Factors Affecting the Distribution of Working Capital Credit: A Case Study of Rural Banks in Indonesia

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Abstract

Working Capital is an indicator of the short-term financial position of an organization and is also a measure of its overall efficiency. The growth of working capital credit for BPR in North Sumatra is not only influenced by the better performance of ROA, ROE, BOPO, and NPL, but is also influenced by the condition of the debtor's business, existing economic conditions, and management's assessment of the health and risk of BPR. The study aims to determine how much influence the CAR, NPL, BOPO, management assessment, ROA, ROE have on the amount of credit to be distributed by BPRs in North Sumatra, Indonesia. The study employed the time series data of published financial statements of 54 rural banks in North Sumatra from 2016 to 2019 and also employed the Chow and Hausman tests, as well as the general effect and fixed effect model specification tests. The results showed that partially the NPL, BOPO, management assessment, and ROE had a significant effect on the amount of credit to be disbursed by BPR in North Sumatra, while the variables CAR, OEOI, and ROA had a negative effect on the amount of credit to be distributed by BPR in North Sumatra. The findings also suggested that banks with a high ratio of NPL, management assessment, and ROE are more aggressive to control the working capital.

Keywords: Capital Adequacy Ratio, Non-Performing Loan, Management Assessment, Return on Assets, Working Capital Loans

JEL Classification Code: G21, R51, E5, G3, E51

I. Introduction

UMKM in Indonesia, in principle, has the skills to be entrepreneurial, but they are limited in the aspect of capital. So, it tends to require working capital funds both to start a business and to develop its business on a larger scale. Among other things, access to working capital needs can be obtained from Rural banks (BPRs), which tend to simplify the process of providing credit compared to commercial banks. Therefore, the Government as the holder of power in

a country gives confidence to BPR's to carry out their duties to distribute credit to parties in need, including the business world (Kasmir & Carbonella, 2008). One of the advantages of BPR in engaging in credit penetration is the ability to channel working capital loans to Micro, Small & Medium Enterprises (MSME) actors using an emotional/personal approach. However, along with the times and the convenience of digital banking products offered by commercial banks and P2P (peer to peer lending) fintech have narrowed the space for BPR's to move amid the obligation to maintain financial ratios so that they can be categorized as healthy banks.

In Indonesia, BPR is one of the financial institutions that has successfully extended credit, including working capital credit, to the business world. This can be seen from the performance of Rural Banks during 2015–2019, where the growth of working capital loans in 2015–2019 experienced significant growth of 49.05%. This shows the performance of BPR financial ratios has improved from year to year. So that it can increase credit expansion and strengthen capital which has an impact on increasing profitability (ROA) which causes the return on equity (ROE) to increase and improves the performance ratio of the Non-Performing Loan (NPL) ratio obtained by BPRs. With an increase in credit, it will

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generate interest income which will increase the capital of the BPR. Hence, the contribution to the provision of working capital loans for BPRs to many businesses has increased. The development of People's Credit Banks in North Sumatra is quite high in terms of distributing working capital loans to the business world, wherein 2015–2019 the growth of working capital loans continues to increase.

The growth values of BPR Working Capital Loans in North Sumatra Province show that the working capital loans expansion carried out by BPR both in Working Capital, Investment and Consumption Loans has increased in North Sumatra Province in 2015–2019 period. So that the amount of working capital credit extended by BPR's continues to increase in line with the increase in total credit. This situation will have an impact on increasing the level of profitability (ROA) of the existing BPRs in North Sumatra Province. Increasing ROA will cause an increase in the rate of return on equity (ROE) and will make the ratio of operating costs to income decrease and, in the end, make CAR even higher. This situation is caused by the higher NPL value, which reduces the ability of BPRs to extend credit.

The statistics of average growth in ROA, ROE, CAR, BOPO, and NPL of KMK in North Sumatra Province shows that the higher the growth of KMK distributed by BPR's in North Sumatra, it will make the average performance of the value of Return on Assets, Return on Equity and, BOPO, Capital Adequacy Ratio, and NPL of BPR KMK become increasingly good. Meanwhile, the performance of the NPL ratio for working capital credit, apart from being influenced by credit growth, was also influenced by the conditions of the debtor's business as well as the existing economic conditions (Syahyunan et al., 2017). The better the repayment rate of credit installments from customers, the better the income and liquidity of the BPR.

Besides, the growth of working capital credit disbursed by BPRs is also influenced by management assessments, where management assessments include 2 (two) components, namely general management and risk management using a list of questions/statements consisting of 10 general management questions/statements and 15 questions/statements. Risk management statement as in Attachment 2 of Decree of the Board of Directors of Bank Indonesia No.30/12/ KEP / DIR about Procedures for Health Assessment of Rural Banks. Furthermore, management's ability to generate profits and increase profitability ratios, namely the assessment of the rate of return on assets (ROA) also affects management's assessment (Chulanova & Ussenova, 2015). The rate of return on assets (ROA) is calculated in accordance with the Decree of the Board of Directors of Bank Indonesia No.30 / 12 / KEP/DIR on procedures for the Health Assessment of Rural Banks. To determine the relationship between total working capital credit, working capital credit growth, ROA, and the criteria for assessing the return on assets (ROA)

of working capital credit for rural banks in North Sumatra (Nadeem et al., 2020; Ahmad & Ahmad, 2019).

The growth in working capital credit from 2015–2019 tends to increase accompanied by an increase in the rate of return on assets (ROA), wherein 2015–2019 the asset valuation tends to be in the range of >1.5%, so it can be ascertained that the conditions for improving the return of assets from existing BPRs in North Sumatra are very healthy, so it will affect the level of public interest in placing their funds in the BPR (Hismendi et al., 2021). However, if the rate of return on assets is low or unhealthy, then credit extended by BPR to MSME actors has the potential to experience delays in payment. In that case, business actors will be burdened with the operational costs of the business they run (Abdillah et al., 2019). Furthermore, with a high or healthy rate of return on assets, credit extended by BPR's to UMKM players will experience an increase in payments, then business actors will not be burdened with the operational costs of the business they run (Zulfiqar et al., 2020; Ahmad & Ahmad, 2021). To minimize the failure rate to certain installments, BPRs tend to be careful in extending KMK loans because it will affect the BPR's financial ratios in the event of credit failure.

The problem in this study will be focused/limited on lending in BPR's (excluding BPRS) in the area of supervision of the Regional Office Financial Services Authority (KR) 5 North Sumatra because BPR's operating in North Sumatra Province is under the supervision of OJK KR 5 North Sumatera.

2. Literature Review

2.1. Agency Theory

Agency theory is a principle that is used to explain and resolve issues in the relationship between business principals and their agents. Most commonly, that relationship is the one between shareholders, as principals, and company executives, as agents. The principal and the agent, two competing economic actors, are explained in agency theory. Agency theory explains the contract between one or more persons (the principal) and another person (the agent) in which the principal instructs the agent to conduct a service on their behalf and authorizes the agent to make the right decisions for the principal (Weismann, 2021). If the principal and the agent have a common purpose, the agent will back up the principal's instructions and carry them out.

Weismann (2021) stated that the proper arrangement of contracts to balance the interests of principals and agents in the event of a conflict of interest is the core of agency theory. The application of agency theory can be seen in a work contract that regulates the proportion of each party's rights and responsibilities while still considering the overall benefits. The job contract is a collection of rules that regulate the profit-sharing process, which is approved by the

principal and agent in terms of benefits, returns, and risks. The job contract would be optimal if it can be equitable, that is, if it can compromise between the principal and the agent, mathematically demonstrating optimal execution of the agent's responsibilities and provision of satisfactory benefits / special rewards from the principal to the agent.

Creditors have claims on a portion of the company's profits through repayment of principal debt and interest payments (Lastu et al., 2020; Din et al., 2021). In relation to funding owners, often depositors and shareholders do not have sufficient information regarding the financial condition of the bank that should be required before investing in funds to ensure that the creditor of the funds they deposit will be guaranteed with the bank concerned and provide good returns. The use of funds for several things that have a high risk will have an impact on increasing the risk of return. Likewise, from the debtor (borrower) side, because of the urgent need for credit disbursement funds, debtors often do not have enough information regarding the bank where they borrowed (Muda et al., 2018). The information needed includes, among others, the prevalence of the interest rate given whether it will burden the debtor in returning funds and its relationship with the continuity of the debtor's business, the bank's financial condition considering the debtor will place his collateral in the bank, government policy regulations regarding the ease of providing credit such as the KUR program with interest subsidies by the government.

2.2. Signaling Theory

The signaling theory states that corporate financial decisions are signals sent by the company's managers to Investors to shake up these asymmetries. According to Talwar et al. (2021), an action or signal is an action taken by company management that gives instructions to investors on how the company's prospects are managed. So, the Signaling Theory suggests a method for an organization to communicate with consumers of financial statements. This signal emerges in the form of specifics about what management has done to fulfill the owner's desires.

According to Carnell et al. (2021), investment fund owners must always know how much funds are channeled and how much return on funds is channeled, where the funds channeled can be in the form of investment loans, consumption, and working capital loans. To find out the number of funds channeled in the banking sector, the bank must always monitor and adjust who is entitled to receive credit, so that the bank will get information on how far and how much the refund rate is successful if the party given the credit, is a right person.

If credit disbursed experiences default problems which lead to an increase in NPL, then the owner of the bank as an investor will blame the bank's management function which is not in line with expectations, thus hampering the increase

in returns on assets and equity, resulting in decreased profits compared to the previous year (Lastu et al., 2020). This will have an impact on management's trust that does not match market expectations or is not in accordance with the wishes of bank owners and capital owners, so it is necessary to change strong and transparent management principles in managing the distribution of bank credit funds.

2.3. Credits

According to Law No. 10 of 1998 credit is a loan agreement between the bank and the borrowing party which is required to pay off the debt at a certain time plus the loan interest or profit-sharing agreement in accordance with a predetermined agreement. Similarly, under Law No. 7 of 1992, credit is defined as the allocation of money or an equivalent argument based on a loan arrangement between a bank and another party that allows the borrower to repay the debt with interest, compensation, or profit-sharing after a specified period.

According to Nuritno (2014), the word credit comes from the word *credere* which means to provide economic value to a person or business entity based on trust. In general, credit is the provision of several funds or an amount of money made by the bank to a third party or customer (customer) which is intended to improve business development, where the loan and loan agreement made by the customer must be accompanied by the settlement of obligations according to the date maturity. According to Li et al. (2020), credit can be distinguished from an approach point of view based on its purpose/use as follows:

1. Consumptive loans, namely loans used for their own needs with their families
2. Working capital credit, namely credit used to increase the borrower's business capital
3. Investment credit, namely credit that is used for productive investment, but will only result in a relatively long period.

2.4. Factors Influencing Credit Distribution by BPR

According to Lastu et al. (2020) the factors that affect lending by BPR are as follows:

2.4.1. Return on Asset (ROA)

Return on assets is a profitability ratio that provides how much profit a company is able to generate from its assets. Banks in lending must pay attention to the rate of return of funds, where the amount of credit extended to customers must be able to calculate the rate of return on funds that have been borrowed with maturity, where this situation can affect the number of assets of the BPR itself, thus affecting

the rate of return on assets (return on asset). The formula for calculating Return on Assets is as follows:

$$ROA = \frac{\text{Profit before Tax}}{\text{Average Total Asset}} \times 100\%$$

2.4.2. Return on Equity (ROE)

The return on equity (ROE) is a measure of the profitability of a business in relation to equity. When the BPR will distribute credit to customers, it must be able to pay attention to the rate of return of funds that must be received from the return on investment, where the rate of return on investment will quickly increase profits, thereby increasing the assets and equity of the BPR (Erwin et al., 2018). The formula for calculating Return on Equity is as follows:

$$ROE = \frac{\text{Net Income}}{\text{Total Equity}} \times 100\%$$

2.4.3. Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio (CAR) is the ratio of a bank's capital in relation to its risk-weighted assets and current liabilities. It is decided by central banks and bank regulators to prevent commercial banks from taking excess leverage and becoming insolvent in the process. Every BPR that extends credit to customers must know whether the BPR is sufficient and capable of providing funds or face the risks experienced by the BPR if the available funds are insufficient for lending (Dubey & Puri, 2021). The formula for calculating the Capital Adequacy Ratio is as follows:

$$CAR = \frac{\text{Capital}}{\text{Risk Weighted Assets (RWA)}} \times 100\%$$

2.4.4. Operational Costs divided by Operating Income (BOPO)

Any BPR that extends credit would face the issue of how well bank management can monitor operating costs, where BOPO refers to a bank's attempt to reduce operational risk, which is the uncertainty associated with its business operations. Operational risk comes from operational losses, which are affected by the bank's operational cost structure, as well as the likelihood of the services and products provided failing. The formula for calculating BOPO is as follows:

$$BOPO = \frac{\text{Operating costs}}{\text{Operating Income}} \times 100\%$$

2.4.5. Non-Performing Loan (NPL)

A nonperforming loan (NPL) is a loan in which the borrower is in default due to the fact that they have not made the scheduled payments for a specified period. NPL can occur if the BPR that extends credit to customers does not get the amount of credit paid according to the due date or it can be said that there has been a non-performing loan due to delinquency in credit payments by customers that cannot be paid according to the due date or the customer are not able to repay loans lent by the BPR (Jethwani et al., 2021). The formula for calculating a Non-Performing Loan is as follows:

$$NPL = \frac{\text{Total Nonperformance Loans}}{\text{Total Credits}} \times 100\%$$

2.5. Management Assessment

Management assessment includes 2 (two) components, namely general management and risk management using a list of questions/statements consisting of 10 questions/statements from general management and 15 questions/statements of risk management as in Attachment 2 of Decree of the Board of Directors of Bank Indonesia No.30/12/KEP/DIR concerning Procedures for Health Assessment of Rural Banks, whereas 81 s.d. 100 is considered healthy, 66 s.d. 81 is considered adequate information, 51 s.d. 66 is considered inadequate information, and 51 is considered not healthy information.

2.6. Research Framework

The conceptual structure in this study is defined as follows (Figure 1), and it is focused on the context to achieve this analysis. It is supported by theoretical analyses and reviews of previous researchers.

3. Research Methods

This is a quantitative analysis aimed at assessing and evaluating the influence of independent variables on the dependent variable. Return on assets, return on equity, capital adequacy ratio, OEOI, non-performing loans, inflation rates, and interest rates are the independent variables in this analysis that will be measured and evaluated for their effects on the amount of credit to be allocated (Y) as the dependent variable.

4. Results and Discussion

4.1. Descriptive Statistical Analysis

The descriptive statistical analysis is used to evaluate the description of data from the highest to the lowest value.
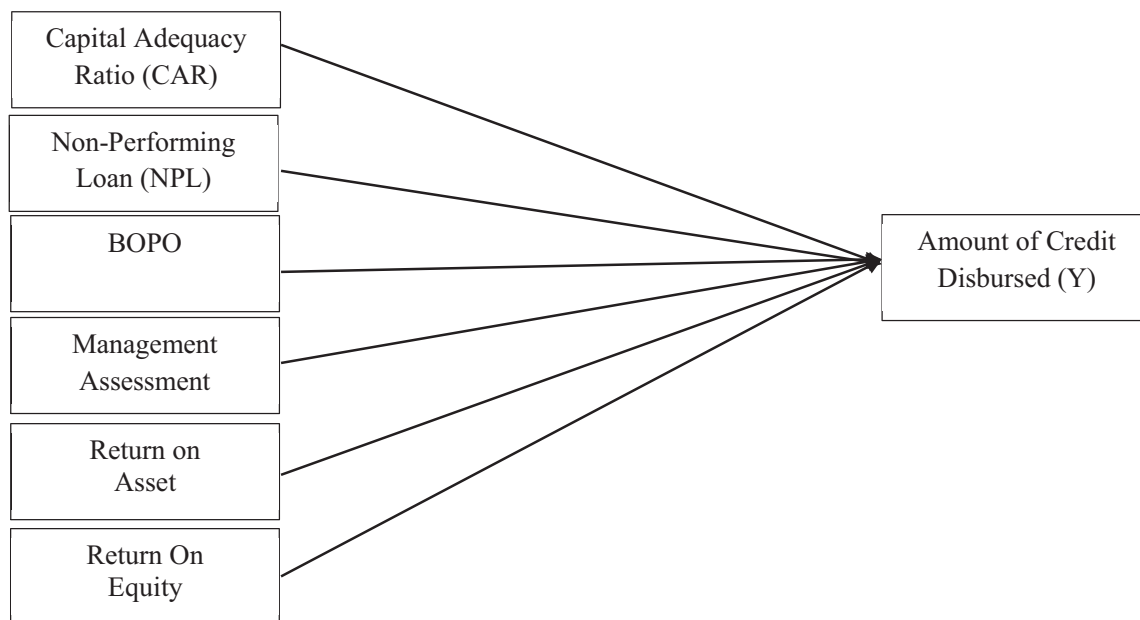
Figure 1: Research Framework

Table 1: Descriptive Statistics of CAR, NPL, BOPO, Management Assessment, ROA, ROE, and Amount of Loans Disbursed

	BOPO	CAR	NPL	Management Assessment	ROA	ROE	Amount of Credit Disbursed
Mean	91.49363	27.92932	8.753187	2.032445	2.290846	2.150637	10473595
Median	86.00000	22.00000	6.000000	2.000000	3.000000	10.00000	7173184.
Maximum	608.0000	310.0000	81.00000	4.000000	12.00000	796.0000	98168955
Minimum	0.000000	–8.000000	0.000000	1.000000	–127.0000	–2983.000	0.000000
Std. Dev.	35.98478	21.36238	7.479006	0.585093	8.328521	136.3237	12224097
Skewness	7.197239	5.494309	2.741104	0.378126	–8.036767	–16.53509	3.775800
Kurtosis	77.88710	55.80874	18.04809	4.139309	94.81036	338.2639	22.20742
Jarque-Bera	209107.7	104621.2	9223.303	67.23996	312388.0	4081110	15316.51
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	78959.00	24103.00	7554.000	1754.000	1977.000	1856.000	9.040009
Sum Sq. Dev.	1116208	393374.7	48216.43	295.0915	59792.00	16019544	1.290017
Observations	864	864	864	864	864	864	864

Based on the descriptive statistical analysis in Table 1, the following sample description is obtained:

The average value of the ROA is 5.151, and the standard deviation of ROA is –128. Based on Table 5, we can conclude that the minimum and maximum values for ROA are –127 and 12. It is known that the average ROE is 2.151 and the ROE fluctuates from –83 to 796. The average value of the

CAR component is unknown, but it's believed to be about 21.36. CAR can go as low as 8, and high as 310 The average value of the NPL variable is 8.75, and the lowest value being 0, and the highest being 81. The regular average value of the BOPO variable is 91.494. BOPV has a standard deviation of 35, a minimum of 0, and a maximum of 608 The average for evaluation variables is 2.05, with a standard deviation of
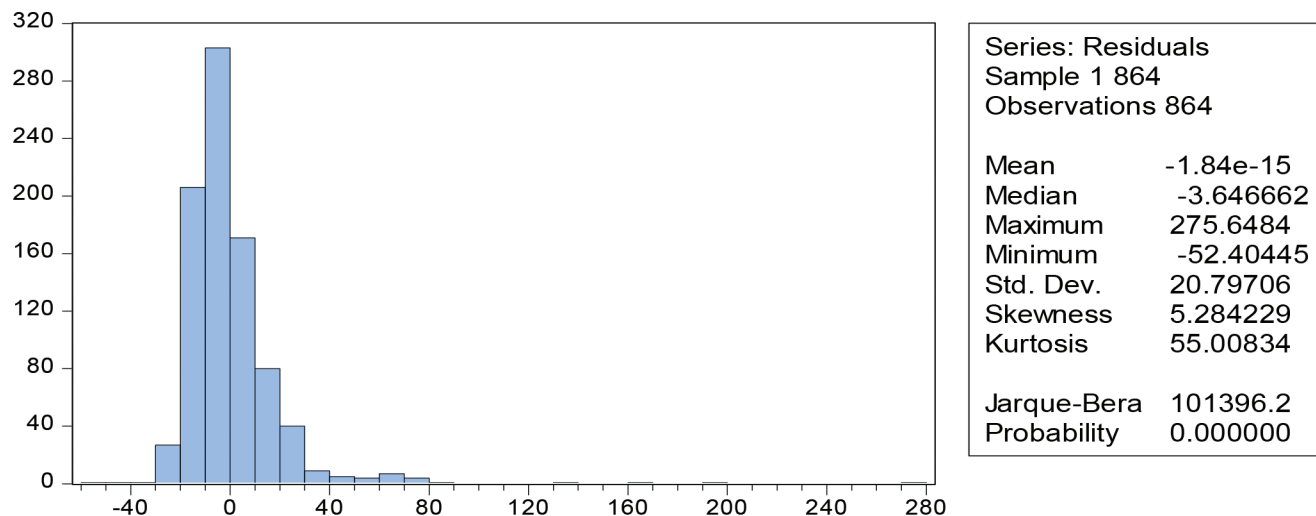
Series: Residuals	
Sample 1 864	
Observations 864	
Mean	-1.84e-15
Median	-3.646662
Maximum	275.6484
Minimum	-52.40445
Std. Dev.	20.79706
Skewness	5.284229
Kurtosis	55.00834
Jarque-Bera	101396.2
Probability	0.000000

Figure 2: Jarque-Bera Normality Test

0.56, and a minimum of 1, and a maximum of 4. The average sum of variable credit given is 10479500 with a standard deviation of 122,000.

This indicates that the average amount of credit extended is influenced by the ups and downs of ROA, NPL, BOPO, and management's assessment of disbursed credit, where the average ROE value, and the average CAR value decreased; the average ROA, NPL, and BOPO values are stable, and management's assessment of credit disbursed was high.

4.2. Classic Assumption Test

4.2.1. Normality Test

The purpose of the data normality test is to find out whether or not the data has a normal distribution. The data normal distribution test is invaluable in discriminating between random data and non-normal data (Syahyunan et al., 2017). In the study, the p-level of significance was 0.05. Figure 2 shows the Jarque-Bera (J-B) data normality test data normalcy.

From Figure 2, it can be estimated that the J-B-statistical probability is 1.01% Compared to the value of 0.05, the probability is 0.00000 which means that the data is normally distributed.

4.2.2. Multicollinearity Test

There are deviations from the linearity (i.e., multicollinearity) assumption when the independent variables in the model are non-linear. The regression model requires no multicollinearity. To see if there is

Table 2: Multicollinearity Test

Variance Inflation Factors			
Date: 10/13/20 Time: 12:40			
Sample: 2015Q1 2230Q4			
Included observations: 863			
Variable	**Coefficient**	**Uncentered**	**Centered**
	Variance	**VIF**	**VIF**
CAR	3.570015	1.833147	1.056595
NPL	0.009848	2.587376	1.091099
BOPO	0.001519	29.12128	3.897317
MANAGEMENT_ASSESMENT	1.575796	13.97689	1.068514
ROA	0.029537	4.365560	4.058170
ROE	2.99E-05	1.101097	1.100823
C	25.99581	51.55104	NA

multicollinearity, the Variance Inflation Factor (VIF) value must be less than or equal to 10. The multicollinearity results are shown in Table 2.

The V-VIF ratio of the CAR (X) is 1.06, the V-VIF ratio of the NPL (X) is 1.09, the V-VIF ratio of management (X) is 3.80, and the V-VIF ratio of the ROE (X) is 4. The multicollinearity of each independent variable is less than or equal to 10, which means there are no multicollinearity problems.

4.2.3. Autocorrelation Test

The out-autocorrelation test measures whether or not there are outliers' existences in the dataset. For autocorrelation to be absent in the regression model, non-autocorrelation assumptions are often tested using the Durbin-Watson conditions.

a. The null hypothesis is rejected if d is less than dl or greater than (4-Dl), meaning that autocorrelation occurs.
b. The null hypothesis is accepted if d is between dU and (4-Du), suggesting that no autocorrelation exists.
c. There is no definitive conclusion if d is between dL and dU, or between (4-dU) and (4-dL).

The study found the following autocorrections values with Durbin-Watson test such as F-statistic is 17.28966, Durbin-Watson stat is 1.902507, and Prob (F-statistic) value is 0.012255. The Durbin-Watson statistic has a value of 1.902. The non-autocorrelation assumption is met since the Durbin-Watson statistic value is between 1 and 3, namely 1.7071 1.9025 2.1694. In other words, the residuals had no high autocorrelation problems.

4.2.4. Heteroscedasticity Test

It is used to test for heteroskedasticity in a linear regression model and assumes that the error terms are normally distributed. It tests whether the variance of the errors from regression is dependent on the values of the independent variables. The regression model requires heteroscedasticity to be absent. The Glejser test finds the existence or absence of heteroscedasticity by examining the significance of the independent variable on the dependent variable. If the independent variable is statistically impacting the dependent variable (with at least a 5% confidence), then heteroscedasticity is present. The Glejser tests are tabulated in Table 3.

It can be inferred from Table 3 that the likelihood value of 0.1000 is greater than the 0.05 significance level. This implies that there is no heteroscedasticity between the independent and dependent variables.

4.3. Panel Data Regression Estimation Model

4.3.1. Estimation Model with Chow Test Between Typical Effect Model (CEM) and Fixed Effect Model (FEM)

The distinctions between CEM and FEM are as follows:

a. If the amount of time series data is high, and the number of cross-section units is small, the difference between series and parallel calculations is very small (Muda et al., 2020). The instruments are capable of traditional calculations, so conventional calculations can be done. Because of this collection of conditions, the FEM approach is recommended.
b. When N is high and T is small, the results of the two methods can be very different. FEM is more fitting if you genuinely believe that the person, or the unit sample cross-section, is not random. CEM is more appropriate if the sample cross-section unit is random.

The Chow test is used to decide if the CEM or FEM estimation model is better for forming a regression model. The following is the theory that was put to the test.

H0: The CEM model is superior to the FEM model in terms of precision.
H1: The FEM model is superior to the CEM model in terms of precision.

The results of the Chow test using Eviews 7, as shown in Table 4, are as follows:

The probability value of the cross-section Chi-square is 0.05, so the prediction model used is the Fixed Effect Model (FEM), where the probability value of the cross-section Chi-square is 0.05, so H0 is accepted, and H1 is refused.

4.3.2. The Hausman Test is Used to Determine the Estimation Model Between the Fixed Effect Model (FEM) and the Random Effect Model (REM)

The Hausman test is used to decide if the estimation model is FEM or REM when creating a regression model. The following is the theory that was put to the test.

Table 3: Heteroscedasticity Test (Glejser Test)

Heteroskedasticity Test: Glejser			
F-statistic	16.57184	Prob. F (6,263)	0.1000
Obs*R-squared	89.82185	Prob. Chi-Square (6)	0.1050
Scaled explained SS	160.5568	Prob. Chi-Square (6)	0.1100

Table 4: Results of the Chow Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	69.15863	Prob. *F* (2,261)	0.0000
Obs**R*-squared	93.52378	Prob. Chi-Square (2)	0.0000

Table 5: Results of the Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. df	Prob.
Cross-section random	0.000000	6	1.0000

H0: The REM model outperforms the FEM model.
H1: The FEM model outperforms the REM model.

The following are the results of the Hausman test performed with Eviews 7, as shown in Table 5:

4.4. Hypothesis Testing

4.4.1. Relationship Between CAR, NPL, OEOI and Management Assessment of ROA and ROE, on the Amount of Credit, Extended

Examination of the coefficient of determination, simultaneous effect testing (*F* test), and partial effect testing will all be used to test the hypothesis (Sinaga et al., 2020). Table 6 shows the statistical values for the coefficient of determination, the *F* measure, and the *t*-test.

4.4.2. Analysis of the Coefficient of Determination

The value of the determination coefficient (Adjusted *R*-squared) is $R^2 = 0.7263$, according to Table 6. This means that 72.63 percent of the credit extended is affected by CAR, NPL, OEOI, management evaluation, ROA, and ROE, while the remaining 27.37 percent is influenced by other variables.

4.4.3. Significance Test of Simultaneous Effects (Test *F*)

The *F* test is used to determine if the independent variables have a combined or simultaneous effect on the dependent variable. Table 6 reveals that the likelihood value (*F*-statistics) for all independent variables, namely total CAR, NPL, BOPO, management assessment, ROA, and ROE, is 0.000 0.05, indicating that all independent variables, namely total CAR, NPL, BOPO, management assessment, ROA, and ROE, have a major effect on the amount of credit at the same time.

4.4.4. Panel Data Regression Equations and Partial Significance Test (*t*-test)

This test is used to see to what extent CAR, NPL, OEOI, management evaluation, ROA, and ROE affect the amount of credit extended. The regression equation is as follows, based on Table 6, the regression equation is obtained as follows:

$$\begin{aligned} \text{Total Credit Disbursed} = {} & 30.62809 - 3.502007\,\text{CAR}_{it} \\ & + 0.034564\,\text{NPL}_{it} - 0.025484\,\text{BOPO}_{it} \\ & + 1.725001\,\text{management assessment}_{it} \\ & - 0.233991\text{ROA}_{it} + 0.010259\text{ROE}_{it} + t \end{aligned}$$

From this equation, it can be explained that:

1. The coefficient value of the CAR vector is –3.502007. CAR has a negative impact on BPRs in North Sumatra. Thus, as a result, it is evident that the CAR variable has a negative (statistically) impact on the loan amount of credit provided by BPRs in North Sumatra.
2. The NPV (Coefficient Value) is 0.0364. This value reflects a major influence on the variable value of credit extended by BPRs in North Sumatra. The estimated NPL coefficient of BPRs in North Sumatra is positive and significant at a 5% significance level.
3. The coefficient value of the BOPO component is –0.484. That is, BOPOI impacts BPRs in North Sumatra. It has been shown that the *T* value is –0.654 and the likelihood is 0.513, which makes it significant at a 5% level.
4. The value of the evaluation coefficient is 1.25. This variable has a major positive and significant impact on the amount of credit that is extended by BPRs in North Sumatra It is well-known that the *t* value is

Table 6: Statistical Values of the Coefficient of Determination, *F* test, and *t*-test

Variable	Coefficient	Std. Error	*t*-statistic	Prob.
CAR	–3.502007	5.970008	–5.851438	0.2500
NPL	0.034564	0.099237	0.348302	0.0277
BOPO	–0.025484	0.038981	–0.653764	0.5134
Management Assessment	1.725001	1.255307	1.374167	0.0397
ROA	–0.233991	0.171863	–1.361499	0.1737
ROE	0.010259	0.005469	1.876061	0.0410
C	30.62809	5.098609	6.007147	0.0000
R-squared	0.746384	Mean dependent var		27.92932
Adjusted *R*-squared	0.726350	S.D. dependent var		21.36238
S.E. of regression	14.76140	Akaike info criterion		8.921733
Sum squared resid	56871.65	Schwarz criterion		8.960346
Log likelihood	–1105.381	Hannan–Quinn criter.		8.936513
F-statistic	17.28966	Durbin–Watson stat		1.902507
Prob (*F*-statistic)	0.000000			
Dependent Variable: Amount of Credit Disbursed Method: Least Squares Date: 10/13/20 Time: 12:34 Sample: 2015Q1 2230Q4 Included observations: 864				

1.374, while the likelihood value is 0.39. This has a positive and important effect (statistically) at a 5% level in North Sumatra.

5. The ROA variable's coefficient has a value of –0.233. Thus, this can be claimed that ROA negatively affects the value of BPR's credit in North Sumatra. Since the *T* value is –1.361, and the likelihood value is 0.173, the impact is statistically significant at the 5% stage in North Sumatra.

6. The ROE coefficient is positive at 0.0159. This impact has a positive and significant influence on the variable credit provided to BPRs in North Sumatra. It is established that the *t*-value is 0.876, while the likelihood is 0.041, which means that has a positive and statistically significant impact on the variable in North Sumatra at 5% significance.

4.5. Discussion

4.5.1. Effect of CAR on the Amount of Credit Extended

Based on the test results, it is reported that CAR impairs the capacity of BPR to lend in North Sumatra during the year 2016–2019. This is shown by the results of t value of –5.85 and the probability value (*F*-statistics) of 0.2500 > 0.05 which suggests that the percentage of BPR credit disbursed in North Sumatra has a negative impact on the CAR value. According to Buchory (2014), the CAR can affect the amount of credit that BPRs grant. According to Kasmir and Carbonella (2008), a decrease in CAR results in a decrease in credit reserve money. If the limit widens, the ROA will then increase, and money will be available to lend to the public in an equal or greater sum.

4.5.2. The effect of NPL on the Amount of Credit Disbursed

The findings show that it is certain that NPL will increase the amount of credit in North Sumatra in the period 2016–2019. It is supported by the t value of 0.348 and the probability value (*F*-statistics) of 0.027 < 0.05 which shows that there is a significant relationship between NPL and the amount of credit given by BPR.

According to Nuritno (2014), NPL greatly affects the increase in the amount of credit to be distributed, where if the NPL goes up, it will affect the bank's ability to provide funds for community credit distribution, so that it will reduce the CAR value, as a result, the bank will not be able to maximize the amount of funds. Which will be used to extend credit.

According to Suyono et al. (2016) the value of CAR increases, it will affect the rate of return on assets (ROA) and equity (ROE), that is, the value of ROA and ROE will also decrease and have an impact on decreasing the ability of BPRs to provide funds for working capital loans. Conversely, if the CAR value decreases, the ROA and ROE values will also increase, where an increase in the value of ROA and ROE will have an impact on the increasing ability of BPRs to provide funds for working capital credit disbursements.

4.5.3. The Effect of BOPO on the Amount of Credit Disbursed

The study concluded that BOPOs have a negative impact on the amount of disbursement of credit in North Sumatra in the period 2016 to 2019. This is shown by the t value of –0.654 and the probability value (*F*-statistics) of 0.5134 > 0.05, which is positive indicating that there is a negative effect of BOPO on North Sumatra's disbursement.

According to Diyanti and Widyarti (2012), OEOI greatly affects the increase in the amount of credit to be distributed by BPR, including the amount of working capital credit, where if the BOPO increases, it will affect the increase in capital to be distributed as working capital credit to the public. An increase in BOPO will affect the ability of BPR to increase asset growth (ROA) and increase capital growth (ROE), where with the increase in BOPO, the ROA and ROE will decrease, thus affecting the ability of BPR to provide funds to channel credit in the future. This will lead to a decrease in CAR value, as a result, ROA and ROE will also decrease in value so that the bank will not be able to provide funds for the process of lending working capital loans in the future and will not be able to cover bank operational costs. However, in the case of BPR in North Sumatra, BOPO did not have a major impact on the increase in the amount of credit to be distributed, where there were assets from the BPR that could still cover the capital to be channeled to cover the increase in BOPO and increased capital for lending working capital to the public. As a result, the increase and decrease in the value of ROA, ROE, and CAR do not affect BOPO, so that the BOPO value does not go down and this increase in BOPO cannot be avoided. According to Enqvist, et al. (2014) the decreasing OEOI make it easier for banks to be able to increase the rate of return on capital (ROE) and will also increase the return on assets (ROA), where the decreasing BOPO will enable BPR to have funds for distributing working capital loans to the public. This has an impact on the increasing CAR value which will make the bank's condition suitable for lending both investment credit and working capital credit.

4.5.4. The Effect of Management Assessment on the Amount of Credit Disbursed

It has been shown that management assessment is likely to have a positive and significant impact on the amount of credit given to North Sumatra over the years from BPR. As can be evidenced by the *t* value of 1.3741 while the probability value (*F*-statistics) of 0.0397 < 0.05 this means that the management variable has a positive and important influence on the amount of credit given out in North Sumatra.

Management assessment is closely related to credit quality assessment, where management assessment is related to credit quality assessment and risk-based bank health assessment, where if the credit disbursed experiences problems, the quality of the credit will increase the NPL, as a result, there is a risk that must be borne by the BPR, where the level of ROA, ROE, CAR will decrease which will increase operating costs per operating income (BOPO). As a result, BPR experiences problems in increasing capital for increasing lending in the years to come. According to Nuritno (2014) if the credit disbursed has no default in repayments, then the quality of the credit is high, as such, NPL will decrease, and the levels of ROA, ROE, and CAR will increase so that BOPO will decrease and can be controlled. As a result, BPRs will no longer experience problems in raising capital to increase credit distribution in the coming years.

4.5.5. Effect of ROA on the Amount of Credit Disbursed

ROA has a net negative effect on the total disbursement amount. This can be concluded from the result showing a negative *t*-adjusted slope of –1.361 and the probability value (*F*-statistics) of 0.1737 > 0.05, in North Sumatra. According to Enqvist et al. (2014), the ROA variable affects the amount of credit disbursed, especially for working capital credit, where the increase in ROA will have an impact on an increase in assets, where the increased assets will benefit the BPR Bank in channeling credit. The advantage obtained by BPR banks is the increase in the capital of the BPR banks, where along with the capital increase, it will increase the amount of funds needed to be to channel credit to the public, especially working capital loans to entrepreneurs (Erwin et al., 2018). This indicates that the increase in the amount of BPR credit in North Sumatra depends on the rate of return on the BPR's assets. However, in the case of BPR in North Sumatra, the ROA variable did not have a significant effect on increasing the amount of credit extended. This was because the capital owned by the BPR was able to cover the lack of loan funds that were delayed in repayment so that the decrease in ROA could be covered by excess capital and fund reserves held by the BPR.

According to Kasmir and Carbonella (2008), if the return on assets (ROA) decreases, the BPR will not be able to easily get the desired capital to increase the amount of funds for lending in the future, especially working capital loans for entrepreneurs. This indicates that the ROA variable has a very significant effect on the availability of capital for distribution and credit for BPRs.

4.5.6. The Effect of ROE on the Amount of Credit Disbursed

The findings show that ROE has a significant effect on credit disbursed by BPR's in North Sumatra in the period 2016–2019. This is evidenced by the results of the *t* value of 0.876, and the probability value (*F*-statistics) of 0.041 < 0.05, which indicates that the ROE variable has a positive effect on the variable amount of credit disbursed by BPR's in North Sumatra. According to Suyono et al. (2016), ROE affects the amount of credit to be disbursed by BPR, where if ROE increases, it will be able to increase capital to increase the amount of credit to be distributed. An increase in the amount of ROE can cover the lack of loan funds that are late to return so that if the amount of credit returned decreases and affects ROA, it can be covered by excess capital and reserve funds held by the BPR.

5. Conclusion and Suggestions

Panel data regression analysis methods, including data mixing cross-section and time series, were used. This research employed the Chow and Hausman tests, as well as the general effect and fixed effect model specification tests. The findings show that CAR, BOPO, and ROA have an insignificant effect on the credit disbursed by BPR's in North Sumatra. While NPL, management assessment, and ROE have a positive and significant effect on the amount of credit disbursed by BPR's in North Sumatra, simultaneously. We also find the continual effect of NPL, management assessment, and ROE in the distribution of working capital credit in rural banks. Future more, banks with low working capital credit, which are likely to face significant effects of NPL, management assessment, and ROE, are particularly active in adjusting their working capital investment.

1. It is recommended that BPRs penetrate new markets and can reach BPR products. This is intended so that BPRs can control Non-Performing Loans (NPLs) from increasing. This is to ensure that BPRs can increase assets to increase the amount of working capital credit that will be disbursed to the public.
2. It is better if the BPR always maintains that the credit disbursed is returned on time. This is to maintain the quality of working capital loans disbursed so that the

risk assessment of credit is reduced and BPRs can maintain credit quality properly.
3. It is recommended that BPRs always raise capital by increasing profits from other products besides credit financing products. This is intended so that BPRs can always increase ROE, where an increase in ROE will be able to cover funds that delayed in repayments by customers, to cover the rate of return on assets (ROA), and stabilize the value of CAR.
4. For future research, it is advisable to add several variables such as Debt to equity ratio and external variables such as macroeconomic variables for the continuation of the research. This is done to know the extent to which these variables affect the increase in the amount of working capital credit that will be disbursed.

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