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THE EFFECT OF THIRD PARTY FUNDS, CAPITAL ADEQUACY RATIO, AND NON-PERFORMING LOANS ON MSME CREDIT DISTRIBUTION IN BANKS REGISTERED ON THE IDX

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Abstract

This study aims to examine the effect of Third Party Funds (TPF), *Capital Adequacy Ratio* (CAR), and *Non-Performing Loans* (NPL) on total MSME credit distribution at Book III and Book IV banks listed on the Indonesia Stock Exchange (IDX) in 2020-2025. The approach used is quantitative with secondary data from financial statements and bank annual reports. The sample was determined through *purposive sampling* , resulting in 12 banks and 72 observations, which were then analyzed using multiple linear regression using SPSS. The test results indicate that TPF has a positive and significant effect on MSME credit, CAR has no significant effect, while NPL has a positive and significant effect. Simultaneously, all three variables have a significant effect (F = 15.182; sig. 0.000) with a coefficient of determination of 40.1%, so that 59.9% of the remaining variation is explained by factors outside the model. These findings indicate that the bank's ability to raise funds is the main determinant of MSME credit expansion, while capital adequacy is not a major constraint in the sample banks.

Keywords: CAR, DPK, MSME Credit, NPL, Banking.

INTRODUCTION

The banking sector contributes significantly to the economy through its activities of collecting funds from the public and then redistributing them in the form of credit. Third Party Funds (TPF), consisting of current accounts, savings accounts, and time deposits, are one of the most important sources of funding for banks. The size of TPF can support a bank's ability to disburse credit, but an increase in collected funds is not always followed by an increase in credit because banks also consider the state of capital, credit quality, and risks faced. In this study, the observed credit distribution focuses on MSME credit, because this financing is related to working capital needs, business development, and MSME investment activities.

In addition to third-party funds (DPK), a bank's credit capacity is also related to its Capital Adequacy Ratio (CAR) and Non-Performing Loans (NPL). CAR indicates a bank's capital capacity to face risks that may arise from its operational activities, while NPL is a ratio that reflects the proportion of non-performing loans within the bank. Changes in these two ratios can influence a bank's credit distribution policy. Therefore, the development of third-party funds (DPK), CAR, NPL, and MSME loans at each bank demonstrates that the relationship between these factors does not always follow the same pattern. This is evident in the following banking data:

Table 1. Development of Third Party Funds, CAR, NPL, and MSME Credit for the 2020-2025 Period

Bank	Year	DPK (Rp trillion)	CAR (%)	NPL (%)	MSME Credit (Rp trillion)
Book IV					
BMRI	2020	1145	19.9	3.29	100.4
	2025	2106	19.36	0.96	156.8
BBRI	2020	1029	20.61	2.99	821.7
	2025	1482	26.10	2.65	1185.2
BBCA	2020	840	25.8	1.8	78.3
	2025	1220	28.8	1.7	138.5
Book III					
MEGA	2020	79	31.04	1.39	**1.45**

	2025	**104**	30.4	**1.99**	**1.15**
MAYA	2020	72	**15.45**	4.09	11.8
	2025	**138**	**10.1**	3.67	**16.2**
DBS	2020	62	23.26	4.55	1.85
	2025	98	22.22	1.89	2.75

Source: Processed Data, 2026

The differences seen in the table indicate that the development of third party funds (DPK), CAR, NPL, and MSME credit at Book III and Book IV banks during the 2020-2025 period showed varying conditions. In general, increases in third party funds were followed by increases in MSME credit at most banks. However, a different situation was seen at Bank MEGA, where third party funds increased from IDR 79 trillion in 2020 to IDR 104 trillion in 2025, while MSME credit actually decreased from IDR 1.45 trillion to IDR 1.15 trillion. Furthermore, Bank MAYA showed an increase in MSME credit from IDR 11.8 trillion to IDR 16.2 trillion despite a decrease in CAR from 15.45% to 10.1%. These differences indicate that increases in third party funds, changes in CAR, and NPL conditions are not always followed by the same pattern of MSME credit distribution at each bank. This indicates a dynamic in MSME credit distribution that requires further study.

This situation is also evident in previous studies (Wibowo et al., 2023) which found that third party funds (DPK) had a significant positive effect, while (Gunawan & Herawati, 2024; Sudaryanti et al., 2021) found a significant positive effect on CAR and third party funds (DPK). Meanwhile, (Adelina et al., 2024) found that CAR and third party funds (DPK) had no significant effect, while NPL had a significant negative effect. These differences in research findings underpin the need for further research into the influence of third party funds (DPK), CAR, and NPL on MSME credit distribution.

Based on this phenomenon, this study analyzes third-party funds (DPK), capital adequacy ratio (CAR), and non-performing loans (NPL) against total MSME credit distribution at banking companies listed on the Indonesia Stock Exchange (IDX). DPK reflects a bank's funding sources, CAR indicates its capital capacity, and NPL reflects credit quality and risk. These three variables are used to examine their relationship with banks' ability to disburse MSME credit.

LITERATURE REVIEW

Credit distribution to MSMEs is influenced by various factors related to the internal conditions of banks. These factors focus on third-party funds (DPK), capital adequacy ratio (CAR), and non-performing loans (NPL) to understand their relationship to banks' ability to disburse credit to the MSME sector.

Distribution of MSME Credit

According to Priyono et al. (2019), lending to MSMEs helps expand access to financing, supports business growth, and increases employment. Meanwhile, Khairani & Putri (2025) show that sound e-commerce and financial management contribute to the sustainability of MSMEs. Therefore, lending is a crucial support for the development and sustainability of MSMEs.

The Influence of DPK on MSME Credit Distribution

Third-party funds (TPF) are the primary source of funds for banks, financing credit distribution. The greater the amount of third-party funds collected, the greater the bank's ability to provide credit. The positive influence of third-party funds on credit distribution has been studied by (Amrozi & Sulistyorini, 2020; Frans et al., 2024; Ulina Br Sebayang et al., 2025).

The Influence of CAR on MSME Credit Distribution

CAR reflects a bank's capital capacity to withstand the risks of lending (Azwarini & Hadi, 2023). Adequate CAR can support credit expansion, but the impact is not always positive, as banks with high capital may be more cautious when extending credit (Amrozi & Sulistyorini, 2020; Gayo et al., 2022).

The Influence of NPL on MSME Credit Distribution

The NPL indicates the extent of non-performing loans at a bank. A higher NPL indicates greater risk, leading banks to tighten lending restrictions (Oktavianti & Abrianto, 2023). Studies (Amrozi & Sulistyorini, 2020; Yudhistira & Sugiastuti, 2023) show that NPL negatively impacts lending.

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Conceptual Framework and Hypothesis

Funding sources, capitalization, and credit quality do not operate in isolation; they collectively shape a bank's credit distribution capacity. Differences in previous findings, particularly regarding CAR and the direction of the NPL effect, prompted a reexamination of Book III and IV banks, focusing on MSME loans. The relationships between these variables are depicted in Figure 1, and the following hypotheses are formulated.

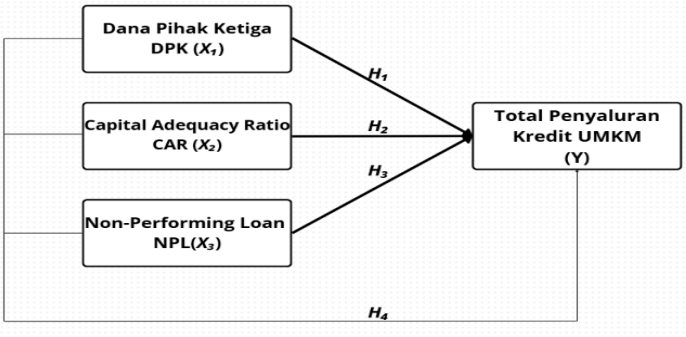


Figure 1. Conceptual Framework

H 1 : DPK influences the total distribution of MSME credit to banks listed on the IDX.
H 2 : CAR influences the total distribution of MSME credit to banks listed on the IDX.
H 3 : NPL affects the total distribution of MSME credit to banks listed on the IDX.
H 4 : DPK, CAR, and NPL simultaneously influence the total distribution of MSME credit to banks listed on the IDX.

RESEARCH METHODS

This study uses a quantitative approach with secondary data. The effect of third party funds (DPK), CAR, and NPL on total MSME credit distribution is tested using multiple linear regression processed using SPSS.

Population and Sample

The study population included all banking companies listed on the Indonesia Stock Exchange (IDX) during 2020-2025. The sample was selected using a *purposive sampling technique* based on the criteria in Table 2, resulting in 12 banks with 72 observations (12 banks x 6 years). Six banks were categorized as Book IV (BMRI, BBRI, BBCA, BBNI, BNGA, and PNBN) and Book III (BNLI, BNII, BDMN, MEGA, MAYA, and DBS).

Table 2. Sampling Criteria

NO	CRITERIA	TOTAL
1	Banking companies (Conventional Commercial Banks) listed on the IDX during 2020-2025	43
2	Banking companies that did not publish financial reports consecutively during 2020-2025	(18)
3	Banking companies whose data is complete according to research needs during 2020-2025	(13)
	Number of samples	**12**
	Number of research samples (12x6)	**72**

Source: Processed Data, 2026.

Data Types and Sources

The data used is secondary quantitative data sourced from the financial statements and annual reports of the sample banks, supplemented by publications from the IDX, the Financial Services Authority (OJK), and each bank's official website. Data collection was conducted through documentation, then filtered and adjusted to meet the research needs to ensure completeness and suitability for observation.

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Operational Definition of Variables

The definition and measurement of each variable are presented in Table 3.

Table 3. Operational Definition of Variables

VARIABLES	DEFINITION	INDICATOR	SCALE
DPK (X_1)	Public funds collected by banks in the form of current accounts, savings and deposits.	DPK = Current Account + Savings + Deposits	Ratio
CAR (X_2)	The ratio that shows how sufficient the bank's capital is to cover the risk of loss.	CAR = (Bank Capital / ATMR) x 100%	Percentage
NPL (X_3)	The ratio that describes the level of non-performing loans compared to total loans.	NPL = (Non-Performing Loans / Total Loans) x 100%	Percentage
MSME Credit (Y)	The credit value given by banks to MSMEs in a certain period.	Total realization of MSME credit per year (Rp Trillion)	Ratio

Source: Processed Data, 2026.

Data Analysis Techniques

The analysis begins with descriptive statistics to determine the minimum, maximum, average, and standard deviation values. The next stage is the classical assumption test, namely residual normality with *Kolmogorov-Smirnov* (residuals are considered normal if significance > 0.05), multicollinearity test (free if Tolerance > 0.10 and VIF < 10), heteroscedasticity test using *scatterplot graph* , and autocorrelation test with *Durbin-Watson statistics* . The influence of independent variables on the dependent variable is tested with the following model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

The hypothesis was tested using the t-test for partial effects and the F-test for simultaneous effects at a significance level of 5% (0.05); the effect is declared significant if sig. < 0.05. The coefficient of determination (*Adjusted* $R2$) is used to assess the ability of the independent variable to explain the variation of the dependent variable.

RESULTS AND DISCUSSION

The data analyzed amounted to 72 observations from 12 banks during 2020-2025.

Descriptive Statistics

Table 4. Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation
X_1_DPK	72	62	2106	478.99	527,322
X_2_CAR	72	10	39	24.93	6,100
X_3_NPL	72	1	5	2.69	.934
Y_KreditUMKM	72	1	1185	125.85	273,240
Valid N (listwise)	72				

Source: SPSS output, processed, 2026

The average third-party funds (DPK) was Rp478.99 trillion, CAR 24.93%, NPL 2.69%, and MSME loans Rp125.85 trillion. The standard deviations for third-party funds (527,322) and MSME loans (273,240) were greater than the average, indicating a wide distribution of data across banks. This is understandable, as the sample includes banks of very different scales, with third-party funds ranging from Rp62 trillion to Rp2,106 trillion.

Classical Assumption Test

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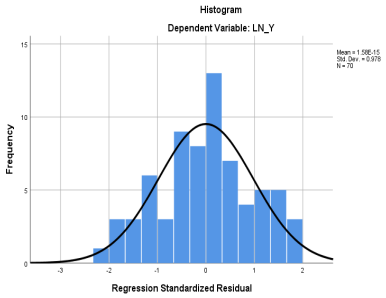


Figure 2. Histogram of Residuals

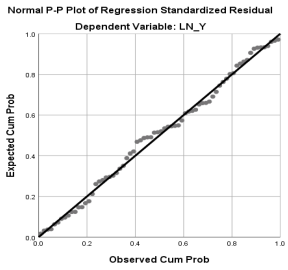


Figure 3. Normal PP Plot of Residuals

The residual histogram (Figure 2) is bell-shaped with a center around zero, and most of the points on the normal PP plot (Figure 3) are near the diagonal line with seemingly small deviations.

Table 5. Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	X_1_DPK	.769	1,300
	X_2_CAR	.861	1,162
	X_3_NPL	.754	1,327

Source: SPSS output, processed, 2026

The Multicollinearity Test in Table 5 shows that all independent variables have Tolerance > 0.10 and VIF < 10, so no multicollinearity problems were found.

Table 6. Autocorrelation

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
1	.633 [a]	.401	.375	216,068	.530

Source: SPSS output, processed, 2026

The Durbin-Watson value of 0.530 is well below 2, indicating autocorrelation. This is understandable because the data examines the same bank year after year. In the heteroscedasticity test, the residual points in the scatterplot (Figure 4) are randomly distributed above and below 0 on the Y-axis without forming any particular pattern, thus concluding that the model does not experience heteroscedasticity.

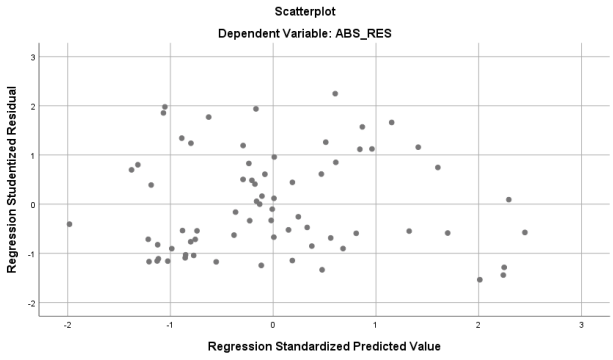


Figure 4. *Scatterplot*

Regression Results and Partial Hypothesis Testing

The results of multiple linear regression estimation are presented in Table 6. The equation obtained is as follows:

$$Y = -441.137 + 0.372X_1 + 7.290X_2 + 77.038X_3$$

Table 6. Multiple Linear Regression Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	-441,137	177,648		-2,483	.015
	X_1 _DPK	.372	.055	.718	6,709	.000
	X_2 _CAR	7,290	4,531	.163	1,609	.112
	X_3 _NPL	77,038	31,618	.263	2,437	.017

Source: SPSS output, processed, 2026

All three independent variables have positive coefficients. Third-party funds (sig. 0.000) and non-performing loans (sig. 0.017) have a significant effect because their significance values are below 0.05, while CAR (sig. 0.112) has no significant effect.

Coefficient of Determination (R^2)

Table 7. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.633 [a]	.401	.375	216,068

Source: SPSS output, processed, 2026

R^2 value of 0.401 indicates that third party funds (DPK), CAR, and NPL together explain 40.1% of the variation in MSME credit distribution. The remaining 59.9% cannot be explained by the variables in this research model. This situation indicates that MSME credit distribution is also potentially related to other factors, such as credit interest rates, bank liquidity, macroeconomic conditions, credit distribution policies, and the financing needs of MSMEs.

Simultaneous Hypothesis Testing (F Test)

Table 8. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2126266.376	3	708755.459	15,182	.000 [b]
	Residual	3174598.381	68	46685.270		
	Total	5300864.757	71			

Source: SPSS output, processed, 2026

The F-test is a statistical test to determine whether all independent variables in a regression model simultaneously have a significant effect on the dependent variable, while also assessing the model's adequacy in explaining the relationship between research variables. From the processed data, the $_{\text{calculated F-value}}$ was 15.182 with a significance level of 0.000. Because this value is less than 0.05, it is concluded that DPK, CAR, and NPL together have a significant effect on MSME credit distribution.

The Influence of Third Party Funds on Total MSME Credit Distribution

The regression result of the DPK coefficient is 0.372 with a sig. value of 0.000 (<0.05), so $H1_{\text{is}}$ accepted. DPK has a positive and significant effect on total MSME credit distribution. This means that the increase in funds collected by banks through current accounts, savings, and time deposits is followed by an increase in disbursed MSME credit. This situation is in line with the function of banks as intermediary institutions, where DPK is a source of funds used to distribute credit to the public. This pattern is also seen in data from BMRI, BBRI, BBCA, MAYA, and DBS, which generally show that an increase in DPK is followed by an increase in MSME credit. This study is in line with(Frans et al., 2024; Ulina Br Sebayang et al., 2025) which found a positive influence of DPK on credit distribution.

The Influence of CAR on Total MSME Credit Distribution

The CAR variable has a coefficient of 7.290 with a sig. 0.112 (>0.05), so $H2_{\text{is}}$ rejected. CAR does not significantly influence total MSME credit distribution. This indicates that the level of capital adequacy is not yet a factor that directly determines the amount of MSME credit distributed by banks. This may occur because the average CAR of banks in the sample is above the minimum limit set by the regulator, so capital adequacy is not a major obstacle in credit distribution. This study is in line with(Amrozi &

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Sulistyorini, 2020; Gayo et al., 2022) which found that the level of capital is not always followed by an increase in credit distribution.

The Impact of NPL on Total MSME Credit Distribution

The test results show an NPL coefficient of 77.038 with a significance level of 0.017 (<0.05), thus H3 is accepted. However, the direction of the effect is positive, thus differing from the relationship generally predicted theoretically. This means that the increase in NPL during this research period was actually followed by an increase in MSME credit distribution. This study is inconsistent with(Oktavianti & Abrianto, 2023; Yudhistira & Sugiastuti, 2023) found a negative relationship between NPLs and credit distribution. This difference may be related to bank characteristics and the observation period, where increases in credit volume can coincide with changes in the level of non-performing loans. This situation is evident in MEGA and MAYA data, which show that MSME credit distribution continues to grow despite fluctuating NPLs.

The Influence of Third Party Funds (DPK), CAR, and NPL on Total MSME Credit Distribution

The simultaneous test yielded an F value of 15.182 with a sig. 0.000 (<0.05), so H4 was accepted. This means that DPK, CAR, and NPL jointly influence the total distribution of MSME credit. The R2 value of 0.401 indicates that the three variables are able to explain 40.1% of the variation in MSME credit distribution, while the remaining 59.9% is influenced by other factors outside the research model, such as interest rates, banking policies, or credit demand from MSME actors. This study confirms that MSME credit distribution is related to several banking factors, namely the ability to raise funds, capital conditions, and credit risk (Ulina Br Sebayang et al., 2025; Wibowo et al., 2023).

CONCLUSION

The results of the study on the influence of Third Party Funds (DPK), Capital Adequacy Ratio (CAR), and Non-Performing Loans (NPL) on total MSME credit distribution at Book III and IV banks listed on the Indonesia Stock Exchange (IDX) during 2020-2025 concluded that Third Party Funds (DPK) had a positive and significant effect on MSME credit distribution. This means that when funds collected from the public increase, the bank's ability to channel credit to the MSME sector also increases. CAR did not have a significant effect on MSME credit distribution, indicating that the model's adequacy level is not a direct determinant of the amount of MSME credit disbursed by banks. NPL, on the other hand, had a positive and significant effect on MSME credit distribution. Simultaneously, Third Party Funds (DPK), Capital Adequacy Ratio (CAR), and Non-Performing Loans (NPL) significantly influenced MSME credit distribution. The R2 value indicates that these three variables can explain 40.1% of changes in MSME credit distribution, while the remaining 59.9% is related to factors outside the research model.

For banks, the results of this study demonstrate the importance of managing third-party funds (DPK) as a source of funding to support MSME lending. Banks also need to pay attention to credit quality and risk management to ensure more measurable lending. Future researchers can expand this study by adding other variables related to MSME lending and expanding the period and sample size to provide a broader picture.

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