

The Effect of Capital Adequacy Ratio (CAR) And Loan To Deposit Ratio (LDR) To Return On Asset (ROA) on PT BJB Tbk

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Abstract

This study determines how the effect of Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LDR) on Return On Assets (ROA) at PT. Bank BJB Tbk. This study uses data from the company's financial statements at PT. Bank BJB Tbk from 2011 to 2020. The data were processed and analyzed using the Eviews 9 application program. The results of the study showed that the Capital Adequacy Ratio (CAR) variable had no positive and insignificant effect on profitability which was calculated using return on assets (ROA). The Loan to Deposit Ratio (LDR) variable has no positive and insignificant effect on profitability which is calculated using return on assets (ROA). Capital Adequacy Ratio (CAR) and Loan To Deposit Ratio (LDR) have no significant effect on profitability which is calculated using Return On Assets (ROA) the results of $R^2 = 0.329$ or 32.9% and the remaining 67.1% is influenced by other factors.

Keywords: CAR; LDR; ROA

JEL Classification: G21

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Introduction

CAR (Capital Adequacy Ratio) is a capital adequacy ratio that shows the ability of banks to provide funds that are used to overcome possible risk of loss. This ratio is important because keeping the CAR at a safe limit (at least 8%), also means protecting customers and maintaining the stability of the financial system as a whole. The greater the CAR value, the better the ability of banks to face the possible risk of loss.

LDR (Loan to Deposits Ratio) is a ratio that measures a bank's ability to meet short-term obligations (can be called liquidity) by dividing the total credit to the total Third Party Funds (TPF). Banking liquidity needs to be managed to meet the needs when customers take their funds and distribute loans (credit) to borrowers (debtors). If the LDR value is too high, it means that banks do not have sufficient liquidity to cover their obligations to customers (DPK). On the other hand, if the LDR value is too low, it means that banks have sufficient liquidity but their income may be lower, because as is well known, the banking world earns income through disbursed loans.

ROA (Return On Assets) is a ratio that measures the ability of banks to generate profits (can be called profitability) by comparing net income with resources or total assets owned. Its function is to see how effective banks are in using their assets to generate income. The greater the ROA value, the better the ability of banks to generate profits.

CAR and LDR have positive and significant effect on ROA with population 31 banks (Pratami, 2021). CAR and LDR are positive but not significant on ROA with 10 banks (Kurniawati et al., 2018). CAR is not significant but LDR is significant on ROA in 9 commercial banks (Dewi, 2018). CAR and LDR are significant on ROA in 16 banks (Fitrianingsih et al., 2020). CAR is significant but LDR is not significant on ROA in 12 banks' foreign exchange (Rembet & Baramuli, 2020). CAR and LDR are negative and significant on ROA (Alazis, 2020). CAR and LDR are positive and significant toward ROA (Setyarini, 2020). CAR and LDR are positive and significant on earning growing (Wita, 2018). CAR and LDR are positive and significant on ROA (Pratama et al., 2021). CAR is not significant and negative meanwhile LDR is not significant and positive on ROA (Pranowo et al., 2020).

Table 1. CAR, LDR, and ROA between 2011 and 2020

Year	CAR (%)	LDR (%)	ROA (%)
2011	18.36	72.95	3.15
2012	18.11	74.09	2.46
2013	16.51	96.47	2.61
2014	16.08	93.18	1.92
2015	16.21	88.13	2.04
2016	18.43	86,70	2.22
2017	18.77	87.27	2.01
2018	18.63	91.89	1.71
2019	17.71	97.81	1.68
2020	22.89	89.85	1.55

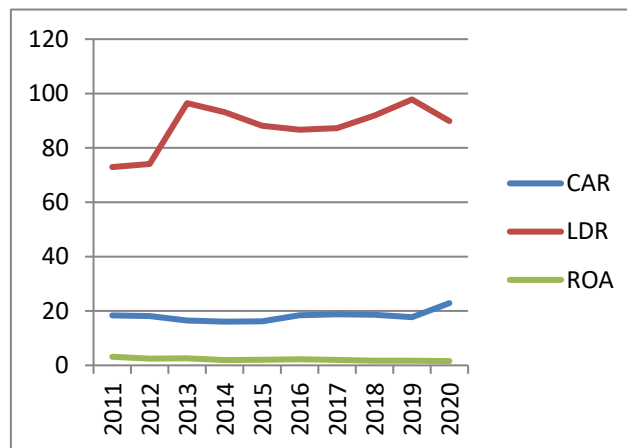


Figure 1. CAR, LDR, and ROA between 2011 and 2020

Based on the financial statements of PT. Bank BJB Tbk in 2011 -2020, it can be seen that it has a poor level of ROA because it continues to experience very significant fluctuations, but in 2020 ROA of PT. Bank BJB Tbk only 1.55 % and in 2011 it was 3.15 % more than the standard value because the standard was 2.00%, this shows that PT. Bank BJB Tbk does not have a stable ROA.

Based on the report data of PT. Bank BJB Tbk in 2011-2020, it appears that the growth of LDR from year-to-year experienced unstable fluctuations, in addition to the amount of LDR PT. Bank BJB Tbk is still below the ideal LDR standard of 72.95 % in 2011, while the minimum required limit is 80%. This is a serious problem faced by PT. Bank BJB Tbk, which is very reasonable if the bank's ability to generate profits is still not maximized, considering that the bank's ability to operate its business is still very low.

If it is seen from the existing data, the CAR or the ratio of owned capital fluctuates every year and has exceeded the *standard limit of the Bank of international settlement*, which is 8%. However, the sufficient capital is still not able to increase the profitability (ROA) of PT Bank BJB Tbk.

Based on the explanation above, the authors are interested in conducting research on **"The Effect of Capital Adequacy Ratio (CAR) and Loan To Deposit (LDR) on Return On Assets (ROA) at PT BJB Tbk"**.

The gap research of CAR and LDR on ROA which still have no consensus the influence CAR and LDR on ROA. This study will discuss the effect CAR and LDR on ROA only on PT BJB Tbk.

Literature Review

According to Hery (2017: 138) "financial ratio is a ratio calculation using financial statements that function as a measuring tool in assessing the financial condition and performance of the company". Financial ratios are numbers obtained from the comparison between one financial statement item and another item that has a relevant and significant relationship. According to Fahmi (2014: 49) "financial ratio is a study that looks at the comparison between the amounts contained in the financial statements by using formulas that are considered representative to be applied".

Meanwhile, according to Kasmir (2017:104) "financial ratios are activities to compare the numbers in the financial statements by dividing one number by another. Comparisons can be made between one component with components in one financial report or between components that exist between financial statements. The results of these financial ratios are used to assess the performance of management in a period whether it reaches the predetermined level. Then also can assess the ability of management in empowering company resources effectively.

Based on Bank Indonesia Regulation No. 13 of 2011 Article 6, banks are required to assess the soundness of banks individually using a risk approach (Risk-based Bank Rating) with an assessment coverage of risk factors, Good Corporate Governance, Earnings, and Capital.

Assessment of risk factors (*risk profile*) includes assessment of credit risk, market risk, liquidity risk, operational risk, legal risk, strategic risk, compliance risk, and reputation risk (PBI No.13/1/PBI/2011). Among the eight risks, credit risk and liquidity risk are used in this study. These two risk factors are used because they can be measured using a quantitative

approach and have clear ranking criteria. The formula used in calculating the risk profile is *Non-Performing Loan* and *Loan to Deposit Ratio*.

$$NPL = \frac{\text{Credit Risk}}{\text{Total Credit}}$$

$$LDR = \frac{\text{Total Credit}}{\text{Third Part Fund}}$$

Good Corporate Governance is a system that manages and controls the company to create added value (value *added*) for interested parties (Sutedi, 2012: 2). The method for assessing *Good Corporate Governance* was initially analyzed based on the Circular Letter of Bank Indonesia No.09/12/DPNP of 2007. The analysis in this circular used a self-assessment paper on *Good Corporate Governance* published by Bank Indonesia. Over time, Bank Indonesia again issued Bank Indonesia Circular Letter No.15/15/DPNP in 2013 regarding the Assessment of *Good Corporate Governance*. Based on SE BI No.15/15/DPNP, in an effort to improve and improve the quality of the implementation of *Good Corporate Governance*, banks are required to periodically conduct a comprehensive *self-assessment* on the adequacy of the implementation of *Good Corporate Governance*. *Good Corporate Governance* Analysis grouped in a governance system consisting of 3 (three) aspects of *governance*, namely *governance structure*, *governance process*, and *governance outcome*. The Bank conducts a *self-assessment* of *Good Corporate Governance* based on the attachment of SE BI No.15/15/DPNP which contains a working paper on the assessment of *Good Corporate Governance*.

Assessment of profitability (*earnings*) is an important thing in a bank because it is one of the parameters in assessing the soundness of a bank related to the bank's ability to earn profits. The assessment of the profitability factor can be calculated using the formula, namely *Return On Assets* (ROA), as follows:

$$ROA = \frac{\text{Earning Before Tax}}{\text{Average Assets}}$$

Capital is one of the important factors for a bank because if a bank has a good capital factor, then of course the bank will also be more fluent in carrying out its operational activities in achieving the bank's own goals. The capital factor can be measured using the *Capital Adequacy Ratio* (CAR) formula. CAR is a ratio that measures the capital adequacy of a bank which is calculated based on the ratio of total capital to risk-weighted assets.

$$CAR = \frac{Capital}{Risk\ Weighted\ Assets}$$

According to Fahmi (2012:153) " *Capital Adequacy Ratio (CAR)* is a bank's performance ratio to measure the adequacy of capital owned by banks to support assets that contain or generate risks, for example loans provided ".

Capital Adequacy Ratio (CAR) is a ratio that shows how far all bank assets that contain risks (credit, investments, securities, claims on other banks) are also financed from the bank's own capital in addition to obtaining funds from sources outside the bank such as funds. from the public, loans, and others. Based on the definitions from several experts above, the researcher can conclude that the *Capital Adequacy Ratio (CAR)* is a bank performance ratio to measure the capital adequacy of the bank to support assets that contain or generate risk.

According to Sudirman (2013:112), RWA (Risk-Weighted Assets) is the sum of the risk scales of balance sheet assets and bank administrative accounts. Balance sheet assets and administrative assets have been weighted according to the predetermined risk weight level. Supervision of the provisions regarding RWA (Risk Weighted Assets) is to ensure that the maximum limit of RWA (Risk Weighted Assets) based on the weighting determined by Bank Indonesia ranges from 0-100% depending on the level of liquidity, the more liquid assets are, the smaller the risk weight.

According to Kasmir (2017:225) "*LDR (Loan to Deposit Ratio)* is the ratio used to measure the composition of the amount of credit given compared to the amount of public funds and own capital used. Meanwhile, according to Darmawi (2011:61) "*LDR (Loan to Deposit Ratio)* is one of the liquid measures of the inventory concept in the form of a loan to deposit ratio."

From the understanding of LDR according to the experts above, it can be concluded that LDR is a ratio that measures the extent to which a bank is able to repay withdrawals made by depositors by relying on loans as a source of liquidity. The higher this ratio, the lower the liquidity of the bank concerned. On the other hand, the lower the LDR ratio, the higher the liquidity of the bank concerned. This ratio is also an indicator of the vulnerability and capability of a bank. The LDR value can be determined through a formula determined by Bank Indonesia through Bank Indonesia Circular Letter No. 3/30/DPNP On December 14, 2001.

According to Kasmir (2017:225), " the safe limit of a bank's LDR is around 80%. However, the maximum LDR limit is 110%". The LDR ratio is calculated by comparing credit

with third party funds where the credit used is the total credit extended to third parties, and does not include loans extended to other parties. Meanwhile, third party funds are demand deposits, savings, and time deposits which are not included between banks.

Return On Assets (ROA) is a comparison between net income and total company assets. The greater the *Return On Assets* (ROA) of a bank, the greater the level of profit achieved by the bank and the better the financial position of the bank in terms of the use of its assets. According to Dendawijaya (2013: 120) " ROA is used to measure the ability of bank management to obtain overall profit (profit) . In carrying out or any particular activity, the first expectation is to gain profit or profitability.

Return on Assets (ROA) according to Kasmir (2017:201) is a ratio that shows the *return* on the number of assets used in the company. In addition, *Return on Assets* (ROA) provides a better measure of the company's profitability because it shows the effectiveness of management in using assets to earn income. *Return On Assets* (ROA) is used to measure the effectiveness of changes in generating profits by utilizing assets owned by *Return On Assets* (ROA) which is the ratio between profit before tax to total assets. *Return on Assets* (ROA) is a company's performance is getting better, because the rate of taking (*return*) is getting bigger. *Return on Assets* (ROA) is also the product of the *net income margin factor* and asset turnover.

From the statement above, it can be concluded that the use of *Return On Assets* (ROA) is, among others, for bank management in obtaining profits by managing their assets.

H1: It is suspected that the Capital Adequacy Ratio (CAR) has a partial effect on Return On Assets (ROA).

H2: It is suspected that the Loan to Deposit Ratio (LDR) has a partial effect on Return On Assets (ROA).

H3: It is suspected that the Capital Adequacy Rasio (CAR) and Loan to Deposit Ratio (LDR) has a partial effect on Return On Assets (ROA).

Research Methods

In this research, the writer uses descriptive quantitative research. It means descriptive research is research that uses or tells and describes how the results of the calculation of the company's *financial* data in the form of financial statements. While quantitative research because the data used and obtained is in the form of numbers. From the figures obtained will

be analyzed further in data analysis. This type of research is basically a scientific way to obtain data with a specific purpose and use. This research model is relatively more complex because a theory can be built functions to explain, predict, predict and control a symptom. So in this study the authors wanted to know the effect of *Capital Adequacy Ratio* (CAR) and *Loan to Deposit Assets* (LDR) on *Return On Assets* (ROA).

Table 2. Operational Variables

Variable	Variable Operation	Parameter	Scale
<i>Capital Adequacy Ratio</i> (CAR) (X ₁)	A ratio that shows how far all bank assets that contain risks are also financed from the bank's own capital funds, in addition to obtaining funds from sources outside the bank.	$CAR = \frac{Capital}{Risk\ Weighted\ Assets}$	Ratio
<i>Loan To Deposit Ratio</i> (LDR) (X ₂)	It is a comparison between the total loans granted and the total Third Party Funds (DPK) that can be collected by the bank	$LDR = \frac{Total\ Credit}{Third\ Part\ Fund}$	Ratio
<i>Return On Assets</i> (ROA) (Y)	The company's ability to earn income in the company's operations by utilizing its assets	$ROA = \frac{Earning\ Before\ Tax}{Average\ Assets}$	Ratio

Regression analysis was carried out to measure the accuracy of the regression function in estimating the actual value (Rudianto, 2014: 356). In general, regression analysis is basically a study of the dependence of the dependent variable on one or more independent variables. The goal is to find out the relationship between one variable and another using an estimation equation.

The results of the regression analysis are in the form of coefficients for each independent variable. This coefficient is obtained by predicting the value of the dependent variable with an equation. The analytical model used is multiple linear regression analysis assisted by the computer program Eviews 9 .

Multiple linear regression analysis in addition to measuring the strength of the relationship, multiple linear regression analysis also shows the direction of the relationship

between the independent and dependent variables. The dependent variable (Y) in this study is ROA while the independent variable (X) is CAR and LDR.

With the linear regression equation as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

Information:

Y = ROA

α = Constant

β = Coefficient of independent variable

X₁ = CAR

X₂ = LDR

e = Error

According to Sugiyono (2016: 93) "hypothesis is a temporary answer to the formulation of research problems, therefore research problem formulations are usually arranged in the form of question sentences, said to be temporary because the answers given are only based on relevant theories, not yet based on facts. empirical data obtained through the collection of data". The research hypothesis was tested using multiple linear regression analysis, partial test and simultaneous test.

The t test or partial test is intended to test how the influence of each independent variable individually on the dependent variable. Level used is = 0.05, which means that the possibility of drawing conclusions has a 95% probability or 5% error tolerance. In this test, the *software* reviews 9. Criteria for the hypothesis are accepted or rejected, namely by comparing the value of t count with t table with the following criteria : If $-t_{table} < t_{count} < t_{table}$ OR sig value > 0.05 with a level of 5% then H_0 is accepted and H_a is reject . If $-t_{count} < -t_{table}$ OR sig value < 0.05 with a level of 5%, then H_0 is rejected and H_a is rejected.

To determine the effect of the independent variables (X₁, X₂,) simultaneously (together) on the variable (Y) the F test is used. The formula used according to Sugiyono (2017: 252) "The F test is used to determine the effect simultaneously (together with same) X`X between the independent variable and the dependent variable".

In this test, software Eviews 9 is used . *The criteria* for accepting or rejecting the hypothesis are by comparing the calculated F value with the F table with the following criteria: If the calculated F value $> F_{table}$, then H_0 is rejected and H_a is accepted. If the calculated F value $< F_{table}$, then H_0 is accepted and H_a is rejected.

Results and Discussions

Before using the multiple regression as a model, the BLUE estimator must be tested first. The BLUE estimators are Normality, Autocorrelation, Multicollinearity, heteroskeasticity and linearity. The results are discussed below.

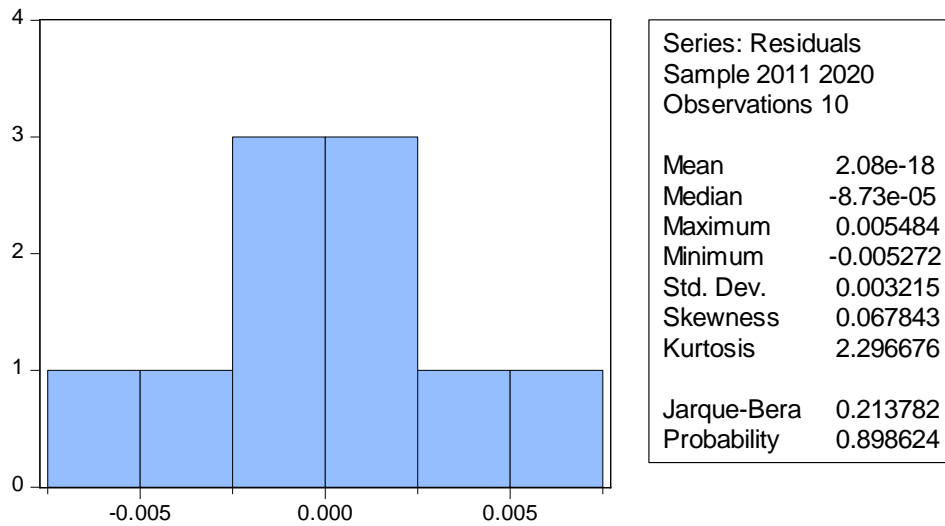


Figure 2. Normality Test

Figure above shows that the model has normal distribution with Jarque-Berra under 1 and Probability $0.898624 > 0.05$.

Table 3. Breusch-Godfrey Serial Correlation LM Test

F-statistics	0.446035 Prob. F(2.5)	0.6634
Obs*R-squared	1.514019 Prob. Chi-Square(2)	0.4691

The table above shows that the residual serial correlation is about 0.4691. It is above 0.05. It means that the model has no autocorrelation.

Table 4 Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistics	0.346079 Prob. F(2.7)	0.7189
Obs*R-squared	0.899822 Prob. Chi-Square(2)	0.6377

Scaled explained SS	0.285860	Prob. Chi-Square(2)	0.8668
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The table above shows that the model is homoscedasticity. It shows with probability 0.6377 that is above 0.05.

Table 5. Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000260	196.0500	NA
CAR	0.000917	32.76675	1.035819
LDR	0.000239	139.6861	1.035819

Table 5 shows that CAR and LDR have VIF about 1.035819 and 1.035819 consecutively. Those means that multicollinearity does not occur.

Table 6. Ramsey RESET Test for Linearity

	Value	df	Probability
t-statistics	0.942446	6	0.3823
F-statistics	0.888205	(1, 6)	0.3823
Likelihood Ratio	1.380511	1	0.2400

The table above shows that the model is linear. The probability is 0.3823 that is above 0.05.

Table 7. Multiple Regression with Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	0.046008	0.016139	2.850636	0.0247
CAR	-0.046864	0.030283	-1.547537	0.1657
LDR	-0.019859	0.015447	-1.285637	0.2395

R-squared	0.328618	Mean dependent var	0.018510
Adjusted R-squared	0.136795	SD dependent var	0.003923
SE of regression	0.003645	Akaike info criterion	-8.147556
Sum squared resid	9.30E-05	Schwarz criterion	-8.056781
Likelihood logs	43,73778	Hannan-Quinn Criter.	-8.247137
F-statistics	1.713130	Durbin-Watson stat	1.313870
Prob(F-statistic)	0.247967		

The table above shows that the independent variables are not significant to the dependent variable. The CAR parameter is -0.046864. The relationship CAR and ROA are inverse. When CAR increases 1% The ROA will decrease 0.046864%. The CAR's t-count is -1.547537. It between t-table -2.306 and 2.306 which shows H_0 is accepted or CAR does not signify ROA.

The LDR parameter is -0.019859. It means if LDR increase 1%, the ROA will decrease 0.019859%. The LDR's t-count is -1.285637 that is between -2.306 and 2.306. It concluded that H_0 is accepted or LDR does not signify ROA.

F-statistic is 1.713130 that is below F-table 4.35. It means that CAR and LDR do not signify ROA simultaneously

Conclusions

Based on the discussion and results of statistical analysis and hypothesis testing that have been carried out in the previous chapter, the research can be concluded that: There is no significant effect between the variable *Capital Adequacy Ratio (CAR)* on *Return On Assets (ROA)* at PT Bank BJB in 2011 – 2020. There is no significant effect between the *Loan To Deposit Ratio (LDR)* variable on the *Return On Assets (ROA)* at PT Bank BJB in 2011-2020. There is no simultaneous significant effect between *the variables Capital Adequacy Ratio (CAR)* and *Loan To Deposit Ratio (LDR)* on *Return On Assets (ROA)* at PT Bank BJB in 2011-2020.

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