

The Effect of Financial Risk, Capital Structure, Banking Liquidity on Profitability. Operational Efficiency as Intervening Variables in Persero Bank and Private Commercial Banks

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ABSTRACT: This study aims to (1) to partially analyze the effect of financial risk, capital structure, and liquidity on operational efficiency (2) to partially analyze the effect of financial risk, capital structure, liquidity, and operational efficiency on (3) to analyze partially the effect of financial risk, capital structure, and liquidity on profitability through operational efficiency at State-Owned Banks and Private Commercial Banks. The data collection technique used purposive sampling. The type of data used is quantitative data and secondary data sources which are downloaded through the website <https://www.idx.co.id/>. The results showed (1) financial risk, capital structure, and liquidity partially had a significant effect on operational efficiency (2) financial risk, capital structure, liquidity, and operational efficiency partially had a significant effect on profitability. (3) Financial risk, capital structure and liquidity partially have no significant effect on profitability through operational efficiency.

KEYWORDS- *Financial Risk, Capital Structure, Liquidity, Operational Efficiency, Profitability*

I. INTRODUCTION

A bank is a financial institution that functions as an intermediary between the parties providing funds and those in need of funds. One sector that utilizes the distribution of funds from the bank to trigger economic growth is the real sector. According to Kasmir (2014:4) that managing banking must be done professionally, so that it can obtain continuous profits as the main purpose of the bank was established, therefore in obtaining profit (profitability) in managing the banking business sector it is expected to maintain the continuity of banking business in Indonesia. . One way that is done by a bank is to collect funds for the community and then processed it in the form of credit.

To improve the welfare of the community, savings from the community are channeled back to the community in the form of credit. The increasingly fierce competition is reflected in the emergence of relatively new banks. Therefore, one of the factors that are of concern to banks is to maintain the level of bank liquidity. Liquidity is related to the bank's ability to meet obligations that are soon due. Constraints in the provision of liquidity can affect a bank's ability to generate profits or bank profitability . The existence of the ability of banks to earn profits in the banking world has an important role for owners, depositors, government and the public in assessing the financial condition of a Bank. Return on assets (ROA) is one of the ratios to measure a bank's ability to generate profits. Return On Assets focuses on the bank's ability to earn earnings in the company's operations. Meanwhile , Return on Equity (ROE) only measures the return obtained from the company owner's investment in the business. So in this study the emphasis is on ROA as a measure of bank performance.

The reason for choosing Return on Assets (ROA) as a performance measure is because it can be used to measure the company's effectiveness in generating profits through the use of its assets (Sekarwati, 2019). Return On Assets is a ratio in measuring the level of profit obtained based on the management of total assets. If

the ratio is getting bigger, it will reflect better financial performance or a high level of profitability . Profitability is one indicator in making it easier for banks to obtain funds from third parties. This is due to public trust in banks to manage their funds in the form of credit. Better credit distribution can affect bank profits or improve profitability .

Furthermore, there are various aspects that affect Return On Assets which is a measure of profitability according to the findings of several previous researchers, namely Credit Risk, Capital Structure, Operational Efficiency and Liquidity, each of which is proxied by Non Performing Loans (NPL), Capital Adequacy Ratio (CAR) . , BOPO and Loan to Deposit Ratio (LDR).

According to the 2016-2019 Indonesian Banking Statistics, a number of measures of banking financial performance show fluctuating values and are shown in the following table:

**Table 1
NPL average. CAR, LDR, BOPO and ROA at Persero Banks and
Private Banks in Indonesia 2016-2019**

Rasio	Tahun			
	2016	2017	2018	2019
NPL %	3,22	2,96	2,66	2,73
CAR %	23,19	23,42	22,91	23,54
LDR %	90,77	88,68	94,09	93,96
BOPO %	81,26	78,39	79,13	80,65
ROA %	2,41	2,49	2,50	2,48

Source: Indonesian Banking Statistics.

Table 1.1 shows that the NPL ratio from 2016 to 2019 is already below the BI standard of 5%. This indicates that the ability of banks to manage non-performing loans has been effective, which means that state-owned banks and private banks that were sampled in this study are good enough to carry out monitoring or supervision in providing credit. Meanwhile, seen from the Capital Adequacy Ratio, in 2016-2017, it has a tendency to increase from 23.19% to 23.42%. However, in 2017 and 2018, CAR has decreased.

Then seen from the LDR ratio during 2016-2017 , it decreased from 90.77% to 88.68%, as well as in 2018-2019 which also decreased from 94.09% down to 93.96%. With the LDR ratio which is already above 85%, it can be said that all state-owned and private banks observed in this study are in good category. Furthermore, judging from the BOPO ratio, the BOPO ratio for state-owned banks and private banks observed in this study is classified as good, because the average BOPO ratio is not more than 92% and this is in accordance with Indonesian bank standards. The smaller the BOPO ratio, the more efficient the operational costs incurred by the bank, which means that the bank's financial performance is increasing. On the other hand, the greater the BOPO ratio, the less able the bank to reduce operational costs, which causes the bank to be less efficient in managing the resources available to the bank so that it has a negative effect on bank profits.

Some of the results of research conducted by previous researchers related to the relationship between non-performing loans, capital asset ratio, loan deposit ratio , operational costs to operating income (BOPO) on financial performance with indicators of return on assets . Findings from Pinasti & Mustikawati 2018), which found that NPL had a positive and not significant effect on profitability while the research conducted by Fitria (2017), Saerang, et al. (2014) NPL has a negative and insignificant effect on profitability.

Research conducted by Harun (2016), Bawono (2018) states that CAR has no effect on ROA. Then research by Kurniasih (2016) found that LDR had no partial effect on ROA. Research by Saerang et al. (2014) that partially LDR has a positive and significant effect on ROA. Meanwhile Kurniasih (2016) found that BOPO had no significant effect on return on assets . In contrast to the results of research by Harun (2016) that BOPO has a negative and significant relationship to return on assets .

The increase in NPL creates distrust of banks towards customers. This resulted in a decline in lending to the public and ultimately affected bank profitability . Research results from Nguyen (2020) prove that NPL has a significant effect on profitability.

The low BOPO ratio reflects the efficiency in managing bank operational costs. Operational costs have a significant correlation with the bank's ability to manage risky productive assets. The ability of banks to manage their assets properly will ensure capital adequacy (CAR). A high CAR can anticipate losses in the event of a decline in asset value and ultimately increase the BOPO ratio and bank profitability . The results of research

from Chiaramonte and Casu (2017), Vinh and Thao (2016) which prove that CAR has a significant positive effect on banking efficiency which in turn affects profitability.

Based on previous researchers, where in this study a mediation test will be carried out by choosing operational cost efficiency as a mediating variable which aims to examine the effect of Financial Risk, Capital Structure, Banking Liquidity on Profitability mediated by Operational Efficiency in State-Owned Banks and Private Commercial Banks. The reason for choosing operational cost efficiency as a mediating variable is based on the inconsistency of research and statements found by Abbas et al. (2019) that research on the relationship between financial risk, capital structure, and liquidity on banking profitability in Asian countries that are still experiencing economic development is still very rare. Thus, it is necessary to reveal about these relationships, especially in the banking world in Asian countries which are still experiencing economic development, especially after the banking crisis of 2008 (Abbas, et al. 2019).

II. LITERATURE REVIEW

1. Credit Risk

a) Stewardship Theory

Stewardship theory describes a situation where customers (stewards) are not motivated by individual goals but are aimed at their primary outcome goals for the benefit of the bank (principals). Stewardship theory views customers as credit recipients as parties who can be trusted to act as well as possible for the benefit of the bank. Customers are expected to pay off their obligations before/at maturity because they can minimize financial risk and increase profitability (Donaldson, et al. 1997).

Stewardship theory describes a situation where management is not motivated by individual goals but is more focused on their main outcome goals for the benefit of the organization and assumes a strong relationship between satisfaction and organizational success (Yoyo, et al. 2017:60).

b) Definition of Financial Risk (Credit Risk)

Credit risk is a condition where the debtor does not repay the principal and other cash related to investments in accordance with the provisions stipulated in the credit agreement. Credit risk can cause cash flow problems and affect bank liquidity because payments may be delayed or non-existent, Greuning & Bratanovic (2011). Financial Risk is measured by Non Performing Loan (NPL). Non-Performing Loan (NPL) is the ability of banks to manage non-performing loans (Wibisono, 2017:54).

2. Capital Structure

Capital structure is a balance or comparison between foreign capital and own capital. Foreign capital in this case is long-term and short-term debt. While the own capital is divided into retained earnings and the company's ownership participation in which the aim is to increase the value of the company in the market (Brigham & Ehrhardt, 2011:600).

3. Liquidity

a) Assets and Liabilities Management Theory

Assets and Liabilities Management Theory explains that asset and liability management is aimed at managing liquidity risk, especially cash flow, which aims to maintain an adequate and optimal level of liquidity, such as minimizing idle funds but still taking into account the adequacy of liquidity that will mature (mature). Banks that have a good level of liquidity will have the ability to pay off their obligations, thereby minimizing operational efficiency and increasing profitability.

b) Definition of Liquidity

Liquidity is a condition related to a certain amount of cash and other assets that are easily converted into cash (Darmawi, 2012: 59). According to Muljono (1999) describes a bank that has a good level of liquidity when: (1) the bank has cash assets as much as needed to be used to ensure liquidity; (2) The bank has other liquid assets; (3) Banks are able to create new assets. Similarly, the measurement of bank liquidity uses ratios, such as: (1) The ratio of the total net liabilities of call money to current activities; (2) The ratio between loans to funds received by the bank.

4. Profitability

a) Signaling Theory

Signaling Theory explains that banks with high levels of profitability provide a positive signal for the public to entrust their funds to be managed. Funds sourced from the community will be channeled in the form of credit. Optimal credit management can minimize the occurrence of financial risks that have an impact on operational efficiency and profitability.

b) Definition of profitability

Profitability is a ratio used to measure a company's ability to generate profits from its normal business activities. A company is an organization that operates with the aim of making a profit by selling products (goods and/or services) to its customers.

III. METHOD

The population of this research is 40 banks, namely state-owned banks and Indonesian national private commercial banks listed in the Bank Indonesia directory for the period 2016 to 2019. The sampling technique uses purposive sampling. The amount of data that was processed with the help of the SPSS-23 program was 160 data.

The type of data used is quantitative data and the data source is secondary data in the form of time series data such as financial reports from the Bank Indonesia directory. The data analysis method used classical assumption testing (normality test, multicollinearity test, heteroscedasticity test, autocorrelation test), multiple/multiple regression, coefficient of determination, and hypothesis testing (t test). The variables used consist of three exogenous variables (financial risk: X1, capital structure: X2, liquidity: X3) and two endogenous variables (operational efficiency: Y1 and profitability: Y2).

IV. RESULTS AND DISCUSSION

Before testing the Data Normality Test and other Statistical Tests, it is first explained about the characteristics of the data, namely NPL, CAR, LDR, BOPO and ROA as follows:

Table 2
Descriptive Statistics of Research Variables

	N	Minimum	Maximum	Mean	Std. Deviation
NPL	160	.03	9.92	2,10	1,49
CAR	160	9.01	147.44	22,90	12,51
LDR	160	47.54	163.10	87,21	17,87
BOPO	160	8.09	236.20	92,28	23,89
ROA	160	-18,89	4,00	0,64	2,77
Valid N (listwise)	160				

Source: SPSS output, processed data

From the results of the descriptive analysis in Table 2, the descriptive statistical analysis can be described as follows:

1. The minimum value for Financial Risk (NPL) is 0.03% obtained from PT Bank National Nobu Tbk. Meanwhile, PT Bank Neo Commerce Tbk has the maximum NPL ratio of 9.92%. This means that the highest NPL among the sample companies is 9.92%. The average value of NPL during 2016-2019 is 2,1003%, meaning that for every Rp. 1, the loan disbursed has the potential for non-payment (loss) of Rp. 0.02.
2. The minimum CAR value at PT. Banten Regional Development Bank TBK 9.01 percent. Meanwhile, PT Bank Jago Indonesia has the highest CAR, which is 147.44%. Then the average NPL value during 2016-2019 was 22.8986%, meaning that for every Rp. 1, fixed assets at risk can guarantee a capital readiness of Rp. 0.23.
3. The minimum LDR value at PT Bank Jago Indonesia Tbk is 47.54. Meanwhile, PT Bank BTPN, Tbk has the highest LDR, which is 163.10%. The average LDR value during 2016-2019 is 87.2186%, meaning that for every Rp. 1, funds from the public are channeled in the form of loans of Rp. 0.87.
4. The minimum BOPO ratio is PT Bank Jago Indonesia Tbk at 8.09%. Meanwhile, PT Bank PT Bank Of India Indonesia, Tbk has the highest BOPO, which is 235.20%. The average value of BOPO during 2016-2019 is 92.2762%, meaning that for every Rp. 1, operating income is used for operational costs of Rp. 0.92.
5. The minimum ROA value is PT Bank Jago Indonesia Tbk which has -18.89%. Meanwhile, PT Bank Mayapada Internasional, Tbk has a maximum ROA of 4.00%. The average ROA value during 2016-2019 is 0.6355%, meaning that every Rp. 1 asset can provide a profit of Rp. 0.006.

Table 3
Residual Data Normality Test Results

Uji Kolmogorov-Smirnov Test	Unstandardized Coefficient
Nilai Kolmogorov smirnov test	0,090
Sign	0,200

Source: SPSS output, processed data

From the results of the Kolmogorov-Smirnov test above, the Asymp value is produced. Sig. (2-tailed) of = 0.200 > 0.05, these results can be concluded that the residual data in this regression model is normally distributed, because the value of Asymp. Sig. (2-tailed) is already above 0.005

Table 4
Multicollinearity Test Result

Model	Collinearity Statistics		Conclusion
	Tolerance	VIF	
NPL	0,774	1,293	There are no symptoms of multicollinearity
CAR	0,900	1,111	There are no symptoms of multicollinearity
LDR	0,981	1,019	There are no symptoms of multicollinearity
BOPO	0,741	1,350	There are no symptoms of multicollinearity

Source: SPSS output, processed data

Based on the results of the output Table 4, it can be concluded that there is no multicollinearity due to VIF 10 and tolerance %< 1, meaning that there is no strong correlation or relationship between two or more independent variables in a multiple regression model.

Table 5
Heteroscedasticity Test Results

Residual Model	Independent Variable	Sig	Description
ABRES	NPL	0,054	There is no heteroscedasticity because the value of χ^2 value > 0.05
	CAR	0,062	
	LDR	0,059	
	BOPO	0,057	

Source: SPSS output, processed data

Based on the results of the output Table 5, it can be concluded that the significance value of each variable is 0.05, meaning that there is no variance inequality from the residuals for all observations in the regression model or there is no heteroscedasticity.

Table 6
Autocorrelation Test Results

Model	Mark	Description
R	0,668	No symptoms of autocorrelation
Rsquare	0,473	
Nilai du	1,7798	
Nilai dl	2,2202	
Durbin-Watson	1,929	

Source: SPSS output, processed data

Based on the Durbin Watson table (Appendix 12), it is known that the value of d (dw) = 1.929 from the upper limit (du) which is 1.7798 and less than (4-du) 4-1.7798 = 2.2202. So it can be concluded that there are no problems / symptoms of Autocorrelation.

Table 7
Coefficient of Determination Analysis

Model	Mark	Description
R	0,509	The influence is strong enough
Rsquare	0,259	
Adjusted Rsquare	0,245	
Std. Error of the Estimate	25,83	

Source: SPSS output, processed data

The effect/contribution simultaneously (R_1^2) between financial risk, capital structure and liquidity on operational efficiency is 46% and the remaining 54% is influenced by other factors not observed in the model. Meanwhile, the effect/contribution simultaneously (R_2^2) between financial risk, capital structure and liquidity on profitability is 24.5% and the remaining 75.5% is influenced by other factors not observed in the model.

Simultaneous and Partial Hypothesis Testing

- (1) The results of simultaneous hypothesis testing show that there is a positive and significant effect ($F_1 = 19.111$; $Sig = 0.000 < 0.05$) between financial risk, capital structure and liquidity on operational efficiency. Likewise, there is simultaneously a positive and significant effect ($F_2 = 36.536$; $Sig = 0.000 < 0.05$) between financial risk, capital structure, liquidity and operational efficiency on profitability.
- (2) The results of partial hypothesis testing show the following:
 - (a) Financial risk ($P=0.000 < 0.05$, beta coefficient = 0.419), capital structure ($P=0.002 < 0.05$ and beta coefficient = -0.213), and liquidity ($P=0.000 < 0.05$ and beta coefficient = -0.028 partially significant effect on operational efficiency ($P = 0.000 < 0.05$, beta coefficient = 0.419)).
 - (b) Financial risk ($P=0.001 < 0.05$ and beta coefficient = -0.242), capital structure ($P=0.003 < 0.05$ and beta coefficient = 0.481), liquidity ($P=0.000 < 0.05$ and beta coefficient = 0.187), and operational efficiency ($P = 0.000 < 0.05$ and beta coefficient = -0.435) partially significant effect on profitability.
 - (c) Financial risk ($P=0.054 > 0.05$ and beta coefficient = -0.182), capital structure ($P=0.061 > 0.05$ and beta coefficient = 0.093), and liquidity ($P=0.059 > 0.05$ and beta coefficient = 0.012) partially has no significant effect on profitability through operational efficiency. so that the statement of hypothesis five b can be rejected or not supported. In this case, there is no relationship between the influence of financial risk on profitability through operational efficiency.

Discussion

Effect of Financial Risk on Operational Efficiency

The results of statistical hypothesis testing prove that financial risk has a significant effect on operational efficiency. Financial risk is proxied by NPL which is an indication of a problem within the bank, which if not addressed immediately, will have a negative impact on the bank itself. A high NPL indicates the customer's failure or inability to repay the loan amount received along with the interest, according to a predetermined period of time. This results in losses and increases operational efficiency. The results of this study support the opinion of Kasmir (2004), Afkar, (2017). However, the results of research from Sendyvia Candra (2015) show that NPL has no significant effect on the level of efficiency.

Effect of Capital Structure on Operational Efficiency

The results of statistical hypothesis testing prove that the capital structure has a negative and significant effect on operational efficiency. Capital structure is proxied by Capital Adequacy Ratio (CAR). Banks with high CAR have the ability to provide funds as capital for business development and accommodate the risk of losses that may occur. The risk of loss affects operational efficiency. The results of this study are supported by the findings of Jackson and Fethi (2000). However, this is different from the research conducted by Subandi and Ghazali (2014) which proves that CAR has a significant positive relationship to bank efficiency.

Effect of Liquidity on Operational Efficiency

The results of statistical hypothesis testing prove that liquidity proxied by Loan to deposit ratio (LDR) has a positive and significant effect on operational efficiency. A high LDR ratio indicates low cash availability and has the potential to pose a liquidity risk. Liquidity risk occurs due to the inability to generate cash flow from

assets, both from productive assets (payment of installments) or from asset sales and the inability to collect cash flows from fundraising, interbank transactions, and other loans, congestion or delays. cash flow . The results of this study support the findings of Subandi and Ghazali (2014), however, the findings of Purwoko and Sudiyanto (2013) show that LDR has no effect on operational efficiency.

Effect of Operational Efficiency on Profitability

The results of statistical hypothesis testing prove that operational efficiency has a significant effect on profitability. Operational efficiency is proxied by BOPO which is the ratio between operating costs divided by operating income. The BOPO ratio is used to measure the efficiency of a bank's business or to measure the amount of bank costs incurred to obtain income from assets. The results of this study support the findings of Pinasti and Mustikawati (2019). Likewise with Harun's research (2016) the findings that BOPO has a significant effect on ROA. However, the results of this study do not support the findings of Kurniasih, et al. (2016) which shows BOPO has a negative and insignificant effect on ROA. Meanwhile, the findings of Bawono (2018) which show BOPO have a positive and insignificant effect on ROA.

Effect of Financial Risk on Profitability

The results of statistical hypothesis testing prove that financial risk proxied by Non Performing Loans (NPL) has a significant effect on profitability. NPLs are related to the existence of credit problems in the bank, which if not addressed immediately, will have a bad impact on the bank itself. A high NPL indicates the customer's failure or inability to repay the loan amount received along with the interest, according to the specified time period. This causes losses and reduces the bank's profitability. The results of this study support the opinions of several experts, as stated by Kasmir (2004), Kurniasih (2016), however, the findings of Anton Bawono, Usman Harun (2016) show that NPL has a negative and insignificant effect on ROA.

The Effect of Financial Risk on Profitability Through Operational Efficiency

The results of statistical hypothesis testing prove that operational efficiency has no significant effect on intervening financial risk on profitability. Operational efficiency as proxied by the BOPO ratio is related to the share of operating income used to finance bank operational activities. Banks that have a high level of operational efficiency have a small BOPO ratio. A small BOPO ratio indicates that the bank has the ability to control its operating costs smaller with the assumption that operating income is relatively constant. Likewise, a small BOPO ratio indicates a bank has the ability to increase operating income assuming relatively constant operating costs.

Effect of Capital Structure on Profitability

The results of statistical hypothesis testing prove that capital structure has a positive and significant effect on profitability. Capital structure is proxied by Capital Adequacy Ratio (CAR). Banks with high CAR have the ability to provide funds as capital for business development and accommodate the risk of losses that may occur. The risk of loss affects the profitability of the bank. To increase CAR, banks need to optimize the management of risky assets. This study is supported by research conducted by Kurniasih (2016) which found that capital structure as measured by CAR has a partial effect on ROA. However, the results of this study do not support the findings of Harun (2016); Bawono and Falakh (2018) which show that CAR has a positive and insignificant effect on ROA. While the findings from Pinasti and Mustikawati (2018) show that CAR has a negative and significant effect on ROA.

Effect of Capital Structure on Profitability through Operational Efficiency

The results of statistical hypothesis testing prove that operational efficiency has no significant effect on intervening capital structure on profitability. operational efficiency which is proxied by the BOPO ratio in relation to the share of operating income used to finance the bank's operational activities. Banks that have a high level of operational efficiency have a small BOPO ratio. A small BOPO ratio indicates that the bank has the ability to control its operational costs. Likewise, a small BOPO ratio indicates the bank has the ability to increase its operating income. The results of this study do not support the findings of Chiaramonte and Casu (2017), Vinh and Thao (2016) which prove that capital structure has a significant effect on banking efficiency which in turn affects profitability.

Effect of Liquidity on Profitability.

The results of statistical hypothesis testing prove that liquidity has a positive and significant effect on profitability. Liquidity is proxied by Loan to deposit ratio (LDR). A high LDR ratio indicates high cash availability and has the potential not to pose a liquidity risk. Liquidity risk occurs due to the inability to generate

cash flow from assets, both from productive assets (payment of repayments/installments) or from asset sales and the inability to collect cash flows from fundraising, interbank transactions, and other loans, congestion or the existence of cash flow delays . The results of this study are supported by Wibisono (2017:48), Usman Harun (2016); Saerang, et al. (2014). However, the results of this study do not support the findings of Erma Kurniasih (2016) which shows that LDR has a positive and insignificant effect on ROA.

The Effect of Liquidity on Profitability Through Operational Efficiency

The results of statistical hypothesis testing prove that operational efficiency has no significant effect in intervening Liquidity on profitability. Operational efficiency as proxied by the BOPO ratio is related to the share of operating income used to finance the bank's operational activities. Banks that have a high level of operational efficiency have a small BOPO ratio. A small BOPO ratio indicates that the bank has the ability to control its operating costs smaller with the assumption that operating income is relatively constant. Likewise, a small BOPO ratio indicates a bank has the ability to increase operating income assuming relatively constant operating costs.

V. CONCLUSION

Based on the results of research conducted which aims to determine the effect of credit risk, NPL, CAR, and LDR on BOPO and ROA processed using path analysis, conclusions can be drawn from the overall results of this study, namely:

1. The results of the analysis carried out can be concluded that credit risk has a positive and significant effect on operational cost efficiency at state-owned banks and private banks.
2. The effect of capital structure (CAR) on operational cost efficiency, it can be concluded that capital structure (CAR) is negative and significant on operational cost efficiency
3. The effect of operational efficiency (BOPO) on profitability, where from the results of the analysis it can be concluded that operational cost efficiency has a negative and significant effect on return on assets (ROA).
4. The effect of financial risk (NPL) on profitability (ROA) it can be concluded that NPL has a negative and significant effect on return on assets (ROA).
5. Based on the results of the path test, it shows that operational cost efficiency (BOPO) cannot mediate the effect of financial risk (NPL) on profitability (ROA).
6. Based on the path test results, it can be concluded that operational cost efficiency cannot mediate the effect of capital structure (CAR) on profitability (ROA).
7. From the path test results, it can be concluded that operational cost efficiency can mediate the effect of liquidity (LDR) on profitability (ROA).

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