

The Existence of Islamic Fintech in Encouraging National Economic Growth

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Abstract

This article aims to identify the role of Islamic fintech (peer-to-peer lending) in influencing Indonesia's economic growth. Economic growth is proxied by the growth rate of gross domestic product (GDP), while sharia fintech assets are used as indicators of peer-to-peer (P2P) lending based on sharia information technology. The relationship between the short-term and long-term effects of Islamic fintech P2P lending and economic growth was measured using the vector error correction model (VECM) method. The results of the analysis of the VECM results show that in the long term, every 1 billion increase in Islamic fintech assets will increase economic growth by 0.108%. Furthermore, the short-term effect was found that economic growth was significantly influenced by economic growth in the previous period (55.7%), economic growth in the previous three periods (-62.2%), and the growth of Islamic fintech assets in the previous two periods (0.09%). These results provide input to regulators and the government that the development of fintech P2P lending has an undeniable influence on economic growth, so that the preparation of regulations, ecosystem infrastructure and consumer protection is an important priority to ensure that the objectives of achieving monetary policy on economic growth can be controlled.

Keywords: Islamic fintech; economic growth; peer-to-peer lending

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1. INTRODUCTION

The development of the financial sector is believed to be one of the important components of a country's economic development. Indonesia is no exception, one of the fastest-growing developments in the financial sector is shown by the development of financial technology (fintech) that complements the availability of financial services for the public. Based on The Financial Services Authority (OJK) data, in the last 3 years, there have been significant developments in fintech peer-to-peer (P2P) lending in Indonesia, as seen from the number of fintech assets as a whole, as well as the number of players. At the end of December 2020, there was 149 fintech in Indonesia with total assets of IDR 3.711 trillion. Of these, there is 10 Islamic fintech with total assets of 2.01 percent of the total assets (OJK, 2020).

The existence of Islamic fintech is relatively new when compared to conventional fintech, however, its

growth is relatively faster than conventional fintech. The growth of Islamic fintech assets in May 2021 was 193.71 percent (YoY), far exceeding the growth of conventional fintech assets which was only 16.96 percent (YoY) (OJK, 2021). This high prospect can also be seen from the optimism of the Islamic fintech industry which has a very high growth room. In addition, the support from Islamic financial institutions to collaborate and the advantage of the demographic bonus is the potential for the growth of Islamic fintech (Sari & Dewi, 2021).

The development of fintech is inseparable from the rapid development of information technology that supports the development of the digital economy. The research of Sadigov et al., (2020) carefully explains the linkage of information technology, financial services, and economic growth which states that information technology in this modern era is one of the important factors influencing economic growth (Khan, 2018;

Marcel, 2019; Nguedie, 2018). The development of information technology will lead to increased efficiency in all fields through automation, optimization of production and marketing, acceleration of document/information flow, and transparency (Berzin, Shyshkina, Kuzmenko, & Yarovenko, 2018; Karaoulanis, 2018; Kendiukhov & Tvaronavičienė, 2017; Logan & Esmanov, 2017; Vasylieva, Leonov, Kryvykh, & Buriak, 2017), which in turn will increase economic transactions and economic growth. In the financial sector, the mutually beneficial relationship that exists between modern information technology and financial services will drive radical changes in the financial industry that give rise to new ways for service providers in providing services to their customers (Lyeonov, Bilan, Rubanov, & Grencikova, 2019).

This is the era called the fintech era. The diversity of fintech products includes payment financial services, loans, crowdfunding, insurance, wealth management, aggregators, point-of-sales and others. Specifically in this research, we will focus on P2P lending fintech services.

Peer-to-peer (P2P) lending, which means lending money from investors directly to borrowers via virtual platforms, is one of the fastest-growing segments of the financial lending market. Through P2P lending platforms, approved borrowers can control their finances while investors benefit by earning potentially competitive returns (Bachmann et al., 2011). To assist investors in making investment decisions, lending institutions are continuously focused on exploring methods for understanding loan applicant behavior during economic cycles. They try to model a borrower's default risk (i.e., loan repayment) and then provide a credit rating to the lender (Kim & Cho, 2019). Meanwhile, it is equally important for investors to have a thorough understanding of the P2P market as a whole by evaluating borrower risk at an aggregate level over time. A loan platform with a low and stable default risk can continuously demonstrate a healthy P2P lending environment, thus giving investors more confidence to have a successful investment (Chen, 2012; Emekter, Tu, Jirasakuldech, & Lu, 2015; Mariotto, 2016). Risk control, a healthy lending environment, and investor confidence will support overall economic prosperity which can be measured by controlled economic growth.

The development of fintech is undeniably also affecting the country's economic growth (Fisabilillah

& Hanifa, 2021; Narayan, 2019). Central banks and governments who are very interested in monetary policy to control the economy need to consider and pay attention to the influence of fintech on the economy.

The relationship between fintech and monetary policy is still an empirical question. Fintech as a form of financial market development has a significant effect on the effectiveness of monetary policy (Mylonas, Schich, & Wehinger, 2000). Fintech causes financial asset prices to be more sensitive to changes in interest rates which implies that fintech influences monetary policy through its effect on interest rates and ultimately on financial asset prices. Fintech as a form of financial innovation strengthens the role of interest rates in transmitting monetary policy (Mishra & Pradhan, 2008; Mylonas et al., 2000).

In addition, Hawkins, (2001) and Al-Laham et al., (2009) show that the development of fintech will affect the effectiveness of monetary policy through its influence on the velocity of money. However, they further argue that evolving financial market conditions and more advanced financial technology will only make monetary policy more effective in the short term. In contrast to Mylonas et al., (2000) and Mishra & Pradhan, (2008), Fiedler et al., (2017) concluded that fintech as a form of financial innovation does not directly affect monetary policy. Fintech will only directly influence monetary policy if conventional currencies compete with digital money issued by non-banking companies. Digital money limits the ability of policymakers to maneuver their monetary policy. However, at the same time, competition from digital money reduces the possibility of abuse in the case of the money supply being monopolized by the central bank.

As we discussed in the introduction, this research will focus on the relationship between the influence of Islamic P2P lending on the economy, with various considerations of the condition of the Indonesian state which is unique compared to other countries. Indonesia has a unique fintech lending ecosystem due to the nature of the market and its regulatory approach, including (1) The majority of underserved individuals and MSMEs with limited physical and data access create different business models, supported by a principle-based regulatory approach; (2) Growth is driven by cross-industry collaboration; (3) The challenge of custom approaches; (4) Risk monitoring

through TKB90 P2P lending quality indicators (PwC, 2019).

Based on this, we choose to use the asset size of Islamic P2P lending as a proxy for Islamic fintech growth, because it can represent several considerations related to Indonesia's unique P2P lending segments, namely individuals and MSMEs, growth in cross-industry financing, the customer approach and TKB90 as performance indicators.

In Indonesia, P2P lending is regulated by the Financial Services Authority (OJK) through Financial Services Authority Regulation No. POJK 77/2016, which calls P2P an Information Technology-Based Lending and Borrowing Institution (LPMUBTI). Based on data from the OJK, the latest developments from the fintech industry until May 2021, especially those of the peer-to-peer lending type, reached 127 companies with 9 of them Islamic fintech (OJK, 2021). At the end of May 2021, total P2P Lending fintech financing reached IDR 21.75 trillion, with TKB90 recorded at the level of 98.46 percent. TKB90 is a level of credit quality in a platform. The higher and closer to level 100, the better.

On the other hand, economic growth, which is proxied by GDP, was contributed by the information and communication sector as well as the financial services sector (see Figures 1 and 2). From 2011 to 2020, the contribution of the information and communication sector as well as other financial services to GDP is still very small. Even in 2020, the contribution of other financial services sectors, including conventional and Islamic fintech services, is still below 1 percent (0.67 percent). Meanwhile, the information and communication sector, including e-commerce, was 4.51 percent. Even so, the contribution of the two sectors tends to increase from year to year. Even on average, the growth rate of the information and communication sector and other financial services has always been above the GDP growth rate, which grew by around 8 - 9 percent, above 5 percent (Barata, 2019).

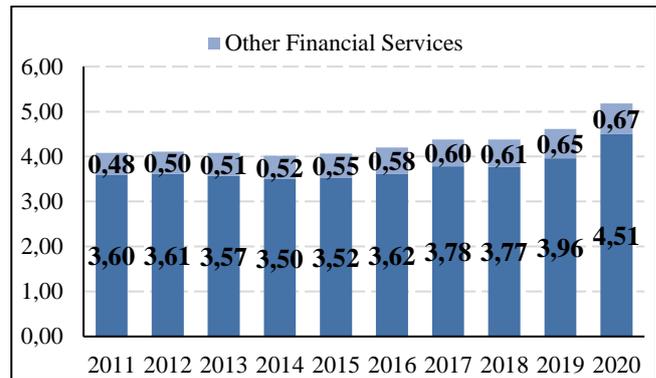


Figure 1.

Distribution of Information and Communication Sector and Financial Services Sector on GDP (fixed prices) 2011-2020.

Source: Central Bureau of Statistics Republic of Indonesia (2021)

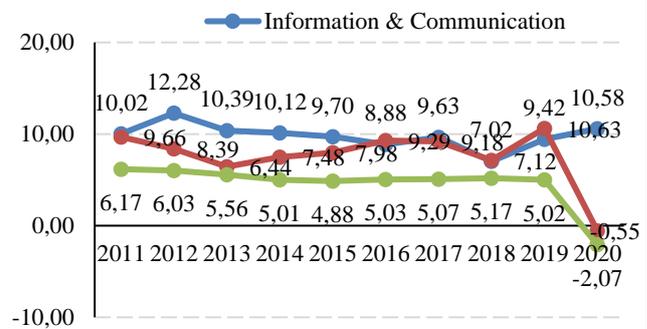


Figure 2.

Growth Rate of Information and Communications Sector, Financial Services Sector, and Year-on-Year GDP in 2011-2020.

Source: Central Bureau of Statistics Republic of Indonesia (2021)

This article aims to identify the role of Islamic information technology-based lending and borrowing in influencing Indonesia's economic growth. Economic growth is proxied by the growth rate of gross domestic product (GDP) using an associative approach as Sadigov et al., (2020) to make it easier for readers to understand the essence of the results and interpretation of research results carried out as a reference for policy-making and/or as inspiration for further research. All data used are secondary data downloaded from publicly available data sources, namely statistics from the Financial Services Authority, statistics from Bank Indonesia, and the Central Statistics Agency. The potential novelty offered in this research is the identification of the role of Islamic information technology-based lending and

borrowing in influencing Indonesia's economic growth before and during the COVID-19 pandemic.

2. RESEARCH METHODS

It was found that previous research examined the role of fintech in general on economic growth in Indonesia (Fisabilillah & Hanifa, 2021; Narayan, 2019; Saraswati, Maski, Kaluge, & Sakti, 2020). Narayan's research (2019) has described in simple terms how the fintech industry that uses a technology-based business model can encourage economic growth. The fintech variable used in this study is the cumulative number of fintech companies from year to year complementing other determinants of economic growth (GDP), namely labor capital, foreign direct investment, capital market development, and trade openness. Meanwhile, research by Saraswati et al., (2020) using the vector error correction model (VECM) method found that the existence of non-inclusive households significantly reduces the effect of policy changes in interest rates on inter-temporal consumption decisions.

The data used in this study is time series data that can be accessed publicly and freely. We use the proxy variable for economic growth (GROWTH) and Islamic fintech growth (ASET) which we obtained from the Financial Services Authority statistical sources from December 2018 to December 2020. The selection of research samples was adjusted to the availability of available data. To obtain an adequate amount of data, a monthly period is chosen. Islamic fintech asset data is available in fintech statistics on the OJK website, while economic growth data is interpolated to obtain monthly data. The data analysis used in this study is the VECM method with the consideration that the VECM model can accommodate data that is not stationary at the level and has advantages over the VAR model, namely being able to identify short-term and long-term relationships between variables and being able to identify the effects of shocks and the duration of their effects. if significant cointegration is found between the variables tested (Engle & Granger, 1987).

In general, the VECM model used is as follows:

$$\Delta y_t = \alpha \beta_{t-p} + \Gamma_1 \Delta y_{t-1} + \dots + \Gamma_{p-1} \Delta y_{t-p+1} + \mu_t \tag{1}$$

with

$$\Gamma_i = -(I - A_i - \dots - A_p), i = 1, 2, \dots, p-1 \tag{2}$$

and

$$\pi = \alpha \beta^T = -(I - A_i - \dots - A_p) \tag{3}$$

To find out the relationship between the development of Islamic P2P lending and economic growth in this study, we use the VECM estimation model as follows:

$$GDP = f(P2P Lending Syariah)$$

with,

$$GDP = \text{Economic Growth}$$

$$\text{Islamic P2P Lending} = \text{Islamic Fintech Asset Growth}$$

The selection of this simple model with two variables was chosen to facilitate its understanding and operationalization in public decision-making by regulators and/or other stakeholders.

3. RESULT AND DISCUSSION

3.1. Result

Based on the results of the data calculations carried out, Table 1 presents descriptive statistics of the variables of economic growth (GROWTH) and growth of Islamic fintech (Assets). The lowest economic growth occurred in June 2020, at which time Indonesia's economic condition was experiencing a slowdown amid the Covid-19 pandemic. Meanwhile, during the observation period, the highest economic growth was recorded in the third quarter of 2019. Meanwhile, the number of Islamic fintech assets continued to grow in value from month to month. At the beginning of the pandemic, Islamic fintech assets had decreased by 16.74 percent and during 2020 fintech assets did not always grow but fluctuated.

Table 1. Descriptive statistics

Variable	Mean	Std. Dev.	Maximum	Minimum
GROWTH	0.0166	0.0425	0.0527	-0.0614
ASSET	38.3911	22.7421	74.6771	2.3275

The results of the stationarity test with the unit root test are presented in Table 2. The probability value of the t-statistical unit root test using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) methods at none of the levels is less than 0.05. This shows that at the level of all research variables data is not stationary. The test is continued when all data variables are first differencing and the results of the probability t-statistics with ADF and PP are less than 0.05 ($\alpha = 5\%$). These results indicate that GROWTH and ASSET are stationary in the first differencing.

Table 2. Stationarity Test with ADF and PP

Variable	Level				First Difference			
	ADF		PP		ADF		PP	
	t-Stat	Prob.	t-Stat	Prob.	t-Stat	Prob.	t-Stat	Prob.
GROWTH	-1.5051	0.1211	-1.2305	0.1943	-2.4843	0.0155	-2.6048	0.0117
ASSET	0.9910	0.9097	1.4640	0.9602	-4.7376	0.0000	-4.7376	0.0000

Referring to the results above, it can be seen that the data of all research variables are stationary at the same degree, namely at the first difference level. Thus, there is no need for differencing to a higher level, so that the estimation of the VAR model can be made.

The estimation of the VAR model on several lag lengths is carried out to find the optimal lag. The first stage looks at the stability of the VAR model at several lags. The stability test results in Table 3 show the maximum modulus value of each existing lag, and of the six that were tested the VAR model was only stable at lags 1 to 4, while lags 5 and 6 were unstable.

Table 3. AR Roots Modulus

long lag	Max Modulus
1	0.5336*
2	0.5804*
3	0.8753*
4	0.9046*
5	1.0304
6	1.0510

After the stability test has been carried out, the next step is the selection of the optimal lag model. Table 4 shows the optimal lag test results from the

Table 4. VAR Lag Order Selection Criteria

Lag	FPE	AIC	SC	HQ
0	0.0191	1.7199	1.8195*	1.7393
1	0.0187	1.6940	1.9927	1.7522
2	0.0240	1.9251	2.4230	2.0222
3	0.0188	1.6422	2.3392	1.7783
4	0.0174*	1.4846*	2.3808	1.6596*

VAR estimation. Where the smallest values of FPE, AIC, and HQ are at lag 4, only SC has the smallest value at lag 1. This means that the optimal VAR equation occurs at lag 4.

Determining whether the VAR or VECM model to choose requires a cointegration test to see whether there is a long-term relationship. The results of the test for the presence or absence of long-term equations were used by the Johansen test (Johansen, 1988), which is as presented in Table 5. The value of trace statistics and maximum eigenvalue at $r = 0$ is greater than the critical value, besides that the p-value is also less than the level of significance. 5% and 1%, thus it can be concluded that there is co-integration (long-term relationship) between GROWTH and ASSET variables.

Table 5. Co-Integrasi test: Johansen

Rank Test	Hypothesis: r	Eigen value	Trace/Max Eigenvalue	Critical Value	p-value
Trace	There is not any	0.8865	44.3127	20.2618	0.0000
	1	0.1451	2.9777	9.1645	0.5848
Maximum Eigenvalue	There is not any	0.8865	41.3350	15.8921	0.0000
	1	0.1451	2.9777	9.1645	0.5848

3.2. Discussion

Table 6 shows VECM in the long run. The ASSET coefficient value has a significant effect on GROWTH at the five percent level of significance. In the long term, every 1 billion increase in Islamic fintech assets will increase economic growth by 0.108%. These results indicate that the impact of Islamic fintech growth is quite significant on national economic growth. If the average Islamic fintech increases by 3 billion each period, the growth of Islamic fintech in the long term will encourage economic growth of 0.326%.

These findings are in line with the findings of Narayan, (2019) which revealed that fintech growth is

positively correlated to economic growth. Where, the influence of new fintech growth is felt in the long term. Likewise, Fisabilillah & Hanifa, (2021) stated that the faster the growth of peer-to-peer lending in Indonesia, the more positive the impact on the Indonesian economy, especially during the Covid-19 pandemic. Fintech peer-to-peer (P2P) lending has a positive and significant impact on economic growth.

Table 6. Vector Error Correction Model: Long Run Equation

Variable	coefficient	statistics table
ASETS(-1)	0.001084	2.9010*
C	0.014566	0.8179

In the short term, the effect of Islamic fintech growth on economic growth in the VECM model is presented in Table 7. Where economic growth is significantly influenced by economic growth in one period ago and the three previous periods. Meanwhile, Islamic fintech assets significantly affected economic growth in the previous two periods by 0.09%. In the short term, Islamic fintech has a positive effect on

economic growth, this result is corroborated by the findings of Narayan, (2019). Each increase of IDR 1 billion in Islamic fintech assets will encourage economic growth of 0.09% in the next two periods. Vice versa, every decrease of IDR 1 billion in Islamic fintech assets will slow down economic growth by 0.09% in the next two months.

Table 7. Vector Error Correction Model: Short Run Equation

Error Correction:	D(GROWTH)		D(ASETS)	
	coefficient	statistics table	coefficient	statistics table
CointEq1	-0.14844	-2.14926*	177.6104	4.78786*
D(GROWTH(-1))	0.55716	2.21170*	268.369	1.98345*
D(GROWTH(-2))	-0.01218	-0.04375	310.1034	2.07435*
D(GROWTH(-3))	-0.62242	-2.31073*	-389.997	-2.69568*
D(GROWTH(-4))	0.374794	1.22554	15.84766	0.09648
D(ASETS(-1))	0.000749	1.63103	-0.87923	-3.56353*
D(ASETS(-2))	0.000909	2.26589*	-0.65648	-3.04574*
D(ASETS(-3))	0.000469	0.98445	-0.83072	-3.24526*
D(ASETS(-4))	0.000339	0.75526	-0.79583	-3.30011*
R-squared	0.637585		0.745116	
Adj. R-squared	0.374011		0.559746	
F-statistic	2.418995		4.01961	

The response of national economic growth to shocks that occur in Islamic fintech assets is illustrated in Figure 3. Based on the results of the impulse response function (IRF) the response of economic growth (GROWTH) to Islamic fintech assets (ASSET) is positive. The new response occurs in the second period and reaches equilibrium in the sixth period. This result is very common considering that the observation period is relatively short and at the end of the observation period tends to experience a lot of volatility in assets and economic growth. These results also indicate that even during the pandemic, Islamic fintech growth will continue to be positively correlated with economic growth, thereby encouraging Islamic fintech growth to be one of the options for accelerating national economic recovery.

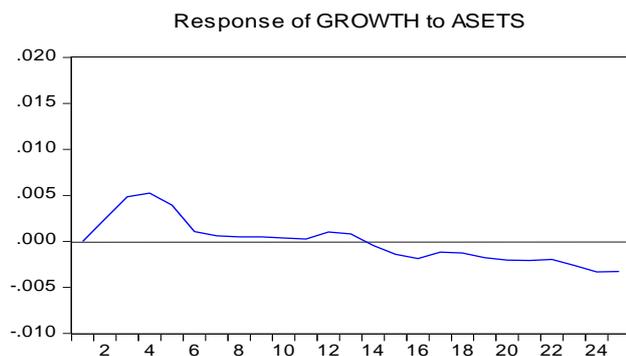


Figure 3. Impulse Response Function GROWTH to ASSET

4. CONCLUSION

The conclusion obtained in this study is that the growth of Islamic fintech provides a positive correlation to national economic growth, both under normal conditions and uncertain conditions such as during this pandemic. The results of the analysis of the VECM results show that in the long term, every 1 billion increase in Islamic fintech assets will increase economic growth by 0.108%. Furthermore, the short-term effect was found that economic growth was significantly influenced by economic growth in the previous period (55.7%), economic growth in the previous three periods (-62.2%), and the growth of Islamic fintech assets in the previous two periods (0.09%).

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