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Effect of Outstanding Credit Volume, Loan to Deposit Ratio, Loan Interest Rate On Credit Union Return On Assets In PUSKOPCUINA 2015-2019

Sabinus Beni ^{1*}, Windhu Putra ² and Nurul Bariyah ³

^{1*} Insitut Shanti Bhuana, Bengkulu; beni@shantibhuana.ac.id

² Universitas Tanjungpura, Pontianak; windhu.putra@ekonomi.untan.ac.id

³ Universitas Tanjungpura, Pontianak; nurul.bariyah@ekonomi.untan.ac.id

Abstract: This study aimed to analyze the factors that affect Non-Performing Loan (NPL) risk in credit unions and factors that affect Return On Assets (ROA) in cooperatives. The study found that credit unions could minimize NPL risk by utilizing social networks according to the theory of social capital, and by ensuring that management and members share the same goals in managing credit risk according to the agency theory. The microfinance theory suggests that credit unions should provide appropriate financing. Multiple linear regression analysis indicated a significant influence of Loan to Deposit Ratio and Loan Interest Rate on ROA. Thus, credit unions should consider the use of deposit funds and set appropriate interest rates to increase ROA and strengthen member relationships. In managing credit risk, credit unions can utilize the theories of social capital, agency, and microfinance.

Keywords: credit union; social capital; agency; microfinance

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1. Introduction

Non-Bank Financial Institutions (NBFI) are institutions outside the formal banking system that offer financial products and services such as financing, investment, insurance, and capital markets. The purpose is to assist economic actors in managing risks and channeling funds in the economy. These institutions provide a more efficient and reliable alternative to formal banking institutions and often offer long-term and short-term loan services. Examples include microfinance institutions, consumer finance institutions, cooperatives, and businesses (Sihombing & Siagian, 2016).

Credit Union is an organization established by a group of people with a common purpose, such as a community or workplace. They function as a community service bank that provides banking services to its members, such as loans, savings, and fund transfers. Friedrich Wilhelm Raiffeisen established the first credit union in Germany in 1864, with the aim of improving the economic and social conditions of villages. Raiffeisen and others established other credit unions throughout Germany, and in 1895, he founded "Deutscher Genossenschafts-Verband" as the parent organization for credit unions in Germany (PUKOPCUINA, 2015).

ROA (Return on Assets) is important for credit unions as it shows their ability to generate profits from their assets and provides indications about the management performance of the CU. ROA can also be used to evaluate the long-term performance of a credit union and help members determine how well the CU is performing compared to other industries. The credit union's loan portfolio also affects ROA by increasing the income generated from financing activities and reducing expenses. If more loans are available to be disbursed, this can increase loan income and reduce expenses, which has a positive impact on the credit union's ROA.

The benefits of increasing Return on Assets (ROA) by a CU include the opportunity to generate more profits and increase liquidity, develop a more diverse investment portfolio, make more loans, and increase revenue and earnings. This can strengthen the CU's position in the market and provide opportunities to take advantage of emerging investment opportunities. However, increasing ROA can also bring risks of high interest rates and credit danger. Therefore, it is important to be cautious and not take excessive risks. In addition, there are other considerations that need to be taken into account when deciding to increase ROA.

Previous research on CU assets has been conducted extensively in Indonesia, but it only focuses on one CU and has not examined the relationship between Loan to Deposit Ratio, loan interest rates, circulating credit, and Non-Performing Loan on CU's Return on Assets. This has not had a significant impact on the development of CUs in Indonesia. Therefore, research is needed on the influence of circulating credit, loan to deposit ratio, and loan interest rates on CU's Return on Assets in 34 provinces in Indonesia through the CU movement under PUSKOPCUINA as a secondary CU institution in Indonesia.

Cooperatives are an economic organization founded by a group of people to meet their needs and improve their welfare through democratic cooperation. Basic principles must be followed by all cooperative members, making it different from other economic organizations (Houngbo F., 2020). Cooperative is an alternative model to address economic and social issues, especially those related to economic injustice and social inequality. In this context, cooperatives can be a tool to improve the welfare of their members and promote sustainable and inclusive economic growth (NN, 2021).

Return on Assets (ROA) is a financial ratio that measures a cooperative's efficiency in generating profit from its assets. ROA is calculated by dividing net income by total assets (Pravasanti, 2018). High ROA indicates effective use of assets to generate profits, while low ROA may indicate problems in asset and financial management. Cooperatives can increase ROA by improving operational efficiency, maximizing asset utilization, and expanding market share (Bernardin, 2016).

Credit in a cooperative is one of the main activities that provides financing to its members. Credit in a cooperative can be provided in various forms such as business credit, consumer credit, investment credit, productive credit, and so on (Ayuningtyas, 2019). Credit in cooperatives can provide significant benefits to its members, especially those who have difficulty accessing formal financial institutions. By obtaining credit from cooperatives, members can obtain working capital, improve their financial condition, and improve their overall welfare (Azhari et al., 2020).

Interest rate in a cooperative is the rate of interest applied to loans provided by the cooperative to its members or others. The interest rate in cooperatives is usually lower than formal financial institutions such as banks because the main purpose of cooperatives is to provide benefits to their members, not to seek profits (Widyanasari & Sujana, 2020). Some cooperatives also set different interest rates depending on the financial condition and performance of their members. For example, members with good credit history or who have been members of the cooperative for a long time may be given a lower interest rate than new members or those with poor credit history (Fatimah & Darna, 2011).

Loan to Deposit Ratio (LDR) in cooperatives is a ratio between the total credit given by the cooperative and the amount of funds received from members' deposits. This ratio is used to measure how much the cooperative is borrowing money from its members and how much money is being lent to members or other parties (Wahyuningsih, 2021). A healthy LDR in a cooperative is around 70-80%, meaning the cooperative has borrowed around 70-80% of its members' savings to provide loans to members or third parties. If the LDR is too low, the cooperative may have difficulty providing sufficient loans to its members or even lose potential income from loan development (Sutami et al., 2019).

Non-Performing Loan (NPL) in a cooperative refers to loans that cannot be recovered or have installment payments that are more than 90 days late. NPL in a cooperative is an important indicator to measure the financial health and credit quality provided to

members (Mahartha et al., 2020). High Non-Performing Loans (NPL) in cooperatives can indicate problems in credit risk management, poor credit policies, or poor credit quality. This can affect the level of trust among members and the overall finances of the cooperative. Therefore, cooperatives need to pay attention to and control NPL levels within a healthy range (Arsyad et al., 2022).

According to social capital theory, individuals will take certain actions based on the benefits and costs associated with those actions. In this case, social norms and social control become important factors in influencing individual decisions. Social norms are rules or values that guide behavior in society, while social control is the various forms of sanctions applied to punish individuals who violate social norms (Kusumaningrum, 2014). Agency theory assumes that agents and principals have different and sometimes conflicting goals, making agency a potential source of problems and conflicts within organizations (Bakti & Triyono, 2022). Microfinance consists of several forms, such as small loans, savings, insurance, and business consulting services. Microfinance is generally aimed at marginalized and less fortunate groups in society, such as small farmers, fishermen, and small traders (Lakon & Afifa, 2022).

Kasim's research has revealed that the circulating credit has a noteworthy and affirmative impact on the Return on Assets (ROA) of credit unions in Malaysia. The research further suggests that credit unions' financial performance is affected by a range of factors including operational efficiency, credit union size, and loan portfolio structure (Abdulle & Kassim, 2012).

This study examines the impact of financial ratios such as CAR (Capital Adequacy Ratio), LDR (Loan To Deposit Ratio), NIM (Net Interest Margin), BOPO (Operating Expenses to Operating Income), and NPL (Non-Performing Loan) on ROA (Return On Assets). The results show that CAR has no influence on ROA, LDR has a significant impact on ROA, NIM has no effect on ROA, BOPO has a significant impact on ROA, and the effect of NPL on ROA is not significant. These findings support Usman's (2003) research, which showed that NPL has no significant impact on profit changes (Pratami, 2021).

This is a study on the influence of member savings and bad credit on residual earnings (a case study of the PDAM Tirta Ayu Employee Cooperative). The results partially indicate that member savings have a strong and positive impact on residual earnings, while bad credit also has a strong and positive impact on residual earnings. Moreover, the results of the study conducted jointly or simultaneously demonstrate that member savings and bad credit have a strong and positive impact on residual earnings (Nurhayati, 2022).

This research identifies factors that affect non-performing loans in commercial banks in Vietnam from 2008 to 2017, which caused a decline in GDP. The study found that good bank performance, credit growth, and higher interest rates can reduce non-performing loans in the banking system. It is recommended to improve monitoring processes and reduce systematic risks in risk management by leveraging global bank experience (Dao et al., 2020).

This study aims to examine the influence of financial ratios on non-performing loans in foreign exchange commercial banks in the period 2015-2019. The sample consisted of 150 companies and the data was analyzed using descriptive and multiple linear analyses. The results show that the capital adequacy ratio, loan-to-deposit ratio, and operational expense ratio have an effect on non-performing loans, while net profit expense does not have an effect on non-performing loans in private foreign exchange commercial banks registered with OJK (Suryani & Africa, 2021).

A study on the Influence of Inflation, Exchange Rates, and Interest Rates on Non-Performing Loans at PT Bank Tabungan Negara (Persero) Tbk Branch Padang found that inflation and interest rates individually have a significant effect on non-performing loans at PT Bank Tabungan Negara (Persero) Tbk Branch Padang, while the exchange rate does not have a significant effect on non-performing loans at PT Bank Tabungan Negara (Persero) Tbk Branch Padang (Roza Linda, 2015).

2. Method

This type of research is a quantitative study that uses panel data from 40 Credit Unions in the Credit Union Cooperative Credit Center of Indonesia (PUSKOPCUINA) from 2015-2019. The study uses a panel data regression model to analyze numerical data with independent and dependent variables. Panel data is a combination of time series and cross-sectional data that can capture different characteristics between individuals and over time.

The variables in this study consist of independent variables, namely circulating credit, Loan to Deposit Ratio (LDR), and loan interest rates, as well as dependent variables, namely Non-Performing Loans (NPL) and Return On Assets (ROA) of Credit Union. Independent variables are variables that influence dependent variables. In this study, circulating credit, LDR, and loan interest rates are independent variables, while NPL and ROA of Credit Union are dependent variables. Circulating credit is the amount of credit disbursed to active members, LDR is the ratio of loans to the total amount of member deposits, and loan interest rates are the highest reference interest rates used by Credit Union. Meanwhile, NPL is the amount of problematic loans, and ROA is the rate of return on assets lent through loans to members. Path analysis is a regression extension model used to test the consistency of correlation matrices between two or more cause-and-effect relationship models compared by researchers. This model is depicted in the form of circles and arrows, where a single arrow represents the cause. David Garson from North Carolina State University is the person who defined path analysis.

The path equation can be formulated as follows: $NPL (Y1) = a1 \text{ Outstanding Credit} + a2 \text{ LDR} + a3 \text{ Loan Interest Rate}$ where: 1) NPL is a mediator variable between the independent variable and the dependent variable 1) Outstanding Credit, LDR, and Loan Interest Rate are independent variables that influence NPL 3) $a1$, $a2$, and $a3$ are regression coefficients that describe the influence of independent variables on NPL. In the path model, NPL will affect the dependent variable ROA. Therefore, the relationship between these variables can be expressed through the path of NPL, which is: $ROA (Y2) = \text{Outstanding Credit} + b2 \text{ LDR} + b3 \text{ Loan Interest Rate} + b4 \text{ NPL}$ where: 1) ROA is a dependent variable that is influenced by independent variables and a mediator variable 2) $b1$, $b2$, $b3$, and $b4$ are regression coefficients that describe the influence of independent variables and a mediator variable on ROA.

3. Results

The research results show that NPL has a significant effect on ROA in Credit Unions in Indonesia with a beta coefficient of 0.189 and a t-value of 2.711 with a significance of 0.007. This means that the higher the NPL level in Credit Unions, the lower its ROA tends to be. However, it should be noted that the beta coefficient is unstandardized and cannot be directly compared to other variables in the model. In addition, the results of the Path Analysis test can be seen in the figure.

Picture of 1.

Results of NPL Influence Test on ROA

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.009	.001		9.365	.000
	NPL	7.238E-14	.000	.189	2.711	.007

a. Dependent Variable: ROA

Analysis of Data The Results of Model 1 Test

The following are the results of Model 1 test:

Picture of 2.

Results of Model 1 Test

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	54509943707,207	18818620583,184		2,897
	Kredit Beredar	,181	,009	,813	20,076
	Loan To Deposit Ratio	2351808534,349	3453175521,892	,028	,681
	Suku Bunga Pinjaman	-4639205959,500	1516192003,839	-,124	-3,060

a. Dependent Variable: Non Performing Loan

In summary, the Constant has a value of 54509943707.207, which is the predicted value of Non Performing Loan when all independent variables (Money Supply, Loan to Deposit Ratio, and Loan Interest Rate) are zero. Money Supply (MS) has a coefficient of 0.181, which means that if Money Supply increases by one unit, Non Performing Loan will increase by 0.181 units. Loan to Deposit Ratio (LDR) has a coefficient of 2351808534.349, which means that if Loan to Deposit Ratio increases by one unit, Non Performing Loan will increase by 2351808534.349 units. Loan Interest Rate (LIR) has a coefficient of -4639205959.500, which means that if Loan Interest Rate increases by one unit, Non Performing Loan will decrease by 4639205959.500 units.

Standardized Coefficients (Beta) show the influence of independent variables on the dependent variable in standard deviation units. In this case, Money Supply has the greatest influence on Non Performing Loan with a Beta value of 0.813, followed by Loan to Deposit Ratio with Beta 0.028, and Loan Interest Rate with Beta -0.124. t-statistics are used to test whether regression coefficients are statistically significant or not. All regression coefficients have statistically significant t-statistics with values greater than 2 and p-value (Sig.) less than 0.05. Std. Error indicates the accuracy of the estimated regression coefficients. The lower the value of std. error, the more accurate the obtained regression coefficients.

Analysis of Data The Results of Model 2 Test

The following are the results of Model 2 test:

Picture 3.

Results of Model 1 Test

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,007	,008		,914	,362
	Kredit Beredar	-9,686E-15	,000	-,110	-1,460	,146
	Loan To Deposit Ratio	,026	,001	,770	17,724	,000
	Suku Bunga Pinjaman	-,002	,001	-,105	-2,398	,017
	Non Performing Loan	5,666E-14	,000	,143	1,886	,061

a. Dependent Variable: Return On Assets

The regression results show that only Loan to Deposit Ratio and Loan Interest Rate have statistically significant coefficients with Return On Assets. The coefficient of Loan to Deposit Ratio is positive (0.026), indicating that the higher this ratio, the higher the Return On Assets. Meanwhile, the coefficient of Loan Interest Rate is negative (-0.002), meaning that the higher the loan interest rate, the lower the Return On Assets. The variables of Outstanding Credit and Non Performing Loan do not have a significant influence on Return On Assets.

Discussion Analysis of Data The Results of Model 1 Test and Model 2 Test

Regression analysis of models 1 and 2 show the relationship between three independent variables (Outstanding Loans, Loan to Deposit Ratio (LDR), and Loan Interest Rate) with two dependent variables (Non Performing Loans (NPL) and Return on Assets (ROA). The NPL variable was added as a mediator variable to observe the influence between independent variables and dependent variable ROA through the mediator variable NPL.

From the regression results, it can be seen that the variables of outstanding credit, LDR, and loan interest rate have a significant influence on NPL, with regression coefficients of 0.181, 0.028, and -0.124, respectively. The positive regression coefficient on the outstanding credit variable indicates that the higher the credit circulation, the higher the likelihood of NPL occurring. Meanwhile, the negative regression coefficient on the loan interest rate variable indicates that the higher the loan interest rate, the lower the likelihood of NPL occurring.

Furthermore, the regression results indicate that the variables LDR and Loan Interest Rate also have a significant influence on ROA, with regression coefficients of 0.770 and -0.105, respectively. The positive regression coefficient on the LDR variable indicates that the higher the LDR, the greater the ROA. This indicates that the credit union has a higher level of independence in financing the loans granted. Meanwhile, the negative regression coefficient on the Loan Interest Rate variable indicates that the higher the loan

interest rate, the lower the ROA generated by the credit union.

However, the variable of Kredit Beredar has no significant effect on ROA. This indicates that an increase or decrease in Kredit Beredar does not have a significant effect on the credit union's ability to generate profit. Finally, the regression results show that NPL has a positive but statistically insignificant effect on ROA, with a regression coefficient of 0.143 and a p-value of 0.061. Although the positive regression coefficient indicates that the larger the NPL, the larger the ROA generated, the statistically insignificant result indicates that this effect cannot be considered strong or certain.

Thus, it can be concluded that the Credit Outstanding, LDR, and Loan Interest Rate affect NPL which in turn affects ROA. However, the Credit Outstanding variable does not have a direct effect on ROA, and the effect of NPL on ROA is not statistically significant. This analysis provides useful information for credit unions to improve financial performance and increase profits by increasing self-sufficiency in credit financing.

4. Conclusions

Based on the regression analysis, there are three factors that affect Non-Performing Loans (NPL), which are Money Supply, Loan to Deposit Ratio, and Loan Interest Rates. Money Supply and Loan Interest Rates have a significant impact on NPL, while Loan to Deposit Ratio does not have a significant impact.

In the context of social capital theory, credit unions can utilize their networks and social relationships to minimize the risk of bad credit or NPL by developing good relationships with their members and the community around them. Meanwhile, in the context of agency theory, credit unions need to ensure that the credit union management and members have the same goals and take appropriate action in managing credit risk. In this case, the interest rates given to members should be carefully considered so as not to be too high, which hinders members from paying back their debts on time, and not too low, which reduces members' awareness of their financial ability before borrowing money.

In the context of microfinance theory, credit unions need to provide financing that is appropriate and proportional to minimize the risk of bad credit or NPL. Credit unions need to pay attention to the financial ability of members to develop their businesses and provide appropriate financing so that members do not have difficulty in paying back their debts. In addition, credit unions also need to pay attention to economic conditions and the market so that they can provide financing that is suitable for the existing market conditions.

By considering the above factors, credit unions can effectively manage credit risk and minimize the risk of bad credit or NPL. Therefore, they can maintain their financial health and provide good credit union services to their members. Based on the results of the data analysis using multiple linear regression, there is a significant effect of the Loan to Deposit Ratio and Loan Interest Rates variables on Return On Assets in the cooperative. This indicates that the higher the Loan to Deposit Ratio and the lower the Loan Interest Rates, the higher the Return On Assets in the cooperative.

The influence of the Loan to Deposit Ratio and Loan Interest Rates on Return On Assets in the cooperative can be related to agency theory, where the Loan to Deposit Ratio can indicate the level of credit risk taken by the cooperative and Loan Interest Rates can

influence members' decisions in taking loans. In addition, the influence of Loan to Deposit Ratio can also be related to microfinance theory, where cooperatives can provide financing to members by utilizing funds from deposits.

The influence of Loan Interest Rates on Return On Assets in the cooperative can also be related to social capital theory, where members' trust in the cooperative will increase if the applied interest rates are low. This can strengthen the social capital owned by the cooperative and strengthen the relationship between the cooperative and its members. Overall, the results of this analysis can provide information for decision-makers in cooperatives to pay attention to the use of deposit funds and set the appropriate loan interest rates to increase Return On Assets in the cooperative and strengthen the relationship with their members.

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