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The Influence of Credit Risk and Liquidity Risk on Profitability of State-Owned Bank (BUMN)

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Abstract—Bank has an important role. As a financial institution that functions to collect and distribute of funds to the public, banking financial institutions are very vulnerable to risk in carrying out its activities. Therefore, this research aims to examine the influence of credit risk and liquidity of BUMN Bank in 2017:Q1Q4 to 2020:Q1Q4. This research used quantitative data with multiplier linear regression method. The unit of analysis studied consisted of three state owns banks in Indonesia: BRI, Bank Mandiri, and BNI. Periode 2017:Q1Q4 to 2020:Q1Q4. The data is taken form financial reports issued by the Financial Services Authority. The results show that credit risk (NPL) has a negative and insignificant effect on the profitability of state owned banks (ROA) in 2017:Q1Q4 to 2020:Q1Q4. Credit risk (NPL) and liquidity risk (LDR) simultaneously affect the profitability of state owned banks (ROA) in 2017:Q1Q4 to 2020:Q1Q4.

Keywords: BUMN Bank; liquidity risk; profitabilitas; risk credit

I. INTRODUCTION

The globalization and modern times in this case, banks have a very important role to community economy. Besides In addition, banks can also support the economy in a country, including in Indonesia (Apriani & Mansoni, 2019). Indonesia, a country that depends on the financial system based on the bank used for could fulfil need external. Many Indonesians d activity for could invest, buy house, or need funds or capital to could develop his business. Activity this no occur in life day-to-day and need a bank to arrange economy. So, from therefore, the banking industry is an industry that has risk, because the banking industry involves the management of money originating from later society rotated to in various activity economy, such as investment, purchase letter valuables and forms planting other. Industry banking to do activities to collect funds from the community and distribute funds that have been obtained from people who have excess funds (debitors) to someone who lacks funds (creditors) with

through credit. This thing meant so that occur the flow of money from party one with the other party. Because, if no there is a circulation of money, then the bank will experience obstacles that result in not being able to operate snya task with good. So, Bank Indonesia as the Central Bank of Indonesia make policies in the application of risk management contained in i regulation "Bank Indonesia No.13/1/PBI/2011 concerning Assessment of the Soundness of Commercial Banks with a risk approach that includes an assessment of four factors, namely Risk Profile (Risk Profile), Good Corporate Governance (GCG), Earning (Profitability), and Capital (Capital)."

Banking risk is uncertainty about the result will be estimated or expected for could received on term time period that. Risk the is risk credit and risk liquidity. Risk credit proxied with Non-Performing Loans (NPL) are ratio of total non performing loans to all credit given to the debitor. High NPL will increase the cost so that interfere with the Bank's performance.

Risk second is risk liquidity proxied with Loan to Deposit Ratio (LDR) measures the Bank's ability to fulfill obligations that must be fulfilled. The higher the LDR, the bank 's profit will increase (assuming it is able to channel credit). effectively). For calculate the Bank's profit using ROA (return on assets) that is the ability of the bank to generate profits by using the total past assets reduced with cost a. The higher the ROA, the higher the bank's profitability, and vice versa.

A number of studies show existence difference result, known with research gaps. There is results study about risk credit and risk liquidity to profitability. Gusganda and Aji (2021) state risk credit influential to profitability of state-owned banks, 2015-2019, while risk liquidity no influential. Study this same with (Dewi & Srihandoko, 2018) that the NPL has an effect to profitability of Bank Mandiri , BRI, and BNI in 2008 – 2017, while risk liquidity no influential towards profitability . Findings _ both of them different with (Meiranto and Ramadanti, 2015) that the NPL has an effect negative to bank profitability. Existence difference results study the caused by the number of units of analysis research, time spent for to do research, and selection variables conducted by the researchers.

The result of similar study was also conducted by Aji & Manda (2021) that showed 1) Credit Risk (NPL) simultaneously affects profitability partially; 2) Partially liquidity risk (LDR) has no effect on profitability; and 3) Credit Risk and Liquidity Risk simultaneously affect profitability. Meanwhile, the result study conducted by Dewi & Wartana (2021) showed that credit risk (NPL) has a negative effect on profitability (ROA) with the contribution given by the NPL variable to ROA is 33.1%. Interest rate risk (NIM) has a positive effect on profitability (ROA) with the large contribution given by the NIM variable to ROA is 59.5%. Liquidity risk (LDR) has a negative effect on profitability (ROA) with the large contribution given by the LDR variable to ROA is 12.7%.

Grounded by the background and the previous studies above, this research aims to examine the effect risk credit and risk liquidity to profitability of state-owned banks in Indonesia in 2017 – 2019 with using quarterly data. Quarterly data the started from quarter one (Q1) to with quarter four (Q4). Expected studies study this could give description about risks faced banking to profitability so that could give recommendation policy.

II. CONCEPT AND HYPOTHESIS

Credit Risk

Credit risk is a form of the inability of companies or institutions and individuals to complete and fulfill their debt obligations when they fall due so that it can causes losses and can even to bankruptcy if the company is not able to manage it properly and quickly. This study uses non performing loans, namely loans whose collectability categories are outside the collectability of current loans and special attention loans. Apriyani dan Mansoni (2019), definition NPL ratio is the ratio of non performing loans. It means this ratio shows that the ability of bank management to manage non performing loans. The higher the NPL, the worse the quality of the bank's credit, which causes the number of non performing loans to get bigger, so that later the possibility of problem banks will also be even greater.

Non performing loans include substandard and bad credit. Non performing loans are usually loans where the payment of the principal installments and the interest that has been determined has passed more than ninety days after being declared due or loans where the payment by the creditor cannot be paid at maturity and the payment is very doubtful. Purwanto (2018), NPL is a ratio to determine the ability of banks to manage bad loans experienced by banks.

Liquidity Risk

Liquidity ratio is the ability of bank management to provide sufficient funds to meet their obligations at any time. Banks face liquidity risk if they do not liquidate their assets at as fair price. Assets are offered at low selling prices while the need to liquidate bank assets is urgent. It means, can be causes and decreases in revenue bank. This research use Loan to Deposit Ratio (LDR). Rahmi (2014) liquidity risk occurs as a result of the inability of banks to provide cash funds to be able to meet customer transaction needs and fulfill obligations that must be repaid with a maturity of less than one year. The standard use of the Bank Indonesia, Loan to Deposit ratio is 80% to 110%.

The larger of the LDR ratio, means, the more liquid. Otherwise, the lowest of the LDR ratio means not liquid. The lower of LDR show the lack of effectiveness of bank in channeling credit, so the bank to get profits is lost.

Profitabilty Bank

Bank profitability shows the company's ability to generate profits over a certain perido of time. This can be measured by looking at the success of the company or institution or institution by comparing the profits it earns in a certain period of time with the amount or capital assets of the company. So the size of company's profit can be known viewing and analyzing the company's financial statements with its profitability ratios.

III. METHOD

The method of this research is quantitative with use panel data. The time period 2017:Q1Q4 to 2020:Q1Q4. The unit of analysis consist from three state-owned banks in Indonesia: Bank Rakyat Indonesia (BRI), Bank Mandiri, and Bank Negara Indonesia (BNI). Data source is taken from report finance published company or published by Financial Services Authority (OJK). Data analysis used multiple linear regression analysis. Variable this research on the study this namely:

Profitability (ROA)

Bank 's ability to generate profit earned from sales, assets and equity based on base measurement certain.

$$ROA = \frac{Net\ profit\ after\ tax}{Average\ total\ assets} \times 100$$

The hypothesis is the more bank profitability is getting good then the bank capable produce income clean and able benefit investors because investors expect dividends and prices the stock. The unit is persen (%).

Risk Credit (NPL)

Risk credit problematic like credit less smooth, credit doubt, and credit jammed.

$$NPL = \frac{Total\ non\ performing\ loans}{Total\ credit} \times 100$$

The hypothesis is if the taller mark of the NPL and the value of the NPL is at above 5%, then can said that the bank currently is at in conditions that are not healthy. The unit is persen (%).

Risk Liquidity (LDR)

Risks affected by related problems with structure funding, obligations to partners, as well asset liquidity and commitment credit to debitor.

$$LDR = \frac{Third\text{-}party\ credit\ amount}{Total\ third\text{-}party\ funds} \times 100$$

The bigger LDR ratio then said more liquid and otherwise. High liquid bank show company banking the experience a number of difficulties in fulfil obligation in period in short caused by the presence of customer money withdrawal to their savings, and otherwisea. The unit is persen (%).

Model research with multiple linear regression equality as following:

$$\mathbf{ROA_{it} = \alpha + \beta_1 NPL_{it} + \beta_2 LDR_{it} + \varepsilon_{it}}$$

Description:

ROA : Bank Profitability

NPL : Risk Credit

LDR : Risk Liquidity

α : Constant

β1, β2 : Coefficient regression

t : time

i : bank

ε : Error term

Panel method analysis tools are Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM) (Gujarati and Dawn, 2009). To determine common effect or fixed effect was carried out by the chow test. This hypothesis of chow test is:

Ho = Common Effect

Ha = Fixed Effect

If cross-section F < α5%, Ho is rejected and Ha is accepted. The model is selected fixed effect. Otherwise, if cross-section F > α5%, Ho is accepted and Ha is rejected. The model is selected common effect.

The second, to determine random effect or fixed effect was carried out by the hausman test. This hypothesis of hausman test is:

Ho = Random Effect

Ha = Fixed Effect

If cross-section F < α 5%, Ho rejected and Ha is accepted, selected model Fixed Effect. Otherwise, if cross-section F > α5%, Ho accepted and Ha is rejected, selected model random effect (Gujarati, 2009).

The third, to determine common effect or random effect was carried out by the langrange multiplier test. Hypothesis:

Ho = Common Effect

Ha = Random Effect

If statistical LM value more big from mark critical chi squares statistic , Ho is rejected and Ha is accepted , the model is selected Random Effect (Gujarati and Dawn, 2009).

IV. RESULT AND DISCUSSION

Panel Method

Test	Result	Criteria	Model
Chow	0.0000	Prob 0.0000 < α 5%	Fixed Effect
Hausman	0.0000	Prob 0.0000 > α 5%	Fixed Effect

The probability of chow 0.0000 < α5%. It means Ho rejected and Ha accepted. The selected model is fixed effect. The probability of hausman 0.0000 > α5%. It means Ho rejected and Ha accepted. The selected model is fixed effect. Both of test show same result, so selected model this research uses fixed effect model.

Classic Assumption Test

Normality

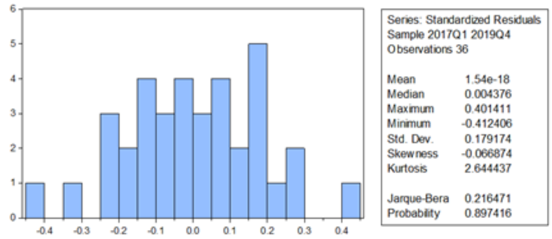


Figure 1. Normality

Hypothesis is Ho = data is normally distributed and Ha = data not normally distributed. Jarque-Bera value is 0.216471 with probability 0.897416 > α5%. It means Ho is accepted and Ha rejected. So, conclusion data is normally distributed.

Multicollonierity

Table 2. Multicollonierity

Variabel	ROA	NPL	LDR
ROA	1.0000	-0.1697	0.2266
NPL	-0.1697	1.0000	-0.1286
LDR	0.2266	-0.1286	1.0000

(Source: Researcher, processed, 2022)

Multicollonierity with partial correlation, shows that there is no value more than 0.8. Conclusion there is no multicollonierity.

Heteroskedasticity

Table 3. Heteroskedasticity

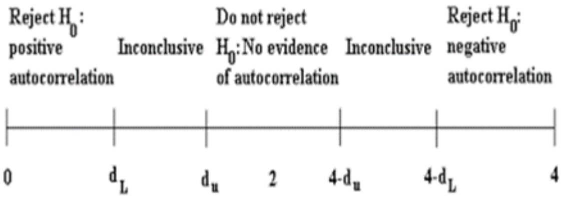
Breush-Pagan LM	Pesaran Scaled LM	PesaranCD
0.3942	0.9945	0.2159

(Source: Researcher, processed, 2022)

Heteroskedasticity this research used Breush Pagan LM, Pesaran Scaled LM, and Pesaran CD. The values are 0.3942; 0.9945; and 0.2159. Hypothesis Ho no heteroscedasticity and Ha there is heteroscedasticity. These three values have exceeded 5% which is used as the α5%, so Ho accepted and Ha rejected. It means no heteroscedasticity.

Autocorrelation

Result from Durbin Watson 2.447; dU 1.5872; dL 1.3537; 4-Du 2.412 and 4-Dl 2.646. From the figure 2 below, the calculated Durbin Watson 2.447 is between dU and 4-dU. It menas, this research no autocorrelation.



(Source: Researcher, processed, 2022)

Figure 2. Autocorrelation

Coefficient of Determination (R^2)

The coefficient of determination (R^2) is 0.772 and the value of adjusted R Square is 0.743. This means that the effect of NPL and LDR on ROA is only 77% and the remaining 100% - 77% = 23% is explained by variables or other factors outside the study and not examined in this research.

F-test and T-test

Table 4. F-test

F-Statistic	Prob. F-Stat
26.318	0.000

(Source: Researcher, processed, 2022)

The value F-Statisric 26.318 and probability 0.0000 < α5%. It menas this research, using NPL and LDR variables have simultaneous effect on ROA. While, T-test can be seen in table 5 below:

Table 5. T-test

Variable	Coefficient	T-Stat	Prob.
NPL	-0.2098	-2.2194	0.0339
LDR	-0.0064	-0.4799	0.6347

(Source: Researcher, processed, 2022)

The equation this research is:

$$Yi = \beta 0 + \beta 1X1it + \beta 2X2it + eit$$

$$= 4.149539 - 0.209806 - 0.006474 + e_{it}$$

NPL (Credit Risk)

The coefficient NPL is -0.2098 with a probability value of 0.0339 < α5%. It means NPL has a negative and significant effect on ROA. This is the same as research (Rahmi, 2014), (Al-Rdaydeh, Matar, & Alghzwai, 2017), (Purwanto, 2018), (Ambarawati & Abundanti, 2018), (Wimpi dan Dewi 2018), credit risk has a negative and significant effect to probability. However, it is different result from (Wirawati dan Yunita, 2020) which states that credit risk (NPL) has an insignificant effect on bank probability.

High NPL results in make its worse bank credit quality. The number of NPL that are getting bigger can make the banking operational burden become large so that it will affect the profitability of the bank. On the other hand, a low NPL indicates that the performance of the banking industry is getting better.

The results of this research study are the lower the NPL value, the higher the bank's profitability. This means that the condition of the banking financial institutions used as the unit of analysis in this research study has a low NPL value (can be below 5%) and it can be said that all banking analysis units are in a healthy condition. This can also be influenced by the consistency and accuracy of debtors in paying their obligations or debts in accordance with the initial agreement made by the bank. The debtor pays off or fulfills payment obligations on time because in providing credit to capital borrowers, financial institutions carry out a selective process that is really strict, disciplined, and fulfills the principles of lending.

LDR (Liquidity Risk)

The coefficient is -0.0064 with a probability of 0.6347 > α5%. LDR has a negative and insignificant effect on ROA bank profitability. This result is the same as research (Pinasti & Mustikawati, 2018), (Wimpi dan Dewi, 2018), (Wirawati dan Yunita, 2020) which states that liquidity risk has a negative and insignificant effect on bank profitability. However, it is different from (Siwu dan Murni,

2018) which states that LDR liquidity risk has a positive influence on bank profitability.

LDR interprets the comparison between loans extended and third-party funds including loans received, but excluding subordinated loans and the amount of funds received by the banking financial institution from various sources of income or income. The LDR limit for a banking financial institution that is permitted or permitted by Bank Indonesia as the Central Bank is at least 78% and the maximum limit value is 92%. LDR also explains the ratio of loans extended to customers to debit funds from the public.

Credit disbursement on a large scale has the potential to cause bad debts so that it can lead to a decrease in profits. Inappropriate and ineffective credit disbursement will be detrimental to banking companies. The results of the larger LDR show that the distribution of credit to third parties is also getting bigger and allows the occurrence of bad loans in the banking financial institution. However, it turns out that the financial institutions of the banking companies studied in this research study are able to reduce the risk of bad loans so that the LDR does not have a significant effect on ROA. This could be because the bank's income is not obtained from interest income on loans distributed to the public, but is generated from commission-based interest income. Currently, banks are transforming from interest income to fee-based income.

V. CONCLUSION

Based on the results obtained, thus it can be concluded that: credit risk has a negative and significant effect, while liquidity risk has a negative and insignificant effect on the profitability of state-owned banks 2017 Q1Q4 to 2019Q1Q4. Some suggestions that can be used by the banking industry are that banking companies are expected to be able to control the risks that may occur that can affect the profitability obtained. By controlling the risks that occur, it is expected to be able to maintain or even increase the profits that will be obtained by the banking industry every year. This control can be carried out by the banking industry by providing alternative funding such as securities and collaborating with several BUMN to increase low-cost funds and third-party funds.

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