The Effect of Islamic Financial Inclusion on Economic Growth: A Case Study of Islamic Banking in Indonesia

Fauziyah Adzimatinur¹, Vigory Gloriman Manalu²
¹,²Universitas Universitas Kuningan, Indonesia
f.adzimatinur@uniku.ac.id, vigoryglo@uniku.ac.id

Abstract

This research aims to examine the effects of financial inclusion in Islamic banking on economic development in Indonesia. The economic growth indicator is represented by the Industry Production Index (IPI) while the financial inclusion indicator is represented by the amount of Third Party Funds, the amount of financing, the number of Third Party Funds accounts, and the number of financing accounts. The data used is time series from January 2011 to February 2020. The Vector Error Correction Model (VECM) is used to analyze the data. The results show that in the long run, inflation has a positive effect, while in the short term, inflation has a positive effect on lag one and has a negative effect on lag 2. While the financial inclusion indicator shows that the financial inclusion of Islamic banking in Indonesia has a positive effect on economic growth.

I. Introduction

Indonesia is one of the nations with the world's largest Muslim population. It has dual banking system. In this system, Indonesia uses conventional and Islamic banking systems. Islamic banking in Indonesia is growing quite rapidly although it is not yet comparable to conventional banks. The first Islamic bank established is Bank Muamalat in 1991. Currently, there are 14 Islamic Commercial Banks (BUS) and 20 conventional banks that have Islamic Business Unit (UUS) with 2.433 total offices. Comparison of the development of Islamic banking and conventional banking can be seen in Table 1.

| Table 1. The Development of Sharia and Conventional Banking in Indonesia in 2020 |
|---------------------------------|-----------------|-----------------|
| Islamic Banks                  | Conventional Banks |
| Assets                         | IDR 576.813 Billion | IDR 9.053.446 Billion |
| Number of Offices              | 2.433            | 30.755           |
| Third Party Funds              | IDR 464.193 Billion | IDR 6.634.998 Billion |
| Total Financing / Credit       | IDR 89.539 Billion | IDR 5.516.904 Billion |

Source: (Statistik Perbankan Syariah, 2020) and (Statistik Perbankan Indonesia, 2020)

In 2018, Indonesia's total Islamic financial assets reached USD 86 billion, an increase of USD 4 billion from the previous year. The increase in total assets places Indonesia in the 7th position with the largest total Islamic financial assets in the world. Indonesia's Islamic financial assets were able to grow 14.01% (yoy) to IDR 1,468.07 trillion from the previous year which amounted to IDR 1,287.65 trillion. Islamic banking with a share of 36.67% of total Islamic financial assets was able to grow positively at a rate of 9.93% (yoy) (Laporan Perkembangan Keuangan Syariah Indonesia, 2019).
The banking sector has an intermediary function to channel capital or savings to business actors so that it plays an important role in moving the real sector. The intermediation function plays a role in accelerating the flow of investment which will have a positive impact on economic growth. The easier the access for each level of society to banking services, the more optimal the implementation of the bank intermediation function will be. Expanding access to financial services for the poor and micro and small businesses has become the focus of the Indonesian government as stated in the national financial inclusion strategy designed since 2010. In 2017, 48.9 percent of adults in Indonesia had access to formal financial institutions, according to the (Global Financial Inclusion Index, 2020). From this results, 37% of poor people already have access to formal financial institutions, and 57% of rich people already have access to formal financial institutions. In addition, digital payment activities have increased, including making or receiving payments online. Digital payment activities increased to 72% in 2017 compared to 2014 of 62%. These data indicate that the sharia banking intermediation function to move the economy is very large. With such great growth, more and more people will be served. The more widespread the reach of Islamic banking shows that the role of Islamic banking is getting bigger for economic growth.

The inclusive financial system is not only about how to provide credit for the poor and micro and small businesses but has a more holistic goal of reducing poverty, distributing income to achieve higher quality and sustainable economic growth without sacrificing and even supporting financial system stability. The determining factors for the success of financial inclusion are banking penetration or bank customer size, availability of banking services, use of banking services, availability of insurance products and availability of pensions that are protected from inflation (Farooq, 2013). Financial inclusion will make a meaningful contribution to inclusive and sustainable economic development at local and national levels. (Bank Indonesia, n.d.).

The inclusion and literacy of Islamic finance in Indonesia is growing. The third National Financial Literacy and Inclusion Survey (SNLIK) conducted by the Financial Services Authority (OJK) in 2019 found that the index of financial literacy reached 38.03% and the index of financial inclusion reached 76.19%. This statistic is an improvement relative to the 2016 OJK survey findings, including the 29.7 percent financial literacy index and the 67.8 percent financial inclusion index. Thus, there has been a rise of 8.33 percent in public financial awareness (literacy) and 8.39 percent in access to financial goods and services (financial inclusion) over the last three years. As many as 12,773 respondents in 34 provinces and 67 cities/districts were included in the 2019 OJK SNLIK study, considering gender and urban/rural area strata. (Survey Nasional Literasi dan Inklusi Keuangan, 2019).

As seen by the substantial increase in funding and financing in 2010-2014, Islamic banking has tremendous potential to introduce financial inclusion, and the findings of the financial ratio study also indicate that Islamic banking’s efficiency and financial position are good. (Nengsih, 2015). The vision of the 2017-2019 Sharia Financial Development Roadmap for Indonesia is to realize a rising and prosperous, inclusive sharia financial services industry that contributes to the stabilization of the national economy and financial system to the realization of Indonesia as the world's financial center for sharia. (Roadmap Pengembangan Keuangan Syariah Indonesia 2017-2019, 2017).

Several studies have been carried out to analyze the influence of financial inclusion on economic development. Inclusion in finance will lead significantly to economic development. (Iramayasari & Adry, 2020), (Suidarma, 2019), (Kim et al., 2018),
Previous researches used annual data of financial inclusion and GDP as the proxy for economic growth. The goal of this study is to examine the role of Islamic financial inclusion in Indonesia's increased economic development. In this study, economic growth was represented by the Industrial Production Index (IPI) variable, while the financial inclusion variable was represented by the number of third party funds (Dana Pihak Ketiga/DPK) accounts, the number of accounts for financing, financing and third party funds, and macroeconomic variable represented by inflation. The method used in this study is VAR/VECM to see the short and long term impact and the contribution of each variable to the economic growth.

II. Review of Literatures

Since the 2008 recession, the term financial inclusion became a movement, primarily based on the effect of the crisis on groups at the bottom of the pyramid (low and irregular wages, people living in rural areas, people with disabilities, employees that do not have legal identification papers, and disadvantaged communities) who are usually unbanked, which is perceived to be quite high outside of developed countries. At the 2020 G20 summit, world leaders endorsed the Global Partnership for Financial Inclusion (GPFI) G20 High Level Policy Guidance on Digital Financial Inclusion for Youth, Women and SMEs and also welcomed the 2020 G20 Financial Inclusion Action Plan, which will direct the work of the GPFI over the next three years. (GPFI, 2020).

According to the World Bank, financial inclusion ensures that individuals and organizations have access to valuable and accessible financial goods and services, such as purchases, transfers, deposits, credit and insurance, that will fulfill their needs. A first step towards greater financial inclusion is access to trading accounts. Transaction accounts are also a gateway to other banking institutions and will guarantee that financial services are open to individuals around the globe.

Bank Indonesia also notes that the strategy of financial inclusion is primarily a method of deepening of financial resources targeted at the society at the bottom of the pyramid to make use of structured financial goods and services such as secure money saving, transfers, savings and loans and insurance. This is achieved not only by providing the object in a fitting way, but also in tandem with different factors.

A research conducted by (Iramayasari & Adry, 2020) examines the effect of financial inclusion from the amount of ATMs inclusions and the amount of bank branches inclusions on financial stability and economic growth in ASEAN countries. This study uses panel data from 2004 – 2017 consisting of 6 countries in ASEAN. The results show that financial inclusion has a significant effect on economic growth in ASEAN, and The amount of inclusion ATMs has a significant effect but has a negative relationship with economic growth in ASEAN; The amount of inclusion bank branches has a significant influence on economic growth in ASEAN.

The nexus between financial inclusion and economic growth in ASEAN was examined by (Suidarma, 2019). The goal of this study is to examine the effect and long-term relationship of financial inclusion on ASEAN economic growth via Gross Domestic Product (GDP) through the instrument of the number of Automated Teller Machine (ATM)s and commercial bank branches. The statistics used are secondary data in the context of an annual panel of ASEAN countries for the period 2008-2015 in order to see the post-global crisis effect that has arisen. In order to see the long-term relationship and the GDP reaction when shocks arise in the variable financial inclusion, the approach used
is the Panel Vector Error Correction Model (VECM). The findings of the estimate indicate that financial inclusion has added significantly to the economic development of ASEAN by the number of ATMs and the number of branches of commercial banks.

Kim (2018) examines the effect of financial inclusion on economic growth in the Islamic Conference Organization (OIC) countries. The research was conducted on 55 OIC countries using dynamic panel data analysis as well as VAR, IRF, and Granger Causality Test. The results show that financial inclusion has a positive effect on economic growth. The results of the IRF show that financial inclusion has a positive influence on future economic growth and the results of the Granger Causality Test show that financial inclusion and economic growth influence each other (Kim et al., 2018).

Onaolapo AR (2015) examines the effect of financial inclusion on economic growth in Nigeria. The research was conducted for the period 1982-2012 using the Ordinary Least Square (OLS). The results show that there is a significant influence between financial inclusion and poverty reduction as well as a positive and significant effect on economic growth (Onaolapo, 2015).

Research Framework

Figure 1. Research Framework

III. Research Methods

3.1 Types and Sources of Data

This study analyzes the effect of financial inclusion on economic growth. The indicator of financial inclusion uses sharia banking data which represents indicators of access, use and quality of banking services, namely the number of accounts, financing and Third Party Funds. Meanwhile, the macroeconomic indicators use the inflation variable and the economic growth indicators use the variable Industry Production Index (IPI). The data is monthly data from January 2011 to February 2020. Data is taken from Islamic Banking Statistics published by the Financial Services Authority (OJK) and Bank Indonesia. The analytical method used is the vector autoregressive correction model (VECM).

3.2 Method

(Juanda, 2009) suggests that in the terminology of the econometric model, there are terms of the dependent variable and the independent variable. Dependent variables are variables that are influenced by other variables, namely independent variables or determining variables. The relationship between dependent and independent variables is as follows:
[Equation 1]

\[ Y_t = \beta_1 + \beta_2 X_{2t} + \beta_3 X_{3t} + \cdots + \beta_k X_{kt} + \epsilon_t \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad (1) \]

Subscript \( i \) denotes the number of observations from 1 to \( N \) for population data, or up to \( n \) for sample data. \( Y_i \) is the \( i \)th observation for the dependent variable, \( X_k \) is the \( i \)th observation for the independent variable \( X_k \), the coefficient \( \beta_1 \) is the regression model intercept, \( \beta_2, \ldots, \beta_n \) is the coefficient for each variable.

Juanda and Junaidi (2012) state that Structural or theoretical models are mainly econometric models of the time series, namely models based on current economic theory. To evaluate current hypotheses, estimating this model will provide numerical information as well as results. Economic theory, however, has always not been able to establish the relevant model parameters because the actual economic phenomena are so complicated. Model Vector Autoregressive (VAR) can be used to overcome this in time series data (timeseries) for the VAR model is built with an approach that minimizes the theory in order to capture the phenomenon.

Often the relationship between variables in a dynamic system cannot be explained by only a single static equation model, but must be with several equations that are dynamic and influence each other. The VAR model can examine the dynamic relationship between these variables.

A VAR model consists of \( m \) variables, each variable is represented by a linear function with \( a(lag) \) \( p \) of the variable itself and of the \( m-1 \) of the other variables. For example, there are two variables \( x \) and \( y \) with the order \( p \), so the VAR model is expressed as follows:

\[ Y_t = \beta_{y0} + \beta_{y1} Y_{t-1} + \cdots + \beta_{yp} Y_{tp} + \beta_{yx1} X_{t-1} + \cdots + \beta_{yxp} X_{tp} + v_t^y \quad \cdots \quad (2) \]

\[ X_t = \beta_{x0} + \beta_{x1} Y_{t-1} + \cdots + \beta_{xyp} Y_{tp} + \beta_{xx1} X_{t-1} + \cdots + \beta_{xxp} X_{tp} + v_t^x \quad \cdots \quad (3) \]

\( \beta_{xyp} \) is the coefficient of \( y \) in the equation \( x \) in the interval (lag) \( p \), \( v_t^y \) and \( v_t^x \) is the error term.

VAR models exist in many ways, one of which is the restricted VAR, also known as the Vector Error Correction Model (VECM). Restriction is provided since the information is not stationary but co-integrated, which implies that a long-term relationship occurs. The VECM specification limits the convergence of the long-term relationship of endogenous variables into their co-integration relationship, but also enables short-term dynamics to occur. Due to the gradual correction by short-term changes to the variance from the long-term balance formula, the term Vector Error Correction Model (VECM) is used. (Juanda and Junaidi, 2012). The VECM is expressed in the following equation:

\[ \Delta Y_t = \beta_{y0} + \beta_{y1} \Delta Y_{t-1} + \cdots + \beta_{yp} \Delta Y_{tp} + \gamma_{x1} \Delta X_{t-1} + \cdots + \gamma_{xp} \Delta X_{tp} \]

\[ - \lambda_y (Y_{t-1} - \alpha_0 - \alpha_1 X_{t-1}) + v_t^y \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad (4) \]

\[ \Delta X_t = \beta_{x0} + \beta_{x1} \Delta Y_{t-1} + \cdots + \beta_{xp} \Delta Y_{tp} + \gamma_{x1} \Delta X_{t-1} + \cdots + \gamma_{xp} \Delta X_{tp} \]

\[ - \lambda_x (X_{t-1} - \alpha_0 - \alpha_1 Y_{t-1}) + v_t^x \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad (5) \]

\( Y_t = a_0 + a_1 X_t \) is the long-run cointegration relationship between the two variables. \( \lambda_y \) and \( \lambda_x \) are parameters error-correction that measure how \( y \) and \( x \) react to deviations from long-run equilibrium. In general, the VECM model specifications can be stated as follows:

\[ \Delta Y_t = \mu_{\Delta x} + \mu_{\Delta t} \Delta t + \Pi_{\Delta y} Y_{t-1} + \sum_{i=1}^{k-1} \Gamma_k \Delta Y_{ti} + \epsilon_t \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad (6) \]
Where:
y_t = vector containing the variables analyzed in the study
µ_0 = vector intercept
µ_1 = regression coefficient vector
t = time trend
Π = α β ' where b' contains long-term cointegration equations
y_t-1 = variable in-level
Γ = regression coefficient matrix
k-1 = VECM order of VAR
ε_t = error term

The VECM models used in this study are:

\[
\begin{pmatrix}
\Delta IPI \\
\Delta Inflasi \\
\Delta RekDPK \\
\Delta RekPemb \\
\Delta LnDPK \\
\Delta LnPemb \\
\end{pmatrix}
= \begin{pmatrix}
\alpha_{10} \\
\vdots \\
\alpha_{60}
\end{pmatrix}
+ \begin{pmatrix}
\alpha_{11} & \cdots & \alpha_{16} \\
\vdots & \ddots & \vdots \\
\alpha_{61} & \cdots & \alpha_{66}
\end{pmatrix}
\begin{pmatrix}
\Delta IPI_{t-1} \\
\Delta Inflasi_{t-1} \\
\Delta RekDPK_{t-1} \\
\Delta RekPemb_{t-1} \\
\Delta LnDPK_{t-1} \\
\Delta LnPemb_{t-1}
\end{pmatrix}
+ \begin{pmatrix}
\epsilon_{1t} \\
\vdots \\
\epsilon_{6t}
\end{pmatrix}
\]

Description:
IPI : Industrial Production Index
Inflation : Inflation (%)
RekDPK : Number of Third Party Fund Account
RekPemb : Number of Financing Account
LnDPK : Third Party Funds (Billion Rupiah)
LnPemb : Financing (Billions of Rupiah)

IV. Results and Discussion

4.1 Stationarity Test
The Augmented Dickey Fuller (ADF) test uses the Stationary Test. Using the Schwarz Knowledge Criteria for automated lag length selection with a cumulative lag of 9, the test was conducted at the level up to the first difference. The variables in this study indicate that the data is stationary in the first difference. Therefore, cointegration testing will be carried out, if there is cointegration then the method will be used Vector Error Correction Model (VECM), but if there is no cointegration then VAR will be used first difference.

4.2 VAR Stability Test
(Firdaus, 2011) states that by calculating the roots of the polynomial equation, referred to as the roots of characteristic polynomials, the VAR stability test is performed. If the values of all the roots of the polynomial function have an absolute value <1 or are in a unit circle, In order for the resulting Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) to be considered valid, the VAR model is considered stable. The modulus value of <1 is seen in the VAR stability table in the appendix. This shows that the VAR model used is considered stable, so that the IRF and FEVD are considered valid.
4.3 Optimal Lag Test
The optimal lag test is used to determine how long the influence of a variable is on other variables. In addition, optimal lag testing is used to avoid autocorrelation in the model (Firdaus, 2011). The test results show that the optimum lag is 2.

4.4 Cointegration Test
The cointegration test aims to determine whether the non-stationary variables are cointegrated or not (Firdaus, 2011). This study uses the Johansen Cointegration Test. The results show that there are two cointegration ranks at the 5% level, this means that multivariate long-term linear equations are contained in the model.

4.5 The Influence of Islamic Banking Financial Inclusion on Economic Growth
The factors that influence financing can be seen from the VECM estimation results. The VECM estimation shows the effect of the studied variables in the short and long term. The determination of the significance of the variables based on the 5% level.

Table 2. The VECM estimation results

<table>
<thead>
<tr>
<th>Short-term</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPI(-1)</td>
<td>0.376171</td>
</tr>
<tr>
<td>IPI (-2)</td>
<td>-0.033372</td>
</tr>
<tr>
<td>INFL (-1)</td>
<td>-58.30257</td>
</tr>
<tr>
<td>INFL (-2)</td>
<td>33.76398</td>
</tr>
<tr>
<td>LN_DPK (-1)</td>
<td>1011.977</td>
</tr>
<tr>
<td>LN_DPK (-2)</td>
<td>2596.810</td>
</tr>
<tr>
<td>LN_PEMB (-1)</td>
<td>106.6592</td>
</tr>
<tr>
<td>LN_PEMB (-2)</td>
<td>-284.3799</td>
</tr>
<tr>
<td>LN_REKDPK (-1)</td>
<td>515.4382</td>
</tr>
<tr>
<td>LN_REKDPK (-2)</td>
<td>936.5485</td>
</tr>
<tr>
<td>LN_REKPEMB (-1)</td>
<td>1194.471</td>
</tr>
<tr>
<td>LN_REKPEMB (-2)</td>
<td>-255.3980</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Long Term</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-18581.97</td>
</tr>
<tr>
<td>infl</td>
<td>62.26665</td>
</tr>
<tr>
<td>LN_DPK</td>
<td>3291.024</td>
</tr>
<tr>
<td>LN_PEMB</td>
<td>14.06793</td>
</tr>
<tr>
<td>LN_REKDPK</td>
<td>210.7260</td>
</tr>
<tr>
<td>LN_REKPEMB</td>
<td>-455.6884</td>
</tr>
</tbody>
</table>

The estimation results shows the effect of each variable on economic growth in the short and long term. In the short term, the lags used are 1 and 2. All variables both at lag 1 and lag 2 have a significant effect on economic growth. Inflation (INFL) in lag 1 has a negative effect on economic growth, while lag 2 has a positive effect. Inflation can have a positive effect on economic growth when existing inflation can stimulate producers to increase production due to increased price. Meanwhile, inflation can have a negative effect on economic growth when rising prices will only reduce people's welfare.
Third Party Funds (LN_DPK) in lag 1 and 2 have a positive effect on economic growth. Third Party Funds (DPK) in Islamic banking will be channeled through financing that can stimulate development in the real sector.

Financing (LN_PEMB) at lag 1 has a positive effect and lag 2 has a negative effect on economic growth. The amount of financing is closely related to the real sector, so that it directly affects economic growth.

The number of DPK accounts (LN_REKDPK) has a positive effect on economic growth both at lag 1 and 2. The number of financing accounts (LN_REKPEMB) has a positive effect on economic growth at lag 1 and has a negative effect on economic growth at lag 2. This shows that more people have Accounts can increase economic growth because more people have easy access to finance so that it can trigger a development in the real sector.

In the long run, all variables have a significant effect on economic growth. The positive and negative coefficient values show the relationship of each variable to economic growth. The INFL, LN_DPK, LN_PEMB, and LN_REKDPK variables have a positive effect on economic growth, while the LN_REKPEMB variable in the long run has a negative effect on economic growth.

The conclusions of this report are consistent with previous studies demonstrating that financial inclusion has a positive effect on economic development. (Iramayasari & Adry, 2020), (Suidarma, 2019), (Kim et al., 2018), (Onaolapo, 2015), (Erlando et al., 2020). The factors of financial inclusion, such as the number of ATMs, bank branches and the number of deposits, have a positive influence on economic development, representing GDP per capita (Kim et al., 2018). The financial inclusion variable in this study has a positive effect on economic growth except for the variable of number of financing account.

### 4.6 Contribution of Each Variables in Explaining Economic Growth

Forecast Error Variance Decomposition (FEVD) Analysis is a VAR model aimed at predicting the percentage contribution of each variable variance due to changes in those variables in the VAR method. To explain the relative value of each component in the VAR system due to shock, FEVD analysis is used. (Juanda & Junaidi, 2012).
The FEVD estimation results show that the variable that most influences economic growth is Third Party Funds. The findings of the FEVD illustrate the complex contribution of the variables analyzed to the diversity of economic development (IPI). The diversity of the IPI is primarily affected by the IPI itself, followed by the TPF and the amount of accounts receivable.

V. Conclusion

The Islamic banking financial inclusion variables used in this study indicate a significant influence on economic growth. Meanwhile, the Islamic financial inclusion variable that has the greatest influence on economic growth is Third Party Funds. This shows that the development of Islamic banking in Indonesia needs to be encouraged so that it can boost Indonesia's economic growth. Islamic banking has a high concern for the growth of the real sector which has a major influence on economic growth.

Based on the results obtained from this study, there are several suggestions that we provide, including: The Authority should have friendly policies to speed up its development in the country in order to further encourage the contribution of Islamic banking to economic growth. (Rama, 2013).

Islamic financial literacy needs to be improved. This is the role of various parties, both government and bank and non-bank financial institutions. This is because high financial literacy can increase financial inclusion so that it will have an impact on increasing the amount of Third Party Funds or TPF accounts, as well as other financial inclusion variables which will ultimately have an impact on economic growth.

To see in more detail about the effect of financial inclusion, the financial inclusion index variable issued by the World Bank can be included. In addition, it is necessary to add several other macroeconomic variables such as population and unemployment rate. In addition, the Impulse Response Function (IRF) analysis can be used to determine the response of each variable to shocks.

References


