THE INFLUENCE OF INTERNAL AND EXTERNAL FACTORS ON NPF AND NPL

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Abstract

Indonesia has two types of bank, islamic banking and conventional banking. In their activities, banks are often facing any risks, named financing risk (NPF) in the islamic banking and credit risk (NPL) in the conventional banking. Based on data by OJK, the value of NPF is always higher than NPL. However, in January-August 2020 the NPF tended to decrease while the NPL tended to increase, even indicating a movement that would excited the NPF value. Therefore, it's necessary to the research of the factors that influence both NPF and NPL, including the internal and external conditions of the bank. The data that used as reference is the secondary data from OJK of 10 both islamic and conventional commercial banks from the first quarter of 2019 to the third quarter of 2020. Furthermore, the data is analyzed with panel model fixed effect data analysis with the robust standard error estimation method and panels corrected standard error (PCSE cross-sectional SUR). By using 5% of significance level, this research results that NPF is only significantly and positively influenced by FDR. However, NPL is significantly and negatively affected by the inflation and ROA, also significantly and positively influenced by CAR, LDR, and BOPO.

Keywords: NPF, NPL, panel data, Islamic banking, conventional banking

1. INTRODUCTION

Bank is an important financial institution that influences both of the micro and macro economy of the country. Served as a financial auxiliary between the parties who have the excess of funds and parties that need funds or are experiencing a deficit. In the process of its business, the role of the bank as a financial institution that offers services and trusts, each bank always tries to attract as many new customers as possible, increase their income, and increase the provision of loans and services (Simorangkir 2004).

Indonesia is one of the countries that applies a dual financial system, it is conventional financial system and the islamic financial system. According to the Indonesian Law no. 21 of 2008 concerning in islamic Banking, islamic bank is a type of bank that carry out their business activities based on sharia principles and not opposite to the islamic values. According to its type, islamic bank consists of Sharia Commercial Banks (BUS), Sharia Business Units (UUS) and Sharia Rural Banks (BPRS). Meanwhile, conventional bank is a kind of bank that carry out their business activities conventionally and according to its type, it consists of Conventional Commercial Banks (BUK) and Rural Banks (BPR).

One of the differences between Islamic banking and conventional banking lies in the financing and provision of remuneration, both received by the bank and investors (Nasution 2003). According to Firmansyah (2014) remuneration received by or given to conventional banking is in the form of interest in a definite percentage. So it doesn't matter whether the borrower's condition is still able to pay off the debt or not. This of

course will burden the borrower. Whereas in bank that apply sharia principles, the term of credit is not used but is replaced by the term of financing because they have the different principles. Financing in Islamic banking prioritize the elements of agreement and transparency so that Islamic values are maintained in it.

The conventional banking, just like other financial institutions, has a motive to obtain returns (business results) which will always be faced by risk, which is known as credit risk. The risks that maybe occurred can cause a huge loss to conventional banking, if it cannot be detected and managed properly. So, conventional banks are required to be more sensitive in detecting matters that could trigger an increase in the level of their non-performing loans. According to Syaifuddin (2009) credit risk is the danger of negligence from the customers who have been given credit facilities or bank losses as a result of non-repayment of loans given by banks to debtors.

The Islamic banking financial system which is built on the basis of Islam is also not free from the problems just like conventional banking and other financial institutions. As an institution that connects between surplus units (which have funds) and deficit units (which require financing), the composition of the bank funds comes from the public, so that they must channel back to the public morally in the form of financing. In practice, from the total of financing that distributed to the community, not all financing is categorized as a health financing, one of them is the financing that has a lack of quality or has problems (Firmansyah 2014). This problematic financing in the world of Islamic banking is called Non Performing Financing (NPF), while non-performing loans in conventional commercial banks are called Non Performing Loans (NPL). NPF is an incident that often occurs in the world of Islamic banking because one of the main activities of Islamic banking comes from the distribution of financing. If problematic financing (NPF) exceeds the limit, it will be a serious problem that will disrupt the profitability of Islamic banking which will lead to the cessation of the operations of Islamic banking.

According to Nurfalah et al. (2018), Islamic banking is relatively more stable when it's compared to conventional banking in case of facing shocks from both internal (domestic) and external (global). This is reflected in facing Covid-19, the financing that distributed by BUS also tended to increase. Based on Figure 1, non-performing financing (NPF) also tended to experience a decline during the Covid-19 period, in the period of March 2020 to August 2020. Meanwhile, non-performing loans (NPL) tended to increase in March 2020 to August 2020. This shows that islamic banking has managed its financing in a good way and Islamic banking is relatively more stable in facing external shocks compared to conventional banking, so it's resulting a smaller NPF.

Figure 1. Percentage of the NFP BUS and NPL BUK in
March 2020 – August 2020
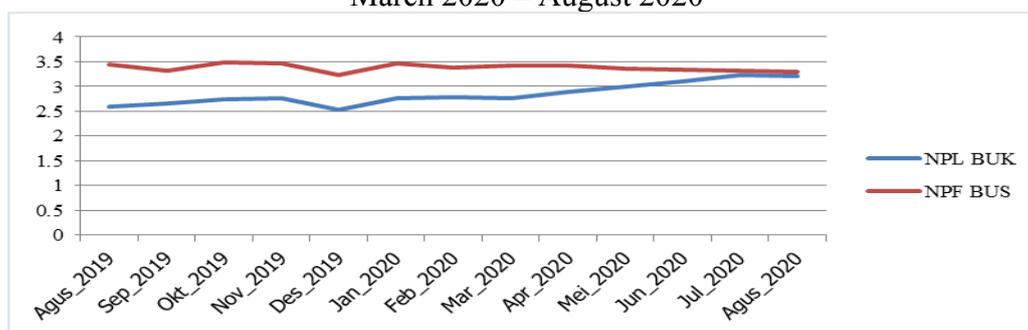
Source: Financial Service Authority (OJK), processed by writers

Financing / credit is the main activity of banking, both Islamic banking and conventional banking, so it is necessary to have such a good credit / financing management. Non-performing loans / financing can disrupt the stability of the islamic and conventional banking financial systems. According to Indrajaya (2019) the impact of the increase in NPF / NPL is it can result in a decrease in bank income and result in the decrease in the profit sharing rate for customers who own funds. If the accumulated amount of financing / bad credit is relatively large, it can reduce the bank capital quickly and increase the potential to th failure of the banks to operate. So that the NPF / NPL needs to be kept to a minimum, so it won't cause losses to the bank, therefore it needs to be detected and managed appropriately.

The previous studies discussed more about the NPF because it continued to increase or the NPF of Islamic banking was higher than the NPL of conventional banking. This research, entitled "The Influence of Internal and External Factors on NPF and NPL" is becoming important because it wants to discuss about NPF which shows a decreasing trend, while NPL shows an increasing trend every month in the first quarter of 2020 to the second quarter of 2020. So, the purpose of this research is to know an overview of the development of NPF / NPL and the factors that influence it, to know the factors that affect NPL and NPF, and to know the comparison of the response between the NPF of Sharia Commercial Banks and NPL of Conventional Commercial Banks based on the factors that influence it in the first quarter of 2019 - the third quarter of 2020.

The cause of NPF / NPL itself can be caused from the internal side or the external side. From the external side it can be caused by the factors such as changes in government policy in the real sector, increased in prices for production factors, increased competition in the business sector, increased the loan interest rates, recession, inflation, and other monetary policies (Kuncoro 2002). The external influence itself can have a direct or indirect impact on NPF / NPL. From the internal side, it generally comes from corporate governance mechanisms, such as Capital Adequacy Ratio (CAR), Operational Cost Ratio to Operating Income (BOPO), and Financing to Deposit Ratio (FDR) (Indrajaya 2019). Meanwhile, according to Solihatun (2014), internal factors that affect NPF are Financing to Deposit Ratio (FDR) and Return on assets (ROA).

2. LITERATURE STUDY

The credits that extended by banks have several risks, one of which is the risk of default which can harm the bank. This risk is caused because the debtor is unable to pay back the principal of the loan. The debtor's inability to repay the loan is a risk that will be faced by the bank where this risk cannot be avoided considering that the function of the bank is to distribute funds to people in need. This risk is also known as bad credit or NPL at conventional commercial banks, while in Islamic commercial banks it is known as non-performing loans or NPF. According to Salas and Saurina (2002) NPL is caused by macroeconomic factors (external banks) and microeconomic factors (internal banks).

The research that conducted by Radivojević et al. (2019) entitled Econometric Model of Non-Performing Loans Determinants using the Generalized Method of Moments (GMM) estimation method. This study states that NPL (-1) and GDP have a positive and significant effect on NPL. Household finale consumption expenditure (HFC) has a negative and significant effect on NPL. Meanwhile unemployment rate (UNR), inflation rate (INF), capital to assets (CAP), and lending interest rate (LIR) have a negative and insignificant effect on NPL.

Kamaludin, Darmansyah, and Usman (2015) with his research entitled Determinants of Non-Performing Loans (NPL) in the Banking Industry (Empirical

Evidence for Go Public Companies on the Indonesia Stock Exchange). This research aims to identify the determinants of NPL in the Indonesian banking sector. The analytical method that used is panel data analysis with the Pooled FGLS (Cross-section random effects) method. The results of this study are LDR and exchange rates show a positive and significant effect on NPL. CAR and NIM have a negative and significant effect on NPL. Meanwhile, inflation has a positive but insignificant effect on NPL.

Firmansyah (2014) in his research entitled Determinant of Non Performing Loans: The Case of Islamic Bank Indonesia using the OLS analysis method and the sobel test with bootstrapping. This research shows that liquidity have a negative and significant effect on NPF, negative and significant inflation and GDP on NPF. However, BOPO and bank size has no effect on NPF. In addition, based on the result of the sobel test analysis with bootstrapping data proves that BPRS liquidity as measured by FDR does not mediate the effect of bank size, BOPO, GDP and inflation on problematic financing.

Auliani (2016) conducted a research entitled Analisis Faktor Internal Dan Faktor Eksternal Terhadap Tingkat Pembiayaan Bermasalah Pada Bank Umum Syariah Di Indonesia Periode Tahun 2010-2014. This study aims to analyze the influence of internal and external factors on the NPF of Islamic banks in Indonesia. BOPO, CAR, FDR, SBIS, inflation and exchange rates as independent variables and the NPF ratio as the dependent variable. By using multiple linear regression analysis method, this study results that BOPO and SBIS show a positive and significant effect on NPF. CAR and inflation sensitivity show a negative and significant effect on NPF. Meanwhile, FDR and exchange rate sensitivity have a positive but insignificant effect on NPF. The possibility that causes FDR does not have a significant effect is that each bank has different criteria and requirements in providing financing. Meanwhile, exchange rate sensitivity does not have a significant effect due to the value of financing in foreign currency in Islamic banking on average in the range of 5 percent of the total disbursed financing, so that changes in exchange rates do not have enough impact and even have almost no impact on the NPF of Islamic banking.

Research conducted by Imaduddin (2008) entitled Determinants of Banking Credit Defaults in Indonesia: A Comparative Analysis. This research aims to compare the factors that influence NPL in conventional banking with NPF in Islamic banking. The results of this study by using the Ordinary Least Square (OLS) analysis method is a two-month lag of NPF, total assets and GDP have a positive and significant effect on NPF. Meanwhile, total third party funds and total financing have a negative and significant effect on NPF. In conventional banking, a 3-month lag from NPL, total assets, proxies as bank money market in each period, and a 3-month lag of total credit have a positive and significant effect on NPL. Meanwhile, GDP and a two-month lag of total credit have a negative and significant effect on NPL. This shows that there are differences in factors that influence the NPF and NPL.

Research conducted by Poetry and Sanrego (2011) entitled Pengaruh Variabel Makro Dan Mikro Terhadap NPL Perbankan Konvensional Dan NPF Perbankan Syariah. By using the VAR (Vector Auto Regression) or VECM (Vector Error Correction Model) analysis method, this study tries to identify the effects of macro and micro variables on NPL and NPF. The macro and micro variables used in this research are IPI (Industrial Production Index), inflation, exchange rate, SWBI / SBIS (Bank Indonesia Syariah Bank Indonesia Wadiah Certificate), SBI (Bank Indonesia Certificate), LDR (Loans to Deposit Ratio), FDR (Financing to Deposit Ratio), and CAR (Capital Adequacy Ratio). The results of the study found that in the short term there were no significant variables affecting NPL and NPF. In the long term, the

variables that have a significant effect on NPL are the exchange rate, IPI, inflation, SBI, LDR, CAR and the significant variables that affect NPF are lnER, lnIPI, inflation, SBIS, FDR_BS, and CAR. According to the results of the IRF, this study found that the NPF in Islamic banking is more stable than the NPL in conventional banking to deal with macro and micro variable fluctuations. According to the FEVD variable that affects NPL in conventional banking is inflation and SBI, while the only variable that affects NPF in Islamic banking is FDR.

3. RESEARCH METHODOLOGY

This research is using panel data in the period of the first quarter 2019-third quarter 2020 due to the limited number of observations that used as many as 10 Islamic commercial banks and 10 conventional commercial banks. The Islamic banks that used are BCA Syariah, BNI Syariah, BRI Syariah, BTPN Syariah, Bank Mandiri Syariah, Bank Mega Syariah, Bank Panin Syariah, Bank Bukopin Syariah, Bank Victoria Syariah, and BJB Syariah. Meanwhile, the conventional banks that used are BCA, BNI, BRI, BTPN, Bank Mandiri, Bank Mega, Bank Panin, Bank Bukopin, Bank Victoria, and BJB. On the descriptive analysis and inferential analysis use the secondary data from the quarterly publications of the Financial Services Authority (OJK), as well as inflation and GDP from the official website of the Central Statistics Agency (BPS) (www.bps.go.id). The data used in the analysis are non-performing finance (NPF) data from 10 Islamic commercial banks, non-performing loans (NPL) from 10 conventional commercial banks, return on assets (ROA) from 10 Islamic commercial banks and 10 conventional commercial banks, operating costs and operating income (BOPO) from 10 sharia commercial banks and 10 conventional commercial banks, financing to deposit ratio (FDR) from 10 sharia commercial banks, loans to deposit ratio (LDR) from 10 conventional commercial banks, capital adequacy ratio (CAR) from 10 sharia commercial banks and 10 conventional commercial banks, Indonesia's monthly inflation and Indonesia's gross domestic product on the constant price basis 2010. The analysis used is descriptive and inferential analysis. Descriptive analysis is used to explain the general description of non-performing finance / non-performing loans and the factors that influence it in Islamic commercial banks and conventional commercial banks in Indonesia for the period of the first quarter of 2019- the third quarter of 2020. The inferential analysis used is panel regression analysis to analyze the factors affecting non-performing finance for Islamic commercial banks (sharia model) and non-performing loans for conventional commercial banks (conventional model) in Indonesia.

The sharia model used is as follows:

$$NPF_{it} = \alpha + \beta_1 INF_{it} + \beta_2 ROA_{it} + \beta_3 CAR_{it} + \beta_4 FDR_{it} + \beta_5 BOPO_{it} + \beta_6 LN\_PDB_{it} + (u_{it} + v_{it}))$$

With

NPF_{it} : The i-th Islamic commercial bank non-performing finance at the t-th (time)

INF_{it} : Inflation in Indonesia of the i at time t

ROA_{it} : Return on assets of the i sharia commercial bank at time t

CAR_{it} : The capital adequacy ratio of the i sharia commercial bank at the t time

FDR_{it} : Loans to deposit ratio of the i sharia commercial bank at time t

$BOPO_{it}$: Operating costs to the operating income of the i sharia commercial bank at time t

LN_PDB_{it} : Indonesia's gross domestic product at time t

i   : Individual; i = 1, 2,…, 10
t   : Study period; t = quarter 1 of 2019,…, quarter 3 of 2020
$\beta_1…\beta_6$: Slope of the regression of each variable
u_i : Each individual error
v_{it} : Model error

The conventional model used is as follows:

$$NPL_{it} = \alpha + \beta_1 INF_{it} + \beta_2 ROA_{it} + \beta_3 CAR_{it} + \beta_4 LDR_{it} + \beta_5 BOPO_{it} + \beta_6 LN\_PDB_{it} + (u_{it} + v_{it}))$$

With
NPL_{it} : The i-th conventional commercial bank non-performing loans at the t-th (time)
INF_{it} : Inflation in Indonesia of the i at time t
ROA_{it} : Return on assets of conventional commercial bank i at time t
CAR_{it} : Capital adequacy ratio for conventional commercial bank i at time t
LDR_{it} : Loans to deposit ratio of conventional commercial bank i at time t
$BOPO_{it}$: Operating costs against operating income of conventional commercial bank i at time t
LN_PDB_{it} : Indonesia's gross domestic product at time t
i   : Individual; i = 1, 2,…, 10
t   : Study period; t = quarter 1 of 2019,…, quarter 3 of 2020
$\beta_1…\beta_6$: Slope of the regression of each variable
u_i : Each individual error
v_{it} : Model error

4. RESULT AND DISCUSSION

The Overview of the NFP of Sharia Commercial Bank and the NPL of the Conventional Commercial Bank

Financing is the main activity carried out by sharia commercial banks. Unlike credit, financing prioritizes elements of agreement and transparency so the Islamic values are maintained in it. However, in fact, from the amount of financing that distributed to the community, not all of the financing was in the healthy category, but some of it was financing that has a bad quality and problematic (Firmansyah 2014). The indicator of non-performing financing in Islamic banking can be seen from the Non-Performing Finance (NPF) ratio, while in conventional banking, the indicator for non-performing loans can be seen from the ratio of Non-Performing Loans (NPL). NPF reflects the risk of financing from financing distributed by Sharia Commercial Banks, while NPL reflects the credit risk of credit extended by Conventional Commercial Banks.

Figure 2. NPF's average movement of 10 BUS and NPL's average of 10 BUK for the period of the first quarter of 2019-the third quarter of 2020
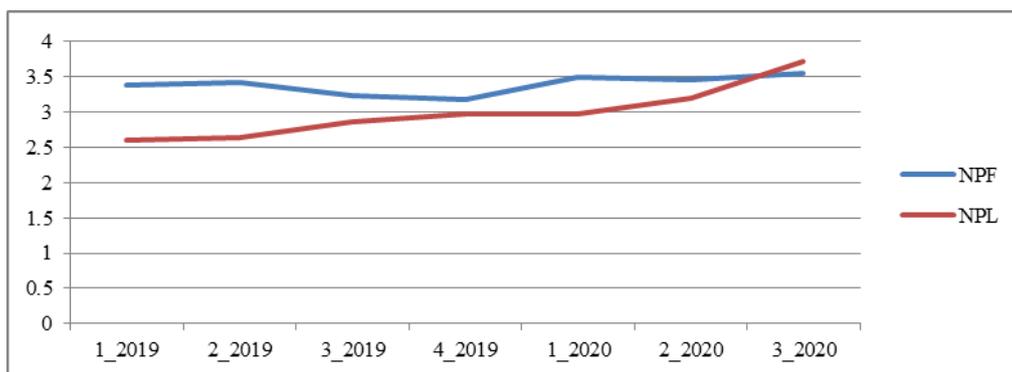
Source: Financial Service Authority (OJK), processed by writers

Figure 2 shows that the average movement of the NPL at 10 BUK and the average NPF at 10 BUS. From this figure, can be seen that the movement of the two values does not fluctuate too much. The average of NPL formed an increasing trend, while the average of NPF tend to form a flat trend. The highest increase in average of NPL occurred in the third quarter of 2020, which increased by 0.527 percent from the previous quarter. Meanwhile, the average of NPF just increased by 0.1 percent from the previous quarter. This shows that in terms of credit / financing risk, BUS is more stable than BUK.

The Overview of The ROA's of Sharia Commercial Bank and Conventional Commercial Bank

Figure 3. The Average of ROA of BUS, average of NPF, average of ROA of BUK, and average of NPL of 10 BUS and BUK in Indonesia from the first quarter of 2019 to the third quarter of 2020
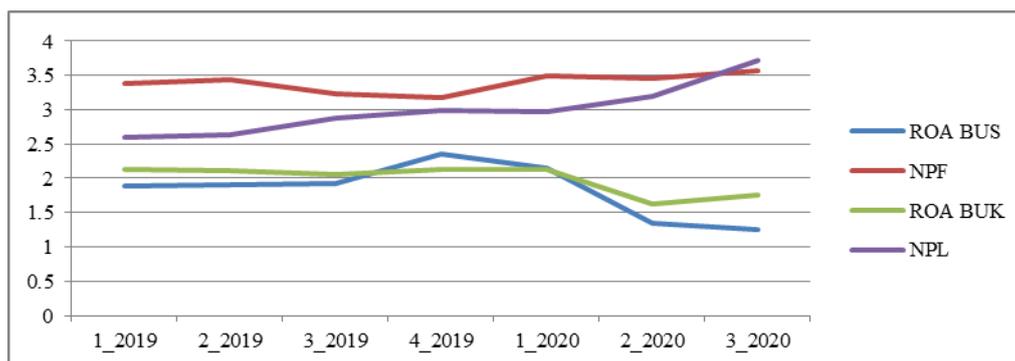
Source: Financial Service Authority (OJK), processed by writers

Figure 3 shows that the movement of the average of ROA and average of NPF of 10 BUS, from this figure it can be seen that the movement of the two values shows the opposite pattern. In the first quarter to the fourth quarter of 2019, the average of ROA of BUK continued to increase. However, starting from the first quarter of 2020, it has decreased continuously until the third quarter of 2020. Meanwhile, the average of NPF in the first quarter to the fourth quarter of 2019 shows a decreasing trend, but in the first

quarter to the third quarter of 2020 it has increased. This indicates that ROA BUS has a negative relationship to NPF.

Likewise, it can be seen that the average movement of ROA of BUK has a pattern that is opposite to the average movement of NPL. In the first quarter of 2019 to the second quarter of 2020 the average ROA of BUK was tended to decrease, while the average of NPL always increased. However, in the third quarter of 2020 an increase in the average ROA of BUK was followed by an increase in the average of NPL. However, it can still be indicated that ROA BUK has a negative relationship with NPL at 10 BUK.

The Overview of BOPO of Sharia Commercial Bank and Conventional Commercial Bank

Figure 4. The average of BOPO of BUS, average of NPF, average of BOPO of BUK, and average of NPL of 10 BUS and BUK in Indonesia from the first quarter of 2019 to the third quarter of 2020.
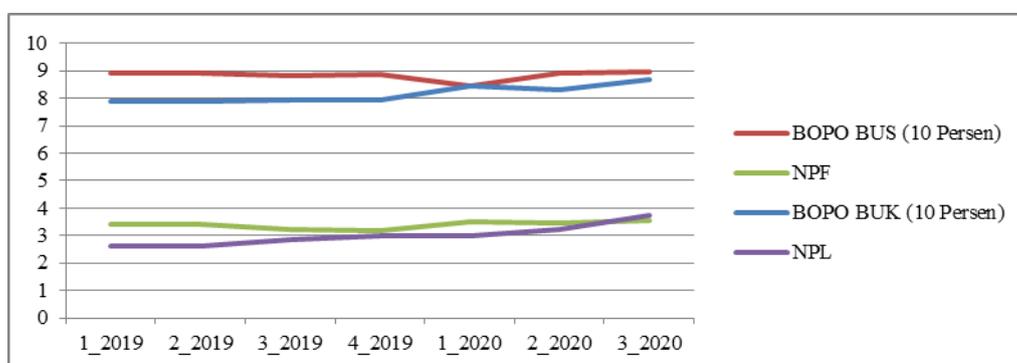
Source: Financial Service Authority (OJK), processed by writers

Figure 4 shows the development of the average of BOPO and the average of NPF of 10 BUS, where we can see that the movement of the two values shows a pattern that tends to be the same. In the first quarter to the third quarter of 2019, the increase in the average of BOPO BUS was followed by an increase in the average of NPF. However, in the fourth quarter of 2019 to the first quarter of 2020, the average movement of BOPO of BUS was in the opposite direction to the average movement of NPF . In the fourth quarter of 2019, the average of BOPO increased by 0.59 percent, while the average of NPF decreased by 0.058 percent. The opposite happened in the first quarter of 2020, the average of BOPO of BUK decreased, while the average of NPF increased. In the second quarter to the third quarter of 2020, the average BOPO and the average NPF showed that the movement back in the same direction. Thus, it can be indicated that BOPO of BUS has a positive relationship to NPF at 10 BUS.

Likewise, it can be seen that the average movement of BOPO of BU tends to be in the same pattern of direction as the average movement of NPL. In the first quarter to the third quarter of 2019, the average of BOPO of BUK and the average of NPL increased. However, in the fourth quarter of 2019 to the second quarter of 2020 the two values move in the opposite direction. In the third quarter of 2020, the two values moved again in the same direction, namely the average BOPO increased by 3.64 percent and the average NPF increased by 0.53 percent. Thus, it is still indicated that BOPO BUK has a positive relationship with NPL at 10 BUK.

**The overview of The CAR of Sharia Commercial Bank and Conventional
Commercial Bank**

Figure 5 shows the development of the average CAR and NPF of 10 BUS, where we can see that the movement of the two values tends to show a pattern in the opposite direction. In the first quarter to the third quarter of 2019 and the first quarter to the second quarter of 2020, an increase in the average CAR BUS was followed by a decrease in the average NPF or vice versa. However, in the fourth quarter of 2019 the average CAR BUS decrease was followed by a decrease in the average NPF and in the third quarter of 2020 an increase in the average of CAR of BUS that followed by an increase in the average of NPF. However, it still indicates that the average CAR BUS has a negative relationship with the average NPF of 10 BUS.

In contrast to the average of CAR of BUS, the average movement of BUK of CAR shows a direction that tends to be the same as the average movement of NPL. In the third quarter of 2019, an increase in the average of CAR of BUK was 0.63 percent followed by an increase in the average of NPL of 0.239 percent. in the first quarter to the third quarter of 2020, an increase in the average of CAR for BUK was also followed by an increase in the average of NPL. However, in the second and fourth quarters of 2019, the average of CAR for BUK decreased, followed by an increase in the average of NPL. Nonetheless, it still indicates that CAR of BUK has a positive effect on NPL of 10 BUK because it has an upward trend.

Figure 5. The average of CAR of BUS, average of NPF, average of BUK of CAR, and average of NPL of 10 BUS and 10 BUK in Indonesia from the first quarter of 2019 to the third quarter of 2020
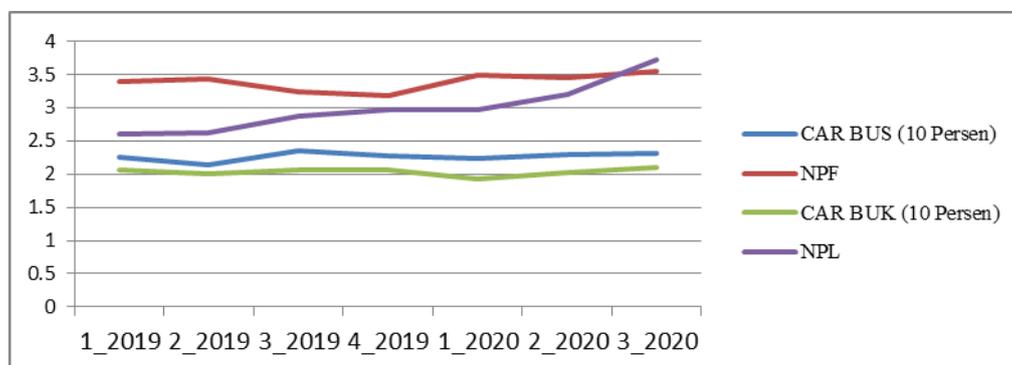
Source: Financial Service Authority (OJK), processed by writers

The Overview of The FDR of Sharia Commercial Bank and The LDR of The Conventional Commercial Bank

Figure 6. The average of FDR of BUS, average of NPF, average of LDR, and average of NPL of 10 BUS and 10 BUK in Indonesia from the first quarter of 2019 to the third quarter of 2020
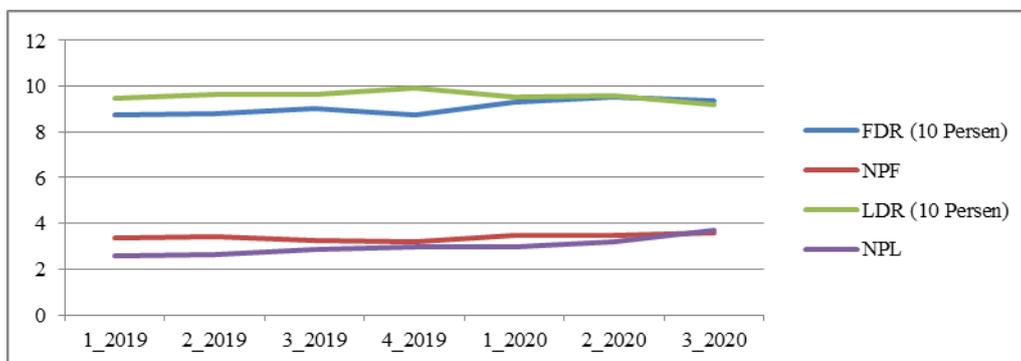
Source: Financial Service Authority (OJK), processed by writers

Figure 6 shows the development of the average of FDR and average of NPF of 10 BUS, where the movement of the two values has the same direction. In the second quarter of 2019 and in the fourth quarter of 2019 to the first quarter of 2020 an increase in the average of FDR was followed by an increase in the average of NPF. However, in the third quarter of 2019 and the second quarter of 2020 an increase in the average of FDR was followed by a decrease in the average of NPF. Likewise, in the third quarter of 2020 the decline in the average of FDR was followed by an increase in the average of NPF. Even so, it still indicates that the average of FDR has a positive relationship with the average of NPF of 10 BUS because it shows an increasing trend.

Likewise, it can be seen that the average of LDR shows a movement with a pattern which tends to be the same as the average of NPL. In the first quarter of 2019 to the second quarter of 2020 an increase in the average of LDR was followed by an increase in the average of NPL. However, in the third quarter of 2020 the decrease in the average of LDR was followed by a decrease in the average of NPL. Even so, it still indicates that the LDR has a positive effect on NPL at 10 BUK.

The Overview of Inflation

Figure 7. The inflation, average of NPF of 10 BUS, and average of NPL of 10 BUK in Indonesia in the first quarter of 2019 to the third quarter of 2020
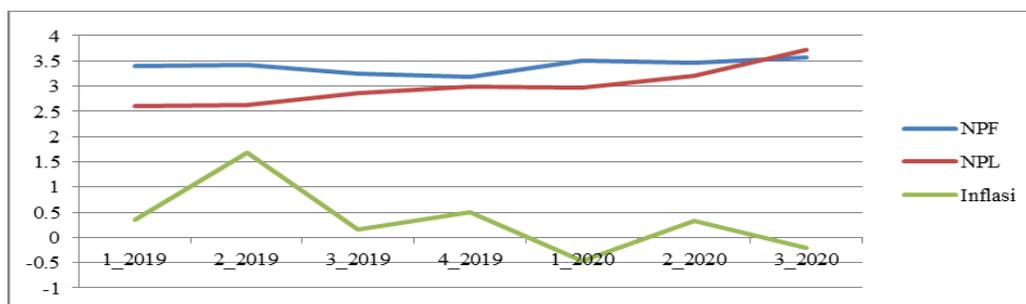
Source: Financial Service Authority (OJK) and Central Bureau of Statistics (BPS), processed by writers

In Figure 7, the movement of inflation tends to show a trend in the same direction as the average movement of NPL, but tends to show a trend in a different direction from the average movement of the NPF. In the fourth quarter of 2020 to the third quarter of 2020, the increase / decrease in inflation was followed by an increase / decrease in the average of NPL, while the increase / decrease in inflation was not followed by an increase / decrease in the average of NPF. However, in the third quarter of 2020 the decline in inflation was followed by an increase in the average of NPL and also an increase in the average of NPF. Nevertheless, this still indicates that inflation has a positive relationship with NPL and has a negative relationship with NPF.

The Overview of PDB of ADHK

Figure 8. The GDP, average of NPF of 10 BUS, and average of NPL of 10 BUK in Indonesia for the first quarter of 2019 to the third quarter of 2020
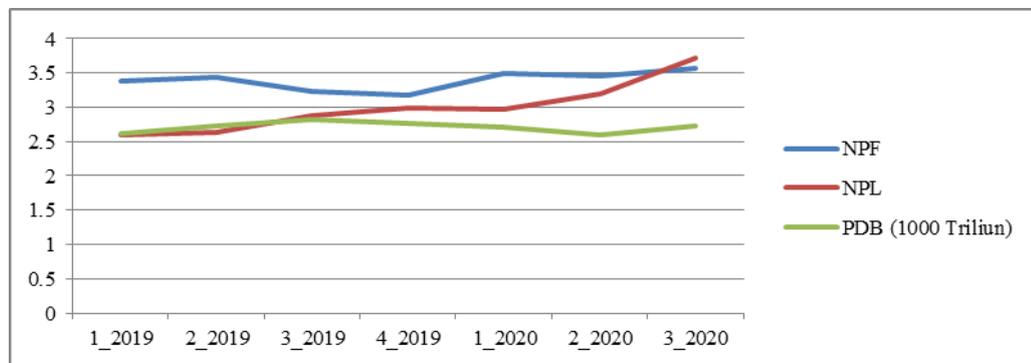
Source: Financial Service Authority (OJK)

In Figure 8, the average movement of NPF and NPL tends to show the same direction as GDP. In the second quarter of 2019 and the third quarter of 2020 the decline in GDP was followed by a decrease in the average of NPL and average of NPF. Likewise, in the second quarter of 2020 an increase in GDP was followed by an increase in the average of NPL and average of NPF. This indicates that GDP has a positive relationship to NPL a nd NPF. Thus, NPF and NPL are stable and resilient when facing GDP shocks.

Sharia Model

Based on the model selection through the Chow test and Hausman test as well as the residual covariance variant structure test, the model chosen to estimate the sharia model is the Fixed Effect Model (FEM) with the robust standard error estimation method with the panel corrected standard error (PCSE cross-sectional SUR). For this reason, testing the classical assumptions that need to be done is only the Normality test and the Non-multicollinearity test. The results that obtained are that the model has met the two assumptions (Table 1), so the model formed can be written as follows,

$$\widehat{NPF}_{it} = (32{,}06989 + \mu_i) - 0{,}021999\ INF_{it} - 0{,}046030\ ROA_{it} + 0{,}030287\ CAR_{it} + 0{,}006412\ FDR_{it} - 0{,}009397\ BOPO_{it} - 1{,}959338\ LN(PDB)_{it}$$

* significant at α = 5 percent

Table 1. The estimation results of the sharia model

Variable	Coefficient	Std. Error	t-Statistic	Prob.	VIF
(1)	(2)	(3)	(4)	(5)	(6)
C	32.06989	25.00019	1.282786	0.2050	
INF	-0.021999	0.091074	-0.241551	0.8100	1.054712
ROA	-0.046030	0.060685	-0.758504	0.4514	5.395903
CAR	0.030287	0.018324	1.652822	0.1042	1.942716
FDR	0.006412	0.002848	2.251848	0.0284	1.131164
BOPO	-0.009397	0.024866	-0.377895	0.7070	4.531046
LN_PDB	-1.959338	1.695250	-1.155781	0.2529	1.023450
Adjusted R-squared			0.898688		
F-statistic			41.80430		
Prob(F-statistic)			0.000000		
Prob(Lilliefors)			0.0748		

Source: Output Eviews 10

The Coefficient of Determination (R^2 adjusted) of the Sharia Model

Based on the output of the sharia model in Table 1, it can be seen that the value of $R^2_{adjusted}$ is 0.898688. This value means that the independent variables, namely ROA, FDR, BOPO, CAR, inflation, and GDP, are able to explain the NPF of BUS by 89.8688 percent. Meanwhile, the remaining 10.1312 percent is explained by other independent variables outside the sharia model.

Simultaneous Test (F-test) of the Sharia Model

Simultaneous test is used to determine whether there is at least one independent variable that affects the dependent variable. Based on the output of the sharia model in Table 1, it can be seen that the probability value of the F test statistic is 0.0000, which is smaller than the significance value (α) which is 0.05. Thus, it can be concluded that H_0 is rejected. So it can be said that with a significance level of five percent, there is enough evidence to say that at least one independent variable between ROA, BOPO, FDR, CAR, Inflation, and GDP, affects the NPF of BUS.

Partial Test (t-test) of Sharia Model

For the partial test, the t-test statistical value of each variable in the model was obtained. Based on the Table 1, it can be seen that the statistical probability of the t-test for the FDR variable is smaller than alpha 0.05, so it can be said that at the five percent significance level the FDR variable has a significant effect to non-performing BUS financing. Then we can also see that the probability of the t test statistics for the inflation variable, ROA, CAR, BOPO, and GDP is greater than alpha 0.05 so that it can be said that at the five percent significance level the inflation variable, ROA, CAR, BOPO, and GDP has no significant effect on the NPF of BUS.

Conventional Model

Based on the model selection through the Chow test and Hausman test also the residual covariance variant structure test, the model chosen to estimate the model is the Fixed Effect Model (FEM) with the robust standard error estimation method with the panel corrected standard error (PCSE cross-sectional SUR). For this reason, testing the classical assumptions that need to be done is only the Normality test and the Non-

multicollinearity test. The results obtained are that the model has fulfilled the two assumptions (Table 2), so the model that formed can be written as follows,

$$\widehat{NPL}_{it} = (-35.26826 + \mu_i) - 0.227796\ INF_{it}* - 0.396467\ ROA_{it}* + 0.128861\ CAR_{it}* +$$
$$0.024051\ LDR_{it}* + 0.054491\ BOPO_{it}* + 2.010622\ LN(PDB)_{it}$$

* significant at α = 5 percent

Table 2. The Estimation Results of Conventional Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.	VIF
(1)	(2)	(3)	(4)	(5)	(6)
C	-35.26826	29.43844	-1.198034	0.2361	
INF	-0.227796	0.100884	-2.257991	0.0280	1.086301
ROA	-0.396467	0.164224	-2.414184	0.0192	2.922809
CAR	0.128861	0.048457	2.659305	0.0103	2.036842
LDR	0.024051	0.008340	2.884036	0.0056	1.355463
BOPO	0.054491	0.011237	4.849085	0.0000	3.641226
LN_PDB	2.010622	2.010015	1.000302	0.3216	1.019751
Adjusted R-squared			0.899876		
F-statistic			42.34292		
Prob(F-statistic)			0.000000		
Prob(Lilliefors)			> 0.1		

Source: *Output Eviews* 10

Coefficient of Determination ($R^2_{adjusted}$) of Conventional Model

Based on the conventional model output in Table 2, it can be seen that the value of $R^2_{adjusted}$ is 0.899876. This value means that the independent variables ROA, LDR, BOPO, CAR, inflation, and GDP are able to explain the NPL of BUK of 89.9876 percent. Meanwhile, the remaining 10.0124 percent is explained by other independent variables outside the conventional model.

Simultaneous Test (F-test) of Conventional Model

Based on the conventional model output in Table 2, it can be seen that the probability value of the F test statistic is 0.0000, which is smaller than the significance value (α) which is 0.05. Thus, it can be concluded that H_0 is rejected. So it can be said that with a significance level of five percent, there is enough evidence to say that at least one of the independent variables ROA, BOPO, LDR, CAR, inflation, and GDP, affects the NPL of BUK.

Partial Test (t-test) Conventional Model

For the partial test, the t-test statistical value of each variables in the model was obtained. Based on Table 2, it can be seen that the statistical probability of the t-test for the inflation variable, ROA, CAR, LDR, and BOPO is each smaller than alpha 0.05, so it can be said that at the five percent significance level the inflation variable, ROA, CAR, LDR, and BOPO, respectively, have a significant effect on BUK non performing loans. Then we can see that the statistical probability of the t test for the variable is greater than alpha 0.05, so it can be said that at the five percent significance level the GDP variable does not have a significant effect on the NPL of BUK.

Comparison of the Response Between NPF and NPL to Inflation

Based on Table 1, it can be seen that inflation has a negative effect on NPF with a coefficient value of -0.021999, it means that for each one percent increase in inflation will reduce the NPF by 0.021999 percent, with the assumption other variables are constant. Similar to NPF, based on Table 2, it can be seen that inflation has a negative effect on NPL with an inflation coefficient of -0.227796, meaning that each one percent increase in inflation will reduce NPL by 0.021999 percent, with the assumption other variables are constant. However, the NPF response to inflation did not show a significant effect. According to Mutamimah and Chasanah (2012) this happened because Islamic banking has one of the advantages compared to conventional banking, which is resistant to the effects of inflation. Islamic banking activities are categorized as investment banking and merchant / commercial banking and in carrying out their operational activities, Islamic banking has replaced the interest system with a profit sharing system. So inflation does not really affect the quality of bank financing. In Islamic banking financing, there are several types of contracts that aim to reduce the risk of financing, such as financing with a sale and purchase agreement consisting of murahabah and istishna. Financing with a profit sharing agreement consisting of mudharabah and musyarakah, also financing with a lease or ijarah agreement. The most dominating financing to be used is financing with a sale and purchase agreement. In the murabahah application the installments are fixed from the beginning to ending, so when there is an increase in inflation in the long term, it does not affect the amount of installments paid by the customers. This is because customers can plan cash flow arrangements that needed to pay off murabahah financing.

According to Wijoyo (2016), both in the short term and in the long term, inflation has an insignificant effect on NPF. This is because Bank Indonesia has published an inflation target for the next three years. This publication of course can be seen as a signal of anticipation by the public, including customers. So that the public can estimate the amount of inflation in the upcoming years, even though this estimate is not necessarily in accordance with the reality that occurred. In 2019 to 2020, when inflation is close to the target range, this condition will not have a major effect on income distribution, allocation of production factors, and national income. When inflation does not have a large effect on income, the real income of the public, including customers, will not experience major changes. Customers can still make payment of their financing installments to Islamic banking, so the demand and supply of financing in Islamic banking will not experience disruption. However, this statement contradicts research conducted by Agustiningsih, Syapsan, and Iyan (2017) which states that inflation has a positive and significant effect on the NPF of Islamic banking.

Comparison of Responses between NPF and NPL to ROA

Based on Table 1, it can be seen that ROA has a negative effect on NPF with a coefficient value of -0.046030, it means that each one percent increase in ROA will reduce the NPF by 0.046030 percent, with the assumption other variables are constant. Similar to NPF, based on Table 2, it can be seen that ROA has a negative effect on NPL with an ROA coefficient value of -0.396467, it means that each one percent increase in ROA will reduce NPL by 0.396467 percent with the assumption other variables are constant. However, the NPF response to ROA did not show a significant effect. This is because when the performance of Islamic banking improves, which is indicated by an

increase in ROA, there is no direct response by reducing the distribution of financing. It's different to the Islamic banking, in conventional banking, an increase in ROA is responded by reducing lending, where according to Messai and Jouini (2013) a bank with high profitability (ROA) has little incentive to generate income and is therefore limited to engaging in risky activities just like giving risky loans. This is also in line with research conducted by Waemustafa and Sukri (2015), Kismawadi, Hamid, and Nurhaliza (2018), and Yolanda and Ariusni (2019).

Comparison of Responses between NPF and NPL to CAR

Based on Table 1, it can be seen that CAR has a positive effect on NPF with a coefficient value of 0.030287, it means that each one percent increase in CAR will increase the NPF by 0.030287 percent with the assumption other variables are constant. Similar to NPF, based on Table 2, it can be seen that CAR has a positive effect on NPL with a CAR coefficient value of 0.128861, it means that each one percent increase in CAR will increase NPL by 0.128861 percent with the assumption other variables are constant. However, the NPF response to CAR did not show a significant effect. This indicates that Islamic banking is carefully responding to an increase in CAR so that an increase in CAR does not directly affect the increase in the distribution of financing to Islamic banking. It's different to Islamic banking, in conventional banking the increase in CAR is responded by an increase of credit distribution, which is in accordance with the statement of Erni Ambarawati (2015) in Anwar and Sunaenah (2016) that increasing credit distribution will increase the risk of problem loans in conventional banking.

Comparison of the Responses of NPF to FDR and NPL to LDR

FDR has a positive and significant effect on NPF with the FDR coefficient in Table 1 by 0.006412, it means that each one percent increase in FDR will increase the NPF by 0.006412 percent with the assumption other variables are constant. Similar to NPF, based on Table 2, it can be seen that LDR has a positive and significant effect on NPL with an LDR coefficient value by 0.024051, it means that every one percent increase in LDR will increase NPL by 0.024051 percent with the assumption other variables are constant. This indicates that the credit distributed to conventional banking and the financing distributed by Islamic banking to each customer has a poor quality, so credit expansion by conventional banking and financing expansion by Islamic banking can reduce the returns for both types of banking and increase the level of NPL or NPF. This is in accordance with what Sipahutar (2007: 56) stated in Poetry and Sanrego (2011) that with poor quality LDR, credit expansion can make a bad contribution to increasing bank profits, so that NPL will also increase. This is also in line with research conducted by Haifa and Wibowo (2015), Antonio (2001: 179) in Ahmad and Widodo (2018), Barus and Erick (2016).

Comparison of Responses between NPF and NPL to BOPO

Based on Table 1, BOPO has a negative and insignificant effect on NPF with a BOPO coefficient -0.009397, it means that each one percent increase in BOPO will reduce NPF by 0.009397 percent with the assumption other variables are constant. Meanwhile, based on Table 2, BOPO has a positive and significant effect on NPL with a BOPO coefficient value 0.054491, it means that each one percent increase in BOPO will increase NPL by 0.054491 with the assumption other variables are constant. This indicates that the bank efficiency factor, BOPO, does not automatically reduce the ratio

of non-performing payments in Islamic banking. According to Dendawijaya (2003) in Destiana (2018), the negative effect of BOPO on NPF is caused by the smaller BOPO ratio, which means that the bank concerned is more efficient in managing operational costs. With this cost efficiency, the bank will get optimal profits, so the bank is able to increase the amount of financing distribution. According to Poetry and Sanrego (2011), an increase in the distribution of financing will result in an increase in the NPF of Islamic banking.

Comparison of the Response Between NPF and NPL to GDP

Based on Table 1, GDP has a negative and insignificant effect on NPF with a GDP coefficient value of -1,959338, it means that each one percent increase in GDP will reduce the NPF by 1.959338 percent with the assumption other variables are constant. Meanwhile, based on Table 2, GDP has a positive and significant effect on NPL with a GDP coefficient value of 2.010622, it means that each one percent increase in GDP will increase the NPL by 2.010622 with the assumption other variables are constant. This insignificant effect shows that Islamic banking and conventional banking can adjust their response to economic conditions so they will be stable against shocks. Meanwhile, the positive effect of GDP on NPL indicates that when the economic condition is booming, conventional banks are more optimistic about the economic conditions of the community, so conventional banks will increase their lending in the hope that they will get a large return. On the other hand, Islamic banking respons to the booming economic conditions carefully in the distribution of its financing to the debtors.

The response of the NPL to economic conditions is in accordance to Djaman's (2005: 23) statement in Poetry and Sanrego (2011) which states that a booming economic condition can trigger a massive expansion of credit provision by banks and if it is not carried out under the close supervision it will increase the ratio of NPL. An increase in the ratio of NPL in this condition is indicated to be caused by the factor of bank negligence, as stated by Siamat (2005: 360) in Poetry and Sanrego (2011) that one of the causes of the increase in NPL is irregularities in the implementation of credit procedures.

Thus, it can be seen that in Islamic banking, the shock to the GDP variable has more impact on the behavior of its customers, while in conventional banking, the shock to the GDP variable has more impact on banking behavior. This is understandable considering that conventional banking has been around longer than Islamic banking, so that Islamic banking is still very careful because it does not have much experience. On the other hand, more experienced conventional banks feel more confident, which in the end are fooled by the booming economic conditions.

5. CONCLUSION

In 10 Islamic commercial banks, the average of NPF, BOPO, and CAR show a trend that tended to be stable. The average movement of ROA shows a downward trend. The movement in the average FDR shows an increasing trend, but the increase is not too sharp. On the other hand, in 10 conventional commercial banks, the average movement of NPL and BOPO show an increasing trend. The average movement of ROA shows a downward trend. The average movement CARA and average of LDR tend to be stable. Meanwhile, in average, the movement of inflation and GDP is very fluctuating, but inflation follows a downward trend.

The variables of inflation, ROA, BOPO, and GDP have a negative and insignificant effect on NPF. Therefore, Islamic banking should increase BOPO and ROA because there is a tendency to decrease NPF. On the other hand, even though Islamic banking is not affected by external factors, Islamic banking must continue to adapt to economic conditions so that problem financing continues to decline. The CAR variable has a positive and insignificant effect on NPF, so that Islamic banking is expected to pay more attention to asset management by reducing the distribution of assets to financing which will result in a decrease of NPF. Meanwhile, the FDR variable has a positive and significant effect on NPF, which indicates that the financing distributed by sharia banks has a poor quality, so sharia banking is expected to improve the quality of financing provision carefully and be more selective in distributing financing in order to have debtors who are committed to repaying the financing so as to avoid financing problems.

Inflation and ROA variables have a negative and significant effect on NPL. CAR, LDR, and BOPO variables have a positive and significant effect on NPL. Meanwhile, the GDP variable has a positive and insignificant effect. Therefore, Conventional banking is expected to pay attention to the management of costs and operating income as well as to pay more attention to the management of assets and profits in order to protect and even reduce the risk of non-performing loans. Conventional banking is also expected to maintain prudence and be more selective in distributing credit in order to avoid non-performing loans. In addition, because inflation has a significant effect on the level of NPL, company management should formulate a strategy to keep the NPL level in a healthy position by taking an attention the inflation rate when distributing credit to the public.

This study also found that there is a difference in response between NPF and NPL to external and internal bank factors, NPF is only influenced by internal factors of Islamic banks, named FDR, while NPL is influenced by external factors, named inflation and internal factors of conventional banks, named ROA, BOPO, CAR, and LDR. Thus, NPF is more stable than NPL in responding to both internal and external bank conditions.

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