

ANALYSIS EFFECT OF BI RATE, INFLATION, GRDP, EXPORT GROWTH AND NON-PERFORMING LOANS TO RURAL BANK (BPR) ROA IN LAMPUNG PROVINCE

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ABSTRACT : *Rural Credit Bank (BPR) is a financial institution that has an intermediation function with the activity of collecting funds from the public, in the form of Savings and Time Deposits, and channeling them back to the public in the form of credit. Businessly, the purpose of BPR is to make a profit. BPR's efforts to obtain profit are faced with problems, namely external problems in the form of unfavorable economic conditions and internal problems in the form of credit risk as indicated by the high Non-Performing Loans. This study aims to analyze the macroeconomic influence that is represented by BI Rate, Inflation, GRDP and Export Growth as well as Non-Performing Loans on BPR ROA in Lampung Province.*

This study uses multiple linear regression analysis tools with the Ordinary Least Square (OLS) method carried out using a time span from 2007 to 2017 and hypothesis testing uses t-statistics to test the partial regression coefficients and the significance of the overall effect with a level of significance of 5%. Because the data used are secondary data in the form of time series data that has wide fluctuations or instability, then testing ARCH (Autoregressive Conditional Heteroscedasticity) and GARCH (Generalized Autoregressive Conditional Heteroscedasticity) and to determine the accuracy of the model need to be tested on several classic assumptions that are underlying regression model. Testing the classic assumptions used in this study include tests of normality, heteroscedasticity, autocorrelation, and multicollinearity.

During the observation period showed that the research data were normally distributed. Based on the heteroscedasticity test and the multicollinearity test, no variables found that deviate from the classical assumptions, but based on the autocorrelation test found a positive autocorrelation. This autocorrelation problem is most likely due to the small amount of data (n). Overall this shows that the available data meets the requirements to use the multiple linear regression equation model.

Based on the test results the coefficient of determination obtained R² value of 0.5164 which means that the closeness of the overall independent variable to the dependent variable is 51.64%, while the remaining 48.36% is influenced by other variables outside this regression model. Based on the F statistical test at the 95% confidence level, the calculated F value is 1.28 and the F-Prob value is 0.3805 > α 5%, so it can be concluded that the overall variables of BI Rate, Inflation, GRDP, Export Growth and NPL influence ROA. Based on the t test it was concluded that the BI rate, inflation, GRDP and NPL did not have a significant negative effect on ROA, while export growth had no significant positive effect on ROA.

Keywords: BI Rate, Inflation, GRDP, Export Growth, NPL, ROA

BACKGROUND

Types of banks according to UU No. 7 of 1992 pasal 5 consist of commercial banks and rural banks (BPR). Bank Perkreditan Rakyat (BPR) is a financial intermediary whose main activity is raising funds from the public, in the form of Savings and Time Deposits, and channeling them back to the community in the form of credit.

The development and problems of BPR from 2006 to 2016 as described by the Otoritas Jasa Keuangan are as follows (OJK, 2016):

- From 2011 to 2015 an increase in BPR assets by 16% and until June 2016 an increase in BPR assets by Rp105 trillion, equivalent to 1.6% of total commercial bank assets.
- As of June 2016, an increase in third party BPR deposits amounted to Rp70 trillion and 70% was in the form of deposits.
- Increase in BPR loans to June 2016 amounting to Rp79 trillion.

In addition to experiencing positive developments, in the last five years the Rural Bank also experienced several problems, consists of capital, management, government, IT systems and legislation (OJK, 2016).

According to Infobank Research Bureau data, as of September 2015, in total there were 27 BPRs whose assets exceeded the assets of 34 commercial banks. The assets of the 27 rural banks ranged from Rp396.33 billion (owned by

the BP BPR of Bandar Lampung City) and Rp5.61 trillion (owned by BPR Eka Bumi Artha from Kota Metro, Lampung). With the ownership of these assets, BPR Eka established itself as the largest BPR in Indonesia, while surpassing the assets of 34 commercial banks. Meanwhile, the assets of BPR BP Kota Bandar Lampung exceeded assets owned by a commercial bank (<https://infobanknews.com/headline/ini-10-bpr-beraset-jumbo/> accessed on 4 March 2018).

Long before 2015 besides PT BPR Eka Bumi Artha in Lampung there was also a large BPR namely PT BPR Tripanca Setiadana. But in 2008, BPR Tripanca was liquidated due to the impact of the global financial crisis. The beginning of the crisis began on 9 August 2007 which was marked by news about the French BNP Paribas which had stated its inability to liquidate securities related to subprime mortgages from the US. The statement of BNP Paribas is the seeds of a crisis that then escalated and became the worst liquidity crisis in various parts of the world including Indonesia, although on different scales ([https://finance.detik.com/moneter/d-1115753/kronologi -and-background-crisis-financial-global-accessed 6 March 2019](https://finance.detik.com/moneter/d-1115753/kronologi-and-background-crisis-financial-global-accessed-6-March-2019)).

In general, regional macroeconomic conditions in Lampung Province in the pre and post crisis period are with the BI Rate, Inflation, GRDP and Export indicators shown in the following table:

Lampung Province Macro Economic Indicators in 2007 - 2018

Year	BI Rate	Inflation	GRDB	Export*
2007	8.71%	6.58%	5.24%	1,427.31
2008	8.67%	14.82%	4.78%	2,659.43
2009	7.15%	4.18%	4.42%	2,017.53
2010	6.50%	9.95%	6.95%	2,496.96

Year	BI Rate	Inflation	GRDB	Export*
2011	6.58%	4.24%	5.93%	3,241.95
2012	5.77%	4.30%	7.57%	3,712.30
2013	6.48%	7.56%	6.33%	3,927.40
2014	7.54%	8.06%	4.70%	3,903.06
2015	7.52%	4.34%	5.33%	3,864.61
2016	6.00%	2.78%	5.26%	3,101.06
2017	4.25%	3.02%	5.31%	3,871.54
2018	6.00%	3.13%	5.25%	3,440.05

Source: Results of Regional Financial Statistics Data Processing published by Bank Indonesia and BPR Publication Reports released by OJK.

Explanation:

* in million USD

** in trillions of rupiah

*** in billions of rupiah

From this table it can be seen that the economy in Lampung Province fluctuates with the dynamics of the national and world economy. As an illustration, in 2008 the Indonesian economy was affected by the global financial crisis.

The economy in Lampung Province was also affected by the global financial crisis as indicated by an increase in inflation which in 2007 amounted to 6.58%, rising to 14.8% in 2008. The monetary policy adopted by the government within 3 years of accelerating economic recovery was by lowering the BI Rate so that decreased by 156 basis points, from 8.71% in 2007 to 7.15% in 2009.

The starting point for economic recovery in Lampung Province starting in 2009 can be seen from the growth of non-oil exports followed by an increase in GRDP. The economic recovery that lasted until 2013 was followed by an increase in inflation to 8.06%. The economic condition in Lampung Province has improved again from 2015 to 2018 which is marked by a lower inflation rate than the GRDP and an increase in non-oil exports.

The development of conventional rural banks in Lampung Province with the parameters of assets, credit, NPL, profit and ROA (Return on Assets) in the last 12 years (2007 to 2018) are as follows:

BPR Industry Development in Lampung in 2007 - 2018

Tahun	Aset**	Kredit**	NPL	Laba***	ROA
2007	3.46	2.75	2.10%	138.30	4.00%
2008	3.62	3.43	26.80%	80.65	2.23%
2009	3.18	2.23	3.81%	174.62	5.49%
2010	3.62	2.84	1.80%	189.76	5.24%
2011	4.52	3.37	1.51%	248.81	5.50%
2012	5.35	3.85	1.47%	304.66	5.69%
2013	6.91	5.19	1.21%	376.26	5.45%
2014	8.67	6.09	1.22%	322.85	3.72%
2015	8.71	7.02	1.34%	318.42	3.66%
2016	10.53	7.65	1.46%	367.82	3.49%

2017	11.60	8.96	1.42%	403.30	3.47%
2018	12.53	9.63	1.37%	478.42	3.82%

Source: Regional Financial Statistics published by Bank Indonesia and BPR Publication Reports published by OJK processed data.

Information:

** in trillions of rupiah

*** in billions of rupiah

From this information it can be seen that the BPR industry in Lampung Province has experienced a crisis situation whose momentum coincided with the global financial crisis in 2008 which had an impact on decreasing assets and credit, increasing NPLs and low BPR ROA. This is because one of the large BPRs in Lampung was liquidated by Bank Indonesia because the condition was not healthy. This shows the performance of the BPR industry in Lampung Province is affected by the external environment in the form of changes in economic conditions.

BPR's efforts to obtain profits are always faced with external conditions including changes in economic conditions, technological changes, regulatory changes and failure risks, especially credit risk. One of the parameters of credit risk is the ratio of problem loans or what is called the NPL (Non Performing Loan). Non-performing loans are characterized by the failure of the debtor to return the loan, both the principal and the interest.

Based on these data researchers are interested in examining the significance of the effect of economic conditions represented by the variable BI rate, Inflation, GRDP, Export Growth and credit risk represented by the NPL variable on BPR performance in Lampung Province, represented by the variable ROA in 2007 to 2018. Research objectives is to analyze the effect of the BI rate, Inflation, GRDP, Export

Growth, and NPL on BPR ROA in Lampung Province from 2007 to 2018.

LITERATURE REVIEW

BPR Financial Performance

Comprehensive BPR performance can be seen from the level of BPR soundness which is assessed with a qualitative approach to various aspects that affect the condition and development of an BPR which includes capital factors (capital), quality of productive assets (Assets), management (Management), profitability (Earning), and liquidity (Liquidity) or abbreviated as CAMEL.

Profitability is used to measure a company's ability to generate profits. The profitability parameter commonly used to assess BPR performance is ROA. In the banking industry, ROA is the most objective measurement method based on available accounting data and the amount of ROA can reflect the results of a series of bank policies.

Return on Assets (ROA) is used to measure the efficiency and effectiveness of a company in generating profits by utilizing its assets. The greater Return on Assets (ROA) shows better performance, because the greater the rate of return. If Return on Assets (ROA) increases, it means that the company's profitability increases, so that the final impact is profitability enjoyed by shareholders (Husnan, 1998).

Macroeconomic Variables

According to Djamil (1989) macroeconomics is an indicator to analyze the state of all economic activity. Macroeconomic conditions as an external factor affect the company's operations in this case the decision making policies relating to the financial performance of banks. Several macroeconomic indicators or variables that can affect the company's financial performance, especially rural banks in Lampung Province, are: BI Rate, Inflation, Gross Regional Domestic Product and Export Growth.

BI rate can directly or indirectly affect the profitability of banks. An increase in the BI rate will be followed by an increase in the interest rates of third party deposits which will directly result in a decrease in the source of funds of third party banks. The decline in third party deposits occurs because of the transfer of public deposits to banks that can provide a greater rate. Rising interest rates on public deposits cannot automatically be followed by increases in loan interest rates. Deposits of deposits generally have a maturity of less than 1 year, so it is greatly affected by movements in the interest rate. Meanwhile, loans generally have a term of more than 1 year (long) so that in the short term they are less affected by changes in interest rates.

Inflation results in a decrease in the real value of savings because the interest rate of savings has decreased or due to rising prices of goods. This condition forces banks to raise bank interest rates to maintain their savers, thereby affecting bank profitability (Sukirno, 2016). Ali (2011) also believes that inflation has a significant negative effect on bank profitability in Pakistan.

GRDP on a national scale is called Gross Domestic Product (GDP). GDP as an indicator of the economy also has an influence on bank profitability. If the GDP increases, it is usually followed by an increase in public income. Increasing community income increases the ability of people to save (saving). This increase in saving will affect bank profitability. This theory is reinforced by the results of research conducted by Ali (2011) conducted on banks in Pakistan, where the results of his study concluded that Gross Domestic Product (GDP) has a significant positive relationship with the amount of savings collected by banks in Pakistan.

According to Sutawijaya (2010) export and investment activities play an important role in a country's economic activities. Exports generate foreign exchange inflows which will be used to finance imports of raw materials and capital goods needed in the production process which will form added value. In foreign trade, exports are divided into oil and gas exports (oil and gas) and non oil and gas exports (non oil and gas). The added value aggregation produced by all production units in the economy is the value of Gross Domestic Product (<https://www.bps.go.id> accessed March 11, 2019). If GDP rises, it will be followed by an increase in public income so that the ability to save (saving) also increases (Sukirno, 2016). Thus, in turn, an increase in GDP will indirectly have a positive effect on bank ROA.

Credit Risk

In addition to raising funds in the form of savings and deposits, BPR operational activities are channeling funds in the form of credit. Credit is a financial facility that allows a person or business entity to borrow money to buy a product and repay it within a specified

time period. However, lending has a high risk for banks in the form of the failure of the debtor to return the loan, both principal and interest, so affect the health of the bank.

The main indicator of the emergence of credit risk is the emergence of problem loans or Non-Performing Loans (NPL) which is an indicator of the quality of credit used by the supervisory authority of the BPR in measuring the performance of BPR loans. Nonperforming loans can have a broad impact and can hamper BPR operations thereby reducing BPR rentability.

On the revenue side, the emergence of NPLs means that banks do not receive loan interest income. In terms of costs, the emergence of NPLs means that banks must establish credit depreciation costs (PPAP) and continue to pay interest on funds channeled in the form of NPL loans and bear overhead costs for the settlement of problem loans.

Therefore, NPL will directly impact bank profits. This means that

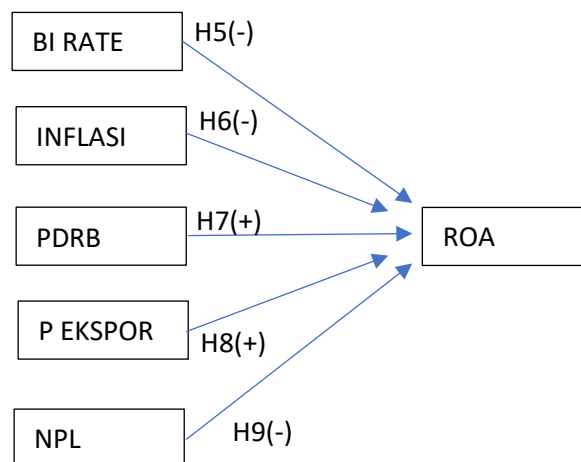
between NPL and profit has a negative correlation, the higher the reduction in bank profit. Puspitasari (2009) in his research examining the effect of NPL on bank ROA showed the result that NPL had a significant negative effect on ROA.

Hypothesis

This study intends to examine the effect of macroeconomics with BI Rate, Inflation, GRDP, Export Growth and credit risk indicators with NPL indicators on BPR performance with ROA indicators in Lampung Province during 2007 - 2018 with the following hypotheses:

- BI Rate has a negative effect on ROA
- Inflation has a negative effect on ROA
- GRDP has a positive effect on ROA
- Export growth has a positive effect on ROA
- NPL has a negative effect on ROA

The theoretical framework can be illustrated in the following chart:



RESEARCH METHODS

Data Types and Sources

The type of data used in this study is secondary data. BI rate data is obtained from the Bank Indonesia website, namely www.bi.go.id (for data from 2007 to 2010) and www.ojk.go.id (for data from 2011 to 2018). ROA and NPL data taken from the Publication Financial Reports of all BPRs in Lampung Province (consisting of 28 BPRs) from 2007 to 2018. While Lampung's regional macro data in the form of inflation, GRDP Growth, and Exports were obtained from the Economic Study and Regional Finance of Lampung Province quarterly 2007 - 2018.

Research Variables and Operational Definitions

The main dependent variable in this study is Return on Assets (ROA). The independent variables used in this study include the BI Rate, Inflation, Gross Regional Domestic Product (GRDP), and Export Growth.

Method of Collecting Data

This study uses two methods of data collection, namely library research by collecting data and theories relevant to the problem to be examined by conducting library research on literature and other literature materials such as articles, journals, books and previous research. In addition, the study also documentary studies through data collection on ROA, NPL, BI rate, inflation, GRDP Growth, and Exports obtained from www.bi.go.id (data for 2007-2010) and www.ojk.go.id (data for 2011 - 2017).

Model Analisis Data

1. Ordinary Least Square

Data Analysis Model

Ordinary Least Square

In this study Ordinary Least Square (OLS) is used to analyze the effect of the BI Rate, inflation, GRDP Growth, Export Growth and NPL on ROA, with the basic model as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Where:

Y	: ROA
α	: Constants
β_{1-5}	: Regression Coefficient
X_1	: NPL
X_2	: BI Rate
X_3	: Inflation
X_4	: GRDB
X_5	: Export Growth

2. ARCH and GARCH Test

The data in this study include time series data related to finance (financial time series) so that there is often a phenomenon of "volatility clustering" ie price periods showing highly fluctuating values over a certain time period followed by periods of price indicating relatively stable value. In some cases, financial data is often different first but still has wide fluctuations (volatility) which means that the variance of the times series data varies from time to time. This condition is known as autoregressive conditional heteroscedasticity (ARCH) which was developed by Engle in 1982 in (Gujarati, 2003: 856).

The ARCH and GARCH (Generalized Autoregressive Conditional Heteroscedasticity) models

are very suitable for use with data that has wide fluctuations or instability. Lots of GARCH model development has been done by several researchers that can be used to process heteroscedasticity time series data, including the Simple GARCH Model with Normally Distributed Residuals, GARCH models with t-distributed residuals, GARCH-M Models, Exponential GARCH (EGARCH)), Stationary GARCH (SGARCH), and Integrated GARCH (IGARCH).

3. Classic Assumption Test

According to the argument of Gauss-Markov (Greene, 2008: 49) Ordinary Least Square (OLS) is a presumption with the smallest variance, so it is BLUE (The Best Linear Unlimited Estimator). Gujarati (2003: 335) suggests several classic assumptions that must be met for a linear regression estimation results so that the results can be said to be good and efficient, namely: the regression model is linear, ie linear in parameters, residual confounding variable (μ) average value (zero mean value of disturbance μ), homokedasticity or variance of μ is constant, there is no autocorrelation between confounding variables (μ), covariance between μ and the independent variable (X) is zero, the amount of data (observation) must be more than the number of parameters It is estimated, there is no multicollinearity and confounding variables must be normally distributed or stochastic.

Based on these criteria, so that a model is said to be good then a number of tests are carried out namely the normality test, the multicollinearity test, the heteroscedasticity test, and the autocorrelation test.

a. Normality test

Normality test is carried out to test whether in a regression, dependent variable, independent variable or both have normal distribution or not have normal distribution, one of the test methods is to use graph analysis method, either normally plot or histogram graph.

b. Heteroscedasticity Test

Heteroscedasticity test was applied to find out whether or not there was a deviation from the classical assumption of heteroscedasticity, namely the existence of variance in residual variance for all observations in the regression model.

c. Autocorrelation Test

The autocorrelation test aims to test whether in a linear regression model there is a correlation between the disturbance error in the t period and the error in the t-1 period (previous) (Ghozali, 2006).

d. Multicollinearity test

Multicollinearity test aims to determine whether the regression model found a correlation between independent variables. Some indicators in detecting the presence of multicollinearity, among others (Gujarati, 2003: 341-356):

- R^2 values are too high (more than 0.8) but there is no or little significant t-statistic.
- The F-statistic value is significant, but the t-statistic of each variable is not significant.

To test the multicollinearity problem can see the correlation matrix of the independent variables, if there is a correlation coefficient of more than 0.8 then there is multicollinearity. To find out whether there is multicollinearity between variables, one way is to look at the Variance Inflation Factor (VIF) of

each independent variable against other independent variables.

Here is the equation of the VIF model:

$$VIF = \frac{1}{(1 - r^2_{ij})}$$

Based on the VIF equation model, then if the correlation value between the independent variables is equal to 1, then the acquisition of VIF values is infinite. Conversely, if colinearity does not occur between independent variables (correlation = 0), then VIF will be equal to 1.

One procedure that can be used to overcome the multicollinearity problem is the principal component regression (PCR). Regression of the main components starts from the analysis of the main components of the independent variables that will produce the main components that are mutually free. If all major components are included in the regression, the resulting model is equivalent to that obtained from the least squares method so that a large variety of variables due to multicollinearity is not reduced.

4. Hypothesis Tests

Hypothesis tests used in this study are the Coefficient of Determination (Adjusted R²), F Test (Model Feasibility Test), and Statistical Test t (Partial Test). The coefficient of determination (adjusted R²) serves to see the extent to which all independent variables can explain the dependent variable. F test shows whether all independent variables included in the model have a joint influence on the dependent variable (Ghozali, 2006). The t statistic test is used to test the effect of each independent variable that is used partially.

RESEARCH RESULTS AND EXPLANATIONS

ARCH and GARCH Test

By testing the intercept (β_0) gives insignificant results (ie prob (t) = 0.1090). Furthermore, based on the ARCH test (1) to ARCH (12) for errors from the model above, all the probability values are more than $\alpha = 0.05$ with the LM test. Thus the decision is that the Ho hypothesis is accepted, meaning that there is no ARCH effect in the ROA data.

Based on the Simple GARCH Model with Normally Distributed Residual Test, it can be concluded that there are no GARCH elements with normally distributed residuals in the ROA data. This can be seen from the probability of chi square which is not significant ($> \alpha = 5\%$) which is 65.09%, so that Ho is accepted which means the constant residual variant or the model used does not contain the GARCH element.

Based on the GARCH Model with t-Distributed Residual Test, it can be concluded that there is no GARCH element with residuals distributed following the t-distribution in ROA data. This can be seen from the probability of chi square which is not significant ($> \alpha = 5\%$), that is 65.14%, so that Ho is accepted, which means the constant residual variant or the model used does not contain the GARCH element of the t-distributed residual test model.

Based on the GARCH-M test it can be concluded that there is no GARCH-M element in the ROA data. This can be seen from the probability of chi square which is not significant ($> \alpha = 5\%$), that is 65.14%, so that Ho is accepted which means the constant residual variant or the model used does not contain the GARCH-M element.

Based on the E-GARCH test it can be concluded that there is no EGARCH element in the ROA data. This can be seen from the probability of the non-significant chi square ($> \alpha = 5\%$) that is 68.74%, so that H_0 is accepted which means the constant residual variant or the model used does not contain the EGARCH element in ROA data.

Based on the S-GARCH test it can be concluded that there is no S-GARCH element in the ROA data. This can be seen from the probability of the non-significant chi square ($> \alpha = 5\%$) that is 65.14%, so that H_0 is accepted which means the constant residual variant or the model used does not contain the S-GARCH element in ROA data.

Based on the I-GARCH test it can be concluded that there is no I-GARCH element in the ROA data. This can be seen from the probability of chi square which is not significant ($> \alpha = 5\%$), which is 55.79%, so that H_0 is accepted which means the constant residual variant or the model used does not contain the S-GARCH element in ROA data.

Based on the ARCH test and the GARCH test above (Simple GARCH with Normally Distributed Residuals, GARCH Models with t-distributed Residuals, GARCH-M, EGARCH, SGARCH and IGARCH) it can be concluded that there are no ARCH and GARCH elements in the data so OLS analysis is feasible for done.

Classic Assumption Test

Based on the normality test using a histogram graph, it is obtained that the symmetrical graph is not skewed to the right or to the left which means that the residuals are normally distributed so that the normal distribution assumptions are

met. In the normality plots graph, the scattered error points coincide near a straight line which means that the residuals are normally distributed so that the normal distribution assumptions are met.

Based on the Heteroscedasticity test conducted by the Park test using the SAS 8.0 program, it can be seen that the probability values of each dependent variable are: BI Rate (X1) of 0.9310, Inflation (X2) of 0.5569, GRDP (X3) of 0.9550, Export (X4) is 0.9883 and NPL (X5) is 0.6887, thus H_0 is accepted, which means that this regression model does not have heteroscedasticity.

Based on the Heteroscedasticity test conducted by the Glejser test using the SAS 8.0 program, it can be seen that the probability values of each dependent variable are: BI Rate (X1) of 0.9397, Inflation (X2) of 0.9421, GRDP (X3) of 0.7096, Export (X4) is 0.4486 and NPL (X5) is 0.8936, thus H_0 is accepted, which means that this regression model does not have heteroscedasticity.

Based on the autocorrelation test calculation results through the Durbin Watson statistical test with the SAS 8.0 application, the count is 1,126 while for d tables for $n = 12$ and $k = 5$, the lower limit (dL) is 0.3796 and the upper limit (dU) is 2.5061. Because the calculation results show that $dL \leq d \leq dU$ there is no positive correlation and the test is inconclusive or cannot be concluded. This autocorrelation problem is most likely due to the small amount of data (n).

Based on the multicollinearity assumption test shows that the five independent variables have a VIF value greater than 1 or in other words there is a multicollinearity problem. Multicollinearity can be overcome by using the method of Pricipal Component

Regression (PCR) or main component regression in such a way that $VIF = 1$, SE (standard error) of each variable is more stable than before the main component regression was used. By using the main component regression it can be proven that the multicollinearity problem can be overcome, so that if previously $VIF X_1, X_2, X_3, X_4$ and $X_5 > 1$, then after testing with the VIF main component regression, all of these variables would be 1.

Hypothesis Testing

Testing the coefficient of determination (R^2) refers to the main component regression test that is characterized by obtaining the value of $VIF = 1$. This F-statistic test is carried out to see how much influence the independent variables together on the dependent variable. Testing the overall hypothesis using the F-statistic test calculated using a 95% confidence level.

Based on the results of calculations to note that the coefficient of determination (R^2) is equal to 0.5164. This means that the closeness between the independent variables as a whole to the dependent variable is 51.64%, while the remaining 48.36% is influenced by other variables outside this regression model.

To test the coefficient of determination used the F statistical test at a 95% confidence level. The calculation results for the independent variables as a whole, the calculated F value of 1.28 and the F-Prob value of 0.3805. With an F-Prob value $> \alpha 5\%$, H_0 is accepted and H_a is rejected. Overall the BI Rate (X_1), Inflation X_2 , GRDP X_3 , Export X_4 and NPL X_5 influence ROA (Y).

Testing of each partial regression coefficient using the t test if the magnitude of the population variance is

unknown, so testing the hypothesis is determined by statistical values. Testing the regression coefficient hypothesis using the t-test at a 95% confidence level.

Based on the t probability test with the PCR, the regression equation from this research model is as follows:

$$\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \epsilon_t$$

$$\ln Y = 137.09 - 115.95 \ln X_1 + 2.97 \ln X_2 - 141.45 \ln X_3 + 92.58 \ln X_4 - 88.17 \ln X_5 + \epsilon_t$$

$$t_{hitung} = (1.36) \quad (-1.71) \quad (0.03) \quad (-1.28) \quad (0.56) \quad (-0.28)$$

Explanations

1. Effect of BI Rate on ROA

The estimation results of data analysis in this study indicate that the BI Rate variable has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that the BI rate has a negative effect on ROA, the test results are in accordance with the hypothesis set. The results of this test are in accordance with research from (Sahara, 2013) which states that the BI interest rate has a negative effect on ROA of Islamic Banks in Indonesia in 2008-2010.

In general, the BI rate is used as a reference for determining deposit rates (savings and deposits) so that the increase in the BI rate is usually followed by an increase in deposit rates, especially deposit rates. The negative effect between the BI rate on ROA occurs because the increase in the BI rate as a reference interest rate is immediately followed by an increase in deposit rates and cannot be followed by an increase in

lending rates resulting in a decrease in net interest margin which affects the decrease in ROA on BPRs.

This happens because of a gap mismatch between RSA (rate sensitive assets), namely credit and RSL (rate sensitive liabilities), namely deposits. Generally, credit term contracts (RSA) are longer than term deposits (RSL). If interest rates tend to rise, it will reduce the level of bank profits because the increase in deposit rates is not followed by an increase in lending rates. Conversely, if interest rates tend to fall, bank profits will increase because the decline in deposit rates is not followed by a decrease in loan interest rates.

2. Influence of Inflation on ROA

The estimation results of data analysis in this study indicate that the inflation variable has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that inflation has a negative effect on ROA, the data test results are in accordance with the hypothesis set. The results of this study are also in line with the results of Ali's (2011) study entitled "Bank-Specific and Macroeconomic Indicators of Profitability - Empirical Evidence from the Commercial Banks of Pakistan" which results concluded that inflation has a significant negative effect on profitability on commercial banks in Pakistan.

Generally, rising inflation will cause the real value of savings to plummet because people will use their assets to meet the costs of expenditure due to rising prices for goods (Sukirno, 2016). This condition affects the decline in people's purchasing power and the economy as well as people's ability to

save so that both directly and indirectly affects the performance of the BPR.

3. Effect of GRDP on ROA

The estimation results of data analysis in this study indicate that the GRDP variable has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that the GRDP has a positive effect on ROA, the results of the study are not in accordance with the hypothesis set. The results of this study differ from the results of Ali's (2011) study entitled "Bank-Specific and Macroeconomic Indicators of Profitability - Empirical Evidence from the Commercial Banks of Pakistan" which concluded that concluding that Gross Domestic Product (GDP) has a significant positive relationship with magnitude savings collected by banks in Pakistan.

4. Effect of Export Growth on ROA

The estimation results of data analysis in this study indicate that export growth variables have a positive and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that export growth has a positive effect on ROA, the results of this study are still in accordance with the initial hypothesis even though the effect is not significant.

5. Effect of NPL on ROA

The estimation results of data analysis in this study indicate that the NPL variable has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that NPL has a negative effect on ROA, the results of this study are still relatively in accordance with the initial hypothesis although the effect is not significant.

The results of this study are in line with the results of research conducted by Agustiningrum (2012) "Analysis of the Effect of CAR, NPL, and LDR on Profitability in Banking Companies" whose results indicate that NPL has a negative and significant effect on bank performance. In addition, Puspitasari Research (2009) "Analysis of the Effect of CAR, NPL, PDN, NIM, BOPO, LDR, and SBI Interest Rates on ROA" results also show that NPL has a negative and significant effect on ROA.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the results of the analysis conclusions can be drawn related to the objectives of this study are as follows:

1. The regression model of macroeconomic influence and non-performing loans on BPR performance in Lampung Province is feasible because it has met and passed the ARCH and GARCH tests, and the classic assumption test is the normality test, heteroscedasticity test, autocorrelation test and multicollinearity test.
2. Test results of the coefficient of determination (R^2) the influence of macroeconomic (BI Rate, Inflation, GRDP, Export Growth) and non-performing loans on the performance of rural banks in Lampung Province have an R^2 of 0.5164. This means that the model formed is quite good which is 51.64% variation in the dependent variable ROA can be explained well by the dependent variables namely BI Rate, Inflation, GRDP, Export Growth and NPL. While the remaining 48.36% is

explained by other variables outside this regression model.

3. BI Rate has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that the BI rate has a negative effect on ROA, the test results are in accordance with the hypothesis set.
4. Inflation has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that inflation has a negative effect on ROA, the data test results are in accordance with the hypothesis set.
5. GRDP has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that the GRDP has a positive effect on ROA, the results of the study are not in accordance with the hypothesis set.
6. Export growth has a positive and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that export growth has a positive effect on ROA, the results of this study are still in accordance with the initial hypothesis even though the effect is not significant.
7. NPL has a negative and not significant relationship to ROA. When compared with the hypothesis set in the research design which states that NPL has a negative effect on ROA, the results of this study are still relatively in accordance with the initial hypothesis although the effect is not significant.

Suggestions

1. BPR industry in Lampung Province especially BPRs that focus on micro and small productive economic sectors, should continue to focus on the micro and small productive economic sectors which are the core competencies of BPRs because based on this research seen from their insignificant influence. The productive sector is relatively not exposed to external (macroeconomic) conditions.
2. With the insignificance of external factors influencing performance, BPRs in Lampung Province should focus on strengthening internal factors, including capital, management, governance, IT systems, service quality and HR quality.
3. The BPR industry in Lampung Province should be able to control credit risk, one of which is the NPL indicator because credit risk is a risk that is quite influential on BPR performance. Credit risk control can be carried out by applying prudential principles and applying adequate credit risk management.

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