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The Role Of BOPO In Moderating The Effect Of NIM On Profit Growth In State-Owned Banks

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Abstract: *This study examines the role of the Operating Expenses to Operating Income ratio (BOPO) in moderating the effect of Net Interest Margin (NIM) on profit growth in state-owned banks in Indonesia. Banking profitability is not only determined by interest margin performance but also by operational efficiency, making BOPO a critical contextual factor in explaining profit growth dynamics. The population consists of four state-owned banks listed on the Indonesia Stock Exchange, observed over the period 2013–2023. Using a saturated sampling technique, the study analyzes 44 annual financial report observations. The research applies a quantitative approach with panel data regression and Moderated Regression Analysis (MRA). The results indicate that NIM has a positive and significant effect on profit growth, showing that higher interest margin management contributes directly to increased profitability. Furthermore, the interaction term between NIM and BOPO is statistically significant, confirming that BOPO acts as a moderating variable that strengthens the relationship between NIM and profit growth. This finding implies that the positive impact of NIM on profit growth becomes stronger when banks operate more efficiently in controlling operating costs relative to operating income. The study highlights the importance of integrating margin management and operational efficiency strategies to enhance sustainable profit growth in state-owned banking institutions.*
Keywords: *Operating Expenses, Operating Income, Net Interest Margin, Profit Growth*

INTRODUCTION

Banking plays a crucial role in the national economy as an intermediary institution that collects funds from the public and redistributes them in the form of credit. A bank's financial performance reflects the effectiveness of management in managing assets and liabilities to maintain optimal profit. One key indicator often used to measure a bank's ability to generate income from its productive assets is the Net Interest Margin (NIM). The NIM reflects a bank's ability to manage the difference between interest income and interest expenses on its productive assets. The higher the NIM, the greater the bank's potential for increasing profit growth.

Profit growth is influenced not only by interest income but also by operational efficiency, as reflected in the Operating Costs to Operating Income. The BOPO ratio indicates how efficiently a bank carries out its operations. A high BOPO indicates high operating expenses, which can depress profitability even if interest income is high. Therefore, operational efficiency plays a crucial role as a moderating factor that can strengthen or weaken the influence of NIM on profit growth.

State-owned banks (BUMN) such as Bank Mandiri, BRI, BNI, and BTN have a large business scale and a strategic role in supporting the Indonesian economy. The financial performance of these four banks serves as a barometer of the stability of the national banking sector. In the last decade (2013–2023), state-owned banks have faced various challenges such as interest rate fluctuations, changes in monetary policy, the digitalization of banking services, and the impact of the COVID-19 pandemic, which has impacted interest income and operational efficiency. Therefore, it is interesting to examine the extent to which NIM influences profit growth at these state-owned banks, and whether the level of operational efficiency (BOPO) can moderate this relationship. In carrying out their business activities, banks require public trust. This quantitative increase in banking has led to intense competition, particularly between government and private banks, forcing customers to think critically and selectively when choosing the best bank to hold their funds (Umam & Murwanti, 2024)

There are several reasons why state-owned banks were chosen as the object of this research. First, state-owned banks are part of the Indonesian government's banking restructuring program, operating in the financial services sector as intermediaries to boost the national economy. Second, state-owned banks contribute approximately 45% to national banking profits, and throughout 2017, they generated a net profit of 65.73 trillion rupiah, a jump from 53.52 trillion rupiah the previous year (CNN Indonesia, 2018).

Regarding profit growth, the following empirical phenomena occurred in state-owned banking companies during 2021 – 2023

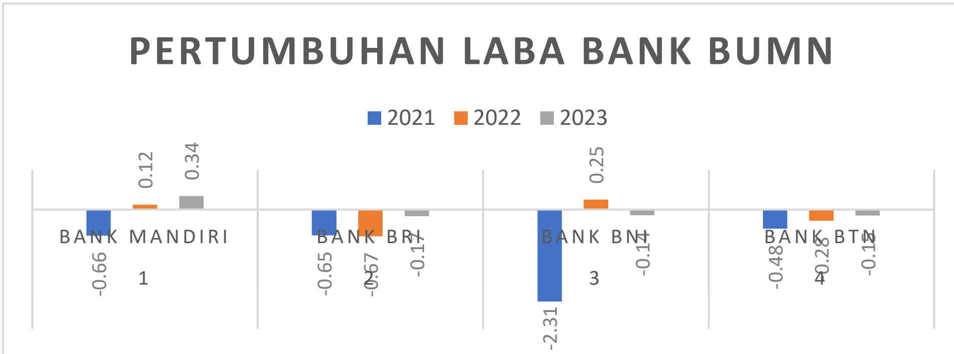

Figure 1. *Profit Growth*

This phenomenon shows that a high NIM does not always lead to increased profits, as low operational efficiency can depress profitability. In other words, BOPO can be an important moderating factor in determining how strongly NIM influences bank profit growth.

According to Syafaat (2021) NIM has no influence on the profit growth of state-owned banks, Alamsyah (2017) partially NIM has no influence on profit growth, According to Angel Siti Fatimah & Aini Rahmah (2022) NIM has no influence on profit growth, According to Sinulingga et al. (2023) NIM has no influence on profit growth, According to shows that partially (Alamsyah, 2017) Net Interest Margin has a positive and significant effect on profit growth.

Referring to the background that has been described previously, the problem formulation in this study is: (1) Net Interest Margin affect profit growth in state-owned bank companies listed on the IDX in 2013-2023? (2) BOPO able to moderate the effect of NIM on profit growth in state-owned bank companies listed on the IDX in 2013-2023?

Based on the formulation of the problem that has been mentioned, the objectives of this study are to: (1) Test and analyze the influence of Net Interest Margin on profit growth in state-owned bank companies listed on the IDX in 2013-2023, (2) Analyze the role of BOPO in moderating the influence of NIM on profit growth in state-owned bank companies listed on the IDX in 2013-2023.

METHOD

The population in this study is four state-owned banks listed on the Indonesia Stock Exchange (IDX) between 2013 and 2023. The annual financial reports used for this study are as follows. The sample is part of the journal and the characteristics possessed by the population.

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Sugiyono (2017) said that there are several methods used for sampling, namely probability sampling and non-probability sampling. Probability sampling is a sampling technique that provides an equal opportunity for each member of the population to be selected as a sample member. While non-probability sampling is a technique that does not provide an equal opportunity for each member to be selected as a sample. The method used in this study is saturated sampling which is included in non-probability sampling. The sample in this study was 4 state-owned banks x 11 years (annual financial reports) = 44 company financial report data.

This study used two methods of regression analysis: regression analysis and moderated regression analysis (MRA). The aim is to study the relationship between the independent variable (X) and the dependent variable (Y). The equation is as follows:

$$Y = a + \boldsymbol{\beta x} + \boldsymbol{\beta} Z + \boldsymbol{\beta X} * \boldsymbol{\beta Z} + +e$$

RESULT AND DISCUSSION

Results

The following are the results of the descriptive statistical analysis:

	Y	X	Z
Mean	1.616973	2.187214	1.824622
Median	0.968458	0.597143	1.772642
Maximum	1.829304	0.711807	1.991758
Minimum	-1.154902	-1.267606	-0.850405
Std. Dev.	0.936051	0.587244	1.152021
Skewness	-0.793183	-1.150172	-0.228470
Kurtosis	2.200271	3.310034	1.139791
Jarque-Bera	5.786221	9.877453	6.726815
Probability	0.055404	0.007164	0.034617
Sum	27.14682	8.237406	36.28337
Sum Sq. Dev.	37.67621	14.82877	57.06755
Observations	44	44	44

Table 1. *Results of descriptive statistical analysis*
Source: Data processed by Eviews Ver 12

Based on the table above, it can be seen that the number of data observations in this study was 44. Then, in the details of the descriptive statistical analysis data for each independent variable and dependent variable, the average or mean value and standard deviation. For the Y variable, the mean value was 1.616973 with a standard deviation value of 0.936051, indicating that the descriptive results of the variable data used were good. Meanwhile, in the X variable, the mean value is 2.187214 with a standard deviation value of 0.587244. A larger mean value indicates that the descriptive results of the variable data used are good. And the Z variable has a mean value of 1.824622 with a standard deviation value of 1.152021. A larger mean value indicates that the descriptive results of the variable data used are good.

In this study, the analytical technique used is panel data regression analysis to illustrate the effect of NIM on profit growth, moderated by BOPO. The estimation method in the previous section shows that the best estimation method used in this study is the Random Effect Model (REM). The following is the regression model:

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	0.718524	0.141072	5.093312	0.0000
X (NIM)	0.542431	0.231276	2.345382	0.0238

Model Information

Item	Description
Dependent Variable	Y (Profit Growth)
Method	Panel Least Squares
Sample Period	2013–2023
Periods Included	11
Cross-sections	4 Banks
Total Observations	44 (Balanced Panel)
Estimation Date	23 January 2025
Estimation Time	09:05

Table 2. *Panel Data Regression Analysis Results*

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	0.626248	0.170237	3.678688	0.0007
X (NIM)	-0.939113	0.469928	-1.998417	0.0523
Z (BOPO)	-0.119198	0.124020	-0.961125	0.3420
XZ (NIM × BOPO)	0.164592	0.169697	3.969920	0.0378

Model Information

Item	Description
Dependent Variable	Y (Profit Growth)
Method	Panel Least Squares
Model	Moderated Regression Analysis (Interaction Model)
Sample Period	2013–2023
Periods Included	11
Cross-sections	4 Banks
Total Observations	44 (Balanced Panel)
Estimation Date	23 January 2025
Estimation Time	09:10

Table 3. *Moderated Regression Analysis (MRA) Results*

It can be seen in the table above that the t-statistic value of the NIM*BOPO interaction variable is 3.969920 and the prob value is 0.0378. and the number of data in this study is 44 (n) tables of 2.015. So that the T-statistic > T table or 3.969920 > 2.015 And the prob value <0.05 or 0.0378 <0.05 means that Bopo is proven to be able to moderate in strengthening the influence of NIM on profit growth, so H2 in the study is accepted.

Discussion

The results of the first hypothesis test indicate that X has a positive contribution from the influence between these variables, with a T-statistic value > T-table (2.345382 > 2.015) and a significance value of 0.0238 < p-value of 0.05.

The results indicate that Net Interest Margin (NIM) has a positive and significant influence on profit growth. This positive influence indicates that any increase in NIM will contribute to increased company profit growth. The significance of this research result indicates that the influence of NIM on profit growth is not a coincidence but is reliable and generalizable to a wider population. In other words, NIM is a significant factor that significantly influences a company's ability to increase its profits. The implication of this finding is that company management needs to focus on effective NIM management, for example by optimizing loan and deposit interest rates, and managing the composition of assets and liabilities to improve company profitability.

According to Alamsyah (2017) shows that partially Net Interest Margin has a positive and significant effect on profit growth. Other studies conclude that According to Syafaat (2021) NIM has no effect on profit growth of state-owned banks, According to Alamsyah (2017) partially NIM has no effect on profit growth, According to Angel Siti Fatimah & Aini Rahmah (2022) NIM has no effect on profit growth, According to Sinulingga et al. (2023) NIM has no effect on profit growth

The results of the second hypothesis test indicate that BOPO moderates the effect of X on Y, with a T-statistic value > T-table, or 3.969920 > 2.015. The probability value is <0.05 or 0.0378 <0.05.

BOPO (Operating Costs to Operating Income) acts as a moderating variable that positively and significantly influences the relationship between NIM (Net Interest Margin) and profit growth, indicating that bank operational efficiency plays a significant role in strengthening the impact of NIM on profit growth. When BOPO acts as a moderating variable, the effect of NIM on profit growth is not only direct but also strengthened by the bank's ability to manage its operating costs. In other words, the more efficient a bank is in controlling operating costs relative to its operating income, the greater the positive impact of NIM on profit growth. This occurs because good BOPO management reflects a bank's ability to generate greater revenue with more efficient costs, so any increase in NIM will contribute more significantly to profit growth.

CONCLUSION

This study concludes that Net Interest Margin (NIM) and operational efficiency, as reflected by the Operating Expenses to Operating Income ratio (BOPO), play an important and interconnected role in explaining profit growth in Indonesian state-owned banks. Based on panel data from four state-owned banks observed over the 2013–2023 period and analyzed using panel regression and Moderated Regression Analysis, the findings demonstrate that NIM has a positive and statistically significant effect on profit growth, indicating that stronger interest margin management directly contributes to improved profitability performance. More importantly, the interaction between NIM and BOPO is significant, confirming that BOPO functions as a moderating variable that strengthens the influence of NIM on profit growth. This means that the positive contribution of NIM becomes more effective when supported by better operational efficiency and tighter cost control. Banks that are able to maintain efficient operating cost structures relative to operating income can translate interest margin advantages into higher profit growth more consistently. These results imply that profit improvement strategies in state-owned banks should not rely solely on margin expansion but must be integrated with efficiency-oriented management policies. Practically, bank management is encouraged to align asset–liability pricing strategies with disciplined operational cost control. Future research is recommended to include additional financial and macroeconomic variables and a broader banking sample to enrich the explanatory power and generalizability of the model.

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