Net Interest Margin, Non-performing Loans, Capital Education Ratio, to Return on Assets of BUMN Banks Listed On The Indonesia Stock Exchange

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Keywords:	Abstract
Net I nterest M argin, Non-performing Loans, C apital Education Ratio, Return on Assets	This study aims to analyze the Net I nterest M argin, Non-performing L oans, C apital Education Ratio , to Return on Assets of BUMN Banks Listed On The Indonesia Stock Exchange . The type of data used in this research is quantitative and qualitative data while the data source used is secondary data. The research was conducted using data from annual published financial reports for a period of 10 years, from 2012 to 2021. The research variables consisted of the independent variables, namely NIM, NPL, CAR, and the dependent variable, namely ROA. The analytical method used is multiple linear regression analysis, and hypothesis testing. Net Interest Margin at BUMN banks has a significant influence on return on assets. Non-performing loans at Bank Mandiri have a significant influence on return on assets, meanwhile at Bank BTN, BRI and BNI, they have no significant effect on return on assets. Capital Education Ratio at BRI bank has a significant effect on return on assets, while Bank Mandiri, BTN, and BNI have no significant effect on return on assets.

1. Introduction

Banks play a pivotal role in advancing the Indonesian economic system by serving as crucial financial intermediaries, bridging the gap between entities with surplus economic funds and those in need of financial support (Mandasari, 2015). In Indonesia, banks operate under two primary functions: Commercial Banks and Rural Credit Banks (BPR). Commercial banks encompass various groups, such as state-owned (BUMN) banks, private banks, foreign banks, and joint venture banks. BUMN banks, being state-owned, significantly contribute to the economy as they utilize state assets for capital, thereby necessitating consistent profitability to maintain performance standards. The government's involvement in BUMN banks instills confidence among the public regarding their reliability, fostering continued scrutiny to ensure their financial health.

The financial performance of a bank serves as a barometer of its overall strength, crucial for investors seeking secure investment avenues. Financial ratios, including average loan interest rates, average deposit interest rates, and overall bank profitability, offer insights into a bank's performance. Profitability, a key metric, can be assessed using ratios like Return On Assets (ROA), calculated by comparing after-tax profits to total assets. A higher ROA signifies better bank performance and vice versa. Factors influencing bank performance include Net Profit Margin, Capital Adequacy Ratio, and Non-Performing Loans, with the failure of banking businesses detectable through comprehensive analysis of company performance.

This study aims to delve into the bank's ability to sustain profitability amidst fluctuating financial ratios, recognizing the potential disparities between prior research findings and future realities. The research problem formulation centers on examining the impact of Net Profit Margin, Capital Adequacy Ratio, and Non-Performing Loans on Return On Assets. Analyzing the drivers behind

fluctuations in bank profitability, as evidenced by Net Interest Margin, Capital Adequacy Ratio, and Non-Performing Loans, this research seeks to elucidate their effects on Return On Assets.

2. literature Review

The definition of financial performance is the work of various parts of a company which can be seen in the company's financial condition in a certain period related to aspects of raising and distributing funds which are assessed based on indicators of capital adequacy, liquidity and company profitability. According to Fahmi (2016), financial performance is a description of the company's success in the form of results that have been achieved thanks to the various activities that have been carried out. Meanwhile, Jumingan (2017), financial performance is an analysis to assess the extent to which a company has carried out activities according to financial implementation rules. Financial performance can be measured using profitability. One of the profitability ratios that can be used is Return On Assets (ROA).

Return on assets (ROA) shows the company's ability to generate profits and the assets used. Return on assets is the most important ratio among existing profitability ratios. Return on assets is obtained by comparing net profit after tax to total assets. Return on assets is a company's financial ratio related to profitability measuring a company's ability to generate profits or profits at a certain level of income, assets and share capital. (Hanafi : 2016),

Law No. 10 of 1998 concerning Banking, explains what is meant by a bank is a business entity that collects funds from the public in the form of savings and distributes them to the public in the form of credit and/or other forms in order to improve the standard of living of the common people. Bank is an institution that acts as a financial intermediary (financial intermediary) between parties who have funds and those who need funds, as well as institutions whose function is to facilitate payment traffic. Indonesian Accounting Association (2016).

According to Law No. 10 of 1998, credit is the provision of money or bills that can be equated with it, based on a loan agreement or agreement between the bank and another party that requires the borrower to pay off the debt after a certain period of time by giving interest , whereas according to Hanafi (2016), credit is the provision of money or bills that can be equated with it, based on a loan agreement or agreement between the bank and another party that makes the borrower pay off his debt after a certain period of time with an amount of interest, and profit sharing in return.

Net Interest Margin (NIM) is a comparison between net interest income and average earning assets (Bank Indonesia Regulations, 2017). The higher NIM owned by a bank causes an increase in net interest income on productive assets managed by the bank concerned, thus causing the company's profitability to increase. Several previous researchers regarding the effect of NIM on ROA had different results. esearch conducted by Dewi (2018) shows that NIM has a negative effect on ROA. Meanwhile, Ardiansyah (2020) revealed that NIM has a positive influence on ROA.

Capital Adequacy Ratio (CAR) is a financial ratio related to banking capital where the amount of a bank's capital will affect whether or not a bank is able to efficiently carry out its activities. capital adequacy ratio or the ability of a bank in existing capital to cover possible losses in credit or trading of securities (IBI, 2015: 51). If the capital owned by the bank is able to absorb unavoidable losses, then the bank can manage all its activities efficiently, so that the bank's wealth (shareholder's wealth) is expected to increase and vice versa. Thus the Capital Adequacy Ratio (CAR) has an influence on bank performance. Previous studies regarding the effect of CAR on ROA found inconsistent results. Research conducted by Martini & Suardana, (2018) states that CAR has a positive

effect on ROA. Meanwhile, research conducted by Dini (2020) shows that CAR has a negative effect on ROA.

Non Performing Loans (NPL) are non-performing loans consisting of loans that are classified as substandard loans, doubtful loans and bad loans (IBI, 2015: 309). NPL is the ratio of total loans with substandard, doubtful and loss quality to total loans (Bank Indonesia Regulation, 2017). Based on the maximum limit for the NPL value is five percent. In this study, the average NPL was 1. Bank Indonesia Circular Letter No. 15/2/PBI/201321%, meaning that this NPL complies with Bank Indonesia regulations, namely that the NPL value must be below five percent.

Non-performing credit or bad credit, namely loans given by banks to investors, but when investors return the credit, investors experience difficulties in returning it (Bank Indonesia Regulation, 2017). Several studies regarding the effect of NPL on ROA have different and inconsistent results. Previous research by Pinasti&Mustikawati, (2018) stated that NPL has a positive effect on ROA, while the results of Harun's (2016) research show that NPL has a negative effect on ROA.

Based on the phenomenon and some of the previous studies described above. This led to the author's interest in conducting research on " Net I nterest M argin, Non-performing Loans , Capital Education Ratio , to Return on Assets of BUMN Banks Listed On The Indonesia Stock Exchange for the 2012-2021 period .

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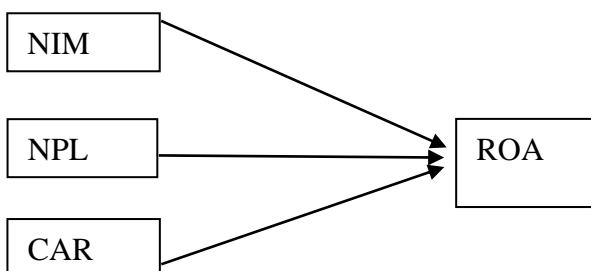
Based on the theory, previous research and the thought framework that has been described, the hypotheses in this study are:

- H1: NIM has a positive and significant effect on ROA at state-owned banks listed on the Indonesia Stock Exchange.
- H2: NPL has a positive and significant effect on ROA at state-owned banks listed on the Indonesia Stock Exchange.
- H3: CAR has a positive and significant effect on ROA at state-owned banks listed on the Indonesia Stock Exchange.

3. Research Methods

The data source in this study uses secondary data in the form of financial statements of banking companies, especially state-owned banks listed on the Indonesia Stock Exchange (IDX) sourced from www.idx.co.id. And the type of data used is quantitative data and qualitative data such as books or in the form of journals and articles. The population used in this study are banking companies, especially state-owned banks which are listed on the Indonesia Stock Exchange (IDX) during the research period of 10 (ten) years (2012 - 2021 period). There are 4 (four) state-owned banks listed on the Indonesia Stock Exchange.

The research sample was taken by purposive sampling, where the sample is used if it meets the following criteria:

a. Banking companies, especially state-owned banks that have gone public on the Indonesia Stock Exchange (IDX) during the research period (2012 to 2021).
b. Financial report data is available during the research period (2012 to 2021).
c. The banks studied were still operating during the time period (2012 to 2021).

Based on the sampling criteria as mentioned above, the number of samples used in this study were 4 (four) state-owned banks, namely Bank Mandiri, Bank BRI, Bank BNI and Bank BTN. The data in this study were analyzed using multiple regression analysis and hypothesis testing. The hypothesis was

tested using multiple linear regression analysis with the help of eviews. So the following equation is obtained:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \ldots\ldots(1)$$

Notation:
Y = Return On Assets
a = Constant
b = Regression coefficient
X1 = Net Interest Margin
X2 = Capital Education Ratio
X3 = Non-Performing Loans
e = Error term

Evaluation of the condition of a bank's financial statements at a certain time in accordance with the standards set by Bank Indonesia is an assessment of the soundness of the bank. Banks with high profits show that the bank is in good health. (Riyadi, 2015).

Table 1: Criteria for ROA, NIM, NPL, CAR

Ratio	Predicate
ROA > 1.5%	Very good
NIM > 6%	Very good
NPL < 2%	Very good
CAR ≥ 12%	Very good

Source: Bank Indonesia Circular Letter No 15/2/PBI/2013

4. Results and Discussion

Table 2. Development of NIM, NPL, CAR and ROA ratios at state-owned banks listed on IDX for the period 2012 to 2021

YEARS	NIM	NPLs	CAR	ROA
MANDIRI BANK				
2012	6.29	1.38	21.36	1.95
2013	5.9	0.6	18.6	3.15
2014	5.94	0.44	16.6	3.57
2015	5.68	0.37	14.93	3.66
2016	5.58	0.37	15.48	3.55
2017	4.73	0.41	19.6	2.53
2018	4.48	0.43	19.9	1.64
2019	5.46	0.84	21.39	3.03
2020	5.52	0.67	20.96	3.17
2021	5.63	1.06	21.64	2.72
STATE SAVINGS BANK				
2012	5.83	3.12	17.69	1.94
2013	5.44	3.04	15.62	1.79
2014	4.47	2.76	14.64	1.14
2015	4.87	2.11	16.97	1.61
2016	4.98	1.85	20.34	1.76
2017	3.99	1.20	19.14	0.81
2018	3.06	2.06	19.34	0.69
2019	3.32	2.96	17.32	0.13
2020	4.32	1.83	18.21	1.34
2021	4.76	1.66	18.87	1.71
BANK RAKYAT INDONESIA				
2012	8.42	1.78	16.95	5.15
2013	8.55	1.55	16.99	5.03
2014	8.51	1.69	18.31	4.73
2015	8.13	2.02	20.59	4.19
2016	8.27	2.03	22.91	3.84
2017	6.89	0.70	24.27	2.72
2018	6.00	0.80	19.59	1.98
2019	6.98	1.04	21.52	3.50
2020	7.45	0.92	20.15	3.68
2021	7.93	0.88	21.95	3.69
STATE BANK OF INDONESIA				
2012	6.2	0.4	18.3	2.7
2013	6.4	0.9	17	2.6
2014	6.2	0.4	15.3	3.5
2015	6.1	0.5	14.2	3.4
2016	5.9	0.8	15.2	2.9
2017	4.7	0.7	19.7	1.4
2018	4.5	0.9	16.8	0.5
2019	4.9	1.2	19.7	2.4
2020	5.3	0.8	18.5	2.8
2021	5.5	0.7	18.5	2.7

Source: Annual report 2012-2021

MANDIRI BANK

Dependent Variable: ROA				
Method: Least Squares				
Date: 02/16/23 Time: 22:00				
Sample: 2012 2021				
Included observations: 10				
Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	-5.008086	4.376919	-1.144203	0.2961
NIM	1.381185	0.504429	2.738118	0.0338
NPLs	-2.542087	1.149018	-2.212399	0.0689
CAR	0.102369	0.133896	0.764539	0.4735
R-squared	0.747897	Mean dependent var		2,897000
Adjusted R-squared	0.621846	SD dependent var		0.688042
SE of regression	0.423106	Akaike info criterion		1.406785
Sum squared resid	1.074111	Schwarz criterion		1.527819
Log likelihood	-3.033927	Hannan-Quinn Criter.		1.274011
F-statistic	5.933277	Durbin-Watson stat		1.486481
Prob(F-statistic)	0.031548			

The results of the regression equation Y = -5.008086 + 1.381185 – 2.542087 + 0.102369 + e. Test value t1 = 2.738118 with a probability level of 0.0338 means that NIM has a significant effect on ROA, t2 = -2.212399 with a probability level of 0.0689 meaning that NPL has no significant effect on ROA, t3 = 0.764539 with a probability level of 0.4735 means that CAR has no significant effect on ROA. The R^2 value of 0.747897 means that all independent variables can affect the dependent variable by 74.79% while the rest are influenced by other variables by 25.21%. The R value of 0.621846 means that NIM, NPL and CAR have a strong relationship to ROA. The F test value is 5.933277 with a probability level of 0.031548 meaning that NIM, NPL, CAR together have a significant effect on ROA

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BTN BANK

Dependent Variable: ROA				
Method: Least Squares				
Date: 02/16/23 Time: 22:03				
Sample: 2012 2021				
Included observations: 10				
Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	-1.839604	1.374768	-1.338120	0.2293
NIM	0.672531	0.090304	7.447405	0.0003
NPLs	-0.166141	0.157405	-1.055501	0.3318
CAR	0.000268	0.000589	0.455138	0.6650
R-squared	0.902626	Mean dependent var		1.292000
Adjusted R-squared	0.853939	SD dependent var		0.590024
SE of regression	0.225495	Akaike info criterion		0.148137

Sum squared resid	0.305088	Schwarz criterion	0.269171
Log likelihood	3.259313	Hannan-Quinn Criter.	0.015363
F-statistic	18.53938	Durbin-Watson stat	3.148405
Prob(F-statistic)	0.001944		

The results of the regression equation Y = -1.839604 + 0.672531 – 0.166141 + 0.000268 + e, Test value t1 = 7.447405 with a probability level of 0.0003 means that NIM has a significant effect on ROA, t2 = -1.055501 with a probability level of 0.3318 meaning that NPL has no significant effect on ROA, t3 = 0.455138 with a probability level of 0.6650 meaning that CAR has no significant effect on ROA. The R^2 value of 0.902626 means that all independent variables can affect the dependent variable by 90.26% while the rest are influenced by other variables by 9.74%. The R value of 0.853939 means that NIM, NPL and CAR have a very strong relationship to ROA. The F test value is 18.53938 with a probability level of 0.00194 meaning that NIM, NPL, CAR together have a significant effect on ROA.

BANK BRI

Dependent Variable: ROA				
Method: Least Squares				
Date: 02/16/23 Time: 22:05				
Sample: 2012 2021				
Included observations: 10				
Variables	Coefficient	Std. Error	t- Statistics	Prob.
C	-1.151845	1.654496	-0.696191	0.5124
NIM	0.988796	0.182481	5.418621	0.0016
NPLs	-0.099587	0.290211	-0.343154	0.7432
CAR	-0.001225	0.000436	-2.812576	0.0307
R-squared	0.943425	Mean dependent var		3.851000
Adjusted R-squared	0.915138	SD dependent var		0.995729
SE of regression	0.290067	Akaike info criterion		0.651763
Sum squared resid	0.504832	Schwarz criterion		0.772797
Log likelihood	0.741183	Hannan-Quinn Criter.		0.518989
F-statistic	33.35149	Durbin-Watson stat		2.642581
Prob(F-statistic)	0.000388			

The results of the regression equation Y = -1.151845 + 0.988796 – 0.099587 – 0.001225 + e. Test value t1 = 5.418621 with a probability level of 0.0016. This means that NIM has a significant effect on ROA, t2 = -0.343154 with a probability level of 0.7432 meaning that NPL has no significant effect on ROA, t3 = -2.812576 with a probability level of 0.0307 meaning that CAR has a significant effect on ROA . The R^2 value of 0.943425 means that all independent variables can affect the dependent variable by 94.34% while the rest are influenced by other variables by 5.66%. The R value of 0.915138 means that NIM, NPL and CAR have a very strong relationship to ROA. The F test value is 33.35149 with a probability level of 0.000388 meaning that NIM, NPL, CAR together have a significant effect on ROA.

BANK BNI			
Dependent Variable: ROA			
Method: Least Squares			
Date: 02/16/23 Time: 22:07			
Sample: 2012 2021			
Included observations: 10			
Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	-3.793388	4.238364	-0.895012	0.4053
NIM	1.076130	0.424574	2.534612	0.0444
NPLs	-0.003299	1.075187	-0.003069	0.9977
CAR	0.016845	0.139595	0.120670	0.9079
R-squared	0.644638	Mean dependent var		2.490000
Adjusted R-squared	0.466957	SD dependent var		0.904863
SE of regression	0.660639	Akaike info criterion		2.297956
Sum squared resid	2.618662	Schwarz criterion		2.418990
Log likelihood	-7.489778	Hannan-Quinn Criter.		2.165182
F-statistic	3.628064	Durbin-Watson stat		1.560479
Prob(F-statistic)	0.083983			

The test statistics indicate that NIM has a statistically significant effect on ROA, as evidenced by a t-value of 2.534612 at a probability level of 0.0444. Conversely, NPL shows no significant effect on ROA, with a t-value of -0.003069 and a probability level of 0.9977. However, CAR demonstrates a significant impact on ROA, with a t-value of 0.120670 and a probability level of 0.9079. The R^2 value of 0.644638 suggests that the independent variables collectively explain 64.45% of the variation in the dependent variable. The regression equation, Y =-3.793388 + 1.076130 – 0.003299 + 0.016845 + e, indicates the relationship between the variables, with the remainder of the variation (35.55%) attributed to other factors. The moderate relationship between NIM, NPL, CAR, and ROA is reflected in the R value of 0.466957. Additionally, the F test value of 3.628064, with a probability level of 0.083983, indicates that NIM, NPL, and CAR collectively have a significant impact on ROA.

5. Closing
5.1 Conclusion

Based on the results of the analysis and discussion that have been carried out in this study, several conclusions can be drawn as follows:

a. Net Interest Margin at state-owned banks has a significant influence on return on assets.

b. Capital Education ratio at BRI bank has a significant effect on return on assets. Meanwhile, Bank Mandiri, BTN, and BNI have no significant effect on return on assets.

c. Non-performing loans at Bank Mandiri have a significant influence on return on assets. Meanwhile, at Bank BTN, BRI and BNI, they have no significant effect on return on assets.

5.2 Suggestions

Suggestions for companies are expected to be able to use capital effectively and be more careful. Companies should also analyze lending properly so that the NPL value can be stable so

that bad credit does not occur. And the company should increase and maintain the NIM ratio to remain positive because this will attract investors to invest. Future researchers should add variables and years of research

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