Contributions of Internal and External Variables in Non-Performing Financing Bank Muamalat for the Period of 2005-2021

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ABSTRACT

The condition of pandemic due to Covid 19 greatly affected the national economy which had an impact on the Islamic banking sector including the ability of the community to repay the financing. The purpose of this study is to describe the condition of internal and external variables for non-performing financing in the 2005-2021 period by using internal variables that are proxied by Operating Expenses (OE), Financing Deposit Ratio (FDR), Net Operating Margin (NOM), and Return On Equity (ROE), while external variables are proxied by Gross Domestic Product (GDP) and inflation. The method used in this research is descriptive quantitative by analyzing secondary data which is processed using Eviews 10 with the VECM method and using quarterly time series data from 2005-2021. The results of data processing using VECM show several findings, namely: the ROE, GDP, and inflation variables have a positive effect, then the FDR and NOM variables have a negative effect, while OE has no effect on non-performing financing in the long term, while in the short term, all variables do not affect non-performing financing. Meanwhile, based on testing using FEDV, the contribution to non-performing financing is OE (1.08%), FDR (0.89%), NOM (4.11%), ROE (0.95%), GDP (2.29%), and inflation (2.68%).

Keywords: internal variables; external variables; non performing financing

ABSTRAK

Kondisi pandemi akibat covid 19 sangat mempengaruhi perekonomian nasional yang berdampak pada sektor perbankan syariah termasuk kemampuan masyarakat dalam mengembalikan pembiayaan. Tujuan penelitian ini untuk mendeskripsikan kondisi variabel internal dan eksternal terhadap non performing financing pada periode 2005-2021 dengan menggunakan variabel internal yang diproksikan dengan Beban Operasional (OE), Financing Deposit Ratio (FDR), Net Operating Margin (NOM), dan Return On Equity (ROE), sedangkan variabel eksternal diproksikan dengan Produk Domestik Bruto (GDP) dan inflasi. Metode yang digunakan dalam penelitian ini deskriptif kuantitatif dengan menganalisis data sekunder yang diolah menggunakan Eviews 10 dengan metode VECM dan menggunakan data time series kuartalan dari tahun 2005-2021. Hasil olah data menggunakan VECM menunjukkan beberapa temuan, yaitu: variabel ROE, GDP, dan inflasi berpengaruh positif, kemudian variabel FDR dan NOM berpengaruh negatif, sedangkan OE tidak berpengaruh pada non performing financing dalam jangka panjang, sedangkan dalam jangka pendek semua variabel tidak berpengaruh pada non performing financing. Sedangkan berdasarkan pengujian menggunakan FEDV, kontribusi terhadap non performing financing adalah OE (1.08%), FDR (0.89%), NOM (4.11%), ROE (0.95%), GDP (2.29%), dan inflasi (2.68%).

Kata Kunci: variabel internal; variabel eksternal; non performing financing
A. INTRODUCTION

In the process of making financing provided to customers by banks, there is a potential for problems or bad financing. Financing risk is the possibility of loss that will arise because the funds channeled cannot be returned. Problem financing is financing whose quality is in the category of substandard, doubtful, and loss (Wasiaturrahma et al., 2020). In the case of Bank Muamalat, this is reflected in the large ratio of non-performing financing or what is generally referred to as Non-Performing Financing (NPF). NPF is one of the performance appraisal instruments of an Islamic bank, which is the interpretation of valuation on earning assets, so it is important to observe it with special attention because it is an indicator of problem financing that needs to be taken into account. After all, it is fluctuating and uncertain.

Bank Muamalat had issues since there was an excessive amount of non-performing debt. The NPF is too high, even in 2009, the NPF reached more than 7%. This happened because of problems with the distribution of financing. As a result of the NPF, according to him, profits and capital were disrupted, so additional capital was needed. However, the majority shareholder is not willing to add capital to bank Muamalat. This can happen if there is an allegation that this problem cannot be solved simply by adding capital but requires in-depth analysis regarding other factors that might influence the NPF problem at Bank Muamalat (Nengsih, 2020; Prastiwi, 2021).

Based on the condition of Bank Muamalat's data, the following shows Bank Muamalat's NPF data for the 2005-2021 period which can describe Bank Muamalat's NPF fluctuations over the past few years:

Figure 1. Bank Muamalat's Non-Performing Financing

Source: OJK, data processed 2023

Figure 1 illustrates how the NPF, which covered the period from early 2005 through the end of 2021, fluctuated, meaning that there was a significant increase and decrease in NPF at Bank Muamalat. The increase in NPF occurred at number 11 in the figure, which was 5.00%,
then it rose at 17, which was 5.80%, and the peak occurred at 19, which was 7.30%. In addition to the increase in NPF that occurred, Bank Muamalat also experienced a significant decrease in NPF at 36, which was 0.80%. This phenomenon has occurred over the past few years, namely based on NPF data for the 2005-2021 period, making researchers interested in researching the NPF that occurred at Bank Muamalat based on several factors or other variables that influenced the occurrence of the NPF problem.

The causes of problem financing can be caused by external influences or internal influences. External influences include macroeconomic factors that are formed on macro monetary and fiscal policies by the state government. External factors, which consist of macroeconomic variables such as GDP and inflation, have a serious effect on the performance of Islamic banks. Theoretically, Islamic banks do not recognize the interest system, as a result, both investments made by Islamic banks themselves and profit sharing with business operators who utilize their funds come from these institutions. This is different when empirical evidence indicates that macroeconomic factors influence the amount of non-performing debt in Islamic banks.

One of the influences of the macroeconomic variables that affect NPF is inflation, then inflation also has an influence on Bank Muamalat's NPF, the following is an overview of Indonesia's inflation growth from 2010 to 2021:

![Inflation Growth Chart](source: BI, processed in 2023)

Figure 2. Inflation Growth

Source: BI, processed in 2023

The figure explains the condition of inflation in Indonesia, which explains that the condition of inflation from year to year has fluctuated and in 2021 has increased due to the influence of the pandemic which has an impact on the people's economy, inflation is used as one of the macroeconomic variables that affect the NPF condition of Islamic banking in research this.
The influence of these macroeconomic factors can have a direct or indirect impact on the NPF of Islamic banks. Hosen & Muhari (2019) explain that macroeconomic policy stability, GDP, inflation, interest rates, and political uncertainty are macroeconomic variables that affect bank performance. Indonesia is a developing country, its economic conditions greatly impact banking activities. Macroeconomics is inseparable from the occurrence of inflation, wherein inflation is a process of increasing general prices continuously, in other words, inflation is a continuous decrease in currency values. If inflation is mild, it will have a positive impact which can drive the economy better, namely making people excited to work, saving money for savings, and making investments. But on the contrary, in conditions of severe inflation, the state of the economy becomes chaotic and the economy is felt to be weak (Bagautdinova et al., 2021).

Internal influence is the influence that comes from operational activities within the bank itself which are contained in financial performance. The financial performance of a bank can be seen through its financial ratios as an indicator of soundness and as an analytical tool to predict the profits to be generated. Internally, the NPF of Islamic banks can be analyzed with the achievements that have been achieved by looking at the financial ratios based on their financial reports. Financial reports can reflect the bank's financial condition at the time of financial reporting. Financial reports can also predict the state of the bank in the future. Several internal factors include OE, FDR, NOM, and ROE.

In the research conducted by Prastiwi (2021), The study discovered that NPF was significantly positively impacted by GDP, operating expenses, and operating income. Further investigation by Siregar & Suryani (2022) found that the Capital Adequacy Ratio (CAR), inflation, Return on Assets (ROA), and Financing to Deposit Ratio (FDR) did not significantly affect NPF in their study using data from the 2008–2014 timeframe. other studies carried out by Damanhur et al. (2018) during the 2014-2015 period using the variables GDP, FDR, inflation, Bank Indonesia Sharia Certificates (SBIS), and total assets result found that partial inflation and SBIS have positive significance to NPF, while GDP has a negative significance to NPF. Furthermore, results were found showing that GDP and Return On Equity (ROE) had a negative significant effect on NPF, as well as FDR and inflation variable factors which had a positive significant effect on NPF (Hosen & Muhari, 2019). This study also adds the Net Operation Margin (NOM) variable as an independent variable whose effect has never been studied before on problem financing in Islamic banks and taking into account the current conditions during the Covid-19 pandemic that occurred in Indonesia and internationally (Sihotang & Hasanah, 2021).

The authors are interested in discussing research on the impact of external and internal variables on Bank Muamalat's non-performing financing because of the background information given above. The novelty of the research is the data used from 2005-2021 (15 years) with the VECM method to describe the NPF response to other variable shocks by linking it to the COVID-19 pandemic turmoil.
B. LITERATURE REVIEW

A literature review was created for this study to clarify how the independent variables related to one another, namely OE, FDR, NOM, ROE, GDP, and inflation on the dependent variable, namely NPF, explained as follows:

According to Wasiaturrahma et al. (2020) explain that CAR has a negative significant effect on NPF, Financing Rate and Interest Rate have a positive significant effect on NPF, Islamic Financing has no significant effect on NPF, and assets do not have a significant effect on NPF. Hosen & Muhari (2019) found that Bank size, FDR, OER, ROE, EA, GDP, and inflation did not have any effect on NPF because they were influenced by external factors that had an effect on and had no effect on each variable. Whereas Damanhur et al. (2018) measured the effect of the variables GDP, SBIS, FDR, and total assets on NPF with the simultaneous results of all independent variables having a positive significant effect on NPF. But partially, inflation and SBIS have a positive significance, while GDP and total assets have a negative significance to NPF. Ardana & Wulandari (2018) GDP, inflation, FDR, SBIS, and CAR on the NPF of Islamic commercial banks with the results showing that SBIS has a positive significance, and CAR with a negative significance. Statistically, in contrast to the results of other studies, GDP, inflation, and FDR do not affect NPF, but simultaneously all independent variables affect NPF. According to Hellen et al. (2019), their research shows that simultaneously, each factor influences NPF. While partially GDP, inflation, exchange rate, CAR, and OE do not affect NPF. Conversely, partially, ROA has a negative effect on NPF and bank size has a positive effect on NPF. Therefore, the researcher concluded that there were some differences in the results of the research from the independent variables studied on NPF.

The relationship between OE and NPF, The burden employed as a reserve in anticipation of losses due to the non-return of money routed through financing will decline and become insufficient to cover the risk of disbursing financing when the operational (business) expenditures incurred by the bank are higher. Depending on the financing offered, which is derived from the source of the highest income, the number of operational funds for each Islamic bank may fluctuate. The biggest risk to banking operations, though, is the amount of revenue that will be converted into financing, which could lead to problematic or even non-performing financing. Therefore, as the OE ratio rises, the NPF will also climb. Based on this description, the hypothesis in this research is as follows: OE has a positive effect on NPF. The relationship between FDR and NPF, FDR is a variable that contributes greatly to the NPF of Islamic banking. This is because the FDR of Islamic banking is very high. This high level of FDR can make a major contribution to the NPF level of Islamic banking. When the FDR is high, it means that there is also a higher distribution of financing. Thus causing an increased risk of high NPF. So, the higher the FDR, the higher the NPF. Vice versa, if there is bad financing, the bank must bear the burden of losses and in the end, capital is needed to cover these losses. So, the hypothesis in this study is formulated as follows: FDR has a positive effect on NPF.
NOM to NPF relationship, The NOM ratio is used to assess a bank's capacity to control its productive assets and increase net income. When establishing high margins, banks must take into account legal loan limits and the proper financing analysis for the level of financing risk. The risk of non-performing financing increases with the bank's sharia pricing, which determines the financing margin, and decreases with deposit pricing. This results from the pricing of high financing costs, which may affect customers' ability to pay installments and raise the value of the NPF. This explanation supports the hypothesis of the study, which is that NOM positively affects NPF. One of the profitability ratios, ROE has a relationship to NPF. The foundation of profitability ROE is one of the profitability ratios, and there is a relationship between it and NPF. The existence of a correlation between operational effectiveness and the caliber of services provided by banks is predicated on profitability. The ability of bank management to generate overall profits is gauged by the ROE ratio. The greater the ROE, the better the bank's performance, thus causing a better return on financing. Then the hypothesis in this study is as follows: ROE harms NPF.

The relationship between GDP and NPF is, The national income of a country is measured using its GDP. GDP offers a summary of the volume of output, or finished goods and services, produced by a specific region over a specific period. GDP reflects the condition of a country and whether the country's economy is progressing. When a country's GDP is high, it can be said that the average income of the people of that country is also high. Increased GDP growth can be used as an indicator for banks to channel their financing so that growth is maintained. When the level of people's income increases it has an impact on the ability to make financing and results in a decrease in problem financing in Bank Muamalat (NPF) so the hypothesis that can be developed in this study: GDP harms NPF. Relationship of Inflation to NPF Inflation is the most effective determinant of risk financing for all levels of the economy, whether high, middle, or low income. High inflation rates can result in a lack of people's purchasing power in fulfilling their daily obligations it can lead to the exclusion of payments for loans at Bank Muamalat. For this reason, it can increase the payment uncollectible ratio or NPF at Bank Muamalat. Then the hypothesis in this study is formulated as follows: Inflation has a positive effect on NPF.

C. RESEARCH METHODS

Utilizing a quantitative methodology, this investigation. Various research tools were used to gather data. The data was then analyzed using the Eviews 10 software which aims to test the hypotheses that have been formulated (Sekaran & Bougie, 2019). The purpose of this study is to examine how the variables OE, FDR, NOM, ROE, GDP, and inflation affected NPF both before and during the epidemic.

Secondary data are the type of information used in this study. The information used came from the Bank Muamalat, BPS, BI, and OJK websites. Quarterly time series data from 2005 to 2021 make up the secondary data in this study. Consequently, there were 476 samples in total and 68 samples/variables in this investigation (Sugiyono, 2019). The Vector Error Correction
Model (VECM) approach was used to analyze the data, and Eviews 10 was used to operate it. As an equation modeling technique, the VECM method demonstrates how each dependent variable is explained by the past, present, and lag values of other variables in the model (Widarjono, 2018).

In testing the optimal lag, the criteria used in determining the optimal lag are:
Akaike Information Criterion (AIC):
\[
AIC = -2 \left( \frac{1}{T} \right) + 2(k + T)
\]  
Schwarz Information Criterion (SIC):
\[
SIC = -2 \left( \frac{1}{T} \right) + k \log(T) / T
\]  
Hannan-Quinn Information Criterion (HQ):
\[
HQ = -2 \left( \frac{1}{T} \right) + 2k \log (\log(T)) / T
\]

Information:
1 = the value of the log-likelihood function
\( T \) = number of observations
\( K \) = estimated parameters

The formulation of the VECM model is as follows:
\[
Y_t = A_0 + A_1 Y_{t-1} + A_2 Y_{t-2} + A_3 Y_{t-3} + \ldots + A_p Y_{t-p} + e_t
\]  

Information:
\( Y_t \) = dependent variable
\( A_0 \) = intercept
\( A_1 \) = Parameter matrix
\( e_t \) = residual

The simple equation in IRF testing is as follows:
\[
yt = a_{11} Y_{t-1} + a_{12} Y_{t-1} + e_{1t}
\]
\[
x_t = a_{21} Y_{t-1} + a_{22} Y_{t-1} + e_{2t}
\]

With the following equation model:
\[
NPF = \alpha_0 + \sum_{i=1}^{6} \alpha_1 BOP_0_{t-1} + \sum_{i=1}^{6} \alpha_2 FDR_{t-1} + \sum_{i=1}^{6} \alpha_3 NOM_{t-1} + \sum_{i=1}^{6} \alpha_4 ROE_{t-1} + \sum_{i=1}^{6} \alpha_5 PDB_{t-1} + \sum_{i=1}^{6} \alpha_6 inf_{t-1} + \mu_l
\]  

Information:
NPF = Non-Performing Financing
\( OE \) = Operating Expenses
\( FDR \) = Financing Deposit Ratio
NOM = Net Operating Margin
ROE = Return on Equity
GDP = Gross Domestic Product
INF = Inflation

D. RESULT AND DISCUSSION

1. Results

Using the outcomes of statistical tests used to process research data, stationary tests, lag tests, stability tests, cointegration tests, long and short-term VECM tests, IRF tests, and FEVD tests, the following results of data processing with descriptive statistics:

Table 1. Results of Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPF</td>
<td>3.330882</td>
<td>7.300000</td>
<td>0.800000</td>
<td>1.308098</td>
</tr>
<tr>
<td>OE</td>
<td>90.01368</td>
<td>99.90000</td>
<td>75.76000</td>
<td>7.754154</td>
</tr>
<tr>
<td>FDR</td>
<td>89.81485</td>
<td>106.5000</td>
<td>57.36000</td>
<td>12.02724</td>
</tr>
<tr>
<td>NOM</td>
<td>3.775441</td>
<td>13.87000</td>
<td>0.010000</td>
<td>3.314925</td>
</tr>
<tr>
<td>ROE</td>
<td>14.83368</td>
<td>42.32000</td>
<td>0.050000</td>
<td>13.44988</td>
</tr>
<tr>
<td>GDP</td>
<td>4.649118</td>
<td>6.810000</td>
<td>4.200000</td>
<td>2.565759</td>
</tr>
<tr>
<td>Inflasi</td>
<td>0.495588</td>
<td>3.320000</td>
<td>0.400000</td>
<td>0.501337</td>
</tr>
</tbody>
</table>

Source: Eviews, processed 2023

According to the aforementioned data, the NPF variable's maximum value from 2005 to 2021 was 7.300000, while its lowest value was 0.800000. The median value of this variable is 3.330882, while the standard deviation is 1.308098. The OE variable has a range of values between 75.76000 and 99.90000. The median value of this variable is 90.01368, while the standard deviation is 7.754154. While FDR's values range from 106.5000 at its maximum point to 57.36000 at its lowest point to 89.81485 on average with a standard deviation of 12.02724. The NOM variable's value is the lowest, at 0.010000. While 13.87000 is the largest. The median value of this variable is 3.775441, while the standard deviation is 3.314925.

The ROE variable has the highest value of 42.32000 and a minimum value of 0.050000, this variable was in the early period 2005 to 2021 with a median value of 14.83368 and a standard deviation of 13.44988. Meanwhile, the GDP variable has the highest value of 6.810000 and a minimum value of -4.200000. Additionally, this variable's average value is 4.649118, and its standard deviation is 2.565759. The inflation variable, meanwhile, ranges...
from a maximum value of 3.320000 to a minimum value of -0.400000. The average value of this variable is 0.495588, while the standard deviation is 0.501337. The data utilized in this investigation were normally distributed, which can be explained in this description using statistics.

a. Stationarity Test

This test is to prove that the research data shows stationarity both at the level, first difference, and second difference so that it can show that the data used have the same stationary level, here are the results of the stationarity test:

Table 2. Stationarity Test

<table>
<thead>
<tr>
<th>Method</th>
<th>Statistic</th>
<th>Prob.**</th>
<th>Obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>-6.91116</td>
<td>0.0000</td>
<td>7 468</td>
</tr>
<tr>
<td>Breitung t-stat</td>
<td>-2.98242</td>
<td>0.0014</td>
<td>7 461</td>
</tr>
<tr>
<td>Im, Pesaran and Shin W-stat</td>
<td>-5.87584</td>
<td>0.0000</td>
<td>7 468</td>
</tr>
<tr>
<td>ADF - Fisher Chi-square</td>
<td>65.7896</td>
<td>0.0000</td>
<td>7 468</td>
</tr>
<tr>
<td>PP - Fisher Chi-square</td>
<td>74.3468</td>
<td>0.0000</td>
<td>7 469</td>
</tr>
</tbody>
</table>

Source: Eviews, Processed 2023

Because the probability is less than 0.05, the stationarity test findings at the level using the Im, Pesaran, and Shin W-stat, ADF-Fisher Chi-square, and PP-Fisher Chi-square techniques all indicate stationary.

b. Test for Optimal Lag Length

Additionally, it is imperative to perform the VECM model's optimal lag length test. When the ideal lag is applied, it prevents models from being unable to accurately estimate the real mistake. The criteria of FPE, SIC, and HQ can be used to calculate the ideal latency. The smallest value is utilized as the lag value.

Table 3. Optimal Lag Test Results

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>FPE</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-1000.023</td>
<td>180569.7</td>
<td>32.20712</td>
<td>32.06265</td>
</tr>
<tr>
<td>1</td>
<td>-833.0976</td>
<td>4314.902*</td>
<td>30.13033*</td>
<td>28.97457*</td>
</tr>
<tr>
<td>2</td>
<td>-787.2444</td>
<td>5040.705</td>
<td>31.89711</td>
<td>29.73006</td>
</tr>
<tr>
<td>3</td>
<td>-741.5031</td>
<td>6491.156</td>
<td>33.66744</td>
<td>30.48911</td>
</tr>
</tbody>
</table>
According to the table, the test results with the best lag length correspond to each indicator's lowest value. Lag 1 is chosen as the ideal lag in the slack length test because it has the lowest values for the indicators FPE, SC, and HQ, which are 4314.902*, 30.13033*, and 28.97457*, respectively. This implies that other variables will react in a single period to a shock to one variable.

c. Stability Test

The purpose of this stability test is to demonstrate that the data used is stable and can be processed for further tests. The stability test's findings are as follows:

Table 4. Stability Test

<table>
<thead>
<tr>
<th>Root</th>
<th>Modulus</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.975901</td>
<td>0.975901</td>
</tr>
<tr>
<td>0.909417</td>
<td>0.909417</td>
</tr>
<tr>
<td>0.577396</td>
<td>0.577396</td>
</tr>
<tr>
<td>0.456485</td>
<td>0.456485</td>
</tr>
<tr>
<td>0.249539 - 0.117360i</td>
<td>0.275759</td>
</tr>
<tr>
<td>0.249539 + 0.117360i</td>
<td>0.275759</td>
</tr>
<tr>
<td>-0.194941</td>
<td>0.194941</td>
</tr>
</tbody>
</table>

Source: Eviews, processed 2023

The stability test is said to be good when the modulus numbers are less than 1. The results of the stability test in this study have a modulus value of less than 1, so it can be stated that the VECM model used is stable. Thus the VECM estimation results are not biased.

d. Cointegrity Test

Table 5. Cointegrity Test

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Trace Statistic</th>
<th>Critical Value (0.05)</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>158.8181</td>
<td>125.6154</td>
<td>0.0001</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>105.5286</td>
<td>95.75366</td>
<td>0.0090</td>
</tr>
<tr>
<td>At most 2</td>
<td>58.78132</td>
<td>69.81889</td>
<td>0.2747</td>
</tr>
</tbody>
</table>
The cointegration test result is shown in the table above. It reveals a cointegration equation with a trace statistical value that is greater than the critical value, specifically: $158.8181 > 125.6154$ and $105.5286 > 95.753666$ with probabilities of 0.0001 and 0.0090. This indicates that there are two cointegrations in the research data, and the Vector Error Correction Model (VECM) model can be applied.

e. VECM Test

Because the results of the cointegration test indicated that there was cointegration between internal, external, and NPF variables, the VECM model was put to the test. The cointegration test's results are shown in the table above, where a cointegration equation with a statistical value that indicates larger The outcomes of the VECM estimation will demonstrate both the long- and short-term relationships for each variable. Here are the VECM estimation results:

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Trace Statistic</th>
<th>Critical Value (0.05)</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>At most 3</td>
<td>34.73081</td>
<td>47.85613</td>
<td>0.4623</td>
</tr>
<tr>
<td>At most 4</td>
<td>16.15500</td>
<td>29.79707</td>
<td>0.7014</td>
</tr>
<tr>
<td>At most 5</td>
<td>5.450271</td>
<td>15.49471</td>
<td>0.7593</td>
</tr>
<tr>
<td>At most 6</td>
<td>0.312637</td>
<td>3.841466</td>
<td>0.5761</td>
</tr>
</tbody>
</table>

Source: Eviews, processed 2023

According to the long-term VECM estimation results shown in the table above, the following variables have an impact on NPF: In contrast, the FDR variable hurts NPF with a T-statistic value of -3.6604 which is smaller than T-table -2.0261, meaning that if GDP increases by 1%, the NPF decreases by 0.02%. The OE variable has no effect

Table 6. VECM Long Term

<table>
<thead>
<tr>
<th>Variable</th>
<th>Koefisien</th>
<th>T-Statistik</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE</td>
<td>0.07104</td>
<td>-1.45172</td>
</tr>
<tr>
<td>FDR</td>
<td>0.02342</td>
<td>-3.66049</td>
</tr>
<tr>
<td>NOM</td>
<td>0.09970</td>
<td>-8.39163</td>
</tr>
<tr>
<td>ROE</td>
<td>0.03841</td>
<td>4.54650</td>
</tr>
<tr>
<td>GDP</td>
<td>0.09817</td>
<td>4.93561</td>
</tr>
<tr>
<td>Inflasi</td>
<td>0.43322</td>
<td>2.76059</td>
</tr>
</tbody>
</table>

Note: T table = 2.0261 and -2.0261

Source: Eviews, processed 2023
on NPF with a T-statistic value of -1.4517 greater than T-table -2.02619, meaning that if OE experiences an increase of 1% means that the NPF is fixed. The T-statistic value of -8.3916, which is lower than the T-table value of -2.0261, indicates that the NOM variable is detrimental to NPF. Therefore, the NPF will fall by 0.09% if NOM grows by 1%. With a T-statistic value of 4.5465 greater than T-table 2.0261, the ROE variable has a positive impact on NPF. As a result, if ROE rises by 1%, NPF rises by 0.03%. Then, with a T-statistic value of 4.9356 greater than T-table 2.0261, the GDP variable has a positive impact on NPF, increasing it by 0.09% if GDP increases by 1%, and With a T-statistic value of 2.7605 bigger than T-table 2.0261, the inflation variable has a positive impact on NPF, increasing it by 0.43% for every 1% increase in inflation.

Table 7. VECM Short Term

<table>
<thead>
<tr>
<th>Variable</th>
<th>Short Term Koefisien</th>
<th>T-Statistik</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE</td>
<td>0.06439</td>
<td>0.95862</td>
</tr>
<tr>
<td>FDR</td>
<td>0.02935</td>
<td>-1.37037</td>
</tr>
<tr>
<td>NOM</td>
<td>0.12182</td>
<td>0.49027</td>
</tr>
<tr>
<td>ROE</td>
<td>0.02881</td>
<td>1.63364</td>
</tr>
<tr>
<td>GDP</td>
<td>0.08821</td>
<td>0.21896</td>
</tr>
<tr>
<td>Inflasi</td>
<td>0.22721</td>
<td>-0.54354</td>
</tr>
</tbody>
</table>

Note: T table = 2.0261 and -2.0261

Source: Eviews, processed 2023

Because the T-Statistics were below the T-table, it was determined based on the VECM estimate test in the short term that none of the factors affected NPF. The findings of the Impulse Response Function can be used to provide a more thorough description of how the variable reacts to shock or shock (IRF).

f. IRF Test

To observe how endogenous variables in the VECM model respond to shock, Impulse Response Function (IRF) analysis is performed. The 60-period future duration of the shock's impact on the variable is also disclosed by the IRF. IRF outcomes for OE, FDR, NOM, ROE, GDP, and inflation are as follows.
The NPF reaction to shock for all factors is shown in the IRF test results in the figure above. The first, a positive stable response following shocks in periods 1 through 8, is shown by OE/BOPO (figure 1) and NOM (figure 3); the second, a negative response at the beginning of period 9 is experiencing ups and downs against shock; however, from period 9 to its end, the stable response is shown by FDR (figure 2) and GDP (figure 5), ROE (figure 4), and fluctuated until the 11th period and then stabilized; inflation (figure 6). The IRF test, however, demonstrates that the NPF responds steadily from the middle to the end of the test when a shock is caused by numerous dependent variables.

g. FEVD Test

To determine how much a variable contributes to changes in each variable, forecast error variance decomposition analysis is performed. The quantity of value used is
expressed as a percentage so that it is clear what proportion each variable contributed to the NPF Muamalat. These are the outcomes of the test of Forecast Error Variance Decomposition:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPF</td>
<td>87.17</td>
</tr>
<tr>
<td>OE</td>
<td>1.83</td>
</tr>
<tr>
<td>FDR</td>
<td>0.89</td>
</tr>
<tr>
<td>NOM</td>
<td>4.11</td>
</tr>
<tr>
<td>ROE</td>
<td>0.95</td>
</tr>
<tr>
<td>GDP</td>
<td>2.29</td>
</tr>
<tr>
<td>Inflasi</td>
<td>2.68</td>
</tr>
</tbody>
</table>

Source: Eviews, processed 2023

The results of the FEVD test are shown in the table above. The following is a thorough explanation: The NPF variable makes an 87% contribution to itself, the OE variable makes a 2% contribution, the FDR variable makes a 1% contribution, the NOM variable makes a 4% contribution, the ROE variable makes a 1% contribution, the GDP variable makes a 2% contribution, and the inflation variable makes a 3% contribution. These facts also support the explanation in the figure that follows:

Figure 4. FEVD Test

Source: Eviews, processed 2023
2. Discussion

a. Effect of OE on NPF

OE has no effect either in the long term or in the short term on NPF. Based on the IRF test, the OE variable was positively responded to by the NPF. This means that with every increase in OE, the NPF remains (no effect). Meanwhile, based on the FEVD results, the OE variable has an average contribution to the formation of NPF of 1.83%. These results indicate that H0 is accepted and H1 is rejected. This means that the amount of OE at Bank Muamalat can be a source of funds circulated in the form of financing. However, the amount of financing provided can pose a risk of increasing problem financing where the debtor is unable to fulfill his obligations in completing financing, when OE increases it will have an impact on NPF. The results of this study are in line with research conducted by Damanhur et al. (2018) which states that OE does not affect NPF and Hellen et al. (2019) that when OE is greater, the burden used for the formation of reserves in anticipation of losses due to non-return of funds channeled through financing will be diminishing and cannot cover the risk of channelling financing and contrary to the Siregar & Suryani (2022) research which stated that OE had a negative effect while Nengsih (2020) stated it was positive, while based on the research objectives it was known that the contribution of OE to NPF was 1.83%.

b. Effect of FDR on NPF

FDR has a negative effect both in the long and short term on the NPF. Based on the IRF test, the FDR variable was negatively responded to by the NPF. This means that every increase in FDR will decrease NPF. Meanwhile, based on the FEVD results, the FDR variable has an average contribution to NPF of 0.89%. These results indicate that H0 is rejected and H1 is accepted. So it can be concluded that FDR has a negative influence on NPF. When the FDR rises, the NPF will decrease. The spirit of the community in fighting for the sharia economic system, especially in investing in bank muamalat, when a bad economic situation occurs, customers at bank muamalat do not panic and continue to support bank muamalat's going concerned by not withdrawing the funding they have deposited at bank muamalat. This is what causes bank muamalat's working capital to remain stable. The results of this study are the same as the research of Hamzah (2018) which states that there is uncertainty in the relationship between customers and bank muamalat, causing FDR to not affect NPF, similar to Damanhur et al. (2018); Hellen et al. (2019); and Ilhami & Thamrin (2021) which explain that FDR does not affect NPF, in contrast to A’yun (2020); Aryani et al. (2016); and Hosen & Muhari (2019) which state that this variable influences NPF, while based on the research objectives it is known that the contribution of FDR to NPF is 0.89%.
c. Effect of NOM on NPF

NOM has a negative effect both in the long and short term on the NPF. Based on the IRF test, the NOM variable was responded positively by the NPF. This means that any increase in NOM will decrease NPF. Meanwhile, based on the FEVD results, the NOM variable has an average contribution to NPF of 4.11%. These results indicate that H0 is rejected and H1 is accepted. NOM is the ratio used to measure the ability of bank management to generate income from profit sharing by looking at the bank's performance in channeling financing. If bank muamalat's main income comes from financing, then when profits from financing (NOM) increase, it should cause a decrease in non-performing financing (NPF). However, the research results answer the opposite where when profit from financing (NOM) increases, it causes an increase in NPF. If a bank can generate high margins, the profitability will also be higher. A high NOM is good for banking growth but this will burden debtors who have to pay high loan loads, so this will have an impact on the possibility of default risk. In addition, the NOM value shows the cost of intermediation carried out by banks so the NOM is an indicator of the efficiency of the banking system. This has an impact on the volume of financing disbursed by banks which is also higher, causing an increase in the NPF value. The results of this study are in line with research conducted by Aryani et al. (2016); and Hosen & Muhari (2019) which have a positive effect, while Nasir & Khomariyah (2021); and Siregar & Suryani (2022) have a negative effect, while based on the research objectives it is known that the contribution of NOM to NPF is 4.11%.

d. Effect of ROE on NPF

ROE has a positive effect on both the long and short term NPF. Based on the IRF test, the inflation variable is negatively responded to by the NPF. This means that any increase in ROE will increase the NPF of the bank. Meanwhile, based on the results of the FEVD evaluation, the ROE variable has an average contribution to NPF of 0.95%. These results indicate that H0 is accepted and H1 is rejected. So it can be concluded that ROE partially does not have a significant effect on NPF. ROE is an indicator of a bank in showing its ability to generate profit from its capital where the formula is income after tax divided by equity. Researchers found that the NPF in 2017, 2018, and 2019 did not have any extreme changes. On average, NPF decreased by from 2017 to 2018 by 0.50%, then from 2018 to 2019 Bank Muamalat's NPF increased by 1.05%, it should be concluded that if Bank Muamalat's profits increase, then the amount increase in the profit is proportional to the amount of decrease in NPF. Conversely, if profits decrease, then the amount of profit reduction is proportional to the amount of increase in NPF. The results of this study lead to differences from the results of previous research conducted by Hosen & Muhari (2019) and Prastiwi (2021) which stated that ROE had a significant positive effect on NPF and what had been done by Pambuko & Pramesti (2020) resulted in ROE having a negative effect and significant to NPF, while
based on the research objectives it is known that the contribution of ROE to NPF is 0.95%

e. Effect of GDP on NPF

GDP has a positive effect on both the long and short term NPF. Based on the IRF test, the GDP variable is positively responded to by NPF. This means that any increase in GDP will increase NPF. Meanwhile, based on the FEVD results, the GDP variable has an average contribution to NPF of 2.29%. These results indicate that H0 is accepted and H1 is rejected. GDP reflects the condition of a country and whether the country's economy is progressing. When a country's GDP is high, it can be said that the average income of the people of that country is also high and vice versa. Increased GDP growth can be used as an indicator for banks to channel their financing so that growth is maintained. There is a significant default by the customer if the economic situation is not good from a slowing GDP which can lead to termination of employment (PHK) from the company. So it can be concluded that the decline in GDP causes an increase in default or NPF.

According to Hosen & Muhari (2019), GDP has a positive influence. This is because when the macro economy increases, economic activity will also increase. This increase in economic activity will have an impact on increasing people's income and in the end, will also increase the capacity of debtors to repay their loans. the ability of customers to fulfill their obligations increases, so the NPF decreases. When the loan repayment capacity of the debtor increases, in other words, the debtor will repay the loan on time, so the profitability of the possibility of problematic financing will decrease. Conversely, if the GDP condition decreases, the banking sector will be more careful in channeling financing. The results of this study are in line with research conducted by (Damanhur et al., 2018) which states that GDP is an important factor causing financing risk in Islamic banking, while based on the research objectives it is known that OE contribution to NPF of 2.29%

f. Effect of Inflation on NPF

Inflation has a positive effect on both the long and short term of the NPF. Based on the IRF test, the inflation variable has a positive response from the NPF. This means that any increase in inflation will increase NPF. Meanwhile, based on the FEVD results, the inflation variable has an average contribution to NPF of 2.68%. These results indicate that H0 is rejected and H1 is accepted. So it can be concluded that inflation has a significant effect on NPF. This indicates that the increase in inflation has made Bank Muamalat's debtors remain committed to carrying out their obligations in paying their debts. in other words, the debtor of Bank Muamalat already has a high responsibility and commitment in terms of repayment of the loan. This is due to the character of Bank Muamalat's debtors being educated on religious principles regarding the treatment of debt and its consequences according to Islamic teachings. Even in a
difficult situation (inflation), non-performing financing at Bank Muamalat remains stable or does not change. The results of this study are in line with research conducted by A’yun (2020); Ardana & Wulandari (2018); Hernawati & Puspasari (2018); and Hosen & Muhari (2019) which state that inflation affects NPF, while based on the research objectives it is known that the contribution of OE to NPF is 2.68%.

E. CONCLUSION

Based on the results and previous discussion, it can be concluded that the internal variables have a negative and positive influence with the internal variables FDR and NOM having a negative effect on the NPF of bank Muamalat with a contribution of 0.89% and 4.11%, then ROE has a positive influence on the NPF of bank Muamalat with a contribution of 0.95%, and EO has no effect. While the external variables, namely GDP and inflation, have a positive influence with contributions of 2.29% and 2.68% on the NPF of bank Muamalat. The implications of the study's findings might be taken into account by bank Muamalat to manage the company's NPF and by the government to assist and safeguard the bank's external sector. For more research, you can use lengthier and more recent data as well as more variables from both internal and external banks.

REFERENCES


