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STRATEGY TO MAXIMIZE DOMESTIC INTERNAL MONETARY FACTORS IN OVERCOMING NON-PERFORMING LOANS (NPL) OF RURAL BANKS DURING COVID-19 PANDEMIC: AN EMPERICAL STUDY FROM INDONESIA

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Abstract

This study aims to test the influence of CoViD 19, Inflation, BI Interest Rate – 7 Day (Reverse) Repo Rate (BI7DRR) and Loan to Deposit Ratio (LDR) on Non-Performing Loans (NPL) of People's Credit Banks registered with the Financial Services Authority during the research period from January 2018 – October 2020. The sample in this study is a national people's credit bank with data obtained from the publication of statistics banking Indonesia financial services authority (OJK). This study used time series data as many as 34 observations with multiple linear regression estimates and CoViD 19 as dummy variables before and during the CoViD 19 pandemic. The results found that the variables CoViD 19 and LDR had a positive and significant effect while bi7drr inflation and interest rates had a negative and insignificant influence.

Keywords: Covid 19, Inflation, BI7DRR Interest Rate, LDR, NPL.

INTRODUCTION

Economic development and development in a country is highly dependent on the dynamic development and real contribution of the banking sector. In the context of Indonesia, the banking sector specifically Rural Banks (BPR). Despite being faced with the COVID-19 pandemic situation, the BPR industry remains committed to being a lever for Indonesia's micro economy, this is evidenced by the fact that BPRs continue to carry out their intermediation function in the form of distributing funds in the form of lending and even continuing to increase. Increased distribution of funds by banks of course has the potential to increase bank credit risk. Data from the Financial Services Authority (OJK) shows the ratio of non-performing loans or commonly called Non-Performing Loans has continued to increase, especially since the CoViD 19 pandemic. This is stated in the Indonesian banking statistics report specifically for BPR.

Tiwu (2020) Stating Non-Performing Loans (NPL) is a ratio that measures the ratio of the number of non-performing loans to total loans where, Credit is credit given to third parties (not including credit to other banks), Non-performing loans are loans with substandard quality, doubtful and non-performing loans, non-performing loans are calculated on a gross basis, figures are calculated per position not annually. In this case, there are many factors that cause the occurrence of NPL itself.

Rossiana (2018) stated that Bank Indonesia determined that a bank must have an NPL value below 5 percent.

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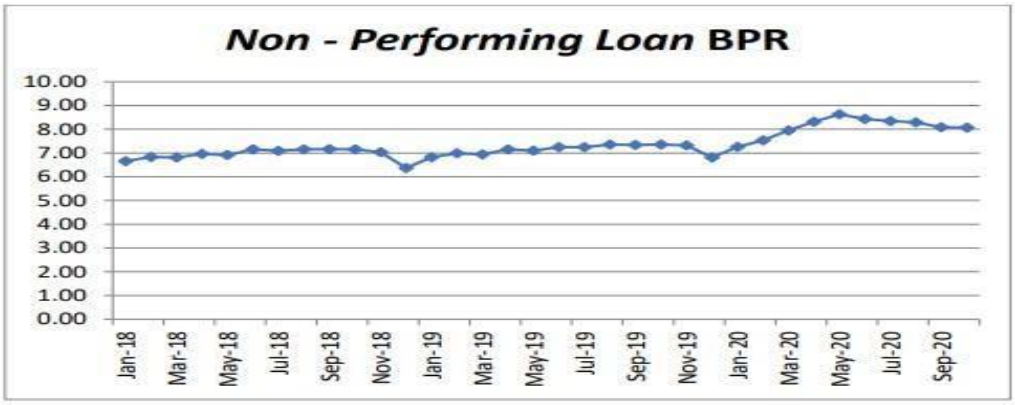
Wiratmini (2020), stated that the ratio of non-performing loans to rural banks has continued to climb since the pandemic or starting in April 2020. Finally, the position of the ratio of non-performing loans in July 2020 has touched the level of 8.34 percent. Before the pandemic, or in March 2020, the ratio of non-performing loans or non-performing loans (NPLs) for rural banks was 7.95 percent. In January and February 2020, the NPL was 7.26 percent and 7.53 percent, respectively.

Based on data obtained by researchers through the Financial Services Authority (OJK), it is known that the ratio of Non-Performing Loan BPRs from 2018 to 2020 is in a position above 5%, this of course shows that the health of the bank is not good compared to the provisions of Bank Indonesia, a bank must have an NPL value. Below 5 percent, which can be seen in Figure 1 below:

Image 1: BPR NPL Development



Source: OJK (Data, processed 2022)

Tiwu (2020:81) explained, external factors such as disasters on a national scale can affect the NPL Ratio which shows banking performance. The COVID-19 pandemic is an external factor. This virus spreads quickly and has spread to several countries, including Indonesia. To overcome the pandemic, the government implemented a health protocol, namely Large-Scale Social Restrictions (PSBB) and social distancing, which are expected to overcome the COVID-19 pandemic. However, the impact of this pandemic continues to spread and has an impact on Indonesia both in the real sector and the monetary sector, resulting in the Indonesian economy. Experienced a slowdown and even economic growth reached -5.32% in the 2nd quarter of 2020. The tourism, mining, construction, automotive,

Several previous studies on Non-Performing Loan banking found various results. Tiwu (2020) who researched Non-Performing Loan BPRs found the results of CoViD 19 and the BI7DRR interest rate had a positive and significant effect on the increase in BPR's NPL nationally. However, Martina and Prastiwi (2014) found that interest rates and inflation have no effect on NPL and have a negative relationship. Linda, et al (2015) who used data from PT. The State Savings Bank (Persero) Tbk Padang Branch found that inflation and interest rates had an effect on NPL. Noviyantidan

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Baskara (2012) found that each increase in the LDR will reduce the NPL of the banking sector, while Astrini et al. (2018) found that the LDR results have an effect on the NPL and have a positive relationship.

Based on the results of the research above, it can be concluded that there is a diversity of results regarding Non-Performing Loans. The diversity of the results of previous studies is determined by the significance value. Several variables used in this study to test their effect on NPL are CoViD 19, Inflation, Interest Rate BI – 7 Day (Reverse) Repo Rate and Loan to Deposit Ratio. This research was conducted at national credit banks. This research consists of four parts, namely introduction, data and methods, results and discussion, and conclusions.

RESEARCH METHODOLOGY

This study uses Indonesian banking statistics from the financial services authorities before and until the time of being affected by the CoViD 19 pandemic in the form of a time series with a total of 34 observations.

The object of this research is the Rural Bank. With the object of observation, namely Inflation data, BI7DRR Interest Rate, LDR and NPL which are downloaded on the websitewww.bi.go.idandwww.ojk.go.idJanuary 2018 - October 2020.

Table 1 Definition of Operational Variables

Variable	Definition	Scale
Non-performing Loan (Y)	Non Performing Loan (NPL) is a ratio that measures the ratio of the number of non-performing loans to total loans.	Ratio
CoViD 19 (X1)	Circumstances Before until the time of being affected by CoViD 19 (January 2018 – October 2020).	Dummy
Inflation(X2)	Inflation is a condition in which the value of a country's currency decreases and the price of goods increase systematically.	Ratio
BI7DRR Interest Rate (X3)	The interest rate is dependent on the loan of money, usually expressed as a percentage, for a certain period of time (monthly or annually).	Ratio
Loan to Deposit Ratio (X4)	Loan to Deposit Ratiois the ratio between the total loans granted and the total Third Party Funds (DPK) that can be collected By banks.	Ratio

The analytical method used in this study is multiple linear regression analysis using the e-views 10 application as an analytical tool, with the following model:

$$Y = \alpha + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \beta 4\ X4 + e$$

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After multiple linear regressions has been carried out, it is continued by doing the classical assumption test which is a statistical requirement that must be met in multiple linear regression analysis based on Least Square (LS). so that the estimation results can be BLUE (Best, Linear, Unbias, Estimator) There are at least four classical assumption tests that must be carried out on a multiple linear regression model before testing the hypothesis, then the classical assumption test consists of a normality test with the Jarque normal probability plot method – Fallow, multicollinearity using the Variance Inflation Factors method, autocorrelation using the Breusch – Godfrey method, and heteroscedasticity using the White test method.

The effect test was carried out with a partial test (t test), the t-value test was carried out to partially test the effect of the independent variable on the dependent variable. Acceptance or rejection of the hypothesis is done by criteria. If t-count > t table, it means that the independent variable has an effect on the dependent variable partially, while if t-count < t-table, it means that the independent variable has no effect on the dependent variable partially or by comparing the significance with the value of : If the significance 0.05, meaning that the independent variable has a partial effect, if the significance is 0.05, it means that the independent variable has no partial effect.

In this study also calculated the value of the coefficient of determination which aims to test the level of closeness or attachment between the dependent variable and the independent variable which can be seen from the magnitude of the coefficient of determination (adjusted squared).

RESULTS AND DISCUSSION

Results

Based on data on NPL, CoViD 19, Inflation, BI7DRR and LDR Interest Rates. The multiple regression estimation is obtained as follows:

Table 2: Multiple Regression Results

Variable	Coefficient
CoViD 19 (X1)	0.9504
Inflation (X2)	-0.0377
BI7DRR Interest Rate (X3)	-0.0729
LDR (X4)	0.0992

Source: Data (Processed, 2022)

In table 1 above, the following multiple linear regression equation is obtained:

$$Y = 0.0908 + 0.0954\ (X1) - 0.0377\ (X2) - 0.0729\ (X3) + 0.0992\ (X4) + e$$

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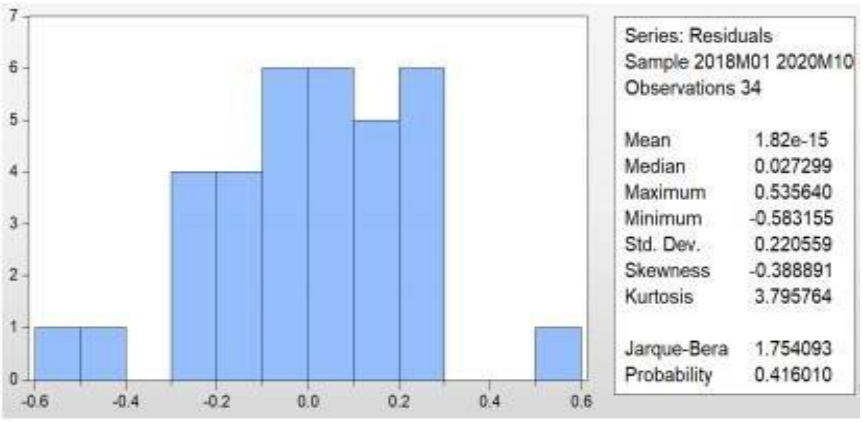
1. Classic Assumption Test Results

a. Normality test

The results of the normality test using the normal probability plot Jarque – Bera method are as follows:

Figure 2: Jarque - Bera . Normality Test



Source: Data (Processed, 2022)

Based on Figure 2, in this approach the residual value is normally distributed if the lines (dots) that describe the actual data will follow or move closer to the diagonal line. From the test results above, it can be seen that the probability value of Jarque – Berra is 0.4160 > 0.05, meaning that the residual data is normally distributed.

b. Autocorrelation Test

The results of the autocorrelation test using the Breusch – Godfrey method obtained the following results:

Figure 3: Breuch – Godfrey. Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.629380	Prob. F(2,27)	0.5406
Obs*R-squared	1.514498	Prob. Chi-Square(2)	0.4690

Source: Data (Processed, 2022)

If the results show a probability value above 0.05, then there is no autocorrelation symptom, while if it is below 0.05, it is concluded that there is an autocorrelation symptom. Based on the test results in Figure 3, it is known that the probability value is 0.4690 > 0.05, meaning that there is no autocorrelation symptom.

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c. Multicollinearity Test

The results of the multicollinearity test using the variance inflation factors method are as follows:

Figure 4 Multicollinearity Test of Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	7.897495	4850.662	NA
COVID_19	0.049878	7.208217	5.512166
INFLASI	0.012843	65.67352	2.944830
BI7DRR	0.007502	120.6954	2.427780
LDR	0.001599	5895.915	1.723636

Source: Data (Processed, 2022)

Based on Figure 4, it is known that the value of Centered VIF for CoViD 19, Inflation, BI7DRR and LDR variables is less than 10, so it can be said that the output of the estimator used is free from multicollinearity symptoms.

d. Heteroscedasticity Test

The results of the heteroscedasticity test with the white test method are as follows:

Figure 5: White. Heteroscedasticity Test

Heteroskedasticity Test: White

F-statistic	1.062508	Prob. F(13,20)	0.4385
Obs*R-squared	13.88916	Prob. Chi-Square(13)	0.3817
Scaled explained SS	14.12487	Prob. Chi-Square(13)	0.3651

Source: Data (Processed, 2022)

Prerequisites that must be met if the test result is above the significant level ($p > 0.05$) means that there is no heteroscedasticity, but if it is below the significant level ($p < 0.05$) then there is heteroscedasticity. Based on Figure 5, it is known that the significance value is seen from the prob. Chi-Square (13) is $0.3817 > 0.05$, it can be said that the test results used are free from heteroscedasticity.

2. Partial Test Statistic Test Results (t Test)

Table 3: Partial Test Results

Variable	t-count	Prob. t-count
CoViD 19 (X1)	4.2556	0.0002
Inflation (X2)	-0.3329	0.7416
BI7DRR . Interest Rate (X3)	-0.8418	0.4068
LDR (X4)	2.4831	0.0190

Source: Data (Processed, 2022)

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1. **Covid variable t test 19**

   Based on table 2 above, the CoViD 19 variable on the Non-Performing Loan (NPL) coefficient obtained a value of tcount = 4.255, which means t-count > t-table (4.255 > 1.697) with a significant value of 0.000 <0.05. This means that CoViD 19 has a significant effect on NPL.

2. **Inflation variable t test**

   Inflation variable on Non-Performing Loan (NPL) coefficient obtained tcount = -0.332 which means tcount < ttable (-0.332 < 1.697) with a significant value of 0.741 > 0.05. This means that inflation has no effect on non-performing loans.

3. **BI7DRR . interest rate variable t-test**

   Variable Interest Rate BI – 7 Day (Reverse) Repo Rate (BI7DRR) to Non-Performing Loan (NPL) coefficient obtained value tcount = -0.841, which means tcount < ttable (-0.841 <1.697) with a significance of 0.406 > 0.05. This means that BI7DRR has no effect on Non-Performing Loans.

4. **LDR variable t test**

   Variable Loan to Deposit Ratio (LDR) to Non-Performing Loan (NPL) coefficient obtained tcount = 2.843, which means tcount>ttable (2.843 > 1.697) with a significance of 0.019 <0.05. That is, LDR has a significant effect on Non-Performing Loans.

3. Coefficient of Determination (R2)

Adjusted R Square is 0.830, indicating that the ability of the independent variables (CoViD 19, Inflation, Interest Rate BI – 7 Day (Reverse) Repo Rate (BI7DRR) and Loan to Deposit Ratio (LDR)) in explaining the variation of the dependent variable (Non – Performing Loan (NPL)) is 83%, while the remaining 17% is caused by other variables not included in this study. The value of the coefficient of determination is quite large (more than 50%). It means that the ability of the independent variable in explaining the dependent variable in this study is quite large.

DISCUSSION

The estimation output results from the multiple regression analysis show that the statistical test results show that CoViD 19 has an effect on Non-Performing Loans (NPL) and has a positive relationship, so the hypothesis is accepted. Thus, where the greater the incidence of CoViD 19, the higher the NPL level. In the background it has been explained that during the CoViD 19 pandemic the number of positive cases of CoViD 19 increased sharply so that social restrictions were imposed, this of course had an impact on the productivity of the workforce in various economic sectors so that as many as 2.8 million workers experienced the impact of outbreak of CoViD 19 of them were housed and laid off. Business sectors such as MSMEs lose profits because people's purchasing power decreases due to the absence of income for consumer households, This results in the company or business sector making less

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sales and the overall economic output of the country declines. As a result, debtors who have loans from BPRs are unable to meet their loan repayment obligations. This will lead to or lead to bad loans and the NPL ratio of rural banks in Indonesia will increase. The NPL ratio that continues to increase will make banks in general and rural banks in particular become ineffective and suffer losses because there is no refund from debtors to BPRs, meaning that the larger the CoViD 19 case, the more it will affect the NPL of Rural Banks. The results of this study support previous research conducted by Tiwu (2020) which stated that CoViD 19 had an effect on NPL.

Statistical test results show that inflation has no effect on Non-Performing Loans (NPL) and has a negative relationship. This shows that the hypothesis is not accepted. The increase in inflation during the research period which reached 3.49% did not affect the NPL of rural banks. This is due to the inflation that occurred during that period was still classified as mild inflation (<10%). This result is supported by previous research which states that the inflation rate has no effect on NPL, Tiwu (2020) and Martina and Prastiwi (2014). These results mean that the higher the inflation rate, the smaller the NPL of the credit bank. This is contrary to research conducted by Ginting (2016) Linda, et al (2015) which states that inflation affects NPL.

The statistical test results show that the BI – 7 Day (Reverse) Repo Rate (BI7DRR) has no effect on NPL and has a negative relationship, this indicates that the hypothesis is not accepted. Thus, the high or low BI7DRR Interest Rate has no effect on the NPL. These results support the research conducted by Martina and Prastiwi (2014) which in their research explains that interest rates do not affect the NPL of Rural Banks. Which means that the Interest Rate determined by Bank Indonesia does not affect the NPL of Rural Banks. This research contradicts research conducted by Tiwu (2020), Utami and Wuryani (2020), Dewi and Ramantha (2015), Ginting (2016) and Linda,

Statistical test results show that LDR has an effect on NPL and has a positive relationship, this indicates that the hypothesis is accepted. This indicates that the higher the LDR ratio will cause an increase in the NPL ratio that occurs in rural credit banks, on the contrary, the lower the LDR ratio will cause a decrease in the NPL ratio. If the bank has a high LDR, then the bank will have a high risk of uncollectible loans which will result in non-performing loans and the bank will suffer losses. These results support the research conducted by Astrini et al (2018), which in their research explains that LDR affects the NPL of Rural Banks. This research contradicts the research conducted by Dewi and Ramantha (2015),

CONCLUSIONS AND RECOMMENDATIONS

This study found that CoViD 19 and LDR had an effect on the NPL of rural banks nationally, while BI7DRR interest rates and inflation had no effect. The results showed that rural credit banks had the highest NPL value of 8.63% and the lowest of 6.37% in the study period, this of course shows that the health of the bank is not good from the provisions of Bank

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Indonesia, a bank must have an NPL value below 5 %, so that the bank must be careful in distributing its credit given the risk of uncollectible credit provided.

Looking at the previous conclusions, there are several suggestions and considerations presented in this study, namely for banks, it is better to be more careful in distributing credit so as to reduce the risk of uncollectible loans given in order to avoid bankruptcy that could occur. For further research that wants to examine research related to CoViD 19, Inflation, Interest Rates BI – 7 Days (Reverse) Repo Rate (BI7DRR) and Loan to Deposit Ratio (LDR) on NPLs, it is hoped that other variables may be more influential. For further research so that the results obtained are better, it is better to add a wider number of observations.

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