BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Umrotul Khasanah (Indonesia), **Ahmad Tibrizi Soni Wicaksono** (Indonesia)

INTERMEDIARY PERFORMANCE OF ISLAMIC BANKS IN THE DISRUPTION ERA: DOES IT CONTRIBUTE TO ECONOMIC GROWTH?

Abstract

The study aims to measure the intermediary performance of Islamic banks in relation to economic growth in Indonesia in the short and long term. There are four main variables used, namely financing, fund placement in BI (Central Bank of Indonesia), investment in securities, and third-party funds in all Islamic banks from 2007 to 2019. The data were tested using vector error correction models (VECM), Granger Causality, Impulse Response Function (IRF), and Variant Decomposition (VDC) to examine causality relationships, the short- and long-term effects, shocks, and variances in Islamic bank intermediary performance to economic growth. The results show that there is a two-way causality relationship between financing and third-party funds to economic growth. While in the short term, fund placement in BI, investment in securities, and financing have a significant influence on economic growth, but in the long run, only the placement of funds in BI will affect economic growth. Also, only fund placement in BI can shock and significantly contribute to economic growth in the long term. The overall intermediary performance of Islamic banks has not contributed to Indonesia's economic growth in the long term.

Keywords financial forecasting, financial market policy, financial intermediaries

JEL Classification G17, G18, O16

Received on: 9th of January, 2021
Accepted on: 23rd of February, 2021
Published on: 18th of March, 2021

Umrotul Khasanah, Doctor and Lecturer, Faculty of Economics, Master of the Islamic Economics Programme Department, Maulana Malik Ibrahim State Islamic University Malang, Indonesia. (Corresponding author)

Ahmad Tibrizi Soni Wicaksono, Master and Lecturer, Faculty of Economics, Islamic Banking Department, Maulana Malik Ibrahim State Islamic University Malang, Indonesia.

Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

The digital revolution in the financial industry has changed customer behavior when accessing financial products and services. Islamic finance has rapidly grown because of the inclusive standardization approach, fintech, environmental, social, and governance opportunities implemented in various countries (N. Alam, 2013; S&P Global Ratings, 2020). Mohamed and Al Taitoon (2019) in the 2019 Islamic Finance Development Report established a potential increase in Islamic financial assets from USD 2.5 trillion in 2018 to about USD 3.4 trillion in 2024 through asset distribution dominated by the Islamic banking sector. This represents a percentage increase of 70% or USD 1,760 billion. Over the last decade, the disruption era has changed Islamic banking business activities to be more flexible, leading to a significant increase in economic transactions (Daly & Frikha, 2016; Elmawazini et al., 2020; Ma'in et al., 2013). This is because the implementation of profit-loss sharing (PLS) imposes risks on banks and shares them with investors and customers (Al-Nasser Mohammed & Joriah Muhammed, 2017; Hashem & Abdeljawad, 2018).

Indonesia is currently the largest Muslim country worldwide with a great potential for the Islamic banking industry (Boukhatem

& Ben Moussa, 2018; Pepinsky, 2013; Central Intelligence Agency, 2019). Furthermore, Edbiz (2019) stated that Indonesia has the highest Islamic Financial Country Index level out of 48 countries. PricewaterhouseCoopers (2018) stated that 71% of Islamic banks had implemented a digital strategy, increasing revenue growth by up to 14%. However, Indonesia's Islamic banking assets only rank tenth-largest globally, with assets of 28 Billion US Dollar (Mohamed & Al Taitoon, 2019). Islamic banking assets fluctuated during the transition of the industrial revolution 3.0-4.0 in the last 5 years. However, there was still an overall increase of up to 252.2 Billion Rupiahs without a significant market share increase (Aminah et al., 2019; Nur Rianto Al Arif & Rahmawati, 2018; Rahman, 2016; Financial Services Authority, 2019).

The Indonesian Financial Services Authority (2019) and the Central Bureau of Statistics (2020) reported that there was inconsistent growth in the performance of Islamic banking intermediaries and economic growth during the 2014–2019 period. This shows that the Islamic banks' role in economic growth in the disruption era has not been optimal, because the Islamic financial system does not recognize an interest-based approach. Even though Abd. Majid and Kassim (2015) and Abduh and Azmi Omar (2012) stated that Islamic banking had increased the participation rate of business actors through the profit-loss sharing system, which affects financial and real economic activities. The purpose of this study is to conduct an empirical test on the causal relationship between economic growth and intermediary performance. Furthermore, it intends to predict the extent of shock and composition of Islamic banking intermediaries' performance in relation to economic growth in the disruption era.

1. LITERATURE REVIEW

Economic growth relates to banking development, though there are differences between them theoretically. According to Beck et al. (2000), banking development through capitalization and private saving levels significantly affect economic growth. Bekaert et al. (2005) studied 95 countries that adhere to a liberal economic system. The results showed that economic growth was highly dependent on the government's ability to maximize the banks' role as an intermediary institution. However, Ahmad (2016) stated that the liberal system in the banking sector was oriented towards maximizing interest. However, the interest system application makes banks face the risk of default because customers repay the loan principal and the interest expense.

The risk of default caused by the interest system affects economic growth. Zainol et al. (2018) established a negative relationship between Non-Performing Loans (NPL) and economic growth. This means that an increase in NPLs in the banking sector could directly weaken a country's economy because constant interest payments without considering profits and losses can be burdensome to business actors. Furthermore, when the NPL value increases, it becomes challenging for banks to conduct liquidity processes to finance the business sector, weakening economic growth (Ahmad et al., 2016; Jakubík & Reininger, 2014; Louzis et al., 2012).

In 2007–2008, after the interest system proved to be a failure, there were many criticisms of the conventional banking system. This made Islamic banking an alternative solution through the PLS scheme (Ascarya, 2013; Iskandar, 2018). The PLS system, Islamic banking offers protection with a better prudence level, including emphasizing aspects of Moral Hazard in every transaction (Sole, 2007; Song & Oosthuizen, 2015). Furthermore, Islamic banking has a high level of protection for customers through sharia compliance aspects (Trad et al., 2017). In its operational activities, Islamic banks are also supervised by BI, the Financial Services Authority (OJK), the Deposit Insurance Corporation (LPS), and the National Sharia Council (DSN). This proves that it aims to mitigate systemic risk (Hassan et al., 2017).

Disruption in the financial system has influenced the banking sector. Although Islamic banks can internally maintain stability, external factors due to technological innovation have presented various banking sector risks (Zveryakov et al., 2019). Manchiraju et al. (2016) state that the payment

http://dx.doi.org/10.21511/bbs.16(1).2021.10

industry is currently experiencing dynamic and erratic changes. This is because technological developments in the financial system have changed investment, payment, and risk management patterns in the financial services industry (Arner et al., 2016; Lee & Teo, 2015). For this reason, it is challenging for the Islamic banking industry to continue contributing to economic growth during the economic disruption era.

Abduh and Azmi Omar (2012), in a study using the Autoregressive Distributed Lag (ARDL) approach, showed a causal relationship between Islamic financial growth and economic development in the short and long term. This means that Islamic banking boosts economic growth and, at the same time, which, in turn, stimulates its development. In line with previous research, Gheeraert and Weill (2015), in their research conducted in 70 countries, stated that effective Islamic banking through financing and deposits contributes to the macroeconomic aspect. Furthermore, conventional banks cannot make a real contribution to the economy.

Jawadi et al. (2016), in research with regression panel approach and causality test panel, show that Islamic banking has not been better in the national banking industry than conventional banking. This is because Islamic banks cannot predict conventional banks' dynamics to protect themselves from a crisis. AL-Oqool et al. (2014), in a study conducted in Jordan, proved that Islamic banks could contribute to economic growth in the long term. However, it has no contribution in the short term due to excessive liquidation. This is in line with Miah and Uddin (2017) and Srairi (2010), who stated that conventional banks in the Gulf States manage operational costs and lending activities more efficiently than Islamic banks.

Ahmed (2006), in research on the role of Islamic banking and finance in economic development, showed that the use of loans in conventional banking for a company was irrelevant when classified as working capital. This is because a company is required to repay the principal, along with interest. Islamic banking takes a different approach through a financing scheme that can be categorized as working capital for companies. For this reason, activities in the company can develop and contribute to economic growth. Santoso (1998) stated that banking's main problem in Indonesia is an overly high sensitivity to credit risk. Failure by a borrower to repay the loan directly leads to a crisis in the banking system. According to Khan and Bashar (2008), Islamic banking's presence through the PLS principle overcomes credit risk due to the interest application. Through this principle, benefits are received by either party because, in principle, the more the project is conducted, the greater the value of the benefits received. Suppose there is a loss, both parties bear it in the proportions determined at the beginning of the agreement. Hadžić (2005) shows that Islamic banking contributes to Muslim and countries' economic growth in the southeastern European region. According to Ahmed (2006), S. Alam (2009), Sole (2007), and Song and Oosthuizen (2015), the main advantage of the Islamic banking system is the principle of prohibiting uncertain transactions. The financial structure of the country is becoming stronger in facing economic shocks. However, Islamic banks in Muslim countries are superior to conventional banking in maintaining economic stability from various crises (Abdulle & Kassim, 2012; Asmild et al., 2018; Doumpos et al., 2017).

Caporale and Helmi (2018) studied economic growth by examining 7 dual banking system user countries, including Indonesia, Tunisia, Turkey, Malaysia, Singapore, Iran, and Jordan, with 7 countries adhering to the single banking system, specifically Argentina, Brazil, Peru, Chile, Ecuador, Costa Rica, and Guatemala. The results showed that financing could contribute to countries' economic growth using Islamic banking in the long term. However, financing in countries that do not have Islamic banking contributes to economic growth in the short term. This is logically understandable because Islamic banking only provides financing for projects directly linked to real sector economic activities.

Zarrouk et al. (2017) stated that conceptually, the relationship between Islamic banking development and economic growth in the disruption era is explained by the financial innovation theory initiated by Schumpeter. Banking is an intermediary institution that transfers resources by managing savings funds and financing business activities that positively affect economic growth

(Baroroh, 2012; Festré & Nasica, 2009). Therefore, Islamic banks need to maintain consistency in their intermediary performance to contribute to the disruption era's economic growth. According to Teimouri and Dutta (2016), the intermediary performance of Islamic banking through the application of technology and sharia compliance approaches contribute to economic growth in various countries, though it may take a long time (Daly & Frikha, 2016).

This study empirically tests the causality and the long- and short-term relationship between the intermediary performance of Islamic banking and economic growth in Indonesia. Furthermore, it predicts the extent of shock caused by exogenous variables to endogenous variables in the next 10 periods. The study analyzes the percentage value of an endogenous variable variance caused by all exogenous variables in a certain period.

2. RESEARCH METHODOLOGY

This study uses time-series data for the 2007–2019 period to empirically test the contribution of Islamic banking industry performance through variable financing (Ln_Financing), funds placement in BI (Ln_BI_Placement), investment in securities (Ln_Securities_Investment), and third-party funds (Ln_Fund) to economic growth (Ln_GDP). The initial stage involves data quality testing, including the Stationary Test, Lag Length Characteristics, VAR Stability Test, and Johansen's Co-Integration Test. The causality between variables is then tested to determine the reciprocal relationship between variables using the Granger Causality Test. In the next stage, the VECM (Vector Error Correction Model) test was conducted by forecasting the Islamic banking contribution to long- and short-term economic growth. This study also forecasted the response between the economic growth variable and the shocking caused by the financing variable, investment in securities, funds placement in BI, and third-party funds through the Impulse Response Function (IRF) test. Afterward, a Variant Decomposition (VDC) analysis was conducted to show the variant presentation value of an economic growth variable caused by all exogenous variables.

3. RESULTS AND DISCUSSION

Augmented Dickey-Fuller analysis (ADF) and Philip Peron (PP) test are used to test the variables in this research model equation with a probability level of 5%. This means that if both tests' probability value is greater than 5% at the level or different degrees, the data used is declared not stationary. Suppose the probability on both tests has a value below 5%, the data is stationary. Table 1 shows the results of the stationarity test for the equation of this model.

Table 1 shows that in the Augmented Dickey-Fuller (ADF) and Philip Peron (PP) tests, at the Level stage, only one variable passed the test, specifically Ln_Funds with the acquisition of a significant value below 5%. Therefore, it is necessary to test all variables in the 1st Difference stage (Kuncoro, 2011). According to the Augmented Dickey-Fuller (ADF) and Philip Peron (PP) test results, at the 1st Difference stage, all variables used in the equation have a significance level below 5%. This means that the overall data used is stationary. Since the

Table 1. Stationarity test

Source: Author's analysis.

Variable	ADF (Level)	PP (Level)	ADF (1st Difference)	PP (1st Difference)
	Prob	Prob	Prob	Prob
LN_GDP	0.2571	0.1813	0.0000*	0.0000*
LN_BI_PLACEMENT	0.0000*	0.7470	0.0000*	0.0000*
LN_FINANCING	0.1327	0.0178*	0.0133*	0.0139*
LN_FUNDS	0.0083*	0.0069*	0.0000*	0.0000*
LN_SECURITIES_INVESMENT	0.7039	0.6671	0.0000*	0.0000*

Note: * – significant at 0.05 alpha.

http://dx.doi.org/10.21511/bbs.16(1).2021.10

Table 2. Lag criteria test

Source: Author's analysis.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	117.0871	NA	5.84e–09	–4.769664	–4.572840	–4.695598
1	398.1680	490.3964	1.09e–13	–15.66672	–14.48578*	–15.22233
2	436.4382	58.62674	6.42e–14	–16.23141	–14.06635	–15.41668
3	483.2128	61.70262	2.80e–14	–17.15799	–14.00880	–15.97293
4	523.6818	44.77427*	1.77e–14	–17.81625	–13.68294	–16.26086
5	561.1062	33.44307	1.49e–14*	–18.34495*	–13.22752	–16.41922*

Note: * indicates lag order selected by the criterion.

data used is stationary at the 1st Difference level, further testing on the VECM estimation can be conducted by determining the Criteria Lag Test's optimal lag.

The Lag criteria test determines the optimal time for each variable to influence its past, significantly affecting the VECM model's estimation. The test was run using a lag order selected based on the Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and Hannan-Quin Creation (HQ). Table 2 shows the test results on the Lag Criteria.

This study uses a lag length of 0 to lag 5. The optimal lag value based on the predetermined criteria is lag 5, indicating the most lag order selected. Therefore, testing in this research can proceed to the Cointegration Rank Test stage.

The Cointegration Rank test was run to determine the long-term relationship between each variable used. VECM estimation can only be performed when an equation model has a co-integration relationship. Otherwise, the test is carried out using the VAR equation model. Table 3 shows the test results on the Cointegration Rank.

Table 3 shows that four rank variables have a co-integration relationship through the Trace and Max-Eigen Statistics values that are greater than the Critical Value with a significance level below 0.05 on the Cointegration Rank Test. This is evident in the Trace Statistic values of 140.7718, 72.76918, 41.19117, and 16.47671, which are higher than the Critical Value values of 69.81889, 47.85613, 29.79707, and 15.49471. Furthermore, the Max-Eigen Statistics values of 68.00265, 31.57801, 24.71446, and 16.47246 were higher than the Critical Value of 33.87687, 27.58434, 21.13162, and 14.26460. This means that all variables in this study have a direct long-term relationship with one another. Therefore, the model in this equation can use VECM estimation at a later stage.

The Granger Causality test is used to determine a reciprocal effect between two variables. It can also determine a significant cause-and-effect relationship between variables determined on the VAR value of pairwise granger causality using a level of 0.05 with an optimal lag of 5 lag. Testing was run on variables of financing, third party funds, investment in securities, funds placement in BI, and economic growth. Table 4 shows the results of the Granger causality test.

Table 3. Cointegration rank test

Source: Author's analysis.

Hypothesized No. of CE(s)	Cointegration Rank test (trace)			Cointegration Rank test (maximum eigenvalue)		
	Trace statistic	0.05 Critical value	Prob.	Max-Eigen statistic	0.05 Critical value	Prob.
r = 0*	140.7718	69.81889	0.0000	68.00265	33.87687	0.0000
r ≤ 1*	72.76918	47.85613	0.0001	31.57801	27.58434	0.0145
r ≤ 2*	41.19117	29.79707	0.0016	24.71446	21.13162	0.0150
r ≤ 3*	16.47671	15.49471	0.0355	16.47246	14.26460	0.0220
r ≤ 4	0.004246	3.841466	0.9467	0.004246	3.841466	0.9467

Note: * – significant at 0.05 alpha.

Table 4. Granger causality test

Source: Author's analysis.

Null hypothesis	F-statistic	Prob.*	Granger status
LN_BI_PLACEMENT does not Granger Cause LN_GDP	0.86727	0.5125	No
LN_GDP does not Granger Cause LN_BI_PLACEMENT	1.15155	0.3517	No
LN_FINANCING does not Granger Cause LN_GDP	4.65270	0.0022	Yes
LN_GDP does not Granger Cause LN_FINANCING	4.09683	0.0048	Yes
LN_FUNDS does not Granger Cause LN_GDP	3.00829	0.0227	Yes
LN_GDP does not Granger Cause LN_FUNDS	2.74374	0.0336	Yes
LN_SECURITIES_INVESMENT does not Granger Cause LN_GDP	2.21983	0.0735	No
LN_GDP does not Granger Cause LN_SECURITIES_INVESMENT	4.68003	0.0022	Yes
LN_FINANCING does not Granger Cause LN_BI_PLACEMENT	2.48426	0.0495	Yes
LN_BI_PLACEMENT does not Granger Cause LN_FINANCING	2.58671	0.0425	Yes
LN_FUNDS does not Granger Cause LN_BI_PLACEMENT	2.82372	0.0299	Yes
LN_BI_PLACEMENT does not Granger Cause LN_FUNDS	0.99053	0.4372	No
LN_SECURITIES_INVESMENT does not Granger Cause LN_BI_PLACEMENT	1.63269	0.1764	No
LN_BI_PLACEMENT does not Granger Cause LN_SECURITIES_INVESMENT	1.31410	0.2800	No
LN_FUNDS does not Granger Cause LN_FINANCING	1.96076	0.1083	No
LN_FINANCING does not Granger Cause LN_FUNDS	3.21872	0.0167	Yes
LN_SECURITIES_INVESMENT does not Granger Cause LN_FINANCING	2.06667	0.0924	No
LN_FINANCING does not Granger Cause LN_SECURITIES_INVESMENT	0.91994	0.4793	No
LN_SECURITIES_INVESMENT does not Granger Cause LN_FUNDS	2.82131	0.0300	Yes
LN_FUNDS does not Granger Cause LN_SECURITIES_INVESMENT	0.45960	0.8035	No

Note: * – significant at 0.05 alpha.

The Granger causality test results show a significant two-way causality relationship between financing and economic growth. The more financing is provided by banks, the more the economy grows (Tabash & Dhankar, 2014). When the economy increases, the volume of increased financing from Islamic banks is affected (Bangake & Eggoh, 2011). Furthermore, a two-way relationship exists between third-party funds and economic growth. This means that these variables have a causal relationship that influences each other. According to Kesumo Wardhany and Arshad (2015), the capital surplus held by Islamic banking is a stimulus for optimizing the intermediary banks' performance to increase economic growth by channeling financing. Furthermore, good economic growth affects third-party funds' growth because of changing behavior patterns to increase investment and savings (Caporale & Helmi, 2018). A two-way causal relationship is also found in financing and fund placement in BI. This means that increased financing should be balanced with a risk mitigation process. When a bank has a high level of financing, it is vital to diversify investment in other sectors (Hafsa Orhan Astrom, 2013; Masood et al., 2012). Fund placement with BI is one of the safest banking businesses. An increase in financing positively affects funds' placement (Gray, 2011; Pessoa & Williams, 2013). Therefore, when the profits on the funds' placement in BI increase, the bank has a surplus of capital that can be used to improve its independent function as a channel of financing (Menicucci & Paolucci, 2016; Sarath & Pham, 2015).

The Granger causality test results show a one-way relationship between economic growth and investment in securities variables in the next stage. This is because economic growth has influenced investment patterns in the capital market industry (Al-Abedallat & Al Shabib, 2012). Furthermore, the economic system and good governance provide guarantees for investors, leading to significant economic growth. The investment value increases with the investor confidence growth (Ocaya et al., 2012; Peltonen et al., 2011). The relationship between the third-party funds and the funds' placement in BI variables indicates a one-way correlation. This is because third party funds are a source of funding for the banking sector. The greater the capital owned, the better the performance of the banking industry (Boďa & Zimková, 2018). Placement of funds with BI is the safest investment because the government guarantees the rate of return. This means that the risk mitigation process through investment diversification will be

http://dx.doi.org/10.21511/bbs.16(1).2021.10

more profitable for banks to balance risks during a disruptive era. Furthermore, there is a one-way relationship between the financing and third-party fund variables. Financing plays the intermediary role in Islamic banking. When a good rate of return balances, the financing ratio level increases, and the bank can increase profits (Yuliana et al., 2017). When financing has increased, both directly and indirectly, profitability and capitalization simultaneously increase, affecting customer perceptions in allocating funds to Islamic banks (Belkhaoui et al., 2020). The test results show a one-way relationship in the investment variable of securities and third-party funds. Apart from the financing sector, investment in securities in the disruption era is essential in increasing bank capital for intermediary function (Maggiori, 2017).

The use of VECM explains the short-term and long-term effects between variables. Based on the Lag Length Criteria test results, the optimal lag in the estimate is lag 5. Therefore, the VECM estimation test process uses 5 with a significant level of 0.05 and a T table value of 2.01174. Table 5 shows the results of the VECM short-run test.

The VECM test results in the short-term estimation based on lag five show that the equation of funds' placement in BI variable at lag four has a positive and significant effect on economic growth at the 0.05 level. Suppose the funds' placement in BI variable increases by 1% in the previous four years, the economic growth increases by 0.365% at this time. Furthermore, the estimation results show that an increase in financing by 1% in the previous four years increases economic growth from the current value by 2.9%. Based on the negative coefficient value of –2.752251, an increase in financing variable by 1% in the previous five years decreases economic growth from the current value by 2.75%. The estimation results on the securities investment variable equation with a negative coefficient of –0.436859 show that a 1% increase decreases economic growth by –0.43% in the current year.

Table 5. VECM short-run test

Source: Author's analysis.

Variable	Coefficient	T-statistic	T-table	Prob.*
CointEq1	0.003593	0.02471	2.01174	Insignificant
D(LN_GDP(–1))	0.141303	0.57101	2.01174	Insignificant
D(LN_GDP(–2))	–0.084274	–0.40679	2.01174	Insignificant
D(LN_GDP(–3))	–0.151490	–0.76601	2.01174	Insignificant
D(LN_GDP(–4))	0.048400	0.17378	2.01174	Insignificant
D(LN_GDP(–5))	–0.510609	–1.83176	2.01174	Insignificant
D(LN_BI_PLACEMENT(–1))	–0.023100	–0.11267	2.01174	Insignificant
D(LN_BI_PLACEMENT(–2))	–0.172760	–0.79362	2.01174	Insignificant
D(LN_BI_PLACEMENT(–3))	–0.034520	–0.19124	2.01174	Insignificant
D(LN_BI_PLACEMENT(–4))	0.365111	2.07734	2.01174	Significant
D(LN_BI_PLACEMENT(–5))	–0.140071	–0.79239	2.01174	Insignificant
D(LN_FINANCING(–1))	0.387827	0.44920	2.01174	Insignificant
D(LN_FINANCING(–2))	–0.598497	–0.57657	2.01174	Insignificant
D(LN_FINANCING(–3))	–1.701258	–1.62966	2.01174	Insignificant
D(LN_FINANCING(–4))	2.921654	2.43194	2.01174	Significant
D(LN_FINANCING(–5))	–2.752251	–2.05353	2.01174	Significant
D(LN_FUNDS(–1))	0.477456	0.46373	2.01174	Insignificant
D(LN_FUNDS(–2))	1.128618	0.79701	2.01174	Insignificant
D(LN_FUNDS(–3))	0.298070	0.21058	2.01174	Insignificant
D(LN_FUNDS(–4))	–1.792776	–1.29506	2.01174	Insignificant
D(LN_FUNDS(–5))	1.628009	1.35167	2.01174	Insignificant
D(LN_SECURITIES_INVESMENT(–1))	0.028177	0.15631	2.01174	Insignificant
D(LN_SECURITIES_INVESMENT(–2))	–0.436859	–2.29693	2.01174	Significant
D(LN_SECURITIES_INVESMENT(–3))	0.040791	0.28210	2.01174	Insignificant
D(LN_SECURITIES_INVESMENT(–4))	0.009890	0.07442	2.01174	Insignificant
D(LN_SECURITIES_INVESMENT(–5))	0.137573	1.14895	2.01174	Insignificant

Note: * – significant at 0.05 alpha.

Table 6. VECM long-run test

Source: Author's analysis.

Variable	Coefficient	T-statistic	T-table	Prob.*
LN_BI_PLACEMENT(–1)	1.373388	3.40459	2.01174	Significant
LN_FINANCING(–1)	–1.919579	–1.43475	2.01174	Insignificant
LN_FUNDS(–1)	0.367690	0.20554	2.01174	Insignificant
LN_SECURITIES_INVESMENT(–1)	–0.096083	–0.66640	2.01174	Insignificant

Note: * – significant at 0.05 alpha.

The long-term estimation results show that only funds' placement in BI has a positive and significant relationship with economic growth at a probability level of 0.05. This can be proven by comparing the t-statistic value (3.40459) with the t-table value (2.01174). Suppose the t-statistic value is greater than the t-table value, there is a significant relationship between the two variables. Furthermore, the coefficient value in the funds' placement in BI is 1.373388. This means that an increase of 1% in the placement of funds in BI leads to a 1.37% increase in current economic growth.

The economic growth response to shocks caused by the funds' placement in BI shows a positive relationship. The greater the value of the increase in the funds' placement in BI, the more it increases economic growth (Alishani, 2012). The trend in the 1st to 5th periods shows an increase in the magnitude of the positive economic growth response to variable shocks in funds placement in BI. In the 6th to 10th period, shocks to the funds' placement in BI variable still responded positively by economic growth. However, its magnitude experienced a downward trend.

Before the IRF and VDC testing, the VAR stability test was run by producing a modulus value < 1 at a lag of 1 to 5. This means that the equation used to perform the test can be declared stable and valid, justifying the analysis results. The IRF test shows the response of a variable to a shock caused by other endogenous variables. Figure 1 shows the IRF test results in the study.

The IRF test results show that economic growth always positively responds to any shocks caused by financing (Abd. Majid & H. Kassim, 2015; Abduh & Azmi Omar, 2012). However, in the 2nd to 10th period, there was a fluctuating standard level of deviation, but still in a positive response. Therefore, an increase in financing in the Islamic banking sector increases economic growth for the next 10 periods.

Source: Author's analysis.

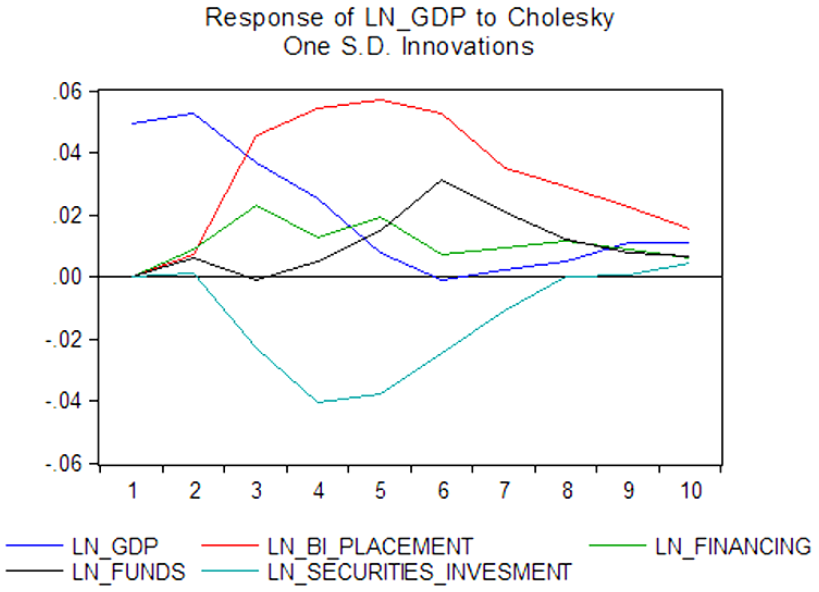

Figure 1. IRF analysis

http://dx.doi.org/10.21511/bbs.16(1).2021.10

Table 7. VDC analysis

Source: Author's analysis.

Period	S.E.	LN_GDP	LN_BI_ PLACEMENT	LN_FINANCING	LN_FUNDS	LN_SECURITIES_ INVESMENT
1	0.049192	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.073264	96.94886	0.933976	1.433218	0.656785	0.027160
3	0.099052	66.61498	21.36348	6.157112	0.367668	5.496767
4	0.123359	47.20341	33.04130	5.034673	0.388273	14.33235
5	0.143184	35.33665	40.22802	5.558743	1.347090	17.52949
6	0.157770	29.11042	44.19532	4.790978	5.009815	16.89346
7	0.163693	27.05943	45.70088	4.788524	6.301352	16.14981
8	0.167183	26.02978	46.85959	5.057605	6.570389	15.48263
9	0.169444	25.75629	47.37458	5.186135	6.610318	15.07268
10	0.170758	25.76891	47.42866	5.234469	6.668341	14.89962

The economic growth response to the shocks caused by third-party funds shows a positive response in the 1st to 10th period (Kesumo Wardhany & Arshad, 2015). However, there has been a decrease in the standard deviation, though still in a positive and stable movement. An increase in third-party funds increases economic growth in the next ten periods.

The response of economic growth to shocks caused by Securities Investment was negative in the 2nd to 8th period. However, there was a positive response in the 9th to 10th periods. This means that in the 2nd to 8th periods, the increase in Securities Investment by Islamic banking responded negatively or slowed economic growth. On the contrary, reducing investment in securities increases economic growth (Mary et al., 2019).

VDC analysis shows the importance of the role of each variable in the VAR/VECM equation based on the composition and the resulting shocks. Using this analysis, predictions and descriptions of how strong the influence of the Placement of Funds on BI, Financing, Third Party Funds, and Investment variables in Securities can be obtained on economic growth over the next 10 periods. Table 7 shows the results of the VDC analysis.

In periods 1 to 2, the largest contributor to economic growth is the variable itself. Funds' placement in BI, financing, third party funds, and investment in securities do not show significant contribution. However, in the 3rd period, the funds' placement in the BI variable showed an increase in the contribution of up to 21%, followed by the variables of financing, third party funds, and investment in securities with gains of 6.1%, 0.3%, and 5.4%, respectively. In the 4th to 10th periods, the contribution of placement of funds in BI continued to increase from 33% to 47%. From the 5th period, this variable contributed more to economic growth than the economic growth itself. This shows that the funds' placement in BI only represents Islamic banking's contribution to long-term economic growth in the disruption era. The intermediary performance of Islamic banking in the future may experience several changes and uncertainties. The central role of Islamic banks currently does not lead to channeling financing, raising funds, and managing investment. Instead, it focuses on helping the government to control monetary policy and regulate the inflation value for economic growth to run well.

CONCLUSION

Empirical results show that Islamic banking intermediary performance in the disruption era may not affect economic growth in the future. This is because Islamic banks experience a lack of capital focused on costly funding, hampering the expansion of access to infrastructure development and various product and service innovations. Besides, Islamic banks experience a lack of human resources to manage investment risk in the disruption era. For this reason, the investment management of an Islamic bank may

not run optimally for the next several periods. Inadequate technology utilization and a lack of Islamic financial literacy in the community also make it difficult for Islamic banks to raise funds, reducing their efficiency.

The empirical evidence from this study provides lessons for Islamic banks to increase their concentration on technology-based resource development. This is because customer behavior of the era is often digital rather than a traditional approach in a disruptive era. Furthermore, the government should build an ecosystem that supports the growth of Islamic banks by ensuring legal certainty. It should also involve Islamic banks in various central and regional government projects for Islamic banks to have the same opportunity to manage larger funds. Furthermore, it is vital to develop more innovative and varied Islamic banking services and products to expand customer access. Islamic banks and the government need to work together to increase Islamic financial literacy. This helps increase the market share of Islamic banks and optimize business activities.

AUTHOR CONTRIBUTIONS

Conceptualization: Umrotul Khasanah, Ahmad Tibrizi Soni Wicaksono.
Data curation: Ahmad Tibrizi Soni Wicaksono.
Formal analysis: Umrotul Khasanah.
Funding acquisition: Umrotul Khasanah.
Investigation: Ahmad Tibrizi Soni Wicaksono.
Methodology: Umrotul Khasanah, Ahmad Tibrizi Soni Wicaksono.
Project administration: Umrotul Khasanah.
Resources: Umrotul Khasanah, Ahmad Tibrizi Soni Wicaksono.
Software: Ahmad Tibrizi Soni Wicaksono.
Supervision: Umrotul Khasanah.
Validation: Umrotul Khasanah.
Visualization: Ahmad Tibrizi Soni Wicaksono.
Writing – original draft: Umrotul Khasanah, Ahmad Tibrizi Soni Wicaksono.
Writing – reviewing & editing: Umrotul Khasanah, Ahmad Tibrizi Soni Wicaksono.

REFERENCE

1. Abd. Majid, M. S., & H. Kassim, S. (2015). Assessing the contribution of Islamic finance to economic growth. *Journal of Islamic Accounting and Business Research, 6*(2), 292-310. https://doi.org/10.1108/jiabr-07-2012-0050
2. 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
3. Abduh, M., & Chowdhury, N. T. (2012). Does Islamic Banking Matter for Economic Growth in Bangladesh? *Journal of Islamic Economics, Banking and Finance, 8*(3), 105-113.
4. Abdulle, M. Y., & Kassim, S. H. (2012). Impact of Global Financial Crisis on the Performance of Islamic and Conventional Banks: Empirical Evidence from Malaysia. *Journal of Islamic Economics, Banking and Finance, 8*(4), 9-20.
5. Ahmad, A. Y. (2016). Does Islamic Banking help in Economic Development of Muslim Countries? *JIBM, 6*(2), 19-39. Retrieved from https://mpra.ub.uni-muenchen.de/88387/8/MPRA_paper_88387.pdf
6. Ahmad, M. I., Guohui, W., Hasan, M., Ali, R., Rafiq, M. Y., & Rehman, R. (2016). Non-Performing Loans and Economic Growth. *Scholars Journal of Economics, Business and Management, 3*(10), 584-586. Retrieved from https://www.researchgate.net/publication/315686762_Non-Performing_Loans_and_Economic_Growth
7. Ahmed, H. (2006). Islamic Law, Adaptability and Financial Development. *Islamic Economics Studies, 13*(2), 79-101.
8. Al-Abedallat, A. Z., & Al Shabib, D. K. (2012). Impact of the investment and gross domestic product (GDP) on the Amman stock exchange index. *Investment Management and Financial Innovations, 9*(3), 130-136.
9. Alam, N. (2013). Impact of banking regulation on risk and efficiency in Islamic banking. *Journal of Financial Reporting and*

http://dx.doi.org/10.21511/bbs.16(1).2021.10

Accounting, 11(1), 29-50. https://doi.org/10.1108/jfra-03-2013-0010

10. Alam, S. (2009). Islamic Finance: An Alternative to the Conventional Financial System? *Korea Review of International Studies,* 37-53. Retrieved from https://www.coursehero.com/file/24427156/12-1-03-Md-Shafi-Alampdf/
11. Alishani, A. (2012). Central bank independence and its effect on money market stability. *ILIRIA International Review, 2*(1), 112. https://doi.org/10.21113/iir.v2i1.166
12. Al-Nasser Mohammed, S. A. S., & Joriah Muhammed, D. (2017). Financial crisis, legal origin, economic status and multi-bank performance indicators. *Journal of Applied Accounting Research, 18*(2), 208-222. https://doi.org/10.1108/JAAR-07-2014-0065
13. AL-Oqool, M. A., Okab, R., & Bashayreh, M. (2014). Financial Islamic Banking Development and Economic Growth: A Case Study of Jordan. *International Journal of Economics and Finance, 6*(3), 72-79. https://doi.org/10.5539/ijef.v6n3p72
14. Aminah, Soewito, Erina, N., Khairudin, & Damayanti, T. (2019). Financial Performance and Market Share in Indonesia Islamic Banking: Stakeholder Theory Perspective. *International Journal of Scientific & Technology Research, 8*(01), 14-18.
15. Arner, D. W., Barberis, J., & Buckley, R. P. (2016). 150 years of Fintech: An evolutionary analysis. *JASSA The Finsia Journal of Applied Finance, 3,* 22-29. Retrieved from https://www.researchgate.net/publication/313364787_150_Years_of_FinTech_An_Evolutionary_Analysis
16. Ascarya. (2013). Solutions to Prevent Financial Crisis in Islamic Economic Perspective: ANP Approach. *Proceedings of the International Symposium on the Analytic Hierarchy Process 2013.* https://doi.org/10.13033/isahp.y2013.078
17. Asmild, M., Kronborg, D., Mahbub, T., & Matthews, K. (2018). The efficiency patterns of Islamic banks during the global financial crisis: The case of Bangladesh. *Quarterly Review of Economics and Finance, 74,* 67-74. https://doi.org/10.1016/j.qref.2018.04.004
18. Bangake, C., & Eggoh, J. C. (2011). Further evidence on finance-growth causality: A panel data analysis. *Economic Systems, 35*(2), 176-188. https://doi.org/10.1016/j.ecosys.2010.07.001
19. Baroroh, U. (2012). Analisis sektor keuangan terhadap pertumbuhan ekonomi regional di wilayah Jawa: pendekatan model levine. *Jurnal Etikonomi, 11*(2), 180-195. http://dx.doi.org/10.15408/etk.v11i2.1892
20. Beck, T., Levine, R., & Loayza, N. (2000). Finance and the sources of growth. *Journal of Financial Economics, 58*(1-2), 261-300. https://doi.org/10.1016/S0304-405X(00)00072-6
21. Bekaert, G., Harvey, C. R., & Lundblad, C. (2005). Does financial liberalization spur growth? *Journal of Financial Economics, 77*(1), 3-55. https://doi.org/10.1016/j.jfineco.2004.05.007
22. Belkhaoui, S., Alsagr, N., & van Hemmen, S. F. (2020). Financing modes, risk, efficiency and profitability in Islamic banks: Modeling for the GCC countries. *Cogent Economics and Finance, 8*(1), 1-25. https://doi.org/10.1080/23322039.2020.1750258
23. Boďa, M., & Zimková, E. (2018). Measuring financial intermediation: a model and application to the Slovak banking sector. *E+M Ekonomie a Management, 21*(3), 155-170. https://doi.org/10.15240/tul/001/2018-3-010
24. 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
25. 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
26. Central Bureau of Statistics. (2020). *Indonesian Statistics*. Central Bureau of Statistics.
27. Central Intelligence Agency. (2019). *The CIA World Factbook 2019–2020*. Skyhorse Publishing.
28. Chowdhury, M. A. F., & Rahman, S. M. K. (2014). The Effect of Conventional Bank's Interest Rate & Islamic Bank's Profit Rate on Investment & Return: An Empirical Investigation in Bangladesh. *Asia-Pasific Journal of Business, 5*(1), 33-41. Retrieved from https://www.koreascience.kr/article/JAKO201410958456705.pdf
29. 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
30. Doumpos, M., Hasan, I., & Pasiouras, F. (2017). Bank overall financial strength: Islamic versus conventional banks. *Economic Modelling, 64,* 513-523. https://doi.org/10.1016/j.econmod.2017.03.026
31. Edbiz. (2019). Islamic Finance Country Index – IFCI 2019. In *Global Islamic FInance Report 2019* (pp. 1-2). DDCAP Group.
32. Elmawazini, K., Khiyar, K. A., & Aydilek, A. (2020). Types of banking institutions and economic growth. *International Journal of Islamic and Middle Eastern Finance and Management, 13*(4), 553-578. https://doi.org/10.1108/IMEFM-09-2018-0304
33. Festré, A., & Nasica, E. (2009). Schumpeter on money, banking and finance: An institutionalist perspective. *European Journal of the History of Economic Thought, 16*(2), 325-356. https://doi.org/10.1080/09672560902891101
34. Financial Services Authority. (2019). *Sharia Banking Statistics*

December 2019. Retrieved from https://www.ojk.go.id/en/kanal/perbankan/data-dan-statistik/statistik-perbankan-syariah/Pages/Sharia-Banking-Statistic---December-2019.aspx

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

36. Gray, S. (2011). *Central Bank Balances and Reserve Requirements* (IMF Working Papers No. WP/11/36). https://doi.org/10.5089/9781455217908.001

37. Hadžić, F. (2005). *Islamsko bankarstvo i islamski razvoj*. Faculty of Economics.

38. Hafsa Orhan Astrom, Z. (2013). Credit risk management pertaining to profit and loss sharing instruments in Islamic banking. *Journal of Financial Reporting and Accounting, 11*(1), 80-91. https://doi.org/10.1108/JFRA-03-2013-0014

39. Hashem, S. Q., & Abdeljawad, I. (2018). Islamic Banks' Resilience to Systemic Risks: Myth or Reality – Evidence from Bangladesh. In *Management of Islamic Finance: Principle, Practice, and Performance* (pp. 37-68). Emerald Publishing Limited. https://doi.org/10.1108/S1569-376720180000019003

40. Hassan, M. K., Brodmann, J., & Rayfield, B. (2017). The Current Status of Islamic Bank Regulation in the World. *Journal of Islamic Economics Banking and Finance, 13*(1), 13-23. https://doi.org/10.12816/0051153

41. Iskandar, I. (2018). Islamic Economics as A New Current of Economic Development in Indonesia. *Muqtasid: Jurnal Ekonomi Dan Perbankan Syariah, 9*(2), 150. https://doi.org/10.18326/muqtasid.v9i2.150-158

42. Jakubík, P., & Reininger, T. (2014). *What are the key determinants of Nonperforming Loands in CESEE?* (IES Working Paper No. 26/2014). Retrieved from https://www.econstor.eu/bitstream/10419/120422/1/804989559.pdf

43. Jawadi, F., Idi Cheffou, A., & Jawadi, N. (2016). Can the Islamic bank be an emerging leader? A panel data causality analysis. *Applied Economics Letters, 23*(14), 991-994. https://doi.org/10.1080/13504851.2015.1125426

44. 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. *Central European Management Journal, 23*(3), 89-104. https://doi.org/10.7206/mba.ce.2084-3356.152

45. Khan, H., & Bashar, O. K. M. R. (2008). *Islamic Finance: Growth and Prospects in Singapore* (U21Global Working Paper Series, No. 001/2008). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1589796

46. Kuncoro, M. (2011). *Metode Kuantitatif (Teori dan Aplikasi untuk Bisnis dan Ekonomi).* Erlangga.

47. Lee, D. K. C., & Teo, E. G. S. (2015). Emergence of Fintech and the Lasic Principles. *Journal of Financial Perspectives, 3*(3), 1-26. Retrieved from https://www.smu.edu.sg/sites/default/files/skbife/EY%20paper.pdf

48. Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking and Finance, 36*(4), 1012-1027. https://doi.org/10.1016/j.jbankfin.2011.10.012

49. Ma'in, M., Rafien, N. S. M., & Arshad, N. C. (2013). Investment, Islamic bank and financial design from Malaysian listed firms. *International Journal of Business and Society, 14*(3), 480-495. Retrieved from http://www.ijbs.unimas.my/repository/pdf/Vol-14No3paper10.pdf

50. Maggiori, M. (2017). Financial Intermediation, International Risk Sharing, and Reserve Currencies. *American Economic Review, 107*(10), 3038-3071. https://doi.org/10.1257/aer.20130479

51. Manchiraju, S., Vudayagiri, G., & Grag, G. (2016). Top 10 Trends in Payments in 2016. In *Capgemini Payments*.

52. Mary, M., Mediawati, E., Mediawati, E., Adirestuty, F., & Adirestuty, F. (2019). The Analysis of Third-Party Funds, State Sukuk, and Corporate Sukuk Towards Financial Deepening in Indonesia. *Review of Islamic Economics and Finance, 2*(2), 53-66. https://doi.org/10.17509/rief.v2i1.22158

53. Masood, O., Al Suwaidi, H., & Darshini Pun Thapa, P. (2012). Credit risk management: a case differentiating Islamic and non-Islamic banks in UAE. *Qualitative Research in Financial Markets, 4*(2/3), 197-205. https://doi.org/10.1108/17554171211252529

54. Menicucci, E., & Paolucci, G. (2016). The determinants of bank profitability: empirical evidence from European banking sector. *Journal of Financial Reporting and Accounting, 14*(1), 86-115. https://doi.org/10.1108/jfra-05-2015-0060

55. Miah, M. D., & Uddin, H. (2017). Efficiency and stability: A comparative study between islamic and conventional banks in GCC countries. *Future Business Journal, 3*(2), 172-185. https://doi.org/10.1016/j.fbj.2017.11.001

56. Mohamed, S., & Al Taitoon, J. (2019). *Islamic Finance Development Report 2019 - Shifting Dynamics*.

57. Nur Rianto Al Arif, M., & Rahmawati, Y. (2018). Determinant factors of market share: Evidence from the Indonesian islamic banking industry. *Problems and Perspectives in Management, 16*(1), 392-398. https://doi.org/10.21511/ppm.16(1).2018.37

58. Ocaya, B., Ruranga, C., & Kaberuka, W. (2012). Dynamic Relationship between Gross

http://dx.doi.org/10.21511/bbs.16(1).2021.10

Domestic Product and Domestic Investment in Rwanda. *World Journal of Education, 2*(6), 79-90. https://doi.org/10.5430/wje.v2n6p79

59. Peltonen, T. A., Sousa, R. M., & Vansteenkiste, I. S. (2011). Fundamentals, financial factors, and the dynamics of investment in emerging markets. *Emerging Markets Finance and Trade, 47*(sup. 2), 88-105. https://doi.org/10.2753/REE1540-496X4703S205

60. Pepinsky, T. B. (2013). Development, Social Change, and Islamic Finance in Contemporary Indonesia. *World Development, 41*(1), 157-167. https://doi.org/10.1016/j.worlddev.2012.06.007

61. Pessoa, M., & Williams, M. (2013). Government Cash Management: Relationship between the Treasury and the Central Bank. *Technical Notes and Manuals, 12*(02), 1. https://doi.org/10.5089/9781616355487.005

62. PricewaterhouseCoopers. (2018). Digital Banking in Indonesia 2018. In *PwC Survey* (Issue July). Retrieved from https://www.pwc.com/id/en/publications/assets/financialservices/digital-banking-survey-2018-pwcid.pdf

63. Rahman, A. (2016). Analisis Faktor-Faktor Yang Mempengaruhi Kinerja Anggota. *Analytica Islamica, 5*(2), 291-314.

64. S&P Global Ratings. (2020). Islamic Finance Outlook 2020 Edition. In *S&P Global Ratings*.

65. Santoso, W. (1998). The determinants of problem banks in Indonesia: an empirical study. *Directorate of Banking Research and Regulations, Bank of Indonesia*, *98/20*(2), 1-50.

66. Sarath, D., & Pham, D. Van. (2015). The determinants of Vietnamese banks' lending behavior. *Journal of Economic Studies, 42*(5), 861-877. https://doi.org/10.1108/JES-08-2014-0140

67. Sole, J. (2007). *Introducing Islamic Banks into Conventional Banking Systems* (IMF Working Papers No. WP/07/175). Retrieved from https://www.imf.org/external/pubs/ft/wp/2007/wp07175.pdf

68. Song, I., & Oosthuizen, C. (2015). *Islamic Banking Regulation and Supervision: Survey Results and Challenges* (IMF Working Papers No. WP/14/220). https://doi.org/10.5089/9781498380928.001

69. Srairi, S. A. (2010). Cost and profit efficiency of conventional and Islamic banks in GCC countries. *Journal of Productivity Analysis, 34*(1), 45-62. https://doi.org/10.1007/s11123-009-0161-7

70. Tabash, M. I., & Dhankar, R. S. (2014). Islamic Banking and Economic Growth: An Empirical Evidence from Qatar. *Journal of Applied Economics and Business*, *2*(1), 51-67.

71. Teimouri, S., & Dutta, N. (2016). Investment and bank credit recovery after banking crises. *Journal of Financial Stability, 26,* 306-327. https://doi.org/10.1016/j.jfs.2016.07.013

72. Trad, N., Trabelsi, M. A., & Goux, J. F. (2017). Risk and profitability of Islamic banks: A religious deception or an alternative solution? *European Research on Management and Business Economics, 23*(1), 40-45. https://doi.org/10.1016/j.iedeen.2016.09.001

73. Yuliana, S., Suhel, S., & Bashir, A. (2017). Comparative Analysis of Profit Sharing Financing Between Islamic Banks (BUS) and Islamic Rural Bank (BPRS) in Indonesia. *International Journal of Economics and Financial Issues*, *7*(2), 266-270.

74. Zainol, J. M., Nor, A. M., Ibrahim, S. N., & Daud, S. (2018). Macroeconomics Determinants of Non-Performing Loans in Malaysia: An ARDL Approach. *International Journal of Academic Research in Business and Social Sciences, 8*(10), 692-706. https://doi.org/10.6007/IJARBSS/v8-i10/4773

75. 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

76. Zveryakov, M., Kovalenko, V., Sheludko, S., & Sharah, E. (2019). FinTech sector and banking business: competition or symbiosis? *Economic Annals-XXI, 175*(1-2), 53-57. https://doi.org/10.21003/ea.V175-09