Does Loan to Deposit Ratio Affect Return on Asset? Evidence from State-owned Banks

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Abstract. The purpose of this study was to determine the effect of Loan to Deposit Ratio (LDR) on Return on Assets (ROA). To support the research, a causal associative method with a quantitative approach was used. The study was conducted on state-owned banks listed on the Indonesia Stock Exchange for the period 2014-2021. The samples used in this study were 4 state-owned banks consisting of PT Bank Negara Indonesia (Persero) Tbk, PT Bank Rakyat Indonesia (Persero) Tbk, PT Bank Tabungan Negara (Persero) Tbk, and PT Bank Mandiri (Persero) Tbk. The data analysis technique uses simple linear regression, correlation coefficient, coefficient of determination, and hypothesis testing. The results showed that LDR did not affect ROA. So, the high profits obtained by state-owned banks come from income other than loan interest income. This research is expected to improve the financial performance of state-owned banks by still paying attention to the percentage of LDR to obtain maximum profit.

Keywords: Loan to Deposit Ratio, Return on Asset, State-owned Banks

1. Introduction

The banking sector is a financial institution that plays a strong role in the country's economic depelovment [1]. The economic growth of a country is closely related to the banking system. The better the banking system, the greater the impact on economic progress [2]. Banks serve the community by lending money so people believe that the presence of banks can solve financial problems and improve the standard of living of many people [3]. State-owned banks are banks whose capital participation is mostly from the state so that they gain more trust from the public. To maintain public trust, banks must always be in a healthy condition [4].

According to Nashihin and Harahap, one of the bank's strategies to maintain its existence is by operating efficiently [5]. The success of a bank is judged by the effectiveness and efficiency of the bank in managing its resources to achieve management goals, one of which is profit [6]. This success shows that the bank's financial performance is considered good. Financial performance is a description of the financial condition of a company which includes all of its financial activities [7].

Bank's financial performance can be seen through one of the profitability ratios, namely Return On Assets (ROA). ROA focuses on the company's ability to earn profits through its operational activities by utilizing its assets [8]. Profit is one of the important mechanisms in encouraging the country's economic grwoth [9]. The greater the profit obtained, the higher the ROA percentage so that the company is considered more effective in managing its assets [6]. In 2020, during the COVID-19 pandemic, the Indonesian government imposed Large-Scale Social Restrictions (PSBB) which resulted in almost all state-owned banks experiencing a decline in income, except for PT Bank Tabungan Negara (Persero) Tbk with the issuer code BBTN. During the weakening of the Indonesian economy, BBTN managed to increase its revenue by 0.56%. See figure 1.

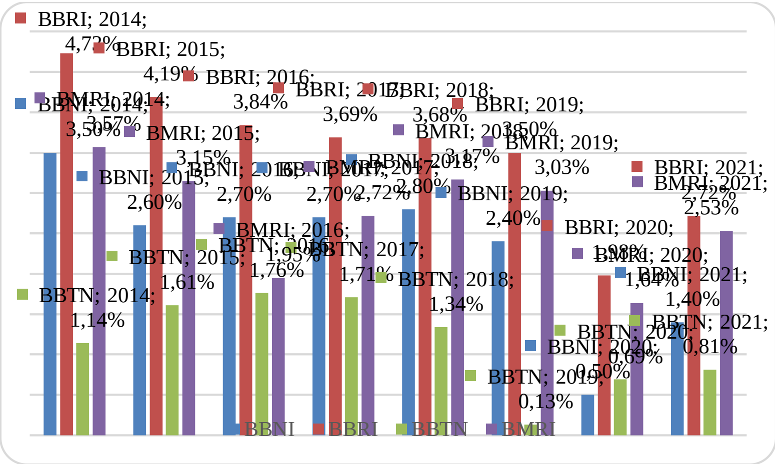

Figure 1. State-owned Banks ROA data

The factor that can affect ROA is one of the liquidity ratios, namely the Loan to Deposit Ratio (LDR). LDR is a company's ability to return depositors' funds using its liquidity source, namely credit [10]. Bank Indonesia Regulation Number 15/15/PBI/2013 explains that the level of bank liquidity is said to be healthy if the LDR is in the range of 78% - 92% [11]. Increasing LDR will cause bank liquidity problems [12]. The liquidity problem can cause the bank’s reputation to decline [13]. If the LDR is too high, the bank does not have sufficient liquidity to meet its obligations to its customers, while if it is too low, it means that the bank has sufficient liquidity but low income [14].

When the LDR increases, the profits obtained by the bank will increase because the bank earns interest income from the loan results [15]. The amount of credit disbursed will determine the profits obtained by the bank [16]. This is supported by the results of previous studies which explain that LDR affects ROA [8,11]. Other previous studies explained that LDR did not affect ROA [10, 14, 17, 18, 19].

This study aims to determine the effect of LDR on ROA in state-owned banks. Meanwhile, the method used in this study is a causal associative method with a quantitative approach.

2. Method

The research method uses a causal associative method with a quantitative approach. The causal associative technique with a quantitative approach is a method for determining and describing explicit link between one variable and another causal variable through data collection, processing, analysis, and interpretation in statistical hypothesis testing [20]. The author utilizes this technique because the purpose of this study is to clearly analyze the causal impact of the variable LDR on ROA. The population used was 4 SOEs consisting of PT Bank Negara Indonesia (Persero) Tbk, PT Bank Rakyat Indonesia (Persero) Tbk, PT Bank Tabungan Negara (Persero) Tbk, and PT Bank Mandiri (Persero) Tbk. The sampling technique used saturated sampling so that the population was used as a sample. The analysis technique uses simple linear regression analysis, correlation coefficient analysis (R), coefficient of determination analysis (R2), and hypothesis testing using a t-test to determine the effect of LDR on ROA.

3. Results and Discussion

Before using the simple regression model, the classical assumption test was carried out consisting of normality, heteroscedasticity, and autocorrelation. The regression model in this study is normally distributed because of the value of sig. 0.200 > 0.05. See table 1.

Table 1. Normality Test

		Unstandardized Residual
N		32
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	1,10703623
Most Extreme Differences	Absolute	,066
	Positive	,066
	Negative	-,064
Test Statistic		,066
Asymp. Sig. (2-tailed)		,200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Heteroscedasticity testing using Spearman Rank shows the results of sig. LDR 0.550 > 0.05 and sig. ROA 0.956 > 0.05 means homoscedasticity data. See table 2.

Table 2. Heteroskedastisitas Test

			LDR	ROA	ABS_RES
Spearman's rho	LDR	Correlation Coefficient	1,000	-,353*	,110
		Sig. (2-tailed)	.	,048	,550
		N	32	32	32
	ROA	Correlation Coefficient	-,353*	1,000	,010
		Sig. (2-tailed)	,048	.	,956
		N	32	32	32
	ABS_RES	Correlation Coefficient	,110	,010	1,000
		Sig. (2-tailed)	,550	,956	.
		N	32	32	32

*. Correlation is significant at the 0.05 level (2-tailed).

The data shows the Durbin-Watson value = 2.245 with the value obtained from the DW table is d_U = 1.5019 and the value 4 - d_U = 2.4981, so it can be concluded that in the regression model there is no autocorrelation because 1.5019 < 2.245 < 2, 4981. See table 3.

Table 3. Durbin Watson Test, Correlation Coefficient, and Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,240[a]	,057	,026	1,12534	2,245

a. Predictors: (Constant), LDR
b. Dependent Variable: ROA

$$Y = 5,263 – 0,031X \quad (1)$$

Equation (1) shows that (a) the constant value is 5.263, meaning that if the LDR has a constant value then the ROA is 5.263 and (b) the LDR value is - 0.031, which means that when the LDR increases, it will be followed by a decrease in ROA. See table 4.

Tabel 4. Simple Linear Regression Analysis and Hypothesis Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,263	2,101		2,505	,018
	LDR	-,031	,023	-,240	-1,353	,186

a. Dependent Variable: ROA

Table 3 shows the correlation coefficient (R) of LDR with ROA is 0.240. This correlation is included in the weak correlation because it is in the range of 0.200 – 0.399. The coefficient of determination (R Square) is 5.7%, which means that LDR has an effect on ROA of only 5.7%, of which the remaining 94.3% is influenced by other factors outside the regression model.

Table 4 shows that $t_{statistic}$ -1.353 < t_{table} 2.04227 and sig. 0.186 > 0.05 means that LDR does not affect ROA. Research shows that LDR does not affect ROA because even though banks provide large loans to customers, they do not necessarily generate large profits. This depends on the quality of the customer's credit because credit is a very risky thing [10]. Large bank profits may not come from credit interest income but come from other income. The results of this study are supported by previous studies which stated that LDR did not affect ROA [10,14]. However, it is inversely proportional to previous studies which stated that LDR affected ROA [8,11, 17, 18, 19].

4. Conclusion

LDR does not affect ROA because the income earned by the bank comes from income other than interest income on loans that are distributed to the public. Although the results of the study show that LDR does not affect ROA, it is hoped that banks will continue to pay attention to lending to customers through the LDR ratio to obtain maximum interest income.

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