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Effect of capital adequacy, credit risk, and operational efficiency on profitability with liquidity as an intervening variable for BUMN Banks 2018-2022

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Abstract. *This study aims to determine Capital Adequacy Ratio (CAR), Non Performing Loans (NPL) and Operational Efficiency (BOPO) to Profitability (ROA) with Loan to deposit Ratio (LDR) as Intervening Variables in BUMN Banks in 2018-2022. The research method used is a quantitative method with a sample of 4 state-owned banks. The data used is secondary data in the form of panel data taken from annual reports published on the website of the IDX (Indonesian Stock Exchange) which are analyzed using the sobel test analysis technique. Data were analyzed using the eviews 9 program. The conclusion from the results of this study was that CAR had a negative and significant effect on LDR, NPL and BOPO had no significant effect on LDR, CAR and BOPO had a negative and significant effect on profitability, NPL had no significant effect on profitability, LDR had an effect positive and significant effect on profitability. LDR can mediate the effect of CAR on Profitability, LDR cannot mediate the effect of NPL and BOPO on Profitability.*

Keywords:
Capital Adequacy, Liquidity, Operational Efficiency, Credit Risk, Financial Performance

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A. INTRODUCTION

In addition to providing other bank services and products, banks serve as financial intermediaries in the collecting and distribution of public monies and donations (Cashmere, 2012:11). As a result of internal and external causes in the economic sector, political social law defense, and security, the banking industry in Indonesia is evolving and changing. Debt financing decisions must consider both internal and external factors, particularly opportunities from product banks. (2019's Maulana & Yusuf).

Banks can be used as a yardstick to measure a nation's development.A nation's economy performs better the better its financial circumstances are. Given the industry's importance, the banking sector must be able to maintain and improve its financial performance.A nation's economy depends heavily on banking. The management's success in leveraging corporate resources to produce the highest possible profit is reflected in the company's financial performance (Mansyur, 2017). The evaluation of a bank's health or unhealthiness is closely correlated with its financial performance. If banks do well financially, they might be said to be in excellent health.

The correct metric for evaluating a bank's financial success is its level of profitability, which may be determined through financial reports. Being profitable means a corporation can produce money quickly and effectively. The performance of the bank improves as its profitability increases.

Return on Assets (ROA) and Return on Equity (ROE) are two metrics that can be used to determine profitability. ROA is one of the profitability ratios that has been employed in research since it can be used to measure a bank's effectiveness in generating profits overall. The degree of profit realized by the bank will increase along with the ROA, and so will the bank's position in terms of asset utilisation (Rivai et al., 2013).The dangers that banks confront have increased as the banking industry has grown.

Banks are getting more and more complicated. As a result, any banker managing a banking operation must fully comprehend the various business risks that banks confront (Latumaerisa, 2011). The possibility of incidents that could result in bank losses constitutes risk in this.

Risk credit is one of the dangers that the banking industry frequently faces. This is due to the fact that the majority of the bank's primary activities involve the granting of credit, and the problem with lending activities is the customers' inability to fulfill their financial commitments to the bank. Credit risk is one of the many hazards that banks face, and it has a significant impact on bank profitability, according to Kolapo et al. (2012).

As for other metrics that are taken into consideration when determining whether profitability ratios will rise or fall, these include the percentage of Loan to Deposit Ratio (LDR), the percentage of Non-Performing Loans (NPL), the efficiency of bank performance as measured by the percentage comparison of Opera ratio, and the bank's capacity to meet immediate financial obligations.

Table 1. Banks BUMN

Nama Bank	Tahun	CAR	NPL	BOPO	ROA	LDR
_BBNI	2018	0,1850	0,0190	0,7020	0,0280	0,8880

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_BBNI	2019	0,1970	0,0230	0,7320	0,0240	0,9150
_BBNI	2020	0,1680	0,0430	0,9330	0,0050	0,8730
_BBNI	2021	0,1970	0,0370	0,8120	0,0140	0,7970
_BBNI	2022	0,1930	0,0280	0,6860	0,0250	0,8420
_BBRI	2018	0,2121	0,0216	0,6840	0,0368	0,8896
_BBRI	2019	0,2255	0,0262	0,7010	0,0350	0,8864
_BBRI	2020	0,2061	0,0294	0,8122	0,0198	0,8366
_BBRI	2021	0,2528	0,0308	0,7430	0,0272	0,8367
_BBRI	2022	0,2330	0,0282	0,6420	0,0376	0,7917
_BBTN	2018	0,1821	0,0281	0,8558	0,0134	1,0349
_BBTN	2019	0,1732	0,0478	0,9812	0,0013	1,1350
_BBTN	2020	0,1934	0,0437	0,9161	0,0069	0,9319
_BBTN	2021	0,1914	0,0370	0,8928	0,0081	0,9286
_BBTN	2022	0,2017	0,0338	0,8600	0,0102	0,9265
_BMRI	2018	0,2096	0,0279	0,6648	0,0317	0,9674
_BMRI	2019	0,2139	0,0239	0,6744	0,0303	0,9637
_BMRI	2020	0,1990	0,0329	0,8003	0,0164	0,8295
_BMRI	2021	0,1960	0,0281	0,6726	0,0253	0,8004
_BMRI	2022	0,1946	0,0188	0,5735	0,0330	0,7761

Source: E-views (2023)

Banks utilize ratios of liquidity in addition to profitability ratios to assess their performance. The Loan to Deposit indicator (LDR) is a frequently used liquidity indicator. LDR is a ratio used to compare total credit to total third-party funds in order to assess a bank's liquidity (ability to satisfy long-term obligations). The ideal number for a loan to deposit ratio range from 78% to 92% determined since 2 December 2013 is based on SE No. 15-41-DKMP.

Operating Expenses Operating Income (BOPO), which is found in the financial statements portion of the comprehensive income statement, is the next ratio in evaluating the financial performance of banks. One of the ratios used to assess a bank's performance in

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controlling operating expenses and reveal operational effectiveness of the bank is the BOPO ratio itself. According to the appendix to SE BI No. 6/23/DPNP, a BOPO value of 94% to 96% or above is considered to be sufficient.

If a bank's LDR ratio value is between 78% and 92%, its NPL value ratio is between 5% and 5%, and its BOPO ratio value is between 94% and 96%, it can be considered healthy. The data on the Loan to Deposit Ratio (LDR), a measure of a company's level of liquidity in achieving financial efficiency, are shown below.

observe the Loan to Deposit Ratio's (LDR) rising value. Operational Income Operating Costs (BOPO) and Non-Performing Loans (NPL).if you exceed the maximum rating cap, the level of banking performance will be rated lower. The bank is declared incapable of managing maximum liquidity, credit, and bank efficiency if the value is below the minimal value that Bank Indonesia has set.

And based on the profitability ratios that are benchmarked with Return On Asset (ROA) and Net Interest Margin (NIM), the higher the value of ROA and NIM, the better the banking performance, which can be seen from increased return on asset returns through ROA and interest rates, which can be seen through the NIM, whereas the lower the value of ROA and NIM, the less effective the banking management is said to be in terms of gain (profit).

The Effect of Loan to Deposit Ratio (LDR) on Non-Performing Loans (NPL) and Operational Income Operating Costs (BOPO) to Return on Assets (ROA) with Net Interest Margin (NIM) as Intervening Variables in the BUMN Sector Listed on the IDX for the 2018-2022 Period" is the title the author is interested in using based on the description of the phenomenon above.

B. LITERATURE REVIEW

1. Bank

According to Taswan (2010), a bank is an organization or group of businesses that engages in the collection of funds from surplus parties (surplus spending units) in the form of demand deposits, deposits, savings, and other deposits before returning those funds to those who are in need of them (deficit spending units) through the provision of financial services, which can improve the welfare of the populace. Kasmir (2014) simply stated that a bank can be understood as a financial entity whose actions his endeavors to gather monies from the community and route it back to the public while also providing other banking services.\

The primary role of a bank is often that of an institution that collects and distributes public cash.In addition to serving as an intermediary institution, a bank can perform the following additional roles, per Budisantoso and Nuritomo (2014). (a) Agent of trust (b) agent of development (c) agent of service.

Changes in legislation have affected banking in Indonesia multiple times over its history, leading to different types of banks that can be observed from a variety of angles. According to Kasmir (2014), there are many ways to look at different types of banking, including

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2. Financial performance

According to Mansyur (2017), financial performance is a measure of how well management uses the company's resources to produce profits. By examining the financial information provided in the report on the bank's finances, it is possible to determine the bank's financial performance and determine whether or not the bank was in poor financial condition at any given time.

The best metric for evaluating a company's financial performance is profitability. Being profitable means a corporation can produce money quickly and effectively. The performance of the bank improves as its profitability increases.

Return on Assets (ROA) and Return on Equity (ROE) are two metrics that can be used to determine profitability. The ROA profitability ratio was employed in this study since it can be used as a gauge of a bank's effectiveness in generating total profits.

According to Juwita et al. (2018), the ROA ratio is used to assess a bank's management team's capacity for achieving profitability and controlling the degree of operational efficiency. The higher the ROA, the greater the profit the bank will achieve and the better off it will be in terms of asset utilization (Rivai et al, 2013).

3. Credit Risk

According to Siamat (2005), credit risk is a risk that results from consumers' inability to pay back bank loans, plus interest, at the predetermined time. In other words, credit risk arises from the borrower's uncertainty over loan repayment. Therefore, participating Banks must exercise caution when evaluating potential debtors in order to foresee the probability of credit risk.

Banks must conduct an evaluation of potential debtors before extending credit in order to help them reach more precise objectives and generate profit. By doing a credit analysis, it should be possible to reduce the credit risk brought on by the debtor's failure to meet his commitments to the bank.

The 6C analysis, one of the analyses used by banks to evaluate potential debtors, includes the following steps: (a) Character, (b) Capacity (c) Capital (d) Collateral (e) Condition of economy (f) Constraint.

4. Capital Adequacy

A bank's ability to absorb any potential loss risk and to invest in the growth of its banking operations depends on its capital. Therefore, the bank essentially has to have enough capital to reduce the potential business risks that the bank will encounter. The bank becomes more capable of managing any potential risk of loss as its capital portfolio grows, enabling it to win over more customers and earn public trust.

The Capital Adequacy Ratio (CAR), or the ratio that divides the bank's capital by Weighted Assets By Risk (ATMR), is used to determine the amount of capital that the bank has. According to Martono (2002), CAR is used to evaluate a bank's capacity to absorb potential risks that may result from its operational activities, such as its trading of valuable papers and loan activities. The extent to which the bank maintains its capital through monitoring, recognizing, controlling, and controlling risks that can affect the quantity of capital, according to Juwita et al. (2018).

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5. Liquidity

A bank's liquidity refers to its capacity to offer enough money to cover all obligations. Because most banks manage public money that are short-term in nature or that can be withdrawn at any time, liquidity management is one of the difficulties in bank operations that is highly complex. As a result, the bank must take into account the need for liquidity for a particular amount of time.

Each bank must be able to keep its financial liquidity well because if a bank lacks liquidity, the entire banking system would be disrupted. Banks must have enough liquidity to satisfy each customer's short-term obligations. According to Pandia (2012), a bank is deemed liquid if it has the capacity to promptly settle demand deposit withdrawals, savings, time deposits, bank loans with impending maturity, and credit requests. However, according to Siamat (2005), a bank is considered liquid if it has the ability to generate new money, has cash equivalents that help it estimate how much liquidity it needs, and if it is forced to have less liquidity because of this but still has securities that can be converted to cash.

The Loan to Deposit Ratio (LDR), one of the measures used to gauge bank liquidity, is one such ratio. LDR is a metric used to compare loans made to outside investors. According to Martono (2002), LDR is a ratio used to assess a bank's capacity to recoup the money that paracustomers have invested through credit that has been extended to debtors. According to Pandia (2012), LDR is a ratio that shows how much the bank has lent to debtors using depositors' money. In other words, the debtor's loans come from the deposits made by money depositors.

According to Bank Indonesia Regulations No. 18/14/PBI/2016, a bank's LDR safe limit is between 80% and 92%. The bank runs the risk of having limited liquidity and not being able to meet customer withdrawal requests if the LDR value is too high. In contrast, if the LDR value is too low, it means that the bank has high liquidity and excess funds available to lend to potential debtors, but its income is lower as a result of ineffective credit-disbursing practices, meaning that it misses out on the chance to maximize profits.

The greater the LDR, which reflects increasing bank lending, indicates that the bank is performing well in its role as an intermediary. The credit that is given out generates cash for the bank in the form of interest, allowing it to meet its responsibilities to clients who want their money back. As a result, as credit is extended more widely, the bank receives more money from flower sales. This improves the bank's financial performance.

According to Astrini et al. (2019), if a bank's LDR is high, there is a greater possibility that the bank will encounter uncollectible loans, which will increase the quantity of non-performing loans and cause the bank to lose money. Poorly handled credit is the root of this. Therefore, banks must appropriately manage credit flows in order to prevent losses brought on by the presence of problematic loans or bad credit, which could have a negative effect on the financial performance of the bank. According to Barus and Erick (2016), the amount of bad credit will be minimal because the greater the LDR, if the bank is able to offer credit successfully, the better the company's profit will be.

6. Operational Efficiency

Efficiency is one metric used to assess how well a business is performing overall. It is based on the ability to produce the most output possible from the available input. effectiveness onEvery bank must be aware of the banking industry in order to establish a good, healthy, and sustainable bank financial performance (Haryanto, 2016). Since the

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banking industry is becoming more competitive and customer living standards are growing, banks must increase operational efficiency. Banks that are unable to increase the efficiency of their operations will suffer in their ability to collect and disburse money.

One statistic used to gauge bank efficiency is the Operational Costs to Income Operational (BOPO) ratio. The BOPO ratio, also known as the efficiency ratio, is used to gauge how well bank management is able to control operational expenditures relative to operating income (Pandia, 2012). This ratio contrasts operational expenses and bank operating income. The total cost of all operations and the total cost of interest are added together to compute operating costs. While total interest income and total operational income are used to compute operating income (Purwoko and Sudiyatno, 2013),

According to Haryanto (2016), the fact that BOPO is high indicates that banks are less effective in controlling sources of funding and assets owned for profit, which can deplete bank capital and disrupt the bank's ability to operate.

According to Barus and Erick (2016), a bank would be in trouble if its operational costs are higher than the income it generates. This is because it suggests the bank is using its operating costs inefficiently.

As a result, a reduction in the bank's financial performance was caused by the bank's inefficient management of operational costs, which is indicated by a higher BOPO ratio. In contrast, a BOPO ratio that is declining shows that the bank is in control of its operational activities and that, as a result of decreased operational expenditures, it is operating more profitably.

C. RESEARCH METHODOLOGY

1. Population and Sample

The population is the whole of the research object to be researched. The population in this study are 4 Owned Commercial Banks Countries listed on the Indonesia Stock Exchange.

The population includes the sample. A selection of people from the population make up the sample. Purposive sampling is used in this study's sample process. Purposive sampling is a sampling approach that meets the researcher's desired criteria.among others.

2. Types and Data Collection Techniques

The type of data used in this study is secondary data, or information that has already been gathered, processed, and published and was either directly obtained from a third party or indirectly through that party.

The bank's yearly financial reports for the years 2018 through 2022 serve as secondary data for this analysis. The Indonesia Stock Exchange website (www.idx.co.id) and the official website of the relevant bank were the sources of the data used, which were found through searches on the internet.

The study's documentation and bibliography are used as a method of data collection. Literature study is a process for gathering data that involves looking through library resources, including books, journals, literature, and other related materials. The study's documentation was created by carefully analyzing published bank financial statements.

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3. Research Variables and Operational Definitions

The variables used in this study include intervening variables, independent variables, and dependent variables. The dependent variable, according to Sutrino (2017), is a variable whose value is influenced by the value of another variable. The return on assets (ROA) used in this study as a proxy for financial performance is the dependent variable.

The independent variable is thereafter a variable whose value has the potential to influence the values of other variables (Sutrisno, 2017). The capital adequacy ratio (CAR), loan to deposit ratio (LDR), and ratio of operating expenses to operating income (BOPO) are used as proxies for operational efficiency, liquidity, and capital adequacy, respectively, in this study.

While this is going on, the intervening variable is a factor that affects whether the relationship between the dependent and independent variables is direct or indirect (Sutrisno, 2017). internal modifying factorsIn this study, non-performing loans (NPL) are used as a proxy for credit risk.

D. RESULTS AND DISCUSSION

(Table 1. Statistic test)

Date: 03/30/23
Time: 22:39
Sample: 2018 2022

	CAR	NPL	BOPO	ROA	LDR
Mean	0.201220	0.030410	0.766935	0.021450	0.892500
Median	0.197000	0.028150	0.737500	0.024500	0.887200
Maximum	0.252800	0.047800	0.981200	0.037600	1.135000
Minimum	0.168000	0.018800	0.573500	0.001300	0.776100
Std. Dev.	0.019851	0.008041	0.111929	0.011352	0.088495
Skewness	0.795026	0.588956	0.302522	-0.235048	1.020657
Kurtosis	3.763341	2.625565	2.045467	1.782284	3.989078
Jarque-Bera	2.592462	1.273066	1.064343	1.419851	4.287700
Probability	0.273561	0.529124	0.587328	0.491681	0.117203
Sum	4.024400	0.608200	15.33870	0.429000	17.85000
Sum Sq. Dev.	0.007488	0.001229	0.238036	0.002448	0.148797
Observations	20	20	20	20	20

Source: E-views (2023)

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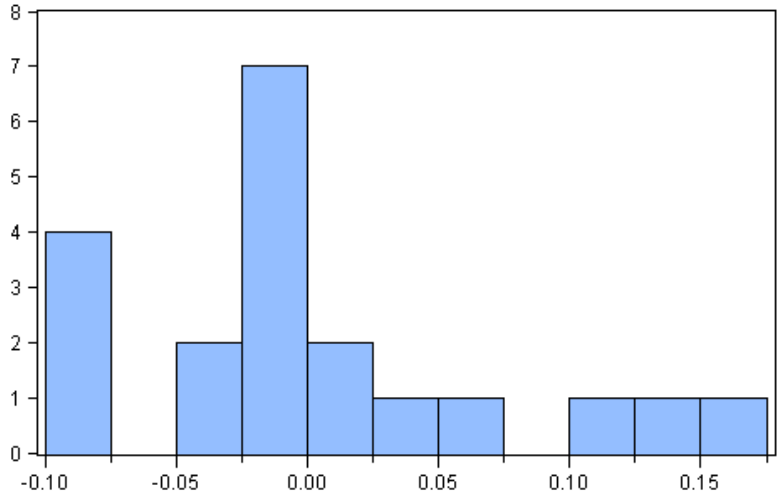
(Table 2. Normality test)



Series: Residuals	
Sample 1 20	
Observations 20	
Mean	1.26e-16
Median	-0.014151
Maximum	0.165214
Minimum	-0.098830
Std. Dev.	0.072179
Skewness	0.811512
Kurtosis	3.029391
Jarque-Bera	2.195890
Probability	0.333556

Source: E-views (2023)

Table 3. Multiculionarity test

Variance Inflation Factors
Date: 04/03/23 Time: 15:54
Sample: 1 20
Included observations: 20

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.118177	382.0352	NA
CAR	1.172776	154.9262	1.419365
NPL	21.51121	68.58009	4.271632
BOPO	0.131364	254.8370	5.054255

Source: E-views (2023)

Table. 4 t test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.591521	0.343769	1.720695	0.1046
CAR	-0.362795	1.082948	-0.335007	0.7420
NPL	-4.200706	4.638018	-0.905711	0.3785
BOPO	0.654193	0.362441	1.804965	0.0899

Source: E-views (2023)

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Based on the results of the analysis it can be concluded that:

CAR	0.335007 < 2.119905	(t hitung < t tabel)	Sig. 0.7420 > 0,05
NPL	0.905711 < 2.119905	(t hitung < t tabel)	Sig. 0.3785 > 0,05
BOPO	1.804965 > 2.119905	(t hitung < t tabel)	Sig. 0.0899 < 0,05

Table 5. F Test

R-squared	0.334751	Mean dependent var	0.892500
Adjusted R-squared	0.210017	S.D. dependent var	0.088495
S.E. of regression	0.078656	Akaike info criterion	-2.070619
Sum squared resid	0.098987	Schwarz criterion	-1.871472
Log likelihood	24.70619	Hannan-Quinn criter.	-2.031743
F-statistic	2.683713	Durbin-Watson stat	1.424902
Prob(F-statistic)	0.081621		

Source: E-views (2023)

Based on Table 5 above, the F value is 2.683713 with a significance value of 0.000 which is smaller than 0.05. This means that the regression model is said to have independent variables that have a simultaneous and significant effect on the dependent variable, namely financial performance.

2.683713 < (Fhitung > 2.852409 Ftabel) Sig. 0.081621 > 0.05

Table 6. ruble test

Rumus	CAR	NPL	BOPO
ab	0,004425011	0,051236011	0,007979192
b^2 * SEa^2	0,00017447	0,003200154	1,95425E-05
a^2 * SEb^2	1,13447E-05	0,00152095	5,63866E-05
(b^2 * SEa^2) + (a^2 * SEb^2)	0,000185815	0,004721104	7,59292E-05
/(b^2 * SEa^2) + (a^2 * SEb^2)	0,013631394	0,068710289	0,008713734
t	0,32461909	0,745681783	0,915702976

Source: E-views (2023)

Based on table 6 regarding testing using the Sobel test, it can be seen as followsBased table 6 ruble test

0,32461909 < 2,119905 0,745681783 < 2,119905 0,915702976 < 2,119905

E. CONCLUSIONS AND SUGGESTIONS

According to the findings of the studies, operational efficiency appears to have a detrimental impact on financial performance. Finances are unaffected by credit risk, capital adequacy, liquidity, or solvency. Additionally, when the number of customers increases, it is anticipated that future research would include additional variables such as third-party funds, cash turnover rates, credit turnover rates, and in this study, only done at Bank BUMN, proxies that are distinct and potentially effect financial performance. Additional research is

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anticipated in order to improve on existing findings and provide more generalizable results employing all Bank.

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