Revisiting the Contribution of Islamic Banks' Financing to Economic Growth: The Indonesian Experience

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ABSTRACT

The contribution of Islamic banking towards economic growth remains debatable amongst academicians and practitioners. This study investigates the relationship between Islamic banks' financing and economic growth in Indonesia which is the largest Muslim population country. This study adopts Autoregressive-Distributed Lag (ARDL) and utilizes time-series quarterly data from 2011Q1 to 2019Q3. The study uses four predictors: financing to deposit ratio, gross capital fixed formation, inflation, and trade openness. The results from the auto-regressive distributed lag model indicate that, in the long-run, Islamic banks' financing has a significant impact on the Indonesian economy. However, in the short-run, financing does not make a substantial contribution to Indonesian economic growth. The study's key implication is that financing by Islamic banks still makes a limited contribution to economic growth in Indonesia. This study enhances the literature review, specifically on evaluating the contribution of Islamic banks towards economic growth. Numerous existing studies on this topic covering the crisis period data, which might suffer from data bias. Therefore, this study addresses this topic, excluding the global financial crises period such as 1998, 2008, and 2020, to demonstrate Islamic banks' evident contribution to Indonesian economic growth.

Introduction

Nowadays, Islamic banking's development is significant and has been universally accepted. In 2018, global Islamic banking showed satisfactory performance as reflected in the increasing return on assets (ROA) of 1.8%, and return on equity (ROE) of 16.3% compared with the moving average for the previous five past years of 1.6% and 13.6%,

respectively. The ROE for global Islamic banking is higher than for conventional banks over the same period in both the United Stated and Europe at 11.9% and 7.2%, respectively (Islamic Financial Service Board, 2019). These data leads Islamic bank become the fastest growing compared to conventional ones (Rusmita & Putri, 2020). The Islamic Financial Service Board (2019) reported that Islamic banking had increased its proportion of financing to the manufacturing sector compared to the previous year in which 42% of the total financing was allocated to households. This might be a positive indication that Islamic banking aims to enhance its contribution to the development of the manufacturing sector.

The development of Islamic banking in Indonesia began in 1992 with the founding of Bank Muamalat Indonesia. It was the only Islamic bank in Indonesia until the global economic crisis 1998 (Abduh & Azmi Omar, 2012). The development of an Islamic bank in Indonesia has gained much attention, especially after the 2008 global financial crisis (Risfandy et al., 2020). After the crises in 1998 and 2008, Islamic banking development experienced a rapid increase, from only one Islamic commercial bank (BUS) unit and nine Islamic rural banks (BPRS) in 1992 (Abduh & Azmi Omar, 2012) to 14 BUS units, 20 Sharia Business Units of Conventional Banks (UUS) and 164 BPRS in June 2019 (Otoritas Jasa Keuangan, 2019). Bank Indonesia designed a policy that led to an Islamic bank to boost the sector compared with conventional banks (Sukmana & Kholid, 2013). According to the Islamic Financial Service Board's (2019) report, Islamic banking in Indonesia came in the top five in the percentage of allocated funds to the manufacturing sector of Islamic banks in 13 countries: Iran, Pakistan, Oman, Malaysia, Bangladesh, Saudi Arabia, United Arab Emirates, Brunei, Jordan, Bahrain, Kuwait, and the United Kingdom.

In addition, in 2017 Indonesian Islamic banks reached their highest growth levels, with assets growing at 23.5%, and financing and deposits registering 19.4% and 25.1% growth, respectively (Islamic Financial Services Board, 2018). Based on this explanation, Islamic banking is believed to have great potential to spur real economic activity since it allows fast expansion (Djennas, 2016). In the global rapid growth of the Islamic finance industry, Indonesia as the country with the largest Muslim population, is very much expected to make a significant contribution to encouraging the development of Islamic banking (Rizvi et al., 2020).

Interestingly, Su and Yao (2016) explain that the increase in the manufacturing sector growth rate significantly affects economic growth in middle-income countries because it accelerates technological accumulation, escalates incentives for saving, intensifies the human capital and economic institutions. They explain that manufacturing has become the main sector driving the economic growth. Haraguchi et al. (2017) state that the manufacturing sector remains an essential factor in achieving

higher economic growth. In broader a view, Mensi et al. (2020) and Aldeen et al. (2020) clarify that Islamic banks could encourage the savings by a religious person who is restrained from getting involved in conventional banks. This, in turn, generates a supply of funds for financial intermediaries. This study illustrates that Islamic banks tend to mobilize their financing to construction and real estate, which, importantly, shapes the evolution of capital stock, the primary resource of economic growth. This study shows that Islamic banking assists the financial stability, a crucial factor for economic growth. Daly and Frikha (2016) and Hayat and Kabir Hasan (2017) emphasize that Islamic banking provides its products to real economic activities under a risk-sharing mechanism between the lender and borrower. This can improve susceptible groups like small and medium enterprises (SMEs) and provide real economic growth.

Imam and Kpodar (2016) explain that Islamic banks contribute to economic growth in eight ways. However, this study summarizes to four ways. First, Islamic banks provide lending to persons and companies that lack assets through a risk-sharing scheme. Second, Muslim customers prefer saving their money in Islamic banks to conventional banks because the Islamic banks fulfil their needs of spiritual principles. Third, they encourage financial stability through profit and loss schemes that create fewer crises in crisis-prone system. The World Bank (2015) reports that risk-sharing principles and the avoidance of speculative financial products helps Islamic banks to face crises and strengthens the financial stability. In the context of Indonesian Islamic banks, Rizvi et al. (2019) show that the presence of Islamic bank as choices from conventional banks expands diversification that, in turn, improves banking industry stability. Finally, Islamic banks offer financing for morally acceptable projects. In deciding to fund an investment project, Islamic banks consider whether the project is harmful to society, which effectively increases the economic growth.

Numerous studies have shown that Islamic banks play an essential, significant role in enhancing economic growth. Jawad and Christian (2019) conducted a study to examine the interaction between Islamic banking development (IDB) and economic growth. The study observed 24 countries, including Indonesia, using annual data from 2004 to 2014. The results show that IDB, which runs its business without using an interest rate, has a positive impact on economic growth since it has roots in the real sectors of the economy. Moreover, the presence of Islamic banks answers and complies with the demands of customers who want to do their financial transactions based on Sharia principles, which leads to more economic transactions. Ben Mimoun (2019) examined the nature of the relationship between Islamic Banks' (IB) financing and real performance in the non-oil private sector in Saudi Arabia using quarterly data from

2007Q1 to 2016Q4. The results reveal that the expansion of IB's funding positively increases real investment and vice versa. Besides, Boukhatem and Ben Moussa (2018) demonstrate that the development of Islamic banks boosted the economic growth in 13 countries of the MENA region.

Tabash and Anagreh (2017) observed the role of Islamic banking in economic growth in United Arab Emirates (UAE). The research show that Islamic banking efficiently expedites money flow and leads economic growth to a higher level. Kassim (2016) investigated the impact of Islamic banking finance on Malaysia's economic performance. The results show that Islamic banks' financing and economic growth tend to move in the same direction both in the short and long-run. This result agrees with a study conducted by Imam and Kpodar (2016) which shows that there is a significant, positive relationship between Islamic banking and economic growth in 52 countries from 1990-2010. Lebdaoui and Wild (2016) assessed the linkage between the presence of Islamic banks in Southeast Asian countries over the period 2000Q1 to - 2012Q4. This study finds that the considerable assets of Islamic banks tend to increase economic growth, which is a sign that Islamic banks allocate funds effectively to real economic activities.

Abd. Majid and H. Kassim (2015), Grassa and Gazdar (2014), Igonina and Postaliuk (2014), Rajabi and Muhammad (2014), Tabash and Dhankar (2014), Zirek et al. (2016) also demonstrate that Islamic bank development, in the long run, contributes positively significantly to economic growth. The studies explain that Islamic banks mostly grow in two directions. First, they provide financing and actively participate evaluating business performance. Secondly, Islamic banks facilitate Muslims and assure them that their contracts are based on Islamic principles. Abduh and Azmi Omar (2012), Gudarzi Farahani and Dastan (2013), and Mohd. Yusof and Bahlous (2013) studied the correlation between Islamic financing and economic performance in Indonesia, Malaysia, Bahrain, Saudi Arabia, UAE, Kuwait, Qatar, and Yemen. This study showed that Islamic banks played a crucial role as financial intermediaries for deficit to surplus households. Thus, it significantly effects better economic performance in the short- and long-run. Abduh and Azmi Omar (2012) illustrate that a decrease in Islamic bank financial systems will cause a decline in economic growth and vice versa; thus, when the Islamic banks' performance decrease, it will influence the economic recession. This study posits that the development of Islamic banks has a strong correlation with economic growth since Islamic banks contribute to the business activities directly.

Several empirical studies show that Islamic banks do not statistically increase economic growth. Atici (2018) finds that Islamic bank participation does not have a significant effect on Turkey's economic growth in the short-run. Rafay and Farid (2017)

reveal that there is no relationship between Islamic banks' finance and economic growth in the short-run. However, in the long-run, the development of an Islamic bank expands real economic activity in Pakistan. These results agree with the fact that the market share of Islamic banks in Pakistan is still low compared to the total bank industry. Hachicha and Ben Amar (2015) demonstrate that, in the short-run, Islamic banks in Malaysia do not effectively contribute to economic growth, which reflects a lower percentage of PLS than non-PLS contracts. In the long-run, positive movements in the Islamic finance ratio led to an increase in economic growth.

Most previous studies find that an Islamic bank has a positive impact on economic growth. There are significant differences between the short- and long-run relationships in each country, because of different social, political, economic and Islamic governance systems (Asutay & Mohd Sidek, 2020). The above studies were mostly conducted before the global crisis and use data that are a combination of before and after the Asian financial crises of 1998 and 2008, the subprime-mortgage crisis (Bank Indonesia, 2008). Thus, those results might suffer from data bias because of unstable domestic macroeconomic conditions caused by the economic crisis (Cahyono & Rani, 2018). Neglecting these realities is a limitation of those studies. This study aims to address this limitation by evaluating the contribution of Islamic banks' financing to real economic activity in Indonesia, particularly after the global economic crisis. In order to achieve the study's purpose, this study adopted four independent variables: Financing Deposit Ratio (FDR), Gross Fixed Capital Formation (GFCF), Inflation (INF), and Trade Openness (TO). Selection of the variables was determined by reviewing existing empirical studies in the context of Islamic banks' financing contribution to economic growth. The macroeconomics data were sourced from the Indonesia Central Bureau of Statistics and FDR was obtained from the Financial Services Authority of Indonesia.

As a country with a majority Muslim population, Indonesia presents an interesting case for study to evaluate the contribution of Islamic banks' financing to economic growth, especially after the economic crises in 1998 and 2008 and up to 2020. To the best of our knowledge, there has been limited studies focusing on evaluating Islamic banking's financing contribution to the economic growth, particularly Indonesian context. Therefore, this study aims to fill that gap and broaden the literature on evaluating the contribution of Islamic banking to economic growth in Indonesia and excluding the financial crises. The results contribute to the regulatory framework of Islamic banks for better policy and practice in Islamic banking to increase economic growth through allocating finance to the manufacturing sector. The findings from this study should enable regulators and Islamic banks to evaluate their financial policy and business strategies so they increase the contribution of Islamic banks to real economic

activity.

Hypotheses Development

To represent the real economic activity by companies, especially medium and large manufacturing ones, this study uses the Industrial Production Index (IPI) as the dependent variable. The IPI for large manufacturers indicates that manufacturers engage at least 100 workers, whereas medium manufacturers engage 20-99 workers (Badan Pusat Statistik Indonesia, 2019). The IPI is the appropriate variable that theoretically explains the link between Islamic finance and economic growth (Kassim, 2016). Thus, this study uses IPI as the dependent variable and adopted four independent variables described in the next following paragraphs.

Islamic banks' total Financial Deposit Ratio (FDR) is adopted as the proxy of Islamic banks' financial contribution to economic growth. It reflects the percentage of funds allocated by Islamic banks to the private and non-private sector divided by Islamic banks' total deposits assets. The FDR variable is a measure to capture the Islamic banks' size (Jawad & Christian, 2019) and discloses the total of all financing contracts such as murabahah, mudarabah, musharakah, ijarah, istishna, and salam (Zarrouk et al., 2017). Therefore, the following relationship is hypothesised:

H1: FDR has a positive and significant impact on economic growth through financing the business activity.

This study includes Gross Fixed Capital Formation (GFCF) as the control variable that represents the accumulation of net investment by the domestic enterprises in fixed capital assets during an accounting period (Abduh et al., 2012; Atici, 2018; Rafay & Farid, 2017). A high GFCF is likely to be associated with the increasing enterprise consumption and production (Abduh et al., 2012). Hence, the following hypothesis is formulated:

H2: GFCF has a positive and significant impact on economic growth.

This study also adopts two control variables, namely, inflation (INF) and Trade Openness (TO), which are included in the model to avoid the problem of biases through their ability to affect economic growth (Djennas, 2016). INF is an indicator of macroeconomic stability measured by products' price volatility (Imam & Kpodar, 2016). High inflation indicates the depreciation of the exchange rate in the rupiah towards products and/services generally, increasing firms' production costs and decreasing firms' profit. In short, it will affect the reduction of a company's total output and profit, which on a macro-scale will lead to the declining of economic growth.

H3: INF has a negative and significant impact on economic growth.

TO is the ratio of total exports and imports to nominal GDP (Abd. Majid & Kassim, 2015). An increasing TO in a country reflects a higher probability of firms expanding their production scale through access to foreign markets and a boost in

domestic market competitiveness and advantages from technological transfer. Therefore, the following relationship is hypothesised:

H4: TO has a positive and significant impact on economic growth.

To ensure its objectives, this study is guided by the research question: How does the Islamic bank in Indonesia affect economic growth, especially since the global financial crises in 1998 and 2008 and before 2020? To analyze the relationship between the variables, a model has been developed (see Figure 1).
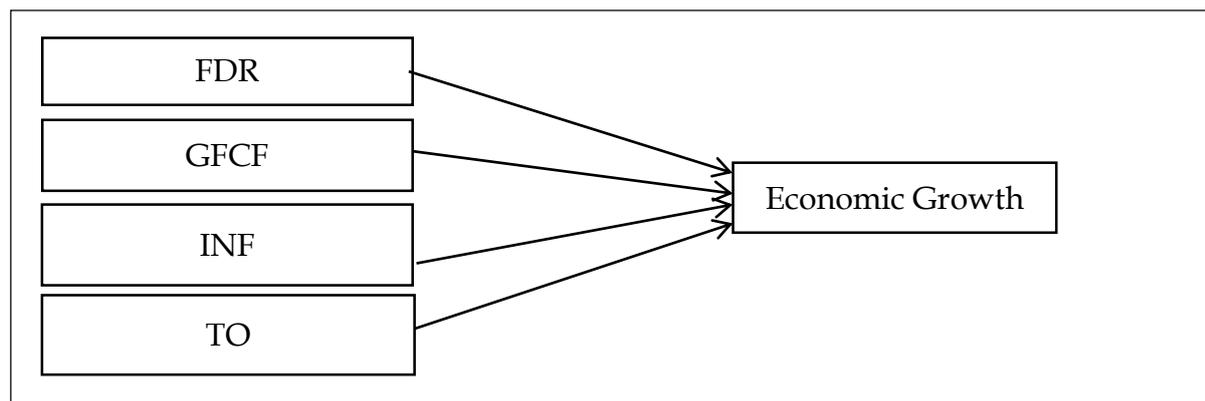

Figure 1. Schematic Diagram of the Study

Method

Sample Selection and Data Sources

This study empirically evaluates the contribution of Islamic banks to economic growth in Indonesia since the global economic crisis using quarterly data from 2011Q1 to 2019Q3. Data selection assumed that the data are stable and reflect real economic activity without the effects of the global economic crisis after 2008, the crisis in 2010 and before 2020, which are subprime-mortgage, Greek crisis, and global coronavirus (COVID-19) pandemic (Bank Indonesia, 2018; World Bank, 2020), respectively. The variables are explained in Table 1.

Table 1. The Variables' Measurement

Variable	Definition	Formula
IPI	The number which tells how industries are performing over a period of time.	$\Sigma \dfrac{W1 \; x \; P1/P0}{W1}$ W_1= Base year weights P_1= Production in current year P_0 = Production in base year
FDR	Ratio of the bank's total financing and total deposits	$\dfrac{Total \; Finance}{Total \; Deposit}$ The data are presented in the form percentage (%).

Variable	Definition	Formula
INF	Change in the consumer price index (CPI).	$\dfrac{CPI_t - CPI_{t-1}}{CPI_t} \, x \, 100$ The data is presented in the form percentage (%).
GFCF	The percentage of production unit expenditure to increase fixed assets minus the used fixed assets reduction.	Production unit expenditure to increase fixed assets minus the used fixed assets reduction. The data are presented in the form billion IDR.
TO	The sum of exports and imports of goods and services measured as a share of GDP.	$\dfrac{\sum exports + \sum imports}{GDP}$ The data is presented in the form percentage (%).

Estimating Model

This study adopts Autoregressive-Distributed Lag (ARDL) to assess the contribution of Islamic banks to Indonesian economic growth. The advantages of using the ARDL approach include the ability to distinguish between the independent and dependent variables, as the aim of this study (Narayan, 2004). Moreover, the ARDL bound approach can access econometric analysis relationships where the variables are not stationary in the same level, in integrated order I(1), I(0) or mutually co-integrated (Pesaran, 1999). This study uses small sample series data for several macroeconomic variables that are vulnerable to the presence of the unit root, thus adopting ARDL is a compatible approach. The general model for ARDL (p, q) estimation is:

$$\phi(L)y_t = c + \theta(L)x_t + \mu_t \tag{1}$$

In detail, equation 1 was obtained from the following equations:

$$\phi(L)y_t = 1 - \phi_1 L - \phi_2 L^2 - \cdots - \phi_p L^P \tag{2}$$

$$\theta(L)y_t = \beta_0 - \beta_1 L - \beta_2 L^2 - \cdots - \beta_q L^q \tag{3}$$

Based on equations 2 and 3, the ARDL (p, q1, q2, ..., qk) model is:

$$\phi(L)y_t = c + \theta_1(L)x_{1t} + \theta_2(L)x_{2t} + \cdots + \theta_k(L)x_{kt} + \mu_t \tag{4}$$

From equation 4, the following equation is written for this current study's estimation model of ARDL (p, q1, q2, q3, q4):

$$\phi(L)IPI_t = c + \theta_1(L)FDR_t + \theta_2(L)GFCF_t + \theta_3(L)INF_t + \theta_4(L)TO_t + \mu_t \tag{5}$$

Where: IPI is the Industrial Production Index; FDR is the Financing Deposit Ratio; GFCF is the Gross Fixed Capital Formation; INF is the inflation rate; TO is the trade openness; and μt is the disturbance term. All the variables are natural logarithms except FDR which is in percentage form and INF which cannot be logged because it contains a negative value.

Results

This section is divided into five steps: First, the stationary status of the dependent and independent variables was checked through the unit root test to confirm that none of the variables is stationary in I(2). Second, the cointegration test applying the Johansen cointegration test was conducted. Third, the Bound F-test to assess the existence of long-term relationship was further administered. Fourth, the Lagrange Multiplier (LM) test was used to verify there is no autocorrelation between the variables in the model. The last, the estimation of ARDL was determined.

First, this study used the Augmented Dickey-Fuller test to check the stationary level of the variables. Table 2 shows the results of the stationary test. From this table, we confirm that INF is stationary in level I(0). This implies that the null hypothesis of having a unit root could not be rejected. All remaining variables (IPI, FDR, GFCF and TO) were stationary in the first difference I(1). The unit root test results imply ARDL is apt for this study.

Table 2. The Result of the Unit Root Test

Variable	Level I (0)			
	Intercept	Trend and Intercept	None	Stat. Status
LnIPI	0.005186	-5.428518*	4.666495	I(1)
FDR	-1.173556	-3.971192***	-0.624506	I(1)
INF	-8.650848*	-8.87863*	-1.917289***	I(0)
LnCFGF	-0.848369	-3.521158***	1.929003	I(1)
LnTO	-1.129639	-4.220186**	-1.424271	I(1)
Variable	First Difference I(1)			
	Intercept	Trend and Intercept	None	Stat. Status
LnIPI	-7.590189*	-6.939144**	-6.586219*	I(1)
FDR	-5.123893*	-1.592842	-5.147956*	I(1)
INF	-16.80219*	-16.56267*	-17.07244*	I(0)
LnCFGF	-2.151343	-17.25880*	-0.909400	I(1)
LnTO	-4.430062*	-4.239456**	-1.328599	I(1)

Source: Data processed (2020)
Note: ***, **, and * denote the statistical significance at 1%, 5%, and 10%, respectively

Second, the Johansen cointegration test results are presented in Table 3. We confirm that the critical value of the trace statistic and the Max-Eigen statistic is higher than critical value (112.7167 > 69.81889 and 45.92173 > 33.87687, respectively). These results indicate that, in the long-run there is cointegration in the equation model.

Table 3. Johansen Cointegration Test Result

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None*	0.783621	112.7167	69.81889	0.0000
At most 1 *	0.769727	66.79494	47.85613	0.0003
At most 2 *	0.331463	22.74020	29.79707	0.2591
At most 3 *	0.299067	10.66030	15.49471	0.2333
At most 4 *	2.91E-07	8.73E-06	3.841466	0.9993
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob.****
None*	0.783621	45.92173	33.87687	0.0012
At most 1 *	0.769727	44.05474	27.58434	0.0002
At most 2 *	0.331463	12.07990	21.13162	0.5398
At most 3 *	0.299067	10.66029	14.26460	0.1721
At most 4 *	2.91E-07	8.73E-06	3.841466	0.9993

Source: Data processed (2020)

Third, the bound test results are presented in Table 4. They reveal that the calculated F- statistic is higher than the upper critical bound at the 1% significance level (5.654414 > 4.37). This finding affirms strong statistical evidence of the existence of a long-run relationship between Islamic banks' financing and economic growth in Indonesia, especially in the period after the global economic crises in 1998 and 2008.

Table 4. The Result of the Bound F-test: The Long-Term Relationship between Islamic Banks' Financing and Economic Growth

Test Statistic	Coefficient	K
F-statistic	5.654414	4
Critical Value Bounds		
Level of Significance	**I0 Bound**	**I1 Bound**
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Source: Data processed (2020)

Fourth, the LM test results are shown in Table 5. The LM test aims to verify the hypothesis of no residual series correlation against the variables (Abu-Bader and Abu-Qarn, 2008). From Table 5, we confirm that the Chi-square probability value is greater than α 1% (0.8191> 0.01), which indicates that it fails to reject the null hypothesis. Thus,

it can be concluded that there is no autocorrelation problem in the observation model.

Table 5. The Result of Lagrange Multiplier Test

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.045647	Prob. F (2,7)	0.9557
Obs*R-squared	0.399100	Prob. Chi-Square (2)	0.8191

Source: Data processed (2020)

The last, the estimation of the long- and short-run relationships are reported in Table 6.

Table 6. Estimation of Long- and short-term Relationships between Indonesia Banks' Financing and Economic Growth

Long-run	Dependent Variable: LnIPI	
	Coefficient	Prob.
FDR	0.001600	0.0263
LnGFCF	-0.027494	0.0300
LnTO	0.917535	0.0000
Intercept	-7.714439	0.9073
Short-run	**Coefficient**	**Prob.**
D(FDR)	0.001843	0.2741
D(INF)	0.728691	0.0020
D(LnGFCF)	-0.036701	0.7431
D(LnTO)	-1.226457	0.0197
CointEq(-1)	-1.011275	0.0000
R-squared	0.995562	
Adjusted R-squared	0.985207	
S.E. of regression	0.012938	
Durbin-Watson stat	1.815986	
R-squared	0.995562	

Source: Data processed (2020)

The ARDL method covers the long-run using the bound test and the short-run using the value of the error-correction coefficient (CointEq (-1)) or error correction term (ECT). Table 6 shows that, in the long-run, FDR has a positive, significant impact on economic growth. This indicates that, after the economic crisis, the increasing financing to the private and non-private sectors by Islamic banks contributes to the increase in economic growth as shown by the higher IPI. Inflation and gross fixed capital formation as control variables significantly influence economic growth. In the short-run, FDR does not significantly contribute to increased economic growth, which indicates that Islamic banks do not have an important role in large and medium manufacturing productivity through the allocation of their funds. Inflation and trade openness play significant roles in encouraging IPI.

Discussion

This study revealed that Islamic bank has positive impact on Indonesian economics growth. The study's results agree with the studies of Atici (2018), Hachicha and Ben Amar (2015), Mohd. Yusof and Bahlous (2013), and Rafay and Farid (2017) who reveal that Islamic banks positively affect the economic growth in long-run, however, in the short-run the impact is insignificant. Juhro et al. (2020) mention that Islamic banking and finance played an essential role in achieving an excellent economy in Indonesia. Kassim (2016) and Zirek et al. (2016) assert that Islamic banks significantly influence economic growth in both the long- and short-run. In the long-run, Islamic banks' financing in Indonesia importance in economic growth is statistically significant at the 5% level.

Moreover, this result also supports the theory that Islamic banks have a strong correlation with real economic activity. According to Rafay and Farid (2017), Islamic banks' investments tend to react to manufacturers' activities. This indicates that Islamic banking institutions have been effective in mediating financial resources between surplus and deficit units (Abd. Majid & Kassim, 2015). Similarly, Mensi et al. (2020) discover that Islamic banking significantly positively affects economic growth through the development of financial systems, such as expanding credit for people who avoid engaging with interest rates. This causes enlarged investment and consumption and consequently improves economic growth. In summary, when manufacturers get financial resources from Islamic banks, it leads them to expand production, consumption and market share that, in turn, contributes to boosting economic growth.

According to Otoritas Jasa Keuangan (2019), this result might also be explained by increasing the percentage of PLS financing. Islamic bank statistical reports show that financing based on PLS contracts has increased from IDR 27.399 billion in 2011Q3 (equal to 29% of total financing) to IDR 161.768 billion in 2019Q3 (equal to 47% of total financing). Thus, economically, Islamic banks in Indonesia have focused their impact on the increase in economic growth through allocating funds to real economic activities, which agrees with sharia compliance. Hachicha and Ben Amar (2015) explain that PLS contracts are based on the economic viability of the projects, which encourages entrepreneurs to seek funding from Islamic banks. Chowdhury et al. (2018) state that risk-sharing financing is the most effective contract type to spur economic growth because it engages with the real sector through investing in productive projects.

However, despite the significant impact portrayed in this study, the coefficient of the impact of Islamic banking on economic growth is quite low. The contribution of Indonesian Islamic banks to economic growth is 0.0016, which indicates that when the financing to deposit ratio of Islamic banks increases by 1%, it boosts economic growth

by 0.16% (in this study reflected in the industrial production index). In the short-run, Indonesian Islamic banks do not significantly contribute to economic growth, which agrees with studies of Lebdaoui and Wild (2016) and Kesumo Wardhany and Arshad (2015) who found that Indonesian Islamic banks still have a low contribution to economic growth; it is positively correlated but weak. This result might be caused by the fact that Islamic banking's market share is only 5% of the banking industry, which is the converse of the number of Muslims in the population. This fact is a challenge for Islamic banks in the next 10 years to improve their market share and contribute more to economic growth (Bank Indonesia, 2020). The result agrees with previous research in Pakistan, the second country with the second highest Muslim population. Rafay and Farid (2017) reveal that, in the short-run, Islamic banks do not significantly encourage economic growth because of a smaller share by Islamic banking indicating that Islamic banks do have a great contribution in short-term to economic activity.

The above situation agrees with the state of Islamic banks in Indonesia. Al Arif (2018) asserts that there are over 100 million potential customers of Islamic banks in Indonesia, however, only 3 million people have engaged with Islamic banks. This means Islamic banks' market share remains low compared with conventional banks. This fact also suggests that there is a lack of awareness by Indonesian Muslims of engaging with Islamic banks. Thus, to increase Islamic banks' market share in Indonesia, Al Arif (2017) suggests that Islamic banks should increase the percentage of PLS contracts that distinguish them from conventional banks. This will gain Muslim trust in Islamic banks and improve Islamic banks' market share, which, in turn, will improve the contribution of Islamic banks to economic growth. Evidence from Bangladesh, Chowdhury et al. (2018) also show that PLS are positively correlated with economic growth. In contrast, funding non-PLS schemes such as ijarah, ju'alah, salam, and murabahah, negatively significantly influences on economic growth. The results confirm that financing based on PLS contracts affects economic development because Islamic banks directly participate in real economic activities through investing in productive projects.

Several existing studies present similar results, e.g., Jawad and Christian (2019) who reveal that Islamic banks have not attain an economic scale and have made a small contribution to the GDP of various countries including Indonesia. Caporale and Helmi (2018) demonstrate that Islamic banks do not have a crucial role in stimulating economic growth. Gheeraert and Weill (2015) assessed the contribution of Islamic banks to economic growth in 70 countries and demonstrate that Islamic banking development does not show clear evidence of driving economic productivity. The reason for these results is the lower proportion of PLS contracts to total finance by

Islamic banks. Ajmi et al. (2019) state that, based on the Islamic Development Banks report, the percentage of Islamic banks financing in the global context is dominated by murabahah at 78.47%, whereas musharakah and mudharabah were only 0.26% and 1.67%, respectively. In Indonesia, though the percentage of PLS has risen from 28.8% of total financing in October 2011 (Authority Financial Service Report, 2011) to 47.7% in October 2019 (Authority Financial Service Report, 2019), financing contracts by Islamic banks are still dominated by non-PLS financing. For 60 countries, including Indonesia, Meslier et al. (2019) state that equity financing such as PLS contracts, which are the core value of Islamic finance, is rarely used by Islamic banks. This indicates that Islamic banks engage much more in non-participatory financing and are still in the development stage of increasing their ability to contribute to real sector activities.

Based on the above result and explanation, it can be confirmed that Indonesian Islamic banking's market share is remain low. The low Islamic banking's market share shows that all stakeholders such as policy-makers, Bank Indonesia as the central bank, Islamic bank institutions, and Muslims themselves, should collaborate in increasing Islamic banks' performance and contribution to real economic sector activities. Al Arif (2017) states that Islamic banks should receive special treatment from decision-makers and being the last of lender resort is a concern in its financial policy compared to conventional banks. Pratiwi (2016) demonstrates that Islamic banking in Indonesia has not optimized PLS contracts such as mudharabah and musharakah, which provide a greater contribution to the real economic activity. Thus, Islamic banks should set a minimum percentage of PLS contracts in allocating and mobilizing its funds in both long-and short-term financing.

Moreover, the government needs to promote Islamic governance systems to support the development of Islamic banks, such as providing proper guidelines for the conversion of conventional banks to Islamic banks. Underdeveloped institutional frameworks negatively affect the contribution of Islamic banks to the economic growth (Boukhatem & Ben Moussa, 2018). Ideally, the increasing trend of halal lifestyle industries, including halal fashion, halal cosmetics, halal food, and halal tourism, should boost the contribution of Islamic banking to the economic growth. Those halal lifestyle enterprises get financial funding and investment from Islamic banks. 'Halal' does not only reflect in their final products but also in the financial resources they use. This study's results suggest that the government should become an effective bridge connecting Islamic banks and halal lifestyle industries.

Conclusion

This study evaluates the contribution of Islamic banks' financing to economic growth in Indonesia from 2011Q1 to 2019Q3, after the global economic crises. The results show that, in the long-run, Islamic banks' financing, reflected by a positive FDR, significantly

contributes to increased economic growth. This indicates that Islamic banks already have an essential role in encouraging Indonesian economic growth through financing customers, especially entrepreneurs. However, in the short-run, Indonesian Islamic banks do not make a significant contribution to economic growth. The reason for this might be the Islamic banks' lower market share. In fact, as the country with the largest Muslim population, Indonesia should be a leader in Islamic financial and banking development.

This study contributes in two ways. First, this study's results give stakeholders a comprehensive perspective of Islamic banking's contribution to economic growth since the global financial crisis. According to these results, policy-makers should make appropriate regulations to speed-up Islamic banks' contribution, primarily by encouraging PLS contracts' increased use. Second, these results will help finance scholars understand the advantages of Islamic financing. They can become mediators for society in promoting the Islamic banks to increase Islamic banks' market share. Aside from its theoretical contributions and practical implications, this study has several limitations, especially for Islamic banks. This study lacks data after the global economic crises and ignores the presence of financial technology, which might influence the financial institutions' performance. Furthermore, this study evaluates only the contribution of Islamic banks' financing to Indonesia's economic growth and does not compare it with conventional counterparts. Continuous efforts are required to deepen and widen this topic by differentiating the impact of PLS and non-PLS contracts on economic growth and comparing the contributions of Islamic and conventional banks' financing to economic growth in various countries.

Authors' Declaration

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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References

Abd. Majid, M. S., & H. Kassim, S. (2015). Assessing the contribution of Islamic finance to economic growth: Empirical evidence from Malaysia. *Journal of Islamic Accounting and Business Research*, 6(2), 292–310. https://doi.org/10.1108/JIABR-07-2012-0050

Abduh, M., & Azmi Omar, M. (2012). Islamic banking and economic growth: the Indonesian experience. *International Journal of Islamic and Middle Eastern Finance and Management*, *5*(1), 35–47. https://doi.org/10.1108/17538391211216811

Abduh, M., Brahim, S., & Omar, M. A. (2012). A study on finance-growth nexus in dual financial system countries: Evidence from Bahrain. *World Applied Sciences Journal*, *20*(8), 1166–1174. https://doi.org/10.5829/idosi.wasj.2012.20.08.2027

Abu-Bader, S., & Abu-Qarn, A. S. (2008). Financial development and economic growth: The Egyptian experience. *Journal of Policy Modeling*, *30*(5), 887–898. https://doi.org/10.1016/j.jpolmod.2007.02.001

Ajmi, H., Kassim, S., Aziz, H. A., & Mansour, W. (2019). A Literature Review of Financial Contracting Theory from the Islamic and Conventional Overviews: Contributions, Gaps, and Perspectives. *JKAU: Islamic Econ*, *32*, 25–42. https://doi.org/10.4197/Islec.32-2.2

Al Arif, M. N. R. (2017). Spin-off and market share in the indonesian islamic banking industry: A difference in difference analysis. *Management and Marketing*, *12*(4), 540–551. https://doi.org/10.1515/mmcks-2017-0032

Al Arif, M. N. R. (2018). Does the spin-off policy can accelerate the deposit funds in the Indonesian Islamic banking industry? *Journal of Business and Retail Management Research*, *13*(1), 171–178. https://doi.org/10.24052/JBRMR/V13IS01/ART-17

Aldeen, K. N., Herianingrum, S., & Agawany, Z. M. W. al. (2020). Islamic vs. Conventional Banks in Syria: Analysis on Financial Performances. *Shirkah: Journal of Economics and Business*, *5*(1), 1–26. http://dx.doi.org/10.22515/shirkah.v5i1.291

Asutay, M., & Mohd Sidek, N. Z. (2020). Political economy of Islamic banking growth: Does political regime and institutions, governance and political risks matter? *International Journal of Finance and Economics*, *2008*(February 2019), 1–36. https://doi.org/10.1002/ijfe.2011

Atici, G. (2018). Islamic (participation) banking and economic growth: Empirical focus on Turkey. *Asian Economic and Financial Review*, *8*(11), 1354–1364. https://doi.org/10.18488/journal.aefr.2018.811.1354.1364

Authority Financial Service Report. (2011). *Islamic Banking Statistics*. https://ojk.go.id/id/kanal/syariah/data-dan-statistik/statistik-perbankan-syariah/Default.aspx

Authority Financial Service Report. (2019). *Islamic Banking Statistics*. https://ojk.go.id/en/kanal/syariah/data-dan-statistik/statistik-perbankan-syariah/-Default.aspx

Badan Pusat Statistik Indonesia. (2019). *Large and Medium Manufacturing*. https://www.bps.go.id/subject/9/industri-besar-dan-sedang.html#subjekViewTab1

Bank Indonesia. (2008). *2008 Economic Report on Indonesia*. https://www.bi.go.id/id/publikasi/lain/lainnya/Default.aspx

Bank Indonesia. (2018). *Monetary Policy Report Quarter I 2018*. https://www.bi.go.id/id/publikasi/kebijakan-moneter/tinjauan/Default.aspx

Bank Indonesia. (2020). *Islamic Banking in Indonesia in Brief.*
    https://www.bi.go.id/en/ssk/syariah/Contents/Default.aspx

Ben Mimoun, M. (2019). Islamic banking and real performances in a dual banking
    system. *International Journal of Islamic and Middle Eastern Finance and Management,*
    18(3), 231-247. https://doi.org/10.1108/imefm-07-2018-0223

Boukhatem, J., & Ben Moussa, F. (2018). The effect of Islamic banks on GDP growth:
    Some evidence from selected MENA countries. *Borsa Istanbul Review, 18*(3), 231–
    247. https://doi.org/10.1016/j.bir.2017.11.004

Cahyono, E. F., & Rani, L. N. (2018). Macroprudential Policy on Sharia Banking
    Financing The Indonesian Experience. *Shirkah: Journal of Economics and Business,*
    3(2), 153–178.

Caporale, G. M., & Helmi, M. H. (2018). Islamic banking, credit, and economic growth:
    Some empirical evidence. *International Journal of Finance and Economics, 23*(4),
    456–477. https://doi.org/10.1002/ijfe.1632

Chowdhury, M. A. F., Akbar, C. S., & Shoyeb, M. (2018). Nexus between risk sharing
    vs non-risk sharing financing and economic growth of Bangladesh: ARDL bound
    testing and continuous wavelet transform (CWT) approach. *International Journal
    of Islamic and Middle Eastern Finance and Management, 44*(6), 739–758.
    https://doi.org/10.1108/ IMEFM-07-2014-0063

Daly, S., & Frikha, M. (2016). Banks and economic growth in developing countries:
    What about Islamic banks? *Cogent Economics and Finance, 4*(1), 1–26.
    https://doi.org/10.1080/23322039.2016.1168728

Djennas, M. (2016). Business cycle volatility, growth and financial openness: Does
    Islamic finance make any difference? *Borsa Istanbul Review, 16*(3), 121–145.
    https://doi.org/10.1016/j.bir.2016.06.003

Gheeraert, L., & Weill, L. (2015). Does Islamic banking development favor
    macroeconomic efficiency? Evidence on the Islamic finance-growth nexus.
    Economic Modelling, 47(June 2012), 32–39. https://doi.org/10.1016/j.econmod.-
    2015.02.012

Grassa, R., & Gazdar, K. (2014). Financial development and economic growth in GCC
    countries: A comparative study between Islamic and conventional finance.
    International Journal of Social Economics, 41(6), 493–514.
    https://doi.org/10.1108/IJSE-12-2012-0232

Gudarzi Farahani, Y., & Dastan, M. (2013). Analysis of Islamic banks' financing and
    economic growth: a panel cointegration approach. *International Journal of Islamic
    and Middle Eastern Finance and Management, 6*(2), 156–172.
    https://doi.org/10.1108/17538391311329842

Hachicha, N., & Ben Amar, A. (2015). Does Islamic bank financing contribute to
    economic growth? The Malaysian case. *International Journal of Islamic and Middle
    Eastern Finance and Management, 8*(3), 349–368. https://doi.org/10.1108/IMEFM-07-
    2014-0063

Haraguchi, N., Cheng, C. F. C., & Smeets, E. (2017). The Importance of Manufacturing
    in Economic Development: Has This Changed? *World Development, 93*, 293–315.

https://doi.org/10.1016/j.worlddev.2016.12.013

Hayat, R., & Kabir Hassan, M. (2017). Does an Islamic label indicate good corporate governance? *Journal of Corporate Finance*, *43*, 159–174. https://doi.org/10.1016/j.jcorpfin.2016.12.012

Igonina, A., & Postaliuk, M. (2014). Islamic finance as an innovative tool for the Volga region real economy development. *Investment Management and Financial Innovations*, *11*(4), 142–148.

Imam, P., & Kpodar, K. (2016). Islamic banking: Good for growth? *Economic Modelling*, *59*, 387–401. https://doi.org/10.1016/j.econmod.2016.08.004

Islamic Financial Service Board. (2019). *Islamic Financial Services Industry Stability Report*. Islamic Financial Services Board.

Islamic Financial Services Board. (2018). *Islamic Financial Services Board Report*. https://www.ifsb.org/

Jawad, A., & Christian, K. (2019). Islamic Banking And Economic Growth: Applying The Conventional Hypothesis. *Journal of Islamic Monetary Economics and Finance*, *5*(1), 37–62. https://doi.org/10.21098/jimf.v5i1.1047

Juhro, S. M., Narayan, P. K., Iyke, B. N., & Trisnanto, B. (2020). Is there a role for Islamic finance and R&D in endogenous growth models in the case of Indonesia? *Pacific Basin Finance Journal*, 101297. https://doi.org/10.1016/j.pacfin.2020.101297

Kassim, S. (2016). Islamic finance and economic growth: The Malaysian experience. *Global Finance Journal*, *30*, 66–76. https://doi.org/10.1016/j.gfj.2015.11.007

Kesumo Wardhany, N., & Arshad, S. (2015). The Contribution of Islamic Banking to Indonesia's Economic Growth: The Evidence from the Vector Error Correction and Variance Decomposition Methods. *Management and Business Administration. Central Europe*, *23*(3), 89–104. https://doi.org/10.7206/mba.ce.2084-3356.152

Lebdaoui, H., & Wild, J. (2016). Islamic banking presence and economic growth in Southeast Asia. *International Journal of Islamic and Middle Eastern Finance and Management*, *9*(4), 551–569. https://doi.org/10.1108/IMEFM-03-2015-0037

Mensi, W., Hammoudeh, S., Tiwari, A. K., & Al-Yahyaee, K. H. (2020). Impact of Islamic banking development and major macroeconomic variables on economic growth for Islamic countries: Evidence from panel smooth transition models. *Economic Systems*, *44*(1). https://doi.org/10.1016/j.ecosys.2019.100739

Meslier, C., Risfandy, T., & Tarazi, A. (2019). Islamic banks' equity financing, Shariah supervisory board, and banking environments. *Pacific-Basin Finance Journal*. https://doi.org/10.1016/j.carbpol.2020.115849

Mohd. Yusof, R., & Bahlous, M. (2013). Islamic banking and economic growth in GCC & East Asia countries: A panel cointegration analysis. *Journal of Islamic Accounting and Business Research*, *4*(2), 151–172. https://doi.org/10.1108/JIABR-07-2012-0044

Narayan, P. K. (2004). Reformulating critical values for the bounds F-statistics approach to cointegration: an application to the tourism demand model for Fiji. *Discussion Papers 02/04-Department of Economics Monash University*, *02/04*(02), 1–37.

Otoritas Jasa Keuangan. (2019). *Statistik Perbankan Syariah Indonesia*.

https://www.ojk.go.id/id/kanal/syariah/data-dan-statistik/statistik-perbankan-syariah/Pages/Stastistik-Perbankan-Syariah---September-2019.aspx

Pesaran, M. H. (1999). Econometrics and Economic Theory in the 20th Century. *Econometrics and Economic Theory in the 20th Century.* https://doi.org/10.1017/ccol521633230

Pratiwi, A. (2016). Islamic banking contribution in sustainable socioeconomic development in Indonesia: An epistemological approach. *Humanomics*, *32*(2), 98–120. https://doi.org/10.1108/H-12-2015-0085

Rafay, A., & Farid, S. (2017). Dynamic relationship between islamic banking system and real economic activity: Evidence from Pakistan. *Journal of King Abdulaziz University, Islamic Economics*, *30*(2), 97–116. https://doi.org/10.4197/Islec.30-2.10

Rajabi, E., & Muhammad, J. (2014). The Stock Markets, Banks and Growth Nexus: Asian Islamic Countries. *Economic Notes*, *43*(2), 137–165. https://doi.org/10.1111/ecno.12022

Risfandy, T., Harahap, B., Hakim, A. R., Sutaryo, S., Nugroho, L. I., & Trinugroho, I. (2020). Equity Financing at Islamic Banks: Do Competition and Bank Fundamentals Matter? *Emerging Markets Finance and Trade*, *56*(2), 314–328. https://doi.org/10.1080/1540496X.2018.1553160

Rizvi, S. A. R., Narayan, P. K., Sakti, A., & Syarifuddin, F. (2020). Role of Islamic banks in Indonesian banking industry: an empirical exploration. *Pacific Basin Finance Journal*, *62*(August 2018), 101117. https://doi.org/10.1016/j.pacfin.2019.02.002

Rusmita, S. A., & Putri, D. A. (2020). Indonesian Islamic Commercial Banks' Efficiency: A Stochastic Frontier Analysis. *Shirkah: Journal of Economics and Business*, *5*(3), 386–410.

Su, D., & Yao, Y. (2016). Manufacturing as the Key Engine Asian Development Bank Institute. In *ADBI Working Paper* (Issue 573). http://www.adb.org/publications/manufacturing-key-engine-economic-growth-middle-income-economies/

Sukmana, R., & Kholid, M. (2013). An assessment of liquidity policies with respect to Islamic and conventional banks: A case study of Indonesia. *Qualitative Research in Financial Markets*, *5*(2), 126–138. https://doi.org/10.1108/QRFM-09-2011-0023

Tabash, M. I., & Anagreh, S. (2017). Do Islamic banks contribute to growth of the economy? Evidence from United Arab Emirates (UAE). *Banks and Bank Systems*, *12*(1), 113–118. https://doi.org/10.21511/bbs.12(1-1).2017.03

Tabash, M. I., & Dhankar, R. S. (2014). The Flow of Islamic Finance and Economic Growth: an Empirical Evidence of Middle East. *Journal of Finance and Accounting*, *2*(1), 11. https://doi.org/10.11648/j.jfa.20140201.12

World Bank. (2015). *Islamic Finance.* https://www.worldbank.org/en/topic/-financialsector/brief/islamic-finance

World Bank. (2020). *The Global Economic Outlook During the COVID-19 Pandemic: A Changed World.* https://www.worldbank.org/en/news/feature/2020/06/08/the-global-economic-outlook-during-the-covid-19-pandemic-a-changed-world

Zarrouk, H., El Ghak, T., & Abu Al Haija, E. (2017). Financial development, Islamic

finance and economic growth: evidence of the UAE. *Journal of Islamic Accounting and Business Research, 8*(1), 2–22. https://doi.org/10.1108/JIABR-05-2015-0020

Zirek, D., Celebi, F., & Kabir Hassan, M. (2016). The islamic banking and economic growth nexus: A panel VAR analysis for organization of islamic cooperation (OIC) countries. *Journal of Economic Cooperation and Development, 37*(1), 69–100.