ANALYSIS OF THE EFFECT OF NPL, BOPO AND LDR ON CAR WITH ROA AS AN INTERVENING VARIABLE IN BANKING

(Case Study: Conventional Commercial Banks on the Indonesia Stock Exchange (IDX) for the 2016-2021 Period)

Muhammad Iqbal [a*], Yohanes Indrayono [a], Herdiyana[a]

[a]Universitas Pakuan, Bogor, Indonesia

[*]Corresponding Author: muhammad.iqbalup@gmail.com

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Abstract.

Financial performance for bank financial institutions demonstrates how management is focused on managing the business and balancing the interests of shareholders, consumers, monetary authorities, and the general public whose activities are tied to banking. This study aims to provide a rationale for the relationship between Non-Performing Loans (NPL), Operating Costs on Operating Income (BOPO), Loan to Deposit Ratio (LDR), and Capital Adequacy Ratio (CAR) in Conventional Banks listed on the IDX for 2016–2021. 35 conventional commercial banks in Indonesia that will still be in operation by 2021 make up the population of this study. Purposive sampling was used in the sampling process, and 7 banks financial institutions were chosen as samples. The study's findings show that: (1) NPL has no significant impact on ROA; (2) BOPO has a substantial impact; (3) LDR has a significant impact; and (4) CAR factors have a large positive impact on ROA. The findings of this study show that the higher the CAR, the higher the ROA attained by the bank since the capital of the bank is better able to maintain the potential of the danger of losing its business, which also improves performance.

Keywords: Non Performing Loans, Operating Costs to Operating Income, Loan to Deposit Ratio, Capital Adequacy Ratio, Return on Assets.

I. INTRODUCTION

The banking sector is one of the important sectors in the Indonesian economy, because banking is one of the foundations that drives the economy given its function as an intermediary institution, organizer of payment transactions, as well as a means of transmitting monetary policy. The function of the banking sector is to collect funds from the public and mobilize these public funds by channeling them back to the community in the form of fund utilization or investment activities. Conventional commercial banks in the last six years have shown a fluctuating track record of performance. During 2016-2021 the effectiveness of the performance of banking companies in the last six years has continued to decline, where in 2016-2017 ROA has increased in 2017 recorded ROA of 2.51% and in 2018-2020 it has decreased ROA of 1.27% and in 2021 it will increase by 1.72%. CAR showed a significant increase, seen in 2016-2021 of 22.34%. NPL showed a significant decrease in 2016-2018 where in 2019 it was 2.77%, in 2020 NPL experienced a significant increase of 3.33% and in 2021 NPL decreased again by 3.11%. BOPO showed a significant decrease in 2016-2018 where in 2018 it was 62.60%, in 2019 BOPO experienced a significant increase of 66.16% and in 2020 BOPO experienced a significant increase of 73.49% and in in 2021 BOPO experienced a significant decrease of 66.40%. On the other hand, for the fluctuating level of efficiency in bank financing, it is known that the highest LDR in 2019 was 83.38% while the lowest was in 2021 of 69.65%. While Commercial Banks are banks that can provide services in payment traffic. As it is known that the functions of banks in general (Dendawijaya **[1]**) are agent of trust, agent of development, agent of services. (Hasibuan **[2]**) Banks are financial institutions, meaning banks are business entities whose wealth is mainly in the form of financial assets and is profit and socially motivated, so they are not just looking for profit. (Kasmir **[3]**) "Banks are known as places to exchange money or as tables where money is exchanged. This money exchange activity is now known as a foreign exchange trader (money changer). According to (Kuncoro and Suhardjono **[4]**) the main function of a bank is that it is a bank as an institution that collects public funds in the form of savings. Bank as an institution that distributes public funds in the form of credit. bank as an institution that launches trade transactions and circulation of money. According to (Sabir **[5]**), a bank's financial performance is a description of the bank's financial condition in a certain period, both covering aspects of raising funds and channeling funds.

According to (Brightman and Houston **[6]**) Return On Investment (ROI) or often referred to as Return On Assets (ROA) is a measurement of the company's overall ability to generate profits with the total assets available in the company. (Kasmir **[7]**) Return on investment or better known as Return On Investment or Return On Assets is a ratio that shows the return on total assets used in the company, Return On Investment (ROI) is also a measure of management effectiveness in manage the investment. Return on Assets (ROA) is one of the ratios used to measure the profitability of a bank. Analysis of Return on Assets (ROA) or often translated into Indonesian as Economic Profitability to measure a company's ability to generate profits in the past. According to (Kasmir **[7]**), the Capital Adequacy Ratio (CAR) is a comparison of the ratio between the ratio of capital to Risk Weighted Assets and according to government regulations.

According to (Hasibuan **[2]**), in other words, 8% CAR means that the total capital is 8% of the RWA, or vice versa, the RWA amount is 12.5 times the capital available or owned by the bank concerned. The CAR ratio is used to measure the adequacy of the bank's capital to support assets that contain or generate risk, for example, loans. The higher the CAR, the stronger the bank's ability to bear the risk of any credit or risky productive assets.

Definition of Non Performing Loan (NPL) The Bank's main activity is providing credit to its customers. Provision of sound credit has implications for the smooth return of credit by customers on the loan principal and or interest expense. Giving credit without prior analysis will be very dangerous for the bank in this case it should provide data according to the customer's condition, thereby minimizing the occurrence of failure to pay credit. There are causes of problem loans that can be controlled and some that cannot be controlled. Non-current loan principal and interest can directly reduce bank performance, (Christiano **[8]**). NPF (Non Performing Financing) which is the same as NPL (Non Performing Loan) in conventional banks is a ratio related to credit or financing ratios. The NPF ratio shows the ability of bank management to manage non-performing financing so that it gets smaller. The higher the NPF ratio, the worse the bank's management in managing financing, so that the bank will easily experience financial distress.

This ratio, which is often called the efficiency ratio, is used to measure the ability of bank management to control operational costs against operating income (Dewi **[9]**). Operating costs are costs incurred by the bank in order to carry out its main business activities such as interest costs, marketing costs, labor costs and other operating costs. Meanwhile, operating income is the main income of the bank, namely income derived from placement of funds in the form of credit and other operating income. (Riyadi [**10**]) said that the lower the BOPO ratio means the better the performance of the bank's management, because it is more efficient in using existing resources in the company. According to (Kasmir **[7]**) BOPO is used to measure business efficiency carried out by banks, it can also measure the amount of bank fees used to obtain earning assets.

According to (Prasetyo **[11]**), Liquidity is a term used to indicate a supply of cash and other assets that are easily converted into cash. The measurement tool for assessing the soundness of a bank in terms of the liquidity factor that is often used is the LDR (Loan to Deposit Ratio) ratio.

Loan to Deposit Ratio (LDR) is the ratio between the total amount of credit extended by the bank and the funds received by the bank. The Loan to Deposit Ratio states how far the bank's ability to pay back the withdrawal of funds made by depositors by relying on credit provided as a source of liquidity, in other words how far the provision of credit to customers can offset the bank's obligation to immediately fulfill requests from depositors who want to withdraw their money. has been used by banks to provide credit. (Dendawijaya **[1]**).

II. RESEARCH METHODS

This research was conducted at Conventional Commercial Banks listed on the Indonesia Stock Exchange (IDX) for the 2016-2021 period. Where the data was obtained through www.idx.co.id, Indonesian Capital Market Directory (ICMD). Quantitative research is a type of research that produces findings that can be achieved using statistical procedures or other means of quantification. The quantitative approach focuses on symptoms that have certain characteristics in human life which he calls variables (Sujarweni **[12]**). Research design is the procedures used by researchers in the selection, collection and analysis of data as a whole. These stages are influenced by several aspects, including: 1) research objectives, 2) type of relationship between variables, 3) unit of analysis, 4) time horizon, and 5) construct measurement.

The purpose of this study is to find an explanation of the effect of Non Performing Loans (NPL), Operating Costs on Operating Income (BOPO), Loan to Deposit Ratio (LDR) on Capital Adequacy Ratio (CAR) with Return on Assets (ROA) as an Intervening Variable. in Conventional Banks registered on the IDX for 2016-2021. Thus, the form of the relationship between the variables in this study is causal with the unit of analysis, namely Conventional Banks registered on the IDX with a research period from 2016 to 2021. The construct measurement for each variable uses a ratio measurement scale.

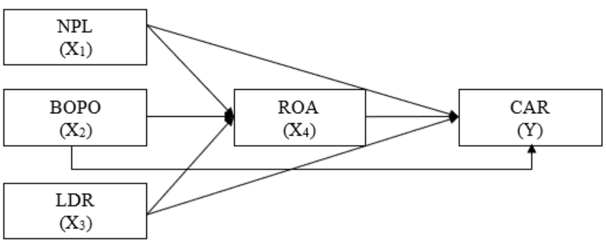

Figure 1. Research Design

The data analysis method used in this study is descriptive statistics and regression analysis. Descriptive statistical analysis is statistics used to analyze data by describing or describing the data that has been collected as it is without intending to make general conclusions or generalizations. As for the regression analysis used, namely panel data regression analysis. Panel data is a combination of time series data and cross section data. Panel data regression can provide more data so that it will produce a greater degree of freedom. Then panel data regression is able to overcome problems that arise when there is an omitted-variable problem. Data processing uses the E-views program.

III. RESULTS AND DISCUSSION

The type of research used in this study is verification. This type of research is used to explain the relationship between variables. In this study, the independent variables were NPL, BOPO, LDR and ROA, while the dependent variable was CAR. The research method used is explanatory survey. The unit of analysis used in this study is organization, namely the data source whose unit of analysis is the respondent from the division/company. because this research is research on an organization or banking industry company listed on the Indonesian Stock Exchange. The analytical method used in this study is quantitative, namely analysis carried out by reading tables, graphs or figures that are available and then carrying out some descriptions or interpretations of these data. The statistical analysis method used is a simple linear regression equation. Based on the sample selection method used, namely the non-probability sampling method, in this case purposive sampling. So, seven samples of companies were determined with predetermined considerations and criteria, where the samples consisted of annual financial reports during the study period, namely seven years.

The sampling technique in this study was a purposive sampling technique. This technique is determined to select sample members specifically based on the research objectives and the suitability of the criteria set by the researcher. The population in this study is limited to conventional commercial banks that are registered with Bank Indonesia for the 2016 period and are active until 2021, and publish their financial reports in the year of research, in which 7 banks were obtained as a sample. This study examines the effect of NPL, BOPO, LDR, ROA on CAR, the findings in this study are limited to these four independent variables. Based on the results of data processing that has been done to answer the proposed hypotheses, it is known that all four hypotheses are accepted. This shows that there is a significant influence between the independent and dependent variables. The following is an analysis related to the influence between variables according to the hypothesis proposed:

Effect of Non-Performing Loans (NPL) on Return on Assets (ROA).

Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of Non Performing Loans (NPL) is more than 0.05 (0.8123 > 0.05), so it can be concluded that NPL has no significant effect on ROA, so the hypothesis is rejected. The results of this study show the same thing as Prasanjaya research, **[13]**. shows that Non-Performing Loans (NPL) have a negative effect on Return on Assets (ROA). These results support the results of research conducted by Avrita and Pangestuti **[14]** that Non-Performing Loans (NPL) have a negative effect on Return on Assets (ROA). Dewi **[9]** stated that Non-Performing Loans (NPL) have a negative effect on Return on Assets (ROA). The higher the Non-Performing Loan (NPL) results in higher interest arrears on credit which has the potential to reduce interest income and reduce changes in profits.

Effect of BOPO on Return on Assets (ROA).

Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of BOPO is less than 0.05 (0.0000 <0.05), so it can be concluded that BOPO has a significant effect on ROA, so the hypothesis is accepted. The results of this study show the same thing as Ragil **[15]**. The addition or reduction of operational costs will affect ROA, as well as the addition or reduction of operating income will affect ROA.

Effect of Loan to Deposit Ratio (LDR) on Return on Assets (ROA)

Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of the Loan to Deposit Ratio (LDR) is less than 0.05 (0.0001 <0.05), so it can be concluded that LDR has a significant effect on ROA, so the hypothesis is accepted. The results of this study show the same thing as the research of Putu **[16]** which states that the Loan to Deposit Ratio (LDR) has a positive effect on Return on Assets (ROA), by Prasanjaya **[13]** which states that Loans to Deposit Ratio (LDR) has a positive effect on Return on Assets (ROA). The LDR ratio shows a comparison between the volume of credit compared to the volume of deposits held by banks. The higher this ratio, the lower the liquidity capacity of the bank concerned so that the possibility of a bank in a troubled condition is getting bigger. The standard set by Bank Indonesia for the LDR ratio is 78-92%.

Effect of Non-Performing Loans (NPL) on Capital Adequacy Ratio (CAR)

Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of Non Performing Loans (NPL) has a significance value of 0.2098 > 0.05, so it can be concluded that NPL has no significant effect on CAR, so the hypothesis is rejected. The results of this study show the same thing as Choerudin and Kusdiasmo's research **[17]** which states that the negative effect of Non-Performing Loans (NPL) on Capital Adequacy Ratio (CAR). Non Performing Loan (NPL) is a ratio that shows a bank's ability to manage credit that is experiencing problems. The higher this ratio, the worse the quality of bank credit which causes the number of non-performing loans to increase and cause losses, conversely if the NPL is lower, the profit or profitability of the bank will increase.

Effect of BOPO on Capital Adequacy Ratio (CAR)

Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of BOPO has a significance value of 0.8091 > 0.05, so it can be concluded that BOPO has no significant effect on CAR, so the hypothesis is rejected. The results of this study show the same thing as Prasanjaya [14] research showing that operating efficiency (BOPO) has a negative effect on Capital Adequacy Ratio (CAR). These results indicate that BOPO has a negative and significant effect on the Capital Adequacy Ratio (CAR). The smaller the BOPO ratio, the more efficient the operational costs incurred by the bank concerned. BOPO has an influence on banking performance because it shows how much a bank can make efficiency with the operational costs incurred. Any increase in operational costs will result in reduced profit before tax and will ultimately reduce the Bank's Capital Adequacy Ratio (CAR).

Effect of Loan to Deposit Ratio (LDR) on Capital Adequacy Ratio (CAR)

Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of the Loan to Deposit Ratio (LDR) has a significance value of 0.0049 <0.05, so it can be concluded that LDR has a significant effect on CAR, so the hypothesis is accepted. The results of this study indicate that the results of the first and second regression equation model tests that have been carried out indicate that the influence of the Loan to Deposit Ratio (LDR) has a significant effect on the Capital Adequacy Ratio (CAR). The Loan to Deposit Ratio (LDR) states how far the bank's ability to pay back the withdrawal of funds made by depositors by relying on the credit provided as a source of liquidity.

Effect of Return on Assets (ROA) on Capital Adequacy Ratio (CAR).

Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of Return on Assets (ROA) has a significance value of 0.0344 <0.05, so it can be concluded that ROA has a significant effect on CAR, so the hypothesis is accepted. The results of this study indicate that Return on Assets (ROA) has a positive and significant effect on Capital Adequacy Ratio (CAR). If the ROA of conventional banks increases, the capital adequacy ratio (CAR) of conventional banks will also experience an increase and vice versa, if ROA experiences a decrease, the capital adequacy ratio (CAR) will also experience a decrease. Return on Assets (ROA) is a measurement of the company's ability as a whole in generating profits with the total assets available in the company.

IV. CONCLUSION

Based on the results of research and data analysis through proving the hypothesis of the issues raised regarding the factors that influence ROA in banking industry companies for the 2014-2020 period, it can be concluded from this study as Effect of Non-Performing Loans (NPL) on Return On Assets (ROA). Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of Non Performing Loans (NPL) is more than 0.05 (0.8123 > 0.05), so it can be concluded that NPL has no significant effect on ROA, so the hypothesis is rejected. Effect of Operational Costs on Operating Income (BOPO) on Return on Assets (ROA). Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of BOPO is less than 0.05 (0.0000 <0.05), so it can be concluded that BOPO has a significant effect on ROA, so the hypothesis is accepted. Effect of Loan to Deposit Ratio (LDR) on Return on Assets (ROA). Based on the significance, if the significance <0.05 then there is a significant effect, and if the significance> 0.05 then there is no significant effect. In table 4.15 it can be seen that the significant value of the Loan to Deposit Ratio (LDR) is less than 0.05 (0.0001 <0.05), so it can be concluded that LDR has a significant effect on ROA, so the hypothesis is accepted. Effect of Capital Adequacy Ratio (CAR) on Return on Assets (ROA). Based on the results of the partial test (t test) between the bank's CAR and ROA, it shows a t-value of 2,967; t table of 2.01669; df 43; a = 0.025. Because the value of tcount < ttable (2.967 <2.01669), on the positive side, it can be said that Ho is rejected and Ha is accepted, which means there is a positive and significant relationship between the CAR variable and ROA. This means that CAR has a significant positive effect on bank ROA. The results of this study indicate that the greater the CAR, the greater the ROA obtained by the bank because the greater the CAR, the better the ability of the bank's capital to maintain the possibility of the risk of losing its business so that the bank's performance also increases.

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