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# Net Interest Margin and Capital Adequacy Ratio: Mediating Influence of Return on Asset

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**Abstract**

**Purpose:** The objectives of this study are to analyze the effect of liquidity, credit risk, and operating efficiency on bank profitability as proxied by Return on Assets and analyze the role of Net Interest Margin (NIM) and Capital Adequacy Ratio (CAR) as an intervening variable.

**Method:** The population in this study was banking companies listed on the Indonesia Stock Exchange (IDX) for 2015-2019. The sampling technique used the purposive sampling technique with 37 companies and 167 analysis units. The data analysis in this study used multiple linear regression analysis and path analysis.

**Finding:** The results show that liquidity and operating efficiency significantly affect profitability. Credit risk has a significant negative effect on profitability, and NIM and CAR have a significant positive effect on profitability. Liquidity has a significant positive effect on NIM and CAR. Credit risk has an insignificant negative effect on NIM, but a significant positive on CAR, while operational efficiency has a significant negative effect on NIM. Meanwhile, NIM and CAR can only mediate liquidity to profitability, and otherwise, CAR can be mediating credit risk to profitability.

**Novelty:** NIM and CAR can be mediate the effect of liquidity on profitability, and in particular, CAR mediates market risk on profitability. Therefore, investors should pay attention to financial banking ratios so that they do not fail in making investments.

**Keywords:** *Profitability, Liquidity, Credit Risk, Operational Efficiency, Net Interest Margin, Capital Adequacy Ratio.*

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## INTRODUCTION

Economic growth is expected to increase every year. One of them is Indonesia's economic growth which is expected to increase from the previous year. However, the ability of banks to make profits began to weaken. This is reflected in the return on assets (ROA) of banking as of September 2019 which began to decrease. The Financial Services Authority (OJK) noted that until the end of the third quarter of 2019, the ROA position of banks was at the level of 2.48%.

PT Bank Tabungan Negara Tbk (BTN), for example, recorded an ROA as of September 2019 of only 0.44%, a significant decrease from the previous year's 0.90%. Also, the profitability ratio is the lowest in recent years. In addition to the small demand for new loans, this is also due to the many rules that banks have to fulfill and this leads to eroding profits (Kontan, 2019).

Profitability is one of the main objectives of banking companies in running their business.

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Banking companies must have sufficient profit or become profitable so that banks can pay interest because most of the funds owned by banks come from third-party funds.

Liquidity is the ability of banks to fulfill their financial debt. A bank with a good level of liquidity means that bank has a good ability to manage its finances. The level of liquidity can be indicated by the Loan to Deposit Ratio (LDR) in banking companies. In addition, a bank can be said to have good performance if the bank is efficient. The level of efficiency of a bank is shown by how the bank manages the operating income received and the operating costs incurred as operational efficiency. The more able to manage both well, the bank is said to be more efficient. Operational efficiency at the bank can be shown by the Operational Efficiency (OE).

The level of bank performance can also be shown by the ability of banks to channel credit. Credit distribution is one of the important roles of banking companies for the community. Distributing credit to the public will provide interest income for banks, where the level of interest income can be one of the measures for bank performance. This interest income will show the market risk that the bank has. The level of market risk is shown by the Net Interest Margin (NIM) in the financial statements. In addition, the ability of banks to overcome credit risk also indicates the bank's performance. A bank can be said to be good if the bank has a low level of credit risk. Credit risk indicated by Non-Performing Loan (NPL) in banking companies.

In addition, this study presents the Cash Adequacy Ratio (CAR) as a mediating variable. The presence of this variable is intended to re-examine the contradictions that occur among many studies. Among them According to (Ben Naceur & Goaied, 2008), there is a positive relationship between CAR and Net Interest Margin (NIM), while (Chester & Horvath, 2009) and (Brock & Franken, 2003) argue that the two ratios have an inverse relationship. On other intermediation function indicators, Amriani (2012) concludes that there is a positive relationship between CAR and Loan to Deposit Ratio (LDR). Therefore, it is important for this study to prove the presence of CAR in this research model.

This phenomenon encourages this study to conduct research on these ratios. This study analyzes the effect of liquidity, credit risk, and operational efficiency on profitability as proxied by the ROA ratio. Market risk as measured by the NIM ratio and CAR is used as an intervening or mediator variable in this study. The population and sz used are banking companies listed on the IDX for the period 2015-2019.

The novelty of this paper is the mediating role of NIM and CAR on the effect of liquidity on profitability, and in particular CAR mediates market risk on profitability. Therefore, investors should pay attention to banking financial ratios so that they do not fail in making investments.

The ability of companies to increase their competitive advantage through good company performance by developing all the corporate resources is explained by Resourced Based Theory. Resourced Based Theory was coined by (Wenerfelt, 1984) explained that corporate resources question can be in the form of assets, quality of employees, technology, organizational structure, and information on implementing the corporate strategy to improve corporate efficiency and effectiveness.

In addition to the RBT, this study is supported by the signal theory, which was first initiated by (Spence, 1973) explained the relationship between internal parties as signalers and external parties as signal recipients. Signal theory explains that the signal given by the management as an internal party is in the form of relevant information needed by the investor as an external party to decide on the signal received. This theory was experiencing development, which was put forward by Penrose (1996), which is company management who has information in the form of corporate financial condition, past records, and good company performance will tend to convey this information to external parties.

Both RBT theory and signal theory support the variables used in this study, namely financial ratios. This is because, through the RBT theory, companies can maintain good company performance and corporate financial condition in the long term by understanding the relationship between company resources, capabilities, and competitive advantage as well as the company's

profitability. In addition, the signal theory explains that the signal given by the management as an internal party is in the form of relevant information needed by the investor as an external party to make decisions on the received signal.

Liquidity as measured by the Loan to Deposit Ratio is one of the financial ratios that shows the level of liquidity of a bank. The LDR ratio is a comparison between the total loans provided by banks to customers and all the funds they havo.e. The more funds collected from the public by banks, the higher the credit that will be given to people who need funds by banks, so that bank interest income will increase, as well as bank profits will also increase (Erturk & Ziblim, 2020)

Other studies by Khoirunnisa et al. (2016) and Anindiansyah et al. (2020) concludes that LDR negatively affects ROA. If the bank disburses too much credit, it is feared that it will cause the bank to become illiquid. Therefore, if the LDR ratio is more than 85%, it will cause high operational costs, which will result in lower ROA of the bank.

**$H_1$: LDR have a significant positive effect on ROA**

The distribution of credit to customers is one of the biggest contributions to the profits obtained by banking companies. The distribution of credit does not fully run well, due to the risk of credit or non-performing loans. Credit risk in banking companies is shown by Non-Performing Loan or NPL ratio. The NPL ratio is a comparison between non-performing loans and the total loans issued by banks. A bank that has an NPL ratio of more than 5% indicates that the bank has a high non-performing loan. The percentage of NPL ratio that is more than 5% indicates that the bank's credit quality is poor, causing the number of non-performing loans to increase Yudiartini dan Dharmadiaksa, (2016). Thus, the higher the credit risk, the lower the profitability obtained by the bank. This is in line with the research of (Dewi et al., 2017) and (Peling & Sedana, 2018) which stated that the NPL ratio has a negative and significant effect on the ROA ratio.

**$H_2$: NPL have a significant negative effect on ROA**

Operational efficiency as measured by the OE ratio shows the comparison between operating costs and operating income of a banking company. A bank can be said to be efficient if the bank can manage the operational costs incurred with operating income received by the bank. The more balanced the two, the more efficient the bank. A bank that has an OE ratio of more than 93%, indicates that the bank is incurring operating costs that are higher than its operating income. This is in accordance with the research of (Khoirunnisa et al., 2016) and (Peling & Sedana, 2018) which stated that the OE ratio has a negative and significant influence on the ROA ratio.

**$H_3$: OE have a significant negative effect on ROA**

Liquidity indicated by the LDR ratio indicates the ability of banks to redistribute funds withdrawn by customers by managing loans provided. The LDR ratio is measured by comparing the total credit given to customers with all funds owned by a bank. The better a bank is in distributing its credit, the higher the income that will be received by the bank. This means that the bank has a good ability to manage all its funds as a source of credit funds. An increase in the LDR ratio due to credit growth will lead to growth in market risk when compared to the growth in bank interest costs Raharjo et al., (2014). This is in accordance with the (Nugrahaning & Wahyudi, 2016) study as well as (Purba & Triaryati, 2018) which states that the LDR ratio has a positive and significant influence on the NIM ratio.

**$H_4$: LDR have a significant positive effect on NIM**

Credit risk indicates the level of non-performing loans experienced by a bank. Credit risk, which is measured by the NPL ratio, is a comparison between non-performing loans experienced by a bank and total loans distributed by banks. According to (Hasibuan, 2009), the NPL ratio shows a bank's ability to manage the problem credit it has on credit provided by the bank. A bank that can manage its credit, means it has a low level of problem credit. A bank that has a low

credit risk means that it will provide high income to the bank. This is because the interest income received by the bank will increase. Thus, the lower the credit risk will increase the interest income, which becomes a measure for market risk. This is in accordance with research (Nugrahaning & Wahyudi, 2016) and (Purba & Triaryati, 2018) which states that the ratio of NPL negatively affects the NIM ratio.

**$H_5$: NPL have a significant positive effect on NIM**

Operational efficiency is one of the financial ratios used as a measure for the level of efficiency of a bank. This ratio indicates the ability of banks to manage their operations. If a bank can manage it well, then the bank can be interpreted as having good performance. Good performance will increase the amount of funds that can be channeled to the community so that the income to be received by the bank can increase (Riyadi, 2006). A bank that has good and efficient performance is indicated by the percentage of the OE ratio, which is less than 93% so that the higher the market risk it has. This is in accordance with (Durguti et al., 2014) and (Margaretha, 2017) which states that OE ratios have a negative influence on NIM.

**$H_6$: OE have a significant positive effect on NIM**

Credit distribution activities by banking companies will generate interest income for banks, which becomes a market risk for banks. Market risk can be measured by Net Interest Margin, which is a financial ratio that shows the level of ability of a bank to manage its productive assets to generate net interest income (Rohmiati et al., 2019).A bank that can distribute its credit in high amounts will provide higher interest income for the bank. The interest income rate is indicated by the percentage of the NIM ratio. A bank with a NIM ratio of more than 2% means that the bank has a high amount of lending. The more credit that is distributed, the higher the market risk, so that it can affect the increase in profitability received by the bank. This is in accordance with the research of (N F Yatiningsih & Chabachib, 2015) and (Dewi et al., 2017) which states that the NIM ratio has a significant positive effect on the ROA ratio.

**$H_7$: NIM have a significant negative effect on ROA**

LDR shows the value of the ability or composition of the credit ratio provided with funds or own capital used or distributed. The high LDR value shows the ability of banks to channel funds rather than collect funds from the public. The high value of a bank's LDR will reduce the value of bank liquidity (Dendawijaya, 2014). Then hypothesis 8 states as follows:

**$H_8$: LDR have a significant positive effect on CAR**

NPL indicates an increase in non-performing loans to total loans owned by banks. This risk will result in a decrease in profit as a form of income owned by the bank concerned. Therefore, it will result in the CAR value which will also decrease. So this research proposes the following hypothesis:

**$H_9$: NPL have a significant positive effect on CAR**

OE is a ratio that shows the ability of bank management to control operational costs against operating income. The greater the OE ratio will give a signal that the bank is less efficient in controlling its operational costs. So the greater this ratio will reduce the CAR value of a bank. So this study proposes the following hypothesis:

**$H_{10}$: OE have a significant negative effect on CAR**

CAR shows the value of a bank's ability to maintain capital stability in guaranteeing public deposits or savings. The high CAR will affect the bank's ability to generate profits. This high CAR must be supported by the management of bank assets in generating profits. Therefore, the higher the CAR value, the higher the profit value from the use of bank assets. So that ROA will increase, thus the hypothesis of this research is as follows:

**$H_{11}$: CAR have a significant negative effect on ROA**

## METHODS

The study used quantitative methods of secondary data. The population used in this study is banking companies listed on the Indonesia Stock Exchange (IDX) for the period 2015-2019. The sampling technique used was the purposive sampling technique, which produced 167 units of analysis.

The analysis data used is a multiple linear regression analysis. The study used multiple linear regression analysis by conducting descriptive statistical tests and classical assumption tests consisting of normality tests, multicollinearity tests, autocorrelation tests, and heteroskedasticity tests. furthermore, the following is the statistical model used to test the research hypotheses:

$$ROA = \alpha + \beta1LDR + \beta2NPL + \beta3OE + \beta4NIM + \beta5CAR + \beta6LDR*NIM + \beta7NPL*NIM + \beta8OE*NIM + \beta9LDR*CAR + \beta10NPL*CAR + \beta11OE*CAR + e$$

Information:

LDR : loan to deposit ratio
NPL : non-performing loan
OE : operating efficiency
NIM : net interest margin
CAR : capital adequacy ratio

## RESULTS AND DISCUSSION

Information about the data used in this study can be known through descriptive statistical analysis. This analysis describes the data from each variable in the study as seen from the mean value, standard deviation, variance, maximum, minimum, sum, range, kurtosis, and skewness (Ghozali, 2018). The results of descriptive statistical testing are presented as follows.

The mean value of LDR is 0.857, which means that sample firms have a loan on average of 85.7% out of their deposits. Sample firms have 3.49% non-performing loans and return 97.1% out of their total assets. Before performing regression tests and hypothesis testing with path analysis, classic assumption tests are carried out first. The classical assumption test on this study was conducted on both regression models. This test consists of a normality test, a multicollinearity test, an autocorrelation test, and a heteroskedasticity test.

The normality test on regression shows the Asymp value. Sig is 0.875, so it can be concluded that the data in this study is normally distributed. Multicollinearity tests on regression showed that each variable had a VIF value of less than 10 and a tolerance value greater than 0.10. So, it can be concluded that there is no problem of multicollinearity in the data in this study.

The autocorrelation test on regression showed Durbin Watson's value of 1.476. This is less than the dl value presented in the DW table of 1.6982. This suggests that in regression, autocorrelation is rejected. Furthermore, data transformation is carried out so that there is no autocorrelation from regression. After the data transformation, Durbin Watson's score was 1,986. This value indicates that there is no autocorrelation of either positive or negative in regression.

**Table 1.** Descriptive Statistical Results

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| LDR | 167 | 0.03 | 3.90 | 0.857 | 0.385 |
| NPL | 167 | 0.00 | 0.16 | 0.034 | 0.020 |
| OE | 167 | 0.58 | 1.96 | 0.908 | 0.179 |
| NIM | 167 | 0.00 | 0.09 | 0.046 | 0.014 |
| ROA | 167 | -11.15 | 5.87 | 0.973 | 2.396 |
| CAR | 167 | 20.70 | 35.62 | 29.229 | 2.430 |

Source: Author's research

**Table 2.** Regression Assumption Test

| Model | Unstandardized Coefficients | | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|
| | B | Std. Error | | | Tolerance | VIF |
| (Constant) | -0.701 | 0.877 | -0.800 | 0.005 | | |
| LDR | -0.201 | 0.741 | -0.271 | 0.787 | 0.213 | 4.694 |
| NPL | -127.082 | 93.028 | -1.366 | 0.174 | 0.005 | 2.630 |
| OE | 7.407 | 4.609 | 1.607 | 0.110 | 0.026 | 3.131 |
| LDR_NIM | -24.446 | 17.987 | -1.359 | 0.176 | 0.082 | 1.262 |
| NPL_NIM | -453.685 | 233.370 | -1.944 | 0.054 | 0.534 | 1.874 |
| OE_NIM | 21.745 | 18.782 | 1.158 | 0.249 | 0.330 | 3.027 |
| LDR_CAR | 0.061 | 0.039 | 1.560 | 0.121 | 0.106 | 7.409 |
| NPL_CAR | 4.514 | 3.161 | 1.428 | 0.155 | 0.004 | 2.212 |
| OE_CAR | -0.225 | 0.154 | -1.456 | 0.147 | 0.021 | 4.697 |
| Asymp. Sig. (2-tailed) – Kolmogorov Smirnov = 0.875 | | | | | | |
| Durbin-Watson = 1.986 | | | | | | |

Source: Author's research

Heteroskedasticity tests for the regression showed that each independent variable had a significance value more significant than α sig.0.05. So, it can be concluded that each independent variable in this study did not experience heteroskedasticity problems. Furthermore, hypothesis testing is done using multiple linear regression and path analysis with the following results.

The results of the $H_1$ analysis showed that liquidity had a negative and significant effect on profitability. Based on table 3, the result of $H_1$ obtained a coefficient value of -0.113 and a significance value of 0.022 (< 0.05); thus, $H_1$ is rejected. The percentage of LDR ratio is more than 85% in a bank, indicating that the bank is increasingly illiquid. Thus, the profit obtained is also not maximized, and it will reduce profitability, which is proxied by the ROA ratio in this study. The results support the research of (Khoirunnisa et al., 2016) and the study (Anindiansyah et al., 2020), which states that the LDR ratio has a negative and significant influence on ROA.

The result of the $H_2$ test shows that the NPL ratio has an insignificant effect on the ROA ratio. The results of the $H_2$ hypothesis test show a coefficient value of -2.039 and a significance value of 0.070 (> 0.05); thus, H2 is rejected. This indicates that an increase in the percentage of the NPL ratio will not be followed by a decrease or increase in profitability proxied by the ROA ratio.

**Table 3.** Summary of Hypothesis Test Results

| Hhypothesis | Variable | | | Estimate | P | Result |
|---|---|---|---|---|---|---|
| H1 | ROA | <--- | LDR | -0.113 | 0.022 | Rejected |
| H2 | ROA | <--- | NPL | -2.039 | 0.070 | Rejected |
| H3 | ROA | <--- | OE | -2.697 | 0.049 | Accepted |
| H4 | NIM | <--- | LDR | 0.006 | 0.022 | Accepted |
| H5 | NIM | <--- | NPL | 0.096 | 0.090 | Rejected |
| H6 | NIM | <--- | OE | -0.043 | 0.008 | Accepted |
| H7 | ROA | <--- | NIM | 2.941 | 0.003 | Accepted |
| H8 | CAR | <--- | LDR | 6.964 | 0.005 | Accepted |
| H9 | CAR | <--- | NPL | 4.262 | *** | Accepted |
| H10 | CAR | <--- | OE | -0.864 | 0.001 | Accepted |
| H11 | ROA | <--- | CAR | -0.035 | 0.021 | Accepted |

Source: Author's research

This is due to a bank that has a percentage of NPL ratio of more than 5% means that the bank has a high credit risk as well. The results of this study support the research (Siwu et al., 2019), which states that the ratio of NPL has an insignificant effect on ROA.

Hypothesis $H_3$ hypothesizes that operating efficiency negatively and significantly affects profitability. Table 3 shows the result of $H_3$ with a coefficient value of -2.697 and a significance value of 0.049 (< 0.05); thus, $H_3$ is accepted. The percentage of OE ratio is more than 93% in a bank, indicating that the bank is increasingly inefficient in managing its operational activities because the costs incurred are more significant than the income received. The more inefficient a bank is, the lower the profitability, which is proxied by the ROA ratio in this study. These results support the (Khoirunnisa et al., 2016) and (Peling & Sedana, 2018) studies which state that the OE ratio has a negative and significant effect on the ROA ratio.

Hypothesis H4 is that liquidity has a positive and significant effect on market risk. Table 3 shows the results of hypothesis testing for $H_4$ with a coefficient value of 0.006 and a significance value of 0.022 (< 0.05); thus, $H_4$ is accepted. A bank with an LDR ratio of more than 85% means that the bank can distribute large amounts of credit. This credit distribution provides the largest role in obtaining interest income at the bank. Thus, an increase in the LDR ratio will be followed by an increase in market risk. The results support the (Nugrahaning & Wahyudi, 2016) and (Purba & Triaryati, 2018) studies, which state that the LDR ratio has a significant positive effect on the NIM ratio.

Hypothesis $H_5$ shows that the NPL ratio has a negative and insignificant effect on the NIM ratio. Table 3 shows the result of $H_6$ with a coefficient value of 0.096 and a significance value of 0.090 (> 0.05); thus, $H_5$ is rejected. This shows that an increase in the percentage of NPL ratio will be followed by a decrease in interest income. This is because a bank with an NPL ratio of more than 5% means that the bank has high credit risk, so the interest income received will also decrease. The results of this study support the (Nugrahaning & Wahyudi, 2016) study, which states that the NPL ratio has a negative and insignificant effect on the NIM ratio.

Hypothesis $H_6$ hypothesizes that operating efficiency negatively and significantly affects NIM. The H6 hypothesis test in table 3 shows a coefficient value of -0.042 and a significance value of 0.008 (< 0.05); thus, $H_6$ is accepted. The percentage of OE ratio, which is more than 93% at a bank, indicates that the bank is increasingly inefficient in managing its operational activities because the costs incurred are more significant than the income received. The higher the OE ratio, will reduce the income received by the bank. The results support the study (Anindiansyah et al., 2020), which states that the ratio of OE has a significant negative effect on the NIM ratio.

Hypothesis $H_7$ is that market risk has a positive and significant effect on profitability. The H7 test in table 3 shows a coefficient value of 2.941 and a significance value of 0.003 (< 0.05); thus, H7 is accepted. If a bank has a percentage of the NIM ratio of more than 2%, then the profitability obtained is also higher. Thus, if the NIM ratio increases, the ROA ratio will also increase. The results support the (N F Yatiningsih & Chabachib, 2015) study and (Nur Fakhri Yatiningsih & Chabachib, 2015), which stated that the NIM ratio had a significant positive effect on the ROA ratio.

Hypothesis 8 states that liquidity significantly affects the Cash Adequacy Ratio. The results show a coefficient value of 6.964 with a p-value of 0.005 (<0.05), so hypothesis 8 is accepted. This means that if the LDR increases, it will be followed by an increase in CAR, which is indicated by a positive coefficient value.

Hypothesis 9 states that Non-Performance Loan has a significant effect on the Cash Adequacy Ratio is accepted. The results show a coefficient value of 4.262 with a p-value of 0.000 (<0.05), so hypothesis 9 is accepted. This means that if the NPL increases, it will be followed by an increase in CAR, which is indicated by a positive coefficient value.

Hypothesis 10, which states that Operational Efficiency has a significant negative effect on the Cash Adequacy Ratio, is accepted. The results show a coefficient value of -0.864 with a p-value of 0.001 (<0.05), so hypothesis 10 is accepted. This means that if the OE increases, it will

**Table 4.** Sobel Test

| Direction Effect | t | t-table | Decision |
|---|---|---|---|
| LDR to ROA through NIM | -0,150 | 1,655 | Not Mediate |
| NPL to ROA through NIM | -0,138 | 1,655 | Not Mediate |
| OE to ROA through NIM | -0,200 | 1,655 | Not Mediate |
| LDR to ROA through CAR | -0,224 | 1,655 | Not Mediate |
| NPL to ROA through CAR | -0,189 | 1,655 | Not Mediate |
| OE to ROA through CAR | -1,936 | 1,655 | Mediate |

be followed by a decrease in the Bank's CAR value as indicated by a negative coefficient value.

Hypothesis 11 states that the Cash Adequacy Ratio has a significant negative effect on profitability. The results show a coefficient value of -0.035 with a p-value of 0.015 (<0.05), so hypothesis 11 is accepted. This means that if the CAR increases, it will be followed by a decrease in the ROA value indicated by a negative coefficient value. The following is a summary of the results of the Sobel test used to see the mediating ability of the NIM and ROA variables:

The results of the Sobel test above show that NIM is not able to mediate the effect of LDR, NPL, and OE on ROA, and CAR is not able to mediate the effect of LDR and NPL on ROA. However, CAR can mediate the effect of OE on ROA. This proves that the more effective banks are in controlling their operational costs, the higher the CAR, which in turn will increase the bank's ability to generate profits.

## CONCLUSION

Based on the analysis that has been done, it can be concluded that LDR and OE have a significant negative influence on ROA. Meanwhile, NPL has a negative and insignificant effect on ROA, as well as NIM has a significant positive influence on ROA. Furthermore, LDR has a significant positive influence on NIM. NPL has a negative and insignificant influence on NIM, whereas OE has a significant negative influence on NIM. While LDR, NPL, and OE have a significant on CAR. Based on the Sobel tests that have been conducted, NIM can't mediate LDR, NPL, and OE to ROA. Meanwhile, CAR can mediate OE to ROA.

The results of this study require banks to always maintain the stability of LDR, NPL, and OE to maintain CAR, which in the end, will be able to increase the ROA of the bank itself. Where the increase in ROA shows that the bank can have a good NIM. so that the bank's performance will be responded well by the market. Furthermore, potential investors who wish to invest in banking companies should pay attention to the financial ratios owned by the banks so that they can reduce the risk of loss and misjudgment in investing in the targeted banking companies by paying attention to these ratios.

This study has limitations both from the sample and the variables used. Future research is expected to use other variables in the study, such as using the ROE ratio to proxy profitability. The ROE ratio can be used as a profitability measurement if the research focuses on the level of return obtained from investors' investments. This ratio can be used in research related to stocks.

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