The Effect of Non-Sharia Financial Instruments On Indonesian Economic Growth

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ABSTRACT
The purpose of this study was to determine and analyze the impact and contribution of the non-bank financial industry (IKNB) and non-Islamic banking on Indonesia's economic growth before and during the pandemic. The variables used in this study are data on total assets of Sharia IKNB, IKNB, and Industrial Production Index (IPI) data as a measure of economic growth. The research method used is the Vector Error Correction Model (VECM) method using monthly time series data from 2015 to 2021. The research results reveal several results, the long-term VECM test of Islamic NBFI and NBFI variables has an impact on economic growth, while the IRF test shows that economic growth is resistant to shocks by sharia NBFI and NBFI over the next 60 years, contributing 11% and 4% to economic growth, respectively.

Keywords: Sharia IKNB, IKNB, Economic Growth, VECM

INTRODUCTION
One of the factors that measure the success of economic growth is the financial sector. The financial sector, including banking, capital markets, and non-bank financial institutions, plays an important role in accelerating Indonesia's economic development. This is due to the ability of the financial sector to mobilize capital from those who have excess funds to invest in various economic sectors that need it. If the financial sector grows well, more sources of funding can come from production or the real sector. Increasing funding for the production sector will later increase the development of sources of capital that will play an active role in economic growth (Sasana et al., 2020).

The relationship between economic growth and the development of the financial sector has so far been the subject of economic research. This idea was first expressed by the neoclassical economist Schumpeter (1911) through his opinion that the financial sector plays a very important role in the development of the business world. Furthermore, several economists after Schumpeter also looked at the relationship between these two sectors, assuming that support from the progress of the financial sector is needed to achieve good economic growth (Goldsmith, 1969; Gurley. J. G & Shaw, 1960; McKinnon & Shaw, 1993). Meanwhile, Robinson (1952) states that the financial sector does not have an impact on the growth of the real sector, or the relationship between the real sector and the financial sector is not too strong (Caporale & Helmi, 2018; Ductor & Grechyna, 2015; Herwartz & Walle, 2014; Singh, 1997) and there is some opinion and evidence that there is an inverse relationship between financial sector development and economic growth (Bist, 2018; Salman & Nawaz, 2018). It can be concluded that the existence of an optimally
managed financial sector can encourage economic growth through the flow of funds from surplus to underdeveloped industries, which can increase effective and efficient resources. In particular, the existence of the financial sector includes trade, value maintenance, diversification of profits and potential losses, unit allocation of resources to supervise administrative and corporate management activities, forms of mobilization and promotion of savings activities, and activities that also encourage various sectors of economic activity (Faza & Wibowo, 2019; Levine, 1997, 2005).

The development of more advanced Islamic IKNB and IKNB is expected to make a full contribution to Indonesia’s economic growth. Most studies have investigated the relationship between the financial sector and economic growth using different methods with different indicators of financial sector development in different countries and different periods. Harrod (1939) and Domar (1946) stated that an increase in new investment can increase economic growth, so the ratio of national savings to national income determines economic growth (Cupian et al., 2020; Rama, 2013; R. O. Utami et al., 2018).

The potential of the non-bank financial industry (IKNB) consists of two branches, the Islamic non-bank financial industry, and the convention. The non-bank Islamic finance industry is based on Sharia principles and the agreement does not contain at least three things that are prohibited: usury, gharar, and maysir, which have been cited as causes of instability and economic crises in various parts of the world (Atika, 2018; Mifrahi & Tohirin, 2020). Islamic non-bank financial industry also uses a risk-sharing paradigm. This concept will make stakeholders careful in raising funds and investing (Chapra, 2008, 2009; Irton et al., 2021). From 2015 to 2021, the non-banking financial industry has grown very rapidly, both traditional and sharia. During this period, the average monthly asset growth rate of Islamic NBFIs was 1.7%, while the average monthly asset growth rate of Sharia NBFIs was 7.5%.

The growth in the number of assets of Islamic IKNB and IKNB can be seen below:

![Figure 1 Asset Growth of Islamic IKNB and IKNB](image)

Source: OJK Report (data processed)

From the picture above, it can be seen that the wealth of Sharia IKNB is only Rp. 64.43 trillion in 2015 was much smaller than the assets of IKNB which was Rp. 1,658.97 trillion. However, Islamic NBFIs have much faster asset growth than NBFIs,
with a compound annual growth rate of 7.5%. The graph also shows that the pattern of growth of NBFI assets tends to increase positively, although several times, both in sharia and conventional terms. In its application, the impact of sharia IKNB IKNB can be seen on economic growth, and the IPI figure is one of the indicators that can be used to measure activity in the actual sector. The success of the planned economic policies is to reduce unemployment and keep inflation stable. Therefore, various policies are carried out in the economy to achieve the desired growth (Naf’an, 2014; Siregar & Suryani, 2022). The following conditions of economic growth:

Figure 1. Indonesia’s Economic Growth in 2010-2021

The m-on-m growth rate is influenced by general and specific guidelines, not seasonal factors. As seen from the graph above, economic growth fluctuates from 2010 to 2021. Economic growth in 2010 was 6.22%, decreased by 6.17% in 2011, and in 2015 Indonesia’s economic growth fell by 4.88%. In 2019, the Indonesian economy decreased by 5.02% from the previous year, namely 2016 at 5.03%, 2017 at 5.07%, 2018 at 5.17%, and 2019 at 5.27%.

Most of the research conducted focuses on the development of the banking sector and capital markets. These two sectors are used as a substitute for the development of the financial sector in the study of financial relations and economic growth. The emergence of IKNB as part of the sector in the development of the financial sector is still underestimated. Empirically, the relationship between NBFI development and economic growth has not been studied intensively. Given the urgency of the existence of sharia IKNB and IKNB and the significant development of these two sectors, it may be necessary to conduct a study related to sharia IKNB and IKNB in Indonesia. This study examines the contribution of these variables to the Indonesian economy, focusing on understanding the impact of the sharia NBFI and NBFI sectors on short-term and long-term economic growth.

RESEARCH METHODS

This study uses a quantitative approach. The quantitative method is a research method based on the philosophy of positivism. This method is used to investigate one or more populations taken from a particular population. Samples are
usually taken using a random sampling technique (Sugiyono, 2019). Data collection was carried out on several research instruments. The data is then analyzed using statistics that aim to test the hypotheses that have been formulated (Sekaran & Bougie, 2019).

This study uses a vector error correction (VECM) model to analyze the impact of IKNB, Sharia IKNB, on economic growth before the pandemic and during the pandemic. The type of data used in this research is secondary data. The data used is taken from the website of the Central Statistics Agency (BPS) and OJK. The secondary data for this research is monthly time series data from January 2015 to March 2021. So the number of samples in this study is 225. The data analysis for this study uses the Vector Error-Correcting Model (VECM) method with Eviews 10. The VECM method itself is an equation modeling that shows each independent variable described by the appropriate lag value and the lag of the other variables in the model.

In general, the VECM model is formulated as follows:

$$Y_t = A_0 + A_1 Y_{t-1} + A_2 Y_{t-2} + \cdots + A_p Y_{t-p} + \epsilon_t$$

Information:
- $Y_t$ = The dependent variable vector ($Y_{1t}, Y_{2t}, Y_{3t}$)
- $A_0$ = Intercept vector sized $n \times 1$
- $A_1$ = Parameter vector size $n \times 1$
- $\epsilon_t$ = Residual vector ($\sum t.1 \sum t.2 \sum t.3$) size $n \times 1$

With an equation model like this: $PE = a_0 + \sum_{i=1}^{3} a_1 PE_{t-1} + \sum_{i=1}^{3} a_2 IKNB_{t-1} + \sum_{i=1}^{3} a_3 IKNBS_{t-1} + \mu_{it}$

**RESULTS AND DISCUSSION**

Descriptive statistics are statistics used to describe data in a form that is easier to understand. In this study, the results of the analysis used are the mean, maximum, minimum, standard deviation, and the number of observations. The following is a presentation of descriptive statistics processed using Eviews 10 software.

<table>
<thead>
<tr>
<th>Table 1. Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Std. Dev.</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

**Source:** processed 2022

Table 1 explains that in the study there were 75 observations on each data studied. The main variable IPI which is a proxy for economic growth has an average (mean) from 2015 to 2021 of 136,8065% with a standard deviation of 10.04405%. The minimum value is 104,0160%, and the maximum value is 158,0000%. The average IKNB value is 2050.403% with a standard deviation of 335,4310%. The lowest value is 1541.430% and the highest value is 2137.200%. The IKNBS variable
has an average value of 90.63267% with a standard deviation of 16.68202%. The maximum value is 111.5400% and the minimum value is 58.51000%.

**Data Stationarity Test**

In this study, the stationarity test used was the Augmented Dickey-Fuller Test (ADF) by conducting a unit root test. The unit root test is important in analyzing time series data to avoid lancing regression problems. In general, time-series economic data has a non-stationary model. If the ADF test result is less than the critical value, then the data is stationary and vice versa or the statistical probability value is < 5% (0.05).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Level</th>
<th>first difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T statistic</td>
<td>Probability</td>
</tr>
<tr>
<td>IPI</td>
<td>-3.615876</td>
<td>0.0076</td>
</tr>
<tr>
<td>IKNB</td>
<td>0.012819</td>
<td>0.9563</td>
</tr>
<tr>
<td>IKNBS</td>
<td>-1.241938</td>
<td>0.6521</td>
</tr>
</tbody>
</table>

The table above explains that level one shows all stationary variables because the statistical probability value is less than 0.05 or 5%. From these results, all variables have been declared stationary.

**Long test of indolence**

The optimal lag length test on the VECM model is very necessary to do. Where the optimal lag is used to avoid the occurrence of a model that is not able to estimate the actual error properly. How determine the optimal lag can be done using the criteria of AIC (Akaike Information Creation), SIC (Schwarz Information Creation), and HQ (Hanna Quinton). The lag value used is the smallest value.

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>215.5845</td>
<td>NA</td>
<td>4.23e-07</td>
<td>-6.161869</td>
<td>-6.064734</td>
<td>-6.123332</td>
</tr>
<tr>
<td>1</td>
<td>505.0170</td>
<td>545.3076*</td>
<td>1.25e-10*</td>
<td>-14.29035*</td>
<td>-13.90181*</td>
<td>-14.13620*</td>
</tr>
</tbody>
</table>

Based on the table, it is found that the optimum lag length test results describe the lowest value for each indicator. For indicators AIC, SC, and HQ each have the lowest -14.29035, -13.90181, and -14.13620 which are in lag 1. So lag 1 is chosen as the optimum lag in the length of the lag test. This means that when a shock occurs in one variable, other variables will respond within 1 period.
Granger Causality Test

The causality test is a test carried out to see the one-way or two-way relationship between research variables. The method used in this study is the Granger causality test. The hypotheses contained in this test are:

H0: there is no relationship between variables
Ha: there is a relationship between variables

Table 4. Granger Causality Test

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG_IKBN does not Granger Cause LOG_IPI</td>
<td>74</td>
<td>4.60839</td>
<td>0.0352</td>
</tr>
<tr>
<td>LOG_IPI does not Granger Cause LOG_IKBN</td>
<td></td>
<td>1.11958</td>
<td>0.2936</td>
</tr>
<tr>
<td>LOG_IKNBS does not Granger Cause LOG_IPI</td>
<td>74</td>
<td>5.84921</td>
<td>0.0182</td>
</tr>
<tr>
<td>LOG_IPI does not Granger Cause LOG_IKNBS</td>
<td></td>
<td>0.14808</td>
<td>0.7015</td>
</tr>
<tr>
<td>LOG_IKNBS does not Granger Cause LOG_IKBN</td>
<td>74</td>
<td>10.9793</td>
<td>0.0015</td>
</tr>
<tr>
<td>LOG_IKBN does not Granger Cause LOG_IKNBS</td>
<td></td>
<td>5.62227</td>
<td>0.0205</td>
</tr>
</tbody>
</table>

Note: *= Probability Value < Significance Value 5%
Source: processed 2022

Based on the table, the results of the causality test on the two-way relationship between the IKNB variable and the IKNBS variable. This is evidenced by the statistical probability values of 0.0015 and 0.0205 < 0.005, so that H0 is rejected. Furthermore, there is a one-way relationship between IKNB and IKNBS on economic growth with probability values of 0.0352 and 0.0182 <5%.

Stability Test

The VECM model can be said to be stable if it is addressed by the results of the VECM stability test. The model is stable if all modulus values are less than one (< 1).

Table 5. Stability Test Results

<table>
<thead>
<tr>
<th>Root</th>
<th>Modulus</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.981883 - 0.039374i</td>
<td>0.982672</td>
</tr>
<tr>
<td>0.981883 + 0.039374i</td>
<td>0.982672</td>
</tr>
<tr>
<td>0.558422</td>
<td>0.558422</td>
</tr>
</tbody>
</table>

Source: processed 2022

Based on the table, it can be seen that the overall modulus value is below one, which means that the VECM model built is stable.

Cointegration Test

The cointegration test is carried out to determine the existence of a long-term relationship between the variables. A cointegration test can be done by comparing the trade statistic and the maximum eigenvalue with the critical value.

Table 6. Cointegration Test

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Unrestricted Cointegration Rank Test (Trace)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trace</td>
</tr>
<tr>
<td></td>
<td>Eigenvalue</td>
</tr>
<tr>
<td>None *</td>
<td>0.188021</td>
</tr>
</tbody>
</table>
The cointegration test results show that the trace statistic value is 14,02803 sequentially greater than the critical value at the 5% level. So, it can be said that there is cointegration in the equation that is built. The Maximum Eigenvalue Statistic test also shows a value greater than the critical value, which is 14.02803 which is greater than 12.32090. This explains that there is 1 cointegration in the IKNB and IKNBS data on economic growth.

**Estimate the Model Vector Error Correction Model (VECM)**

The VECM model testing was carried out because the results of the cointegration test showed that there was cointegration between IKNB and IKNBS data with economic growth. The results of the VECM estimation will show the relationship in the long term and the relationship in the short term on each variable. The results of the VECM estimation are as follows:

**Table 7. Long-term Estimation Results**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(LOG_IKNB(-1))</td>
<td>-1.271792</td>
<td>-8.58983</td>
</tr>
<tr>
<td>D(LOG_IKNBS(-1))</td>
<td>1.071810</td>
<td>4.26457</td>
</tr>
</tbody>
</table>

Source: processed 2022

The table above is the result of long-term VECM estimation, from these results two variables influence economic growth. The first variable is that NBFIs have a negative and significant effect on economic growth with a T-statistic value of -8.58983 which is smaller than T-table -1.98697, meaning that H0 is rejected, if NBFIs increase by 1%, then economic growth decreases by 1.271792%. While the two IKNBS variables have a positive effect on economic growth in the long term. This can be proven by the T-statistical value of 4.26457 which is greater than the T-table of 1.9869787. So, if IKNBS increases by 1%, then economic growth will increase by 1.071810%.

**Table 8. Short-term Estimation Results**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(LOG_IKNB(-1))</td>
<td>0.461877</td>
<td>0.89162</td>
</tr>
<tr>
<td>D(LOG_IKNBS(-1))</td>
<td>0.071535</td>
<td>0.16784</td>
</tr>
</tbody>
</table>

Source: processed 2022

Based on the VECM estimation test in the short term, it is found that all variables have no effect on economic growth because the T-Statistic is below the T-table. As for a more detailed explanation of how the variable responds when experiencing a shock, it can be explained through the results of the Impulse Response Function (IRF).
Impulse Response Function (IRF)

Impulse Response Function (IRF) analysis is used to see the response of endogenous variables in the VECM model caused by shock. The IRF also provides information on how long the impact of the shock on future variables will be for 60 periods. Here are the IRF results from IPI, IKNB, and IKNBS.

**Figure 2. IRF Uji Test Graph**
Response of LOG_IPI to Innovations using Cholesky (d.f. adjusted) Factors

The results of the IRF test in the image above show the response of economic growth to all variables. The first is the IPI response to NBFIs with a red line, where there is a shock at the beginning of the period and is volatile and stable at the end. Overall, IPI's response to SBIS itself is positive. While the green line shows IPI's response to IKNBS, the response given by IPI is a negative response and shows an increase and is stable at the end of the test.

Variance Decomposition

Analysis of Variance Decomposition is used to see how much the variable contributes to changes in each variable. Where the magnitude of the value used is in the form of a percentage so that it can be seen what percentage of the contribution of a variable is to other variables. The following are the results of the Variance Decomposition test:

**Figure 9. Results of Variance Decomposition (VD) Analysis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(LOG_IKNB(-1))</td>
<td>4.11</td>
</tr>
<tr>
<td>D(LOG_IKNBS(-1))</td>
<td>11.07</td>
</tr>
</tbody>
</table>

The Influence of Islamic NBFIs on Economic Growth

The results of the VECM estimation that have been carried out show that the development of the Sharia NBFI variable has an effect on economic growth with the
cointegration equation in the model showing that the development of Sharia NBFI also has a long-term relationship with economic growth in Indonesia and the contribution of this result is that the development of Sharia NBFI and economic growth will mutually affect in the future assuming other variables do not exist. So that it can be interpreted that Sharia NBFI can carry out their functions as a long-term financial services sector that contributes to sustainable economic growth (Arif & Dewanti, 2017; Faza & Wibowo, 2019). The long-term positive impact of Sharia IKNB reflects that financial institutions can create sustainable economic growth. In the end, it will encourage the achievement of a fair distribution of income in accordance with the meaning of economic growth in Islam, which is not only concerned with the amount of income but how that income can be distributed to the whole community (Marsuki et al., 2022; Siregar & Suryani, 2022).

The results of the Granger causality test on the model built show that the relationship that occurs between the development of sharia NBFI and economic growth is a one-way relationship where the development of sharia NBFI will affect economic growth and not vice versa, assuming economic growth is influenced by increasing demand for sharia NBFI products that encourage economic growth, better sustainability, and help the community's economic recovery after the pandemic. The test results are supported by the IRF and FEDV test results. The Sharia IKNB IRF test shows that these variables give a positive response to shocks caused by Economic Growth and vice versa as well. This means that the development of Sharia IKNB encourages economic growth and the development of Sharia IKNB is not directly affected by economic growth before and during the pandemic.

The IRF test of the relationship between the financial sector reported by Sharia NBFI and economic growth is a positive relationship, with a very large standard deviation of 0.011, and during the study period, it was stable. This is also supported by the results of the FEDV test which states that the variance of the contribution of Sharia NBFI development to economic growth is 11.07%. Islamic financial institutions are institutions that emphasize the concept of assets and production-based systems, and when the business and financial sectors move through such a pattern, Islamic NBFI can further contribute to real and public economic growth. The more balanced and faster Sharia NBFI develop, the greater their contribution to production and economic growth (Pambuko & Pramesti, 2020; Rama, 2013; Siregar & Suryani, 2022). This should indicate that economic growth is one of the instruments driving the development of Sharia NBFI and stable economic growth will further enhance the development of Sharia NBFI both in terms of assets and investment.

The Influence and Contribution of IKNB to Economic Growth

The results of the VECM estimation carried out show that the development of NBFI has a long-term relationship with economic growth. This result is consistent with the study of this result that the development of NBFI and economic growth will influence each other in the future assuming there are no other variables (disruption variables) (Baroroh, 2012; Faza & Wibowo, 2019; Rafsanjani & Sukmana, 2014). This
means that NBFIs function as a long-term financial services sector and contribute to sustainable economic growth.

In addition, the long-term adverse impact on NBFIs reflects that non-bank financial institutions can hinder sustainable economic growth. In the end, encourages the achievement of fair and sustainable income distribution in economic growth and post-pandemic economic recovery. This is not only a level of income but also a way to distribute that income throughout society (Fatimah dan Darna, 2011; Utami, 2018). The results of the Granger causality test of the built model show that the relationship that emerges between the development of NBFIs and economic growth is a one-way relationship and that economic growth is influenced by an increase in the demand for NBFI products and ultimately. Encouraging better sustainable economic growth. The test results are supported by the IRF and FEDV test results. The IRF IKNB test shows that this variable responds positively to the shock caused by economic growth. This means that the development of NBFIs will encourage economic growth and this growth will not have an impact on the development of NBFIs.

However, the response to the test was relatively small. This is evidenced by the standard deviation of the two tests near the line of observation. This is the response of 0.004 Economic Growth to the NBFI shock. Also, it doesn't take long to reach a point of stability. The response of Economic Growth to the NBFI shock was stable in the 14th phase. Furthermore, the FEDV test shows that the contribution of NBFIs to the variance of the movement of Economic Growth is relatively small, with the contribution of NBFIs of only 4.11% to the variability of the movement of economic growth. The movement of Economic Growth is still dominated by the variable itself at 84.14%.

Based on the results of the IRF and FEDV IKNB and Economic Growth tests, it can be concluded that NBFIs have a positive impact on Indonesia's economic growth and vice versa. These results are in accordance with the research (Faza & Wibowo, 2019; Liu et al., 2020). This also proves that the contribution of NBFIs to economic growth is relatively small. This means that IKNB has not fully realized its potential as a financial intermediary that contributes to economic growth. Therefore, a key role for the government is needed to develop the IKNB sector that provides a role for the community to support Indonesia's economic recovery after recovery from the COVID-19 pandemic.

CONCLUSIONS AND RECOMMENDATIONS

This study shows that Sharia NBFIs have a positive impact on long-term economic growth, while NBFIs have a long-term negative impact on economic growth. In short, the development of Sharia IKNB and IKNB will support economic growth with a contribution of 11% and 4%, respectively. In addition, the sharia-based financial sector is considered to be better against shocks to economic growth than the traditional financial sector. Given the increasing contribution of the Sharia NBFI sector to the economy, the role of the government in this sector needs to be strengthened. Various regulations required for the development of the sharia NBFI and NBFI sector must be guided by the ease of development without compromising
the prudential principle as a financial intermediary. In addition, we need to improve education and outreach to the community and other stakeholders to increase the utilization of the community's potential.

REFERENCES


