International Economics and Business Conference (IECON)
Vol. 1 No. 1, 181-188

Determinants of Credit Risk of Bank BUMN Listed on the Indonesia StockExchange

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Abstract

This study aims to analyze the Determinants of Credit Risk of Bank BUMN 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 state-owned 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, meanwhile Bank Mandiri, BTN, and BNI have no significant effect on return on assets.

Keywords: NIM, NPL, CAR, ROA

1. Introduction

Banks are the main pillars in the development of the Indonesian economic system because banks have an important role as financial intermediaries, namely intermediaries that connect those who have surplus economic funds to economic units that lack financial assistance (deficit) (Mandasari, 2015). Banks operating in Indonesia based on their functions are divided into two functions, namely Commercial Banks and Rural Credit Banks (BPR). Commercial banks are divided into several groups, including state-owned banks, private banks, foreign banks and joint venture banks. State-owned banks are one of the banks that support a country'seconomy because part of their capital is financed by state assets, so these banks must maintain performance in terms of profit. Good bank financial performance reflects that the company is good. Financial performance can be measured using profitability. One of the profitability ratios that can be used is Return On Assets (ROA). Based on Bank Indonesia Regulations (2017), ROA can be measured by comparing profit after tax to total assets (total assets). The results can be explained that the higher the ROA value, the better the bank is, and vice versa.

Net Interest Margin (NIM) is a comparison between net interest income and average earning assets (Bank Indonesia Regulations, 2017). The higher NIM ownedby 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. Severalprevious researchers regarding the effect of NIM on ROA had different results. research 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.

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). For bank assessment, NPL has a maximum value set by Bank Indonesia of 5%. 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 inconsistentresults.

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 NPLhas a negative effect 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.

Based on the phenomena and some of the previous studies described above. This led to the author's interest in conducting research on "Determinants of Credit Risk for State-Owned Banks for the 2014-2021 period.

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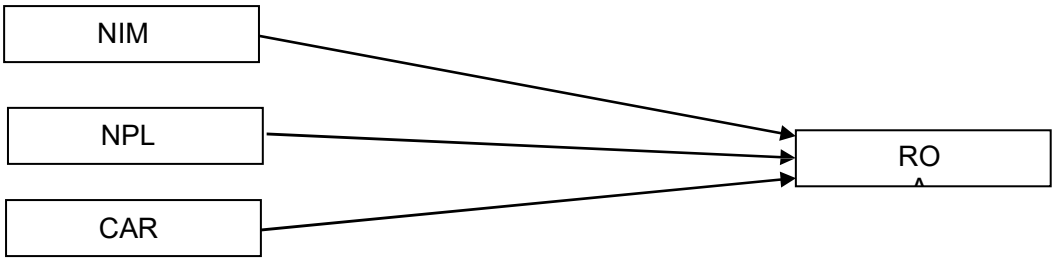

Based on the theory, previous research and the thought framework that has been described, the hypotheses in this study are:

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.

2. 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 ofeviews. So the following equation is obtained:

$Y= \alpha + \beta1.X1+ \beta2.X2+ \beta3.X3+ e$ ..... (1)

Notasi :

Y = Return On Assets
α = Konstanta
β = Koefisien regresi
X1 = Net Interest Margin
X2 = Non Perfoming Loan
X3 = CAR
e = Error term

Table 1 : Criteria ROA, NIM, NPL, CAR

Ratio	Predicate
ROA > 1,5%	Very good
NIM > 6%	Very good
NPL < 2%	Very good
CAR ≥ 12%	Very good

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3. Results and Discussion

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

YEARS	NIM	NPL	CAR	ROA
BANK MANDIRI				
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
BANK TABUNGAN NEGARA				
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	1.2	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	0.7	24.27	2.72
2018	6	0.8	19.59	1.98
2019	6.98	1.04	21.52	3.5
2020	7.45	0.92	20.15	3.68
2021	7.93	0.88	21.95	3.69
BANK NEGARA 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

BANK MANDIRI

Dependent Variable: ROA
Method: Least Squares
Date: 02/16/23 Time: 22:00
Sample: 2012 2021
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.008086	4.376919	-1.144203	0.296

				1
NIM	1.381185	0.504429	2.738118	0.0338
NPL	-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	S.D. dependent var	0.688042
S.E. 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.

BANK BTN

Dependent Variable: ROA
Method: Least Squares
Date: 02/16/23 Time: 22:03
Sample: 2012 2021
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.839604	1.374768	-1.338120	0.2293
NIM	0.672531	0.090304	7.447405	0.0003
NPL	-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	S.D. dependent var	0.590024
S.E. 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

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.151845	1.654496	-0.696191	0.5124
NIM	0.988796	0.182481	5.418621	0.0016
NPL	-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	S.D. dependent var	0.995729
S.E. 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. 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%. TheR 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

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.793388	4.238364	-0.895012	0.4053

NIM	1.076130	0.424574	2.534612	0.0444
NPL	-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	S.D. dependent var	0.904863
S.E. 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 results of the regression equation Y = -3,793388 + 1,076130 – 0,003299 + 0,016845 + e.

Test value t1 = 2.534612 with a probability level of 0.0444. meaning that NIM has a significant effect on ROA, t2 = -0.003069 with a probability level of 0.9977 meaning that NPL has no significant effect on ROA, t3 = 0.120670 with a probability level of 0.9079 meaning that CAR has a significant effect on ROA. The R^2 value of 0.644638 means that all independent variables can affect the dependent variable by 64.45% while the rest are influenced by other variables by 35.55%. The R value of 0.466957 means that NIM, NPL and CAR have a moderate relationship to ROA. The F test value is 3.628064 with a probability level of 0.083983 meaning that NIM, NPL, CAR together have a significant effect on ROA.

4. Conclusion

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

1. Net Interest Margin at state-owned banks has a significant influence on return on assets.
2. 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.
3. 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.

5. Suggestion

1) Suggestions for companies are expected to be able to use capital effectively andbe 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.
2) Future researchers should add variables and years of research

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