First Moderation Test of the Net Interest Margin (NIM) Variable can be seen in Table 15

Table 15 Results of the First Moderation Test of the Net Interest Margin (NIM)

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	-2.95E+08	2.89E+08	-1.022086	0.3178
NIM	1.17E+08	52688402	2.212657	0.0376
BI_RATE	98882596	21804039	4.535059	0.0002

Source: Output Eviews 13, data progressed by researcher 2025.

The results of the Second Moderation Test of the Net Interest Margin (NIM) Variable can be seen in Table 16

Table 16 Result of The Second Moderation Test of the Net Interest Margin (NIM)

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	12116160	6.10E+08	0.019848	0.9844
NIM	55371537	1.21E+08	0.457544	0.6520
BI_RATE	35681029	98468483	0.362360	0.7207
NIM_B	12514187	19318772	0.647773	0.5242

Source: Output Eviews 13, data progressed by researcher 2025.

The results of The First Moderation Test of the Return on Asset (ROA) Variable can be seen in Table 17

Table 17 Result of The First Moderation Test of the Return on Asset (ROA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.19E+08	1.37E+08	1.600977	0.1236
ROA	1.78E+08	48254546	3.685755	0.0013
BI_RATE	28380945	29039063	0.977337	0.3390

Source: Output Eviews 13, data progressed by researcher 2025.

The results of The Second Moderation Test of the Return on Asset (ROA) Variable can be seen in Table 18

Table 18 Result of The Second Moderation Test of the Return on Asset (ROA)

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	5.93E+08	2.47E+08	2.402078	0.0256
ROA	-17445501	1.14E+08	-0.153555	0.8794
BI_RATE	-39797217	47521359	-0.837460	0.4118
ROA_B	34784469	19027654	1.828101	0.0818

Source: Output Eviews 13, data progressed by researcher 2025.

3.2. DISCUSSION

3.2.1. The Effect of Net Performing Loan (NPL) on Credit Distribution

The results of panel data regression analysis show that Net Performing Loan (NPL) has a negative but insignificant effect on credit distribution in banks. Based on the regression analysis results in Table 2.9, the NPL coefficient value is negative and the probability value is 0.7993 > 0.05, which means it is insignificant. This study shows that an increase in NPL has a negative but insignificant effect on credit distribution. NPL shows the level of non-performing loans. The higher the NPL value, the more selective

and cautious banks will be in distributing credit. Conversely, if the NPL value is lower, credit distribution will increase. The findings in this study are in line with studies conducted by (Setyawan, 2016), (Haryanto & Widyarti, 2017), (Ginoga & Syahwani, 2022). Thus, H1, which states that NPL has a significant negative effect on credit distribution, is rejected.

3.2.2. The Effect of Net Interest Margin (NIM) on Credit Distribution

The results of panel data regression analysis show that Net Interest Margin (NIM) has a positive but insignificant effect on credit distribution in banking. The results of the panel data regression test in Table 2.9 show that the coefficient value of the NIM variable is positive. This value is interpreted as meaning that the NIM variable has a positive effect on credit distribution. The t-value of 0.687860 is smaller than the t-table value of 2.07 (0.687860 < 2.07) and the significance level of Net Interest Margin (NIM) of 0.4991 is greater than the predetermined significance level of 0.05 (0.4991 > 0.05). Therefore, it can be concluded that Net Interest Margin (NIM) has a positive but insignificant effect on credit distribution in LQ45-indexed banks in 2020–2024.

According to (Pratiwi & Hindasah, 2014) one of the reasons why NIM has no effect on credit distribution is because NIM, as the bank's net interest income, is retained or included in the capital component, which is used as one of the bank's funding sources. A high net interest income rate can cover the risk of inflation or losses that may occur due to business activities in Indonesia. Thus, NIM is used more to cover various risks and not for credit distribution. Banking performance in Indonesia, especially commercial banks, no longer depends on credit interest income and has begun to rely on fee-based income (Purnama & Cahyono, 2019). The findings in this study are in line with research conducted by (Pratiwi & Hindasah, 2014) , (Martin et al., 2014). It can be concluded that H2, which states that NIM has a positive and significant effect on credit distribution, is rejected.

3.2.3. The Effect of Return on Assets (ROA) on Credit Distribution.

The results of panel data regression analysis show that Return on Assets (ROA) has a significant positive effect on credit distribution. Based on the results of panel data regression testing in Table 2.9, the coefficient value of the ROA variable is positive. This value is interpreted as meaning that the ROA variable has a positive effect on credit distribution. The t-value of 2.820579 is greater than the t-table value of 2.07 (2.820579 > 2.07), and the significance level for Return on Assets (ROA) of 0.0102 is smaller than the predetermined significance level of 0.05 (0.0102 < 0.05). Therefore, it can be concluded that ROA has a significant positive effect on credit distribution in LQ45-indexed banks in 2020–2024.

ROA shows the level of a bank's ability to generate profits by using its assets optimally. If ROA increases, it can be said that a bank has obtained increased income from credit interest. Therefore, theoretically, it can be said that ROA has a positive and significant effect on credit distribution. The findings of this study are in line with those of (Amalia, 2014) and (Putri & Akmalia, 2016). Thus, H3, which states that ROA has a positive effect on credit distribution in banking, is accepted.

3.2.4. The Credit Interest Rate (BI Rate) can moderate the effect of NPL on Credit Distribution.

Based on the moderation test results in Table 13, the p-value probability of the credit interest rate is 0.0227, which is below the significance level of 0.05 (0.0227 < 0.05). Similarly, the moderation test in Table 2 shows that the interaction between NPL and interest rates has a significance level of 0.0129, which means that this value is smaller than the significance level of 0.05 (0.0129 < 0.05). These test results show that the interest rate variable is a quasi-moderator or acts as a moderating variable. Therefore, it can be concluded that the credit interest rate (BI Rate) can moderate the effect of Net Performing Loans (NPL) on Credit Distribution. Thus, H4, which states that the credit interest rate (BI Rate) can moderate the effect of NPL on credit distribution, is accepted.

3.2.5. The Credit Interest Rate (BI Rate) can moderate the effect of NIM on Credit Distribution.

Based on Table 15, the analysis shows that the probability value of the credit interest rate is 0.0002, which is smaller than the specified significance level of 0.05 (0.0002 < 0.05). Meanwhile, the interaction results shown in Table 2 and Table 16 show that the interaction level between the credit interest rate and Net Interest Margin (NIM) shows a probability value (p value) of 0.5242, which is greater than the significance level of 0.05 (0.5242 > 0.05). These results indicate that the credit interest rate falls into the category of mediator predictor. Therefore, it can be concluded that the credit interest rate (BI rate) is unable to moderate the effect of Net Interest Margin (NIM) on credit distribution. Thus, H5, which states that the credit interest rate (BI rate) is able to moderate the effect of NIM on credit distribution, is rejected.

3.2.6. The Reference Interest Rate (BI Rate) can moderate the effect of ROA on Credit Distribution

Based on Table 17, the analysis shows that the probability value (p value) of the credit interest rate is 0.3390, which is greater than the specified significance level of 0.05 (0.3390 < 0.05). Meanwhile, the interaction results shown in Table 2 and Table 18 show that the interaction level between the credit interest rate and ROA has a probability value (p-value) of 0.0818, which is greater than the significance level of 0.05 (0.0818 > 0.05). These results indicate that the credit interest rate falls into the non-moderator category. Therefore, it can be concluded that the credit interest rate (BI rate) is unable to moderate the effect of Return on Assets on credit distribution. Thus, H6, which states that the credit interest rate (BI rate) is able to moderate the effect of NIM on credit distribution, is rejected.

4. CONCLUSION

Based on the results of research conducted on the effect of NPL, NIM, ROA on credit distribution with BI Rate as a moderating variable in banks listed on the Indonesia Stock Exchange (IDX) indexed LQ45 in 2020-2024. The results of the study show that the variables Net Performing Loan (NPL), Net Interest Margin (NIM), and ROA collectively have a significant effect on credit distribution in LQ45-indexed banks during the 2020-2024 period. Partially, NPL and NIM do not have a significant effect on credit distribution, while ROA has a significant positive effect on credit distribution. The interest rate (BI Rate) can strengthen the effect of NPL on credit distribution. However, the credit interest rate (BI Rate) cannot moderate the effect of NIM and ROA on credit distribution of banks listed on the Indonesia Stock Exchange (IDX) indexed by LQ45 in 2020-2024. Banks indexed in the LQ45 are expected to increase their ROA, which indicates how efficient banks are in generating profits, in order to attract new investors to support banking funding.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

Not Applicable

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Data Availability Statement

The data presented in this study are available on request from the corresponding author due to privacy reasons.

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