UDC 332

THE EFFECT OF CREDIT RISK AND LIQUIDITY RISK ON PROFITABILITY WITH CAPITAL ADEQUACY AS A MODERATING VARIABLE

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ABSTRACT
The objective of this research is to investigate the impact of credit risk and liquidity risk on profitability while also examining how capital adequacy serves as a moderating factor. This study employs a non-probability sampling technique called saturation sampling strategy, utilizing secondary data sources from the quarterly financial reports of Bank BUMN Indonesia from 2015 to 2019. A total of 80 observational data points were analyzed using the Modified Regression Analysis (MRA) technique through the SPSS application. The findings indicate that while capital adequacy and liquidity risk do not significantly affect profitability, credit risk has a negative and significant impact on profitability. Furthermore, the research highlights that capital sufficiency does not mitigate the impact of liquidity risk on profitability but instead amplifies the effect of credit risk on profitability. This study aims to provide a review of the fundamental factors for maximizing profitability at Indonesian BUMN Banks by implementing a precautionary principle in risk management, reducing expenses, and maintaining an adequate level of bank capital for business development and to accommodate the risk of financial loss. Thus, this research is expected to contribute towards the improvement of profitability in Indonesian BUMN Banks.

KEY WORDS
Profitability, credit risk, liquidity risk, capital adequacy.

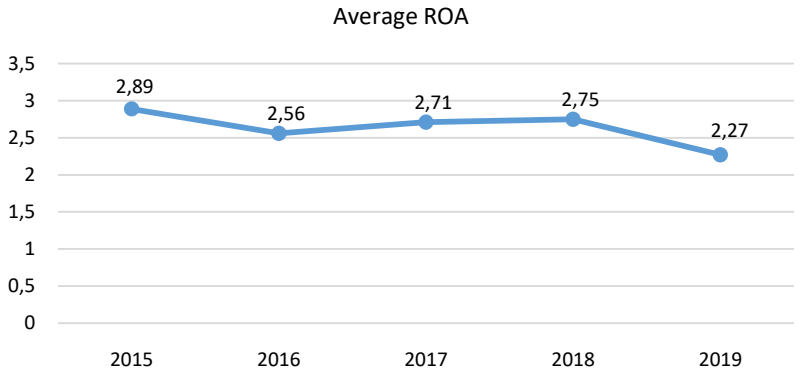
The current era of globalization has led to the expansion of business prospects, but it has also brought about a rising number of complex challenges, such as financial crises, which can be caused by economic instability and currency volatility. In this context, the role of banking as an intermediary organization, organizer of payment transactions, and channel for communicating monetary policy becomes crucial in achieving national goals of raising and equating people's living standards and supporting the operation of the economy (Marliana & Anan, 2015).

Profitability is the ability of a company to generate profits over a specific period of time (Munawir, 2010: 33). It is a crucial metric used to evaluate the financial performance of a company, including a banking firm. In order to determine if a banking firm has operated its business effectively, profitability is one of the metrics used to assess the size of profit. For a new firm, the effectiveness can be measured by comparing its earnings with the assets that generate profits. It is essential for banking firms to maintain or increase profitability to meet shareholder requirements, make the company more attractive to investors, and increase public trust in preserving surplus funds held by banks. This is particularly important given that a bank acts as an intermediary organization that transfers money from debtors to creditors.

The metric used to evaluate a bank's profitability is Return on Assets (ROA).The banking sector plays a crucial role in achieving national goals related to the economy and people's living standards. Profitability is an important metric used to evaluate the financial performance of a company, including banking firms. Maintaining or increasing profitability is essential to meet shareholder requirements, attract investors, and increase public trust in preserving surplus funds held by banks. The metric used to evaluate a bank's profitability is Return on Assets (ROA).

Harmono (2014: 119) claims that the ratio of profit before tax to total assets may be used to calculate return on assets (ROA). Return on Assets is utilized because it is a crucial

profitability statistic for banks and is used to assess how successfully banks are producing profits from the total assets they possess. The ability of the bank to make profits increases with ROA, whereas the ability of the corporation to make profits decreases with ROA (Fahmi, 2016: 80). Throughout the previous five years, Bank BUMN Indonesia's Return on Assets (ROA) growth average has varied. According to the statistics, Bank BUMN Indonesia's ROA has fluctuated over the previous five years with a tendency to drop, as can be seen in Graph 1 for the years 2015 to 2019.



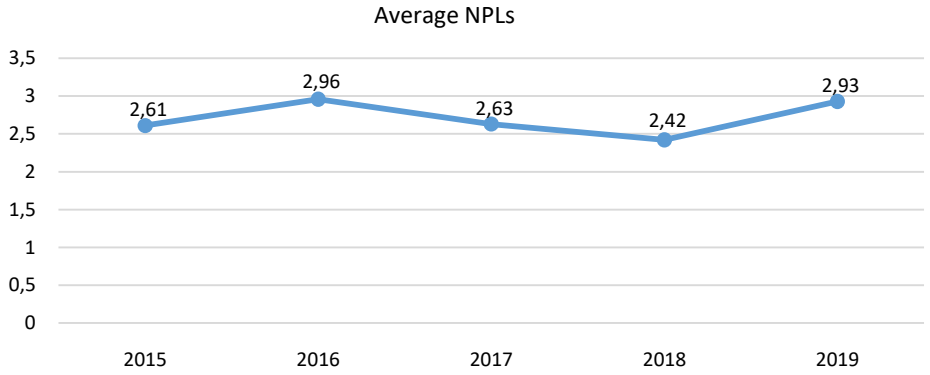
Graph 1 – Development of Average ROA at Indonesian BUMN Banks in 2015 – 2019
(Source: Annual financial reports at Bank BUMN Indonesia 2015 – 2019)

According to Graph 1, the Return on Assets phenomena that took place in Indonesian state-owned banks between 2015 and 2019 showed swings that tended to decline. For the year 2015, BUMN Bank Indonesia's average ROA was 2.89%. The average ROA decreased from 0.33% to 2.56% in the 2016 period, climbed from 0.15% to 2.71 in the 2017 period, and then grew once more from 0.04% to 2.75% in the 2018 period. The average ROA declined dramatically by 0.48% to 2.27% in the 2019 period, which was a considerable decrease that was more than the increase in average ROA from the previous year. These numbers demonstrate that state-owned banks have a hard time sustaining consistent increase in Return on Assets year after year. The grounds for selecting Indonesian state-owned banks as the subject of this research include the fact that it is crucial to understand the variables that might influence the degree of profitability of BUMN Banks as a foundation for controlling and overcoming the risk of collapse. Secondly, there were changes in state-owned banks' ROA, which tended to fall between 2015 and 2019. Second, state-owned banks participated in services as a part of the banking reform program the Indonesian government put in place. Each state-owned bank has a crucial role in development as a conduit to strengthen the national economy. As a result, it is clear that Indonesian state-owned banks are crucial to the growth of the country's economy.

The banking industry's degree of profitability may be impacted by a number of things. These elements, which include size, capital adequacy ratio, non-performing loans, net interest margin, and loan to deposit ratio, may all be characterized as distinct elements in the banking sector (Pertiwi & Susanto, 2019). The definition of risk is a possible loss as a result of the happening of specific events, according to Bank Indonesia Circular Letter No. 13/23/DPNP, which is relevant to the implementation of risk management for Commercial Banks. Risks that can happen might result in losses for the bank if they are not identified and effectively handled. The risks mentioned encompass 8 different categories of risks, including credit risk, market risk, liquidity risk, operational risk, legal risk, strategic risk, compliance risk, and reputation risk. These risks can all have an impact on how profitable the banking industry is. Credit risk and liquidity risk are the two factors that will be discussed in this study because they are risks that result from the bank's primary duty as an intermediary institution, which is to collect money from the public and distribute it back to society. These two risks have a significant impact on the efficient operation of the main banking sector activities.

Credit issuance is the primary strategy used by banks to boost profitability. Credit from banking institutions serves to strengthen bank investors' capacity to capitalize on successful firms. The goal of extending credit is inextricably linked to the bank's founding aim, which was to achieve outcomes through interest payments received as compensation and customer-payable credit management costs (Hery, 2020:39). Credit risk for the bank increases with the amount of credit extended to consumers since late payments will result in lower interest revenue and lower bank earnings or profitability (Anggriani & Puji, 2020). As a result, credit risk influences how profitable a financial organization is. Credit risk, according to Bank Indonesia Circular Letter No.13/24/DPNP/2011, is the risk associated with the debtor and/or third parties failing to fulfill their commitments to the bank. Every rupiah that the debtor issues to the creditor has the danger of being repaid in bad credit. Given that issuing credit is one of the primary functions of the banking industry, credit risk is a frequent concern. Credit management must be implemented as effectively as possible to reduce credit risk, beginning with planning the quantity of credit, defining interest rates, lending guidelines, assessing credit giving, and controlling poor credit (Kasmir, 2018: 81). The ratio of non-performing loans serves as a proxy for bank-owned credit risk (Dewi & Badjra, 2020).

A non-performing loan (NPL) is credit when there are challenges brought on by two factors, namely the bank's analysis and the customer's willful or negligent non-payment of his obligations (Kasmir, 2013: 155). A good NPL standard, according to Bank Indonesia Circular Letter Number 13/24/DPNP dated 25 October 2011, is if the proportion of non-performing loans to total loans that banks make to borrowers is less than 5%. According to Stephani et al. (2017), if the NPL ratio is lower, the bank's profit or profitability will rise. Conversely, if the NPL ratio is greater, the bank's credit quality will be worse, resulting in an increase in the number of non-performing loans and losses.



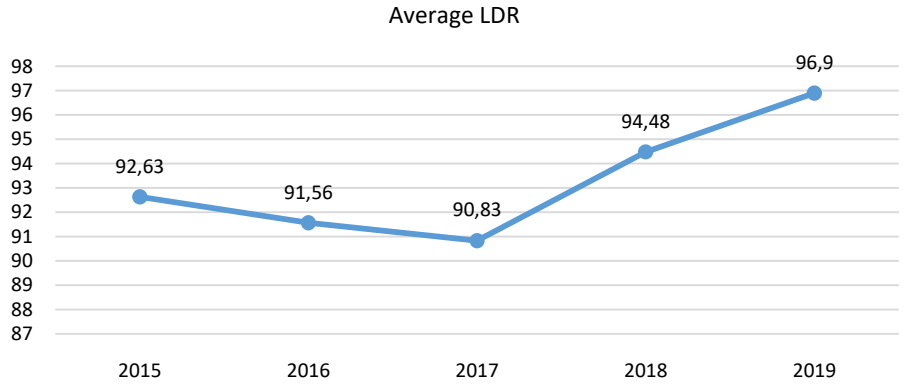
Graph 2 – Development of the Average NPL at Indonesian BUMN Banks in 2015 – 2019
(Source: Annual financial reports at Bank BUMN Indonesia 2015 – 2019)

According to Graph 2, there were variations in the average Non-Performing Loan (NPL) at state-owned banks between 2015 and 2019. For the year 2015, the average NPA for state-owned banks in Indonesia was 2.61%. The average growth in NPL for the 2016 time frame ranged from 0.35% to 2.96%. NPL declined by 0.33% to 2.63% during the 2017 period, and by 0.21% to 2.42% during the 2018 period. The average NPL increased by a very significant 0.53% to 2.93% during the 2019 period, which was higher than the average NPL's decline from the prior year. These numbers show that Bank BUMN Indonesia has a hard time sustaining a stable level of non-performing loans year after year.

The inconsistent nature of study findings is demonstrated by a number of studies on the impact of profitability-related credit risk indicators. Credit risk has a negative and considerable impact on profitability, according to earlier studies by Sukwadewi (2020), Karamoy & Joy (2020), Stanley et al., (2020), Irawati et al., (2019), Idachaba et al., (2019), Sari & Endri (2019), Imani & Antyo (2018), Anam, Isanzu, and Hantono (2017). Nevertheless, study by Liyana & Emmy (2020), Sofyan (2019), and Syafi'I & Ellen (2016) revealed conflicting findings, stating that credit risk has no impact on profitability.

Due to the fact that most of the money managed by banks are short-term and can be withdrawn at any moment by bank clients, the management of liquidity is a very difficult challenge in the operations of banking organizations. The continuation of the bank's operations will be aided by the capacity of banking businesses to manage their liquidity, which has an effect on client trust in banks. Liquidity risk, according to the Indonesian Bankers Association (2016: 46), is the risk associated with a bank's inability to meet its maturing obligations through cash flow funding sources or through high-quality liquid assets that can be used as collateral, without impairing the bank's operations and financial situation. The danger of not having access to cash when it is needed is known as liquidity risk. Banking institutions receive cash by borrowing from or selling financial assets on the market (Bessi, 2015: 3). One of the elements raising the danger of bank liquidity is the disparity between the rate of lending and the money that banks can raise from the general population (Dewi, 2020).

Researchers utilize the Loan to Deposit Ratio (LDR) as a proxy to assess liquidity risk. A popular liquidity ratio in banking is the LDR (Sudirman, 2013: 185). According to Leon and Ericson (2007: 80), LDR measures how much a bank may rely on given credit as a source of liquidity to pay back withdrawals made by clients. According to Kasmir (2014: 225), LDR is a ratio used to determine how much credit is being supplied relative to how much personal capital and public money are being utilised. Profitability may be impacted by a high or low amount of LDR. According to Bank Indonesia Circular Letter Number 13/24/DPNP from October 25, 2011, BI considers a healthy LDR level to be between 78% and 100%. According to Handayani (2017), the lower the liquidity risk, the greater the ability of banking companies to provide funds, resulting in higher liquidity and higher profitability. Conversely, the higher the liquidity risk, the smaller the ability of banking companies to provide funds, resulting in lower liquidity and lower profitability.



Graph 3 – The average development of LDR at Indonesian BUMN Banks in 2015 – 2019
(Source: Annual financial reports at Bank BUMN Indonesia 2015 – 2019)

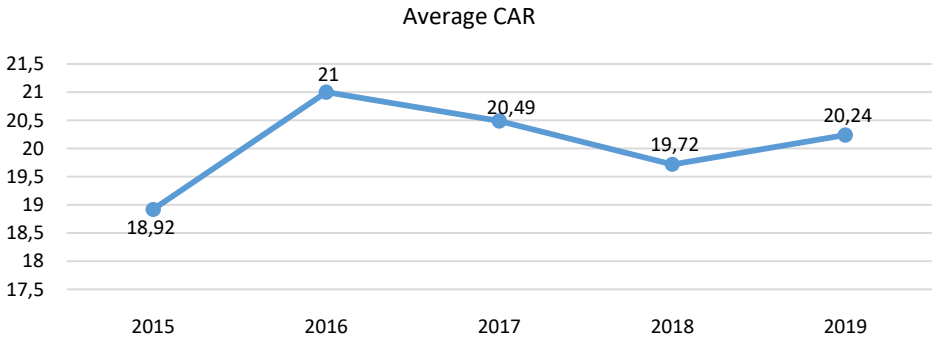
According to Graph 3, there were variations in the average Loan to Deposit Ratio (LDR) at state-owned banks between 2015 and 2019. For the year 2015, the average LDR at state-owned banks in Indonesia was 92.63%. The average LDR fell between the years 2016 and 2017. In 2016, it dropped by 1.07% to 91.56%, while in 2017, the NPL fell by 0.73% to 90.83%. The average LDR grew significantly in 2018 and 2019, rising by 3.65% to 94.48% during the 2018 timeframe. The LDR grew by 2.12% to 96.9% over the 2019 period. These numbers show that Indonesian BUMN Banks struggle each year to preserve the stability of their liquidity.

Many studies on the impact of profitability-related liquidity risk factors highlight the inconsistent nature of study findings. Liquidity risk has a favorable and large impact on profitability, according to studies by Sukmawati (2020), Safitri et al., (2020), Dewi & Badjra (2020), Sofyan (2019), Yusuf & Surachman (2018), and Hantono (2017). While studies by Stanley et al. (2020), Karamoy & Joy (2020), Arasy & Sri (2020), Soares & Muhammad

(2018), and Anam (2017) revealed various findings, all of them indicated that the profitability of an enterprise is negatively impacted by liquidity risk.

Banks must have enough capital to finance their commercial activities in order to perform their operating duties (Hery, 2019: 166). Capital is cash invested by a business owner as a primary to launch or grow (a huge firm) that can generate anything to boost wealth (Pandia, 2012: 28). To protect against any unforeseen losses and to act as a reserve in the case of a financial crisis, bank capital adequacy is crucial (Indonesian Bankers Association, 2016: 159). By giving a cushion to absorb unforeseen losses from their activities, capital adequacy supports bank operations and, in the event of a difficulty, enables the bank to go on in a sound and legal way (Ajayi et al., 2019).

The Capital Adequacy Ratio is the ratio used to assess a bank's level of capital adequacy (Anggriani, 2020). The Capital Adequacy Ratio (CAR) is a measure of capital and reserves for write-offs in credit-bearing, particularly the risks associated with non-collection of interest (Kasmir, 2010: 232). The standard CAR value is at least 8% to be considered a healthy bank, according to Bank Indonesia Circular Letter Number 13/14/DPNP dated 25 October 2011. It impacts the degree of public trust, which raises bank profitability, since the higher the CAR indicates the bigger capital possessed by the bank (Sari & Endri, 2019).



Graph 4 – Development of Average CAR at Indonesian BUMN Banks in 2015 – 2019
(Source: Annual financial reports at Bank BUMN Indonesia 2015 – 2019)

According to Graph 4, there were variations in the average Capital Adequacy Ratio (CAR) at state-owned banks between 2015 and 2019. For the year 2015, the average CAR for state-owned banks in Indonesia was 18.92%. CAR increased by 2.08% to 21% on average over the 2016 time frame. The CAR dropped in both the 2017 and 2018 timeframes. In the 2017 timeframe, it dropped by 0.51% to 20.49%, while in the 2018 timeframe, it dropped by 0.77% to 19.72%. CAR climbed by 0.52% to 20.24% in 2019 as well. Ajayi et al. (2019) contend that boosting bank capital will boost bank profitability because adequate capital allows banks to operate more quickly when extending credit and covering possible losses.

Earlier studies on the impact of capital adequacy on profitability produced mixed findings. Capital adequacy has been linked to increased profitability, according to studies by Sukmadewi (2020), Santoso (2020), Irawati et al. (2019), Sofyan (2019), and Yusuf & Surachman (2018). Yet, it demonstrates that Capital Adequacy does not significantly harm profitability, contrary to the research done by Anam (2017). Profitability is negatively impacted by Capital Adequacy, according to Hantono (2017).

The amount of capital that the bank has on hand depends on its lending activity. The Bank's Capital Adequacy component will be decreased as a result of the Borrower's breach of the Agreement to cover risk losses resulting from interest failure to collect (Kasmir, 2019: 234). According to research by Kusumawardani et al., capital adequacy has a considerable adverse impact on credit risk. This means that the capacity of a bank to reduce credit risk and, as a result, the number of problematic loans that arise inside a bank, is larger the higher the Capital Adequacy indicator. Conclusion: Capital adequacy has a significant impact in

helping banks reduce the risk of non-performing loans. According to research by Yuliani et al. (2020), capital adequacy has a positive impact on credit risk, which means that as capital adequacy rises, so does credit risk. If capital adequacy is used correctly and sparingly, it won't result in losses that raise credit risk, which will boost public confidence in banks. Conversely, if Capital Adequacy is employed excessively or poorly, it will affect the bank's credit risk.

The capacity of the business to fulfill urgent commitments is known as liquidity. A bank's operating circumstances must be kept stable in order for it to sustain liquidity. These skills include the capacity to supply money when clients need to withdraw deposits, the ability to offer funds when granting credit requests, and the ability to provide funds in these situations (Famhi, 2014: 117). The Capital Adequacy possessed by the bank is significantly impacted by bank liquidity. The Bank's Capital Adequacy component will be decreased as a result of the Borrower's breach of the Agreement to cover risk losses resulting from interest failure to collect (Kasmir, 2019: 234). Yuliani & Fadila's (2015) research found that capital adequacy has a considerable detrimental impact on liquidity risk. This indicates that a rise in LDR is conceivable since banks lend a lot of money, which raises the RWA and lowers the bank's CAR. Conversely, if CAR increases, the bank's LDR will fall since increased CAR shows that there are money in the bank that are idle and that the credit risk being absorbed is decreasing. Agustini et al(2017) .'s study demonstrates that CAR has a favorable impact on LDR. Hence, if the amount of capital is sufficient, the public will be interested in taking credit, resulting in sufficient interest from public loans for banks to have cash reserves to bear credit risk and the ability for banks to finance operational activities in order to preserve liquidity.

There are still discrepancies in the results (research gap) connected to the influence of credit risk on profitability and the effect of liquidity risk on profitability, suggesting that there may be other factors influencing the relationship between the two based on the findings of prior studies. Since capital adequacy will influence the link between credit risk and liquidity risk on profitability, it is employed as a moderating variable. Because a banking firm with appropriate capital is considered to be able to safeguard the bank from hazards like credit risk and liquidity risk, the researcher picked capital adequacy as the moderating variable. By giving a cushion to absorb unforeseen losses from their activities, capital adequacy supports bank operations and, in the event of a difficulty, enables the bank to go on in a sound and legal way (Ajayi et al., 2019). Due to the need for more study, the moderating variable Capital Adequacy, which is regarded to have the ability to increase or decrease the association between these factors, must be included. Since capital adequacy affects the link between credit risk and liquidity risk on profitability, it was included or chosen as a moderating variable in this study. This implies that a bank's credit risk and liquidity risk will be lower the greater its capital adequacy since a bank with strong capital adequacy can withstand all potential threats. The profitability of the banking industry will rise as a result of this. The bank can handle any risks if its capital adequacy is high. The increase in bank profitability will be impacted by the low levels of credit risk and bank liquidity risk. As sufficient capital is required above the bare minimum for operational efficiency in order to increase profitability, the Buffer Theory of Capital Adequacy is the overarching theory used in this study.

The research gaps in this study are the results of the contraversion of the effects of credit risk and liquidity risk on profitability and the significance of evaluating bank performance to optimize bank profitability in supporting national development. In order to underline and clarify the Impact of Credit Risk and Liquidity Risk on Profitability with Capital Adequacy as a Moderating Variable, the researchers sought to evaluate it under various circumstances and periods.

H1: Credit risk has a significant negative impact on profitability; H2: Liquidity risk has a significant negative impact on profitability; H3: Capital adequacy has a significant positive impact on profitability; H4: Capital adequacy weakens the impact of credit risk on profitability; and H5: Capital adequacy weakens the impact of liquidity risk on profitability.

METHODS OF RESEARCH

This study is an explanatory study that takes the quantitative approach and associative research methods to determine how one variable affects other variables. Credit risk and liquidity risk are the independent factors employed in this study. Capital adequacy indicators are the moderating variables, while profitability variables are the dependent variables. Saturated Sampling is the sampling method utilized in this study, and the secondary data used was taken from the Bank BUMN Indonesia Quarterly Financial Reports for the years 2015 through 2019.

The study was carried out between 2015 and 2019 at four state-owned banks in Indonesia: PT. Bank Negara Indonesia (Persero) Tbk, PT. Bank Rakyat Indonesia (Persero) Tbk, PT. Bank Mandiri (Persero) Tbk, and PT. Bank Tabungan Negara (Persero). The choice of this research site was made after careful evaluation by the researchers due to a decline in the average fluctuating profitability of the four state-owned banks in Indonesia between 2015 and 2019.

The method of data gathering employed in this study is documentation. Records of occurrences that have undergone investigation are called documentation (Sugiyono, 2017: 240). The financial statements of BUMN Banks for the years 2015 through 2019 are the source of the study's material. Moderated Regression Analysis (MRA), a technique for data analysis, is used to investigate how moderating variables affect both the independent variables and the dependent variable.

RESULTS AND DISCUSSION

The results of the Asymp normalcy test are shown in Table 1 as follows. The two-tailed sign is 0.70. Due to the Asymp value, these findings suggest that the residual data is regularly distributed. Sig. (2-tailed) is more than 0.05, which is the alpha value.

Table 1 – Normality Test Results

		Unstandardized Residual
N		80
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,28435344
Most Extreme Differences	Absolute	,095
	Positive	,095
	Negative	-,070
Test Statistic		,095
Asymp. Sig. (2-tailed)		,070[c]

Source: processed data, 2021.

Table 2 – Autocorrelation Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,685[a]	,470	,434	,50612	2,045

Source: processed data, 2021.

Based on Table 2, it can be seen that the Durbin – Watson value is 2.045. This value is compared with the value of the DW table with a significance value of 5 percent, with the number of observational data (n) 80 and the number of independent variables 3 (k = 3). Based on the DW table, the dL value = 1.5600 and the dU value = 1.7153 are obtained. Because dU < DW < 4 – dU is 1.7153 < DW < 2.285, there are no positive or negative autocorrelation symptoms.

Table 3 indicated that the NPL significance value is 0.396, the LDR significance value is 0.623, the CAR significance value is 0.650, the interaction between the NPL and the CAR is 0.414, and the LDR interaction with the CAR is 0.595. It can be deduced that all

independent variables in the model do not exhibit heteroscedasticity because all independent variables and their interactions with CAR have a significance level of higher than 0.05.

Table 3 – Heteroscedasticity Test Results

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-2,009	5,778		-,348	,729
	NPL	-,448	,524	-1,489	-,854	,396
	LDR	,031	,062	1,597	,508	,613
	CAR	,115	,251	,973	,456	,650
	NPL*CAR	,019	,023	1,288	,822	,414
	LDR*CAR	-,001	,003	-2,303	-,534	,595

Source: processed data, 2021.

Table 4 – Moderated Regression Analysis Test Results

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	18,447	10,479		1,760	,082
	NPL	-4,356	,951	-5,990	-4,580	,000
	LDR	-,079	,112	-1,670	-,709	,481
	CAR	-,541	,456	-1,898	-1,186	,239
	NPL*CAR	,191	,042	5,286	4,496	,000
	LDR*CAR	,002	,005	1,410	,436	,664

Source: processed data, 2021.

Based on the results of the MRA analysis as shown in Table 4, the model equation can be made as follows:

$$Y = 18,44 – 4,356\ X_1 – 0,079X_2 – 0,541_M + 0,191_{X1.M} + 0,002_{X2.M} + e$$

The constant value is 18.44, as can be seen from the regression equation above. This demonstrates that the independent variable is regarded as constant, and as a result, the study's ROA-based proxy for profitability is 18.44 percent. Non-Performing Loan (NPL) has a beta value of -4,356. With this beta value, profitability as measured by ROA will decline by -4.356 units if the NPL rises by one unit while the other independent variables remain constant. The Loan to Deposit Ratio (LDR) has a beta value of -0.079. The profitability, which in this research is proxied by ROA, will fall by 0.079 units if the LDR increases by 1 unit, providing the other independent variables remain constant.

Capital Adequacy Ratio's (CAR) beta value is -0.541. The profitability in this research, which is proxied by ROA, will fall by 0.541 units if the CAR rises by 1 unit, providing the other independent variables remain constant. The positive beta value of the NPL and CAR interaction is equivalent to 0.191. This beta value indicates that the profitability, which in this study is proxied by ROA, will improve by 0.191 units if the interaction between NPL and CAR increases by 1 unit while assuming the other independent variables remain constant. LDR and CAR interact positively, with a beta value of 0.002 for this interaction. According to this beta value, the profitability—which in this study is proxied by ROA—which is increased by 0.002 units—will grow by 0.002 units if the interaction between LDR and CAR increases by 1 unit, providing the other independent variables remain constant.

Based on Table 4, it can be seen that the calculated t value of the credit risk variable proxied by NPL is negative, namely -4.580 with a significance level of 0.000, which is less than $\alpha = 0.05$. This means that credit risk proxied by NPL has a negative and significant effect on profitability proxied by ROA.

Based on Table 4, it can be seen that the calculated t value of the liquidity risk variable proxied by the LDR is negative, namely -0.709 with a significance level of 0.481, which is greater than $\alpha = 0.05$. This means that credit risk proxied by LDR has no significant negative effect on profitability proxied by ROA.

Based on Table 4, it can be seen that the calculated t value of the Capital Adequacy variable which is proxied by CAR is negative, namely -1.186 with a significance level of 0.239, which is greater than α = 0.05. This means that Capital Adequacy proxied by CAR has no significant negative effect on profitability proxied by ROA. Based on Table 4, it can be seen that the calculated t value of the interaction of credit risk proxied by NPL and Capital Adequacy proxied by CAR is positive, which is equal to 4.496 with a significance level of 0.000, which is less than α = 0.05. This means that Capital Adequacy proxied by CAR is not a moderating variable capable of weakening the relationship between NPL and profitability proxied by ROA.

Based on Table 4, it can be seen that the calculated t value of the interaction of liquidity risk proxied by LDR and Capital Adequacy proxied by CAR is positive, which is equal to 0.436 with a significance level of 0.664, which is greater than α = 0.05. This means that Capital Adequacy proxied by CAR is not a moderating variable capable of weakening the relationship between LDR and profitability proxied by ROA.

Table 5 – Determination Coefficient (R^2) Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,685[a]	,470	,434	,50612

Source: processed data, 2021.

Based on Table 5, it can be seen that the Adjusted R Square value is 0.434. This value means that 43.4 percent of the variation in profitability proxied by ROA is affected by variations in NPL, LDR and CAR while the remaining 56.6 percent is affected by other factors outside the model.

The results of the study showing a negative and significant relationship between credit risk and profitability are in line with data on the development of the average NPL ratio and ROA ratio at state-owned banks for the 5-year period 2015 -2019. When there was an increase in the NPL ratio in 2015 of 1.19% to 2.37% in 2016, it was accompanied by a decrease in the ROA ratio in the same year of 3.25% to 2.85%. The results of this study are in line with research conducted by Sukwadewi (2020), Karamoy & Joy (2020), Stanley et al., (2020), Irawati et al., (2019), Idachaba et al., (2019), Sari & Endri (2019), Anam and Hantono (2017) state that credit risk has a negative and significant effect on ROA.

Evaluating the second hypothesis in this study on the relationship between liquidity risk and profitability in state-owned banks revealed that there was no relationship, hence the second hypothesis was not accepted. Liquidity risk cannot directly impact the profitability variable since the test findings between the liquidity and profitability ratio at state-owned banks are not significant. This shows that a high liquidity risk does not prevent banks from becoming profitable (Adhim, 2018). This is a result of the credit being disbursed, which is typically fairly weak or less productive, where many instances of subprime lending are discovered, and a decline in the value of net interest revenue since banking institutions still have to pay interest to third party funds (DPK) (Sunaryo, et al., 2021). According to the average, still-low value of 94% for liquidity risk in state-owned banks, this has no bearing on the accomplishment of profitability. The profitability of state-owned banks can also be impacted by additional factors.

According to studies by Adhim (2018), Dewi (2020), Arasy & Sri (2020), and this study, liquidity risk has no discernible impact on profitability. According to the findings of these researches, it's crucial to strike a balance between the money directed inside the credit framework and the funds raised by third parties. The quantity of third party funds will result in a rise in bank liabilities, which will raise the bank's operating expenses. To make the bank profitable, these factors must be matched with a widest possible distribution of loans. More improvements must be made to banks' credit-extension capabilities.

Assessing the third hypothesis in the study on the relationship between capital adequacy and profitability results in the conclusion that there is no relationship, which implies the third hypothesis is disproved. The third hypothesis, according to which capital adequacy

has a favorable and considerable impact on profitability in state-owned banks for the years 2015 to 2019, is not supported by the study's findings. Because high capital adequacy might limit a bank's capacity to grow its business owing to the rising capital reserves necessary to offset the risk of loss, the relationship between capital adequacy and profitability may not be statistically significant (Asriyani, 2021). High capital growth will limit banks' capacity to increase their fund distribution since it won't be able to keep up with the rise in earning assets. Each bank is required to provide a minimum capital of 8% of risk-weighted assets, according to Bank Indonesia Regulation Number 10/15/PBI/2008 (RWA).

The findings of this study are corroborated by studies by Asriyani (2021), Jayanti & Sartika (2021), and Rinofah et al. (2022), which found no relationship between capital adequacy and profitability. According to these three research, capital adequacy tends to marginally lower profitability. When all of the capital is utilized to fund bank activities, this tendency may develop. A higher Capital Adequacy value than the required minimum does not appear to be able to boost profitability.

The fourth hypothesis test on capital adequacy found that the interaction between capital adequacy and credit risk has a substantial positive impact on profitability and that it moderates the impact of credit risk on profitability in this research. This indicates that the link between credit risk and profitability is positively and significantly impacted by capital adequacy. According to the study's findings, Capital Adequacy can enhance the impact of credit risk on profitability. These findings are inconsistent with the buffer theory of capital adequacy, which contends that adequate capital may shield banks from the danger of excessive loan expansion, possible losses from economic and financial crises, and the chance of slipping below the minimum capital requirements (Adamgbo, 2019). According to Henry, 2019: 164, bank capital adequacy is crucial for facilitating the funding of operational activities and mitigating possible losses from excessive credit expansion. The bank's capacity to finance operational activities and significantly increase profitability is improved by increasing capital (Idachaba et al, 2019). High CAR ratios can shield banks against a variety of business risks, including large levels of non-performing loans. Many types of business risks may be anticipated by banks with adequate capital, allowing them to continue operating in a sound and sustainable way (Henry, 2019: 171).

The findings of this study are consistent with those of Yuliani et al. and Sarita & Zubadi (2018). Findings of this study suggest that CAR has a favorable and substantial impact on NPL. The bigger the Capital Adequacy possessed by the firm, the higher the credit risk as an indication of NPL, hence it is necessary having adequate capital to mitigate credit risk. This does not support the research thesis.

In this study, the effect of liquidity risk on profitability is moderated by the capital adequacy hypothesis, leading to an interaction between capital adequacy and credit risk that has no appreciably beneficial impact on profitability. This indicates that the impact of liquidity risk on profitability cannot be mitigated by Capital Adequacy. These findings contradict the buffer theory of capital adequacy, which contends that banks with capital adequacy levels above the required minimums may maintain their businesses and generate higher profits. Capital adequacy acts as a safety net to absorb unforeseen losses from its operations, enabling banks to go on in a sound and ethical way (Indonesian Bankers Association, 2014: 244). Many types of business risks may be anticipated by banks with adequate capital, allowing them to continue operating in a sound and sustainable way (Henry, 2019: 171).

The findings of this analysis are consistent with studies by Musa et al. (2019) and Kotijah & Guspul (2020), which found no relationship between capital adequacy and liquidity risk. Hence, the bank is better able to preserve capital and stay in good financial health the higher the Capital Adequacy value, so that the fluctuation in Capital Adequacy during the course of the research has no impact on liquidity risk.

CONCLUSION

Based on the analysis of the data and the discussion of the study findings, it can be said that: During the years 2015 to 2019, credit risk has a negative and considerable impact

on profitability at BUMN Banks. According to the study's findings, ineffective management of bank credit risk would lead to a large proportion of bank non-performing loans, which will reduce overall revenue by limiting possibilities to earn interest. For the years 2015 through 2019, the profitability of BUMN Banks is not significantly impacted by liquidity risk. Because state-owned banks are able to handle liquidity risk without involving their Capital Adequacy component, the study's findings suggest that an increase in liquidity risk has no impact on bank profitability. For the years 2015 through 2019, the BUMN Banks' profitability is not significantly impacted by capital adequacy. According to the study's findings, a bank's profitability is unaffected by its degree of capital adequacy. During the years 2015 through 2019, capital adequacy can enhance the impact of credit risk on profitability in state-owned banks. According to the study's findings, capital adequacy contributes to the expansion of credit risk's detrimental impact on profitability. During the years 2015 through 2019, Capital Adequacy is unable to reduce the impact of liquidity risk on profitability at BUMN Banks. The findings of this study show that capital adequacy does not provide bank liquidity, which enables banks to absorb unforeseen losses from bank activities and maintain banks' healthy and appropriate operations.

Following are some recommendations that may be made based on the findings of the study, discussion, and conclusions that have been described: It is suggested that state-owned banks monitor their degree of credit risk, liquidity risk, and capital adequacy. Future academics are urged to utilize or create other factors, such as the ratio of operational expenses to operating revenue, which are anticipated to be capable of affecting or moderating credit risk and liquidity risk in order to boost bank profitability. In order to improve the generalizability of research findings, it is also strongly advised to expand the number of firm samples and the length of the study.

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