SEYBOLD Report
ISSN: 1533 - 9211
DOI: 10.5281/zenodo.6723768

HEALTH RATIO AND ITS RELATION WITH BANKING FINANCIAL PERFORMANCE

Yuhasril
Faculty of Economics and Business, Mercu Buana University, Jakarta

Abstract:
This study aims to determine and analyze the CAMEL ratio to the financial performance of commercial banks listed on the Indonesia Stock Exchange (2010 - 2019) with the financial ratio variables used, namely Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), Net Interest Margin (NIM), Bank Efficiency (BOPO), Loan to Deposit Ratio (LDR) Against financial performance (ROA). The sample of this research is the general banking financial companies listed on the IDX, amounting to 9 companies. However, based on the completeness of the data, only 6 companies were sampled during the observation period from 2010 - 2019. The data in this study came from secondary data obtained through documentation techniques, and data analysis with multiple regression using the Eviews program version 10. The results of this study are Capital Adequacy Ratio has an effect on Return on Assets, Non-Performing Loan does not affect Return on Assets, Net Interest Margin has an effect on Return on Assets, Bank Efficiency has an effect on Return on Assets and Loan to Deposit Ratio has no effect on Return on Assets.
Keywords: Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), Net Interest Margin (NIM), Bank Efficiency (BOPO), Loan to Deposit Ratio (LDR), Return on Assets

Introduction

The performance of state-owned banks throughout 2019 recorded a decline in the profits generated by state-owned banks when compared to the previous year. It happened because the impact of the slowing economy and tight liquidity made the performance of state-owned banks grow sluggishly in 2019. It can be seen in the picture below, which indicates that state-owned banks in 2019 experienced a slowdown. Bank Mandiri, which posted a net profit of Rp. 27.5 trillion in 2019 grew only 9.9 percent (year on year/yoy). This score is very far below the achievement in 2018. Then the Indonesian People's Bank (BRI), which throughout 2019, managed to record a net profit of Rp. 34.4 trillion only managed to grow 6.2 percent from the previous year. Furthermore, for Bank Negara Indonesia (BNI), which throughout 2019, managed to score a net profit of Rp. 15.4 trillion or growing 2.5 percent. Meanwhile, the state savings bank (BTN) had to be satisfied with the red record of performance in 2019. Bank BTN experienced a negative performance where the company's profit fell by 92.5 percent or to Rp. 209.3 billion. Whereas the previous year, 2018, BTN earned a net profit of Rp. 2.81 trillion. For each bank, the performance of state-owned banks that slowed in 2019 was caused by an increase in the cost of funds, the ratio of non-performing loans or NPLs and high-interest expenses.

Financial performance can also be used as a benchmark for the bank's health.

SEYBOLD Report
ISSN: 1533 - 9211
DOI: 10.5281/zenodo.6723768

Profitability is the most appropriate indicator to measure a bank's performance (Syofyan, 2002). The measure of profitability in the banking industry that is used in general is Return On Equity (ROE) and Return On Assets (ROA). Return on Assets (ROA) focuses on the company's ability to earn earnings in its operations. Bank Indonesia is more concerned with assessing ROA than ROE because it prioritizes the value of a bank's profitability as measured by assets whose funds mostly come from public deposits. Therefore, return On Assets (ROA) is more representative in measuring the level of bank profitability (Dendawijaya, 2003), while Return On Equity (ROE) only measures the return obtained from the company owner's investment in the business (Siamat, 2002). Based on previous research, it indicates that there is a research gap in this study. It is explained as follows, the CAR studied by Sarifudin (2005), Widayani (2005), Limpaphayom and Polwitoon (2004), shows a significant negative effect between CAR on profitability as measured by ROA. The results of research by Widati (2012), Werdanigntyas (2007), Sukarno and Syaichu (2006), Ponco (2008), and Mahardian (2005) which show that CAR has a significant positive effect on ROA. With the research gap from the research of Sarifudin (2005) and Widati (2012), it is necessary to conduct further research on CAR on ROA.

Research on credit risk was conducted by Mawardi (2005), which stated that a high Non-Performing Loan (NPL) condition would increase the cost of both the cost of reserves for productive assets and other costs, so that it has the potential to cause losses to the bank, or in other words Non-Performing Loans. (NPL) reduces bank profitability. It shows that Non-Performing Loans (NPL) have a significant negative effect on ROA. This study contradicts the results obtained by Sukarno and Syaichu (2006), which showed positive but not significant results on ROA and Sulistiyono (2005), which showed that Non-Performing Loans (NPL) had a positive effect on ROA. With the research gap between Mawardi (2005) and Syaichu (2006), it is necessary to conduct further research on NPL on ROA. Mawardi (2005) shows that NIM has a significant positive effect and is the most influential variable on bank financial performance as proxied by Return On Assets (ROA). This result contradicts Sarifudin's (2005) research that NIM has a significant negative effect on ROA. With the research gap between Mawardi (2005) and Sarifudin (2005), it is necessary to conduct further research on NIM on ROA. Usman (2003), Widati (2012) and Sukarno and Syaichu (2006), in their research, show that BOPO has a significant negative effect on ROA. The research results conducted by Sarifudin (2005) showed that BOPO had a significant positive effect on ROA. With the research gap from the research of Usman (2003) and Sarifudin (2005), it is necessary to further research to be conducted on BOPO on ROA.

The results of the research by Sarifudin (2005) and Werdaningtyas (2002) show that the Loan to Deposit Ratio (LDR) has a significant negative effect on ROA. The results of this study contradict the results of research conducted by Wahyuni (2015) and Widati (2012), which shows that LDR has an insignificant positive effect on ROA. With the research gap from the research of Sarifudin (2005), Werdaningtyas (2002), with Widati (2012) and Sukarno and Syaichu (2006), it is necessary to do further research on LDR on ROA. Based on the background of the problem above, the formulation of the problem related to research, namely:

SEYBOLD Report
ISSN: 1533 - 9211
DOI: 10.5281/zenodo.6723768

1.) What is the effect of the Capital Adequacy Ratio (CAR) on the bank's financial performance as measured by Return On Assets (ROA)? 2.) What is the effect of Non-Performing Loans (NPL) on bank financial performance as measured by Return On Assets (ROA)? 3.) What effect does Net Interest Margin (NIM) have on bank financial performance as measured by Return On Assets (ROA)? 4.) What is the effect of BOPO on bank financial performance as measured by Return On Assets (ROA)? 5.) How is the Loan Deposit Ratio (LDR) influence the bank's financial performance as measured by Return On Assets (ROA)?

Literature Review

Financial management

According to Musthafa (2017), Financial management explains several decisions that must be made, namely investment decisions, funding decisions or decisions to fulfill funding needs, and dividend policy decisions. According to Sartono (2011), the term financial management can be defined as fund management, both related to the effective allocation of funds in various forms of investment and efforts to raise funds for investment financing or spending efficiently. The implementer of financial management is the financial manager. Although every organization's financial manager's function is not necessarily the same, in principle, the main function of a financial manager is to plan, seek, and utilize in various ways to maximize the efficiency (usability) of the company's operations. The function of Financial Management is as a guide for company managers in every decision making for the smooth running of the company, especially in terms of financial management.

Bank

From the definition of a bank according to the Law of the Republic of Indonesia Number 10 of 1998, it can be concluded that the banking business includes three activities, namely collecting funds, distributing funds, and providing other bank services. Article 29 states that banks are required to maintain a soundbank following the provisions on capital adequacy, asset quality, management quality, liquidity, profitability, solvency, and other aspects related to the bank's business, and are required to conduct business activities following prudential principles. Given that banks mainly work with funds from the public, which are deposited in banks based on trust, each bank needs to continue to maintain its health and maintain public trust. For the benefit of customers, banks are required to provide information regarding the possible risk of loss in connection with customer transactions conducted through the bank. These risks may have been reflected in the financial statements, but users will understand better if the management also discloses the management and control of these risks and the bank's operations in the financial statements. The presentation of information in the financial statements is addressed to parties interested in financial reports, both internal and external to the company. Owners, managers, employees, customers, creditors and governments are usually interested parties (Niswonger et al., 1999). Financial statements (financial statements) that are often presented are:

(1) balance sheet, (2) income statement, (3) cash flow statement, and (4) owner or shareholder

DOI: 10.5281/zenodo.6723768

equity statement (Kieso, 2002). Bank financial statements must be prepared based on the Indonesian Banking Accounting Special Standards (SKAPI) and Indonesian Banking Accounting Principles (PAPI) set by IAI.

Financial performance

The bank's performance is part of the bank's overall performance. According to Harmono (2018), company performance is generally measured based on net income (profit) or as a basis for other measures such as investment returns (return on investment) or earnings per share (earnings per share). Financial performance can be seen from the financial statements presented by the company, but first, an in-depth analysis must be carried out to find out the meaning of the numbers contained in the financial statements. According to Fahmi (2010), financial performance is an analysis carried out to see how a company has implemented it by using financial implementation rules properly and correctly.

CAMEL ratio

A health assessment can be done in various ways, including financial ratios. One of these financial ratios is proxied by the CAMEL ratio. CAMEL is the aspect that has the most influence on the bank's financial condition, which also affects the soundness of the bank. Aspects of CAMEL consist of the assessment of Capital (Capital), Asset Quality (Asset Quality), Management (Management), Earnings (Rentability), Liquidity (Liquidity) and Sensitivity to Market Risk. In this study, the elements of Management and Sensitivity to Market Risk are not discussed. The data on these two factors are confidential and not published to the general public through financial reports.

Capital

According to Siamat (2002), capital is the funds placed by the shareholders, the first party in the bank, which has an important role as an absorber in the event of a loss (risk loss). Banks are required to provide a minimum capital according to the risk profile. The minimum capital adequacy is calculated using the ratio of the Minimum Capital Adequacy Ratio (KPMM) to the applicable regulations (SE BI No.6/23/DPNP Jakarta, 31 May 2004) using the ratio between the bank's capital and Risk-Weighted Assets (RWA). Bank capital consists of core capital and supplementary capital, where the core capital component in principle consists of paid-in capital and reserves formed from profit after tax, while supplementary capital consists of reserves that are not formed from profit after tax and loans of an equivalent nature, with capital in detail. Risk-weighted assets (RWA) are used to calculate the minimum capital consisting of RWA for credit, operational, and market risk.

H1: Capital Adequacy Ratio (CAR) has associated with Return on Asset (ROA)

Asset Quality

Asset quality assessment is intended to evaluate the condition of bank assets and the adequacy of credit risk management (Bank Indonesia, 2004). This aspect shows the quality of

DOI: 10.5281/zenodo.6723768

assets concerning the credit risk faced by banks due to lending and investing bank funds in different portfolios. Each investment of bank funds in productive assets is assessed for quality by determining the level of collectibility, namely whether it is current, substandard, doubtful or loss. The difference in the collectibility level is needed to determine the minimum reserve for the write-off of earning assets that the bank must provide to cover the risk of possible losses occurring (Kuncoro, 2002).

H2: Non-Performing Loan (NPL) has associated with Return On Asset (ROA)

Earnings

Earnings assessment is intended to evaluate conditions, measure the bank's ability to increase profits, and measure business efficiency in supporting operational and capital activities. Earnings are used to measure the bank's ability to set a price that can cover all costs. Profit allows the bank to grow. Stable profits will provide added value (Bank Indonesia, 2004). The components in calculating earnings factors used in this research are Net Interest Margin (NIM) and Operating Costs on Operating Income (BOPO). Interest Margin (NIM) is the ratio of net interest income to the average earning assets to generate net interest income. BOPO is a comparison between total operating costs and total operating income. Operating costs are costs incurred by banks in carrying out their main business activities, for example: interest costs, labor costs, marketing costs and other operating costs, while operating income is the bank's main income, namely interest income obtained from the placement of funds in loans and placements. Other.

H3: Net Interest Margin (NIM) has associated with Return On Asset (ROA)

H4: BOPO has associated with p Return On Asset (ROA)

Liquidity

Availability of funds and sources of bank funds at this time and in the future, is an understanding of the concept of liquidity in this indicator. Liquidity regulation is primarily intended so that banks can at any time fulfill their obligations that must be paid immediately (Kuncoro, 2002). Liquidity is assessed keeping in mind that most bank assets are illiquid with sources of funds with shorter maturities. The liquidity assessment, among others, looks at the bank's ability to provide liquid assets that can be immediately converted into cash (Sudrajat, 2004).

H4: BOPO has associated with p Return On Asset (ROA)

Methodology

The research time used by the researcher is April 2020 to February 2021. This study aims to determine the effect of the CAMEL ratio on the financial performance of commercial banks on the Indonesia Stock Exchange for the period 2010 – to 2019. In this study, the authors used a causal research method. According to Sugiyono (2013), causal research is research to determine the effect of one or more independent variables on the dependent variable. In this study, what is examined is the effect of CAR, BOPO, NPL, LDR, and NIM (independent

DOI: 10.5281/zenodo.6723768

variable) on financial performance (dependent variable). The population in this study were commercial banks operating in Indonesia from 2010to 2019, published by Bank Indonesia, amounting to 115 banks. Determination of the sample to be tested in this study using the purposive sampling method; namely, the sample is determined based on certain criteria. In this study, the analysis method used is a panel data regression analysis model with the help of Eviews 10 software.

Result and Discussion

Descriptive statistics explain the characteristics of the data to be used in the research, which are seen from the minimum, maximum, mean, median and standard deviation values. The maximum and minimum values are used to see each variable's highest and lowest values. The mean value is used to see the average value of the variable. The median value is used to see the middle value of each variable. At the same time, the standard deviation is used to see the value of the homogeneity of each variable. The following are the results of descriptive statistics on each variable:

Table 1. Descriptive Analysis

	ROA [Y]	CAR [X1]	NPL [X2]	NIM [X3]	BOPO [X4]	LDR [X5]
Mean	2.427167	18.71283	2.582500	6.171000	77.84217	86.91283
Median	2.040000	18.41000	2.295000	5.865000	80.84000	87.08000
Maximum	5.150000	29.58000	7.660000	10.77000	98.12000	113.5000
Minimum	0.130000	13.36000	0.000000	3.010000	59.93000	65.44000
Std. Dev.	1.222755	3.540823	1.064778	1.626169	10.03854	11.38441

Source: Data Processed (2021)

Based on the results of the descriptive analysis test, the mean value of the dependent variable Return on Assets (ROA) generated from the 60 samples studied was 2.427167, meaning that the average profit that the company can generate from every one rupiah invested by the shareholders in this study is 2.43 % and the standard deviation is 1.222755. The mean value of the Capital Adequacy Ratio (CAR) generated from the 60 samples studied was 18.71283, meaning that the average ability of banks to protect customers from the risk of losses that banks in this study may experience is 18.71%. The mean value of Non-Performing Loans (NPL) generated from the 60 samples studied was 2.582500, meaning that the average commercial bank has a percentage of the number of non-performing loans consisting of substandard, doubtful and bad collectibility of the total loans issued by banks of 2.582500. The

DOI: 10.5281/zenodo.6723768

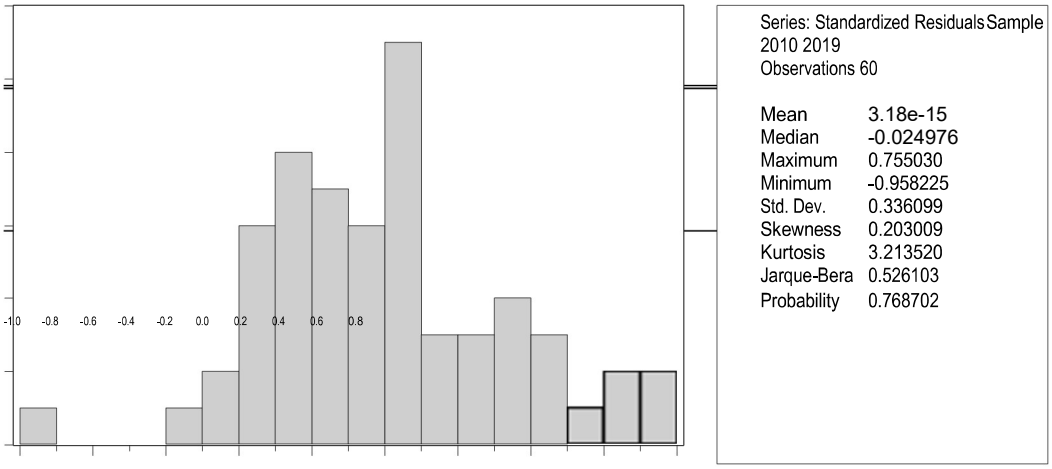
mean value of the Net Interest Margin (NIM) generated by the 60 samples studied was 6.171000, meaning that the average bank earns interest on earning assets of 6.17% from managing earning assets.

The data is said to be stationary if the probability is < 0.05% from the table above, it can be concluded that all of the above variables are stationary, namely CAR with a probability of 0.0000 (0.0000 < 0.05), NPL with a probability of 0.0000 (0.0000 < 0.05), NIM with a probability of 0.0000 (0.0000 < 0.05) , BOPO with probability 0.0000 (0.0000 < 0.05), LDR with probability 0.0000 (0.0000 < 0.05) and ROA with probability 0.0000 (0.0000 < 0.05). Because the ADF test results are all stationary variables, it is not necessary to do the ADF test at the 2nd difference level. The common effect model or pooled least square (PLS) is the simplest panel data model approach because it only combines time series and cross-section data. This model does not pay attention to the dimensions of time and individuals, so it is assumed that the behavior of company data is the same in various periods. This method can use the ordinary least square (OLS) approach or the least-squares technique to estimate the panel data model. The fixed Effect Model is a model that estimates panel data by using dummy variables to capture differences in intercepts. This model assumes that the regression coefficient (slope) remains between individuals and over time Gujarati (2017). However, the intercept is different between companies but the same over time (time-invariant). However, this method brings a weakness, namely the reduced degree of freedom, which in turn reduces the efficiency of the parameter.

The Random Effect Model (REM) uses errors that are thought to have a relationship between time and between individuals. Therefore, REM assumes that each individual has a different intercept, a random variable (Ghozali & Ratmono, 2013). Due to the correlation between the disturbance variables, the OLS method cannot be used to obtain an efficient estimator. Generalized Least Square (GLS) (Greene, 2002) is the right method for estimating the random effect model. Using the Chow Test, the Chi-Square probability value is 0.0000 < 0.05; thus, the H0 hypothesis is rejected. And the results of testing using the Hausman Test obtained a Chi-Square probability value of 0.0000 <0.05, which means that Hypothesis H0 is rejected. Therefore, it can be concluded that from the results of the Chow Test and Hausman Test, the best model used is the Fixed Effect model.

SEYBOLD Report
ISSN: 1533 - 9211
DOI: 10.5281/zenodo.6723768

Figure 1. Normality Test Results



Source: Data Processed (2021)

The table above shows that the Jarque-Bera probability value is 0.526103, which means it is above (0.05) or 0.526103 > 0.05. so that it can be concluded that the data used in this study are normally distributed, which means that the classical assumption test that agrees with the normality test is fulfilled

Table 2. Multicollinearity Test Results

R-squared	0.98477	Mean dependent var	2.427167
Adjusted R-squared	0.98166	S.D. dependent var	1.222755
S.E. of regression	0.16561	Akaike info criterion	-0.59421
Sum squared res id	1.34392	Schwarz criterion	-0.21025
Log-likelihood	28.8263	Hannan-Quinn criter.	-0.44402
F-s statistic	316.728	Durbin-Watson stat	1.467734
Prob(F-s statistic)	0.000000		

Source: Data Processed (2021)

SEYBOLD Report
ISSN: 1533 - 9211
DOI: 10.5281/zenodo.6723768

From the table above, it is known that the Capital Adequacy Ratio (CAR) variable has a multicollinearity value of -0.225334, which is smaller than 0.8, the Non-Performing Loan (NPL) variable has a multicollinearity value of - 0.336584 which is smaller than 0.8, the Net Interest Margin (NIM) variable has a multicollinearity value of -0.225334. In addition, the multicollinearity value of 0.536095 is smaller than 0.8, and the variable Loan To Deposit Ratio (LDR) has a multicollinearity value of -0.940789, which is smaller than 0.8. Therefore, it shows that there is no multicollinearity problem in this study in the research variables.

Table 3. Heteroscedasticity Test Results

Heteroskedasticity Test: Glejser

F-statistic	1.310109	Prob. F(5,49)	0.2752
Obs*R-squared	6.485625	Prob. Chi-Square(5)	0.2618
Scaled explained SS	9.153012	Prob. Chi-Square(5)	0.1031

Source: Data Processed (2021)

From the results of the table above, the heteroscedasticity test using the Heteroscedasticity Glejser test method shows that the probability (Prob.) of each independent variable has a value > 0.05; it can be concluded that the panel data regression model does not have heteroscedasticity.

Table 4. Autocorrelation Test Results

	Y	X1	X2	X3	X4	X5
Y	1.000000	-0.225334	-0.336584	0.536095	-0.940789	-0.109847
X1	-0.225334	1.000000	0.143653	-0.290396	0.180170	-0.141125
X2	-0.336584	0.143653	1.000000	-0.383785	0.320850	-0.015012
X3	0.536095	-0.290396	-0.383785	1.000000	-0.378898	0.121967
X4	-0.940789	0.180170	0.320850	-0.378898	1.000000	0.121719
X5	-0.109847	-0.141125	-0.015012	0.121967	0.121719	1.000000

Source: Data Processed (2021)

In the results of the autocorrelation test above, it can be seen that the Durbin-Watson value obtained is 1.467734, which is between -2 and 2. Thus, it can be concluded that there is no autocorrelation problem. Furthermore, from the Adjusted R2 value, it can be concluded that the Return on Assets of commercial bank companies (Persero) as the dependent variable can be explained by 98.17% by the CAR, NPL, NIM, BOPO and LDR variables as independent variables. At the same time, the remaining 1.83% is explained by other variables that are not used in this model. Therefore, it explains that the independent variables have a strong relationship because the adjusted R2 value is above 70%.

SEYBOLD Report
ISSN: 1533 - 9211
DOI: 10.5281/zenodo.6723768

Table 5. T-Test Results

Variables	Coeff.	Std. Error	t-Statistic	Prob.
C	9.134511	0.606011	15.07318	0.0000
X1	-0.024403	0.008642	-2.823923	0.0068
X2	-0.006237	0.026625	-0.234249	0.8158
X3	0.153627	0.034192	4.493041	0.0000
X4	-0.092282	0.006249	-14.76818	0.0000
X5	3.52E-06	2.14E-05	0.164696	0.8699

Source: Data Processed (2021)

Based on the table, it can be concluded that the results of testing the independent variables on the dependent variable can be analyzed as follows:

1. *Variable Capital Adequacy Ratio* (CAR): The significance value of the CAR variable (t-count) is -2.823923 with a probability of 0.0068 < 0.05, so it can be said that the CAR variable has a negative and significant effect on the Return on Assets variable.
2. Variable Non-Performing Loan (NPL): The significance value of the NPL variable (t-count) is -0.234249 with a probability of 0.8158 > 0.05, so it can be said that the NPL variable has a negative and insignificant effect on the Return on Assets variable.
3. Variable Net Interest Margin (NIM): The significance value of the NIM variable (t-count) is 4.493041 with a probability of 0.0000 <0.05, so it can be said that the NIM variable has a positive and significant effect on the Return on Assets variable.
4. Variable Operating expenses on operating income (BOPO): The significance value of the BOPO variable (t-count) is -14,76818 with a probability of 0.0000 < 0.05, so it can be said that the BOPO variable has a negative and significant effect on the Return on Assets variable.
5. Variable Loan to Deposit Ratio (LDR): The significance value of the LDR variable (t-count) is 0.164696 with a probability of 0.8699 > 0.05, so it can be said that the LDR variable has a positive and insignificant effect on the Return on Assets variable.

Conclusion

Based on the results of the data analysis and discussion that has been described in the previous chapter, the following conclusions are obtained:

1. Capital Adequacy Ratio (CAR) affects Return On Assets in general banking for the period 2010 - 2019.
2. Non-Performing Loans (NPL) have no effect on Return On Assets in general banking from 2010 - 2019.
3. Net Interest Margin (NIM) affects the Return On Assets of shares in general banking from 2010 - 2019.
4. Operating expenses on operating income (BOPO) affect the Return On Assets of shares in general banking from 2010 - 2019.

DOI: 10.5281/zenodo.6723768

5. Loan to Deposit Ratio (LDR) has no effect on Return On Assets in general banking from 2010 - 2019.

Based on the conclusions that have been stated above, the suggestions that can be submitted are: For general banking, it is better to always pay attention to the value of operating expenses on operating income (BOPO) and Loan to Deposit Ratio (LDR) because they are proven not to be able to affect the Return On Assets of general banking. State-owned banks are expected to be able to increase liquidity by reducing the percentage of LDR. State-owned banks need to pay attention to the principle of prudence in disbursing funds or being effective in lending to avoid becoming bad debts; besides that, banks must always supervise debtors in fulfilling their obligations so that banks can increase the rate of return of funds to increase their profitability. State-owned banks are expected to be able to improve their operational efficiency by lowering the BOPO ratio, and streamlining operational costs incurred for their operational activities to increase the opportunity to increase their profitability.

For Investors or Potential Investors, Investors must choose a bank with the optimal, efficient performance to invest in, generating a maximum profit by understanding the bank's financial statements where the capital will be invested. Based on the results of testing this hypothesis, the Net Interest Margin variable affects Return On Assets and can be used as a reference for investors to invest their capital, because NIM is a ratio that shows the ability of bank management to manage their productive assets to generate net interest income. State-owned banks are expected to be able to maintain and improve their financial performance to add value to the bank itself. State-owned banks are expected to be able to maintain or increase bank profitability to attract investors to invest their capital. And for state-owned banks, they must be able to collect third-party funds from the public and increase bank capital even more. To obtain maximum results, further research should increase the research sample and add other independent variables that may affect Return On Assets apart from the variables used in this study.

References

Abdullah, Thamrin and Tantri, Francis. 2013. Banks and Financial Institutions. Jakarta: PT. RajaGrafindo Persada.

Achmad, Tarmizi & Willyanto K. Kusumo. (2003). Analysis of financial ratios as an indicator in predicting the potential for bankruptcies in Indonesia. Economics and Business Media, 15(1), 54-75.

Advances in Economics, Business and Management Research, volume 120 4th International Conference on Management, Economics and Business (ICMEB 2019).

Agus, Sartono. 2011. Financial Management Theory and Applications. Yogyakarta: BPFE.

Ahmad Buyung Nusantara. 2009. “Analysis of the Effect of NPL, CAR, LDR, and BOPO

Ali, Mashud. (2006). Asset liability management: dealing with market risk and operational risk. Jakarta: PT. Library Gramedia.

Amina Sutra Dewi. (2017). The Effect of Car, Bopo, Npl, Nim, and Ldr on ROA in Companies in the Banking Sector Listed on the Stock Exchange for the 2012-2016 Period. Journal of

DOI: 10.5281/zenodo.6723768

Pundi, Vol. 01, No. 03, November 2017.

Angbazo, L. (1997). Commercial bank net interest margin, default risk, interest-rate risk, and off-balance sheet banking. Journal of Banking and Finance, 21, 55-87.

Aprilia. 2017. Analysis of the Effect of Pentagon Fraud on Financial Statement Fraud Using the Beneish Model in Companies Implementing the ASEAN Corporate Governance Scorecard. JOURNAL OF ASSETS (RESEARCH ACCOUNTING), 9 (1), 2017, 101-132. ISSN: 2541-0342

Bambang Prasetyo. 2006. Quantitative Research Methods: Theory and Application. Raja Grafindo Persada : Jakarta.

Bambang Prasetyo. 2006. Quantitative Research Methods: Theory and Application. Raja Grafindo Persada : Jakarta.

Bambang Riyanto. 2001. Fundamentals of Corporate Spending. BPFE, Yogyakarta.

Bank Indonesia. 2004. Bank Indonesia Circular Letter Number 6/23/DPNP Regarding Bank Soundness Rating System. www.bi.go.id. May 31.

Basuki, A. T. and Imamuddin Yuliadi. (2016). Econometrics Theory & Applications. Yogyakarta: Mitra Pustaka Conscience.

Damodar N. Gujarati and Dawn C. Porter. 2012. Fundamentals of Econometrics. Jakarta: Salemba Empat.

Darsono Dan Tjatjuk, Siswandoko, 2011, 21st Century Human Resource Management, Nusantara Consulting, Jakarta

Dendawijaya, Lukman, M.M. (2003). Banking management. Jakarta: Ghalia. Widayani, I. A. (2005). Analysis of Factors Affecting Banking Profitability for the Period 2000-2002 (Empirical Study of Commercial Banks in Indonesia) (Doctoral dissertation, Postgraduate program at Diponegoro University).

Kumar, S. (2022). A quest for sustainium (sustainability Premium): review of sustainable bonds. Academy of Accounting and Financial Studies Journal, Vol. 26, no.2, pp. 1-18

Allugunti V.R (2022). A machine learning model for skin disease classification using convolution neural network. International Journal of Computing, Programming and Database Management 3(1), 141-147

Allugunti V.R (2022). Breast cancer detection based on thermographic images using machine learning and deep learning algorithms. International Journal of Engineering in Computer Science 4(1), 49-56

Firdaus, Iwan, Sunia Hedy Qumaira (2020). The Analysis of Comparison of Bank Health Level Through Capital Approaches, Risk Profile, and Earnings in Conventional State-Owned Banks and National Private Banks Listed in IDX.

Hirdinis, M (2019). Capital structure and firm size on firm value moderated by profitability. International Journal of Economics and Business Administration Volume VII, Issue 1,

DOI: 10.5281/zenodo.6723768

2019.

Lestari, N.L.P.R.W.,Juniarini, N.M.R., (2021). Role Public Business Credit Financing By Financial Institutions On MSME Development Introduction. International Journal of Environmental, Sustainability, and Social Science, 2(1), 40-43. https://doi.org/10.38142/ijesss.v1i3.50

Yamawati, N.K.S., Dewi, I. G. A. R. P.(2021).“The Performance of Employees of Banks with Work Motivation As Moderators.”International Journal of Environmental, Sustainability, and Social Sciences, 2(3),165-173

Yuliani. (2007). The relationship between operational efficiency and profitability performance in the banking sector that goes public on the Jakarta Stock Exchange. Sriwijaya Journal of Management and Business, 5(10), 25-53.

Zimmerman, Gary C. (1996). Factors influencing community bank performance in California. FBRSF Economic Review, 1, 26-42.

Zulfiah, Fitri and Joni Susilo Wibowo. 2014. The Influence of Inflation, BI Rate, Capital Adequacy Ratio (CAR), Non Performing Financing (FDR), Operating Costs and Operating Income (BOPO) on Profitability of Islamic Commercial Banks for the 2008-2012 Period. Journal of Management Science. 2(3): 759-770.

Indonesia Stock Exchange, http://www.idx.co.id