



## **THE INFLUENCE OF FINANCIAL TECHNOLOGY ON THE FINANCIAL PERFORMANCE OF ISLAMIC BANKING IN INDONESIA**

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### **ABSTRACT**

The purpose of this study is to determine the impact of fintech on the financial performance of Islamic banks in Indonesia. This study is a quantitative study using secondary data. The data analysis techniques used include descriptive analysis, normality test, common effect, fixed effect, random effect panel data model selection, panel data model including Chow test, Hausman test, classic acceptance test including multicollinearity, assumed autocorrelation Tests included t test, coefficient determination test (R<sup>2</sup>) and simple linear regression analysis.

The results show that fintech has a partial impact on the financial performance (ROA) of Indonesian Islamic banking. With the continuous development of financial technology services in Indonesian Islamic banks, the impact on the performance (ROA) of Indonesian Islamic banks has become more and more significant.

**Keywords: Financial Technology, Financial Performance, ROA**

### **INTRODUCTION**

Banking is one of the institutions that have an important role in the development of the national economy and facilitates the economy and monetary (Kasmir, 2012). According to the Banking Law of the Republic of Indonesia No.10 Tahun 1998 concerning amendments to the Republic of Indonesia No.7 Tahun 1992 concerning banking, is a business entity that collects funds from the public in the form of deposits and distributes them to the public in the form of credit and other forms in order to improve the standard of life of the community (Ismail, 2011).

According to the Sharia Banking Law of the Republic of Indonesia No. 21 of 2008, Islamic banks are everything that concerns Islamic banks and Sharia business units, including institutions, business activities, and procedures and processes in carrying out their business activities (Andrianto, et al, 2019). Islamic banks are financial institutions that have an intermediation function of two parties with excess and lack of funds, which have the main task of collecting and distributing funds (Abdul Nasser Hasibuan, dkk, 2021).

The development of the banking world at this time is very rapid. In an effort to win business, the use of technology is something that must be done by banking institutions. Sharia Banking is often referred to as Islamic Bank, which is banking whose implementation is based on Islamic law or sharia (Yennita Sari, dkk, 2020)..



Sharia Banks consisting of Sharia Commercial Banks (BUS), then Sharia Business Units (UUS) and Sharia People's Financing Banks (BPRS). Basically, all banks carry out the same business activities, namely raising funds and distributing public funds in addition to providing other financial services (Hasanah Siregar, dkk, 2020).

The role of technology in building and providing new products or banking service facilities. Users of banking services are spoiled with various facilities that make it easier for them to conduct banking transactions (Misbah, et al, 2021). Along with the development of the times in this era of globalization, any community activity cannot be separated from technological assistance. Similarly, financial institutions are now starting to shift to technology-based financial institutions. One of the advances in the field of financial institutions today is the adaptation of Financial Technology. (Alfadri, 2022)

Fintech is a term used to denote companies that offer modern technology, namely financial innovation in the financial sector. Fintech companies are mostly micro, small or medium-sized companies that don't have much equity, but have a clear idea of how to introduce new innovations or how to improve existing services in the financial services market. At this time, Islamic banking can compete with conventional banks in Indonesia with the potential of a Muslim-majority society, Islamic banking continues to grow and show satisfactory results, this is inseparable from good bank performance and can maximize existing capital and potential (Ali Hardana, dkk , 2022).

Based on the table above, it is clear from the profitability of Bank BNI Syariah Return on assets in 2018 of 1.42% increased to 1.82% in 2019 and decreased to 1.33% in 2020. At Bank BRI Syariah, the return on assets in 2018 decreased from 0.43% to 0.31% and increased in 2020 by 0.81%. At Bank BJB Stariah in 2018 of 0.54% increased in 2019 to 0.60% and decreased to 0.41% in 2020. In BPD West Nusa Tenggara Syariah, the return on assets in 2018 of 1.92% increased to 2.56% in 2019 and decreased to 1.74% in 2020. For this reason, it is necessary to examine whether there is an influence of financial technology on the financial performance of banks in Indonesia. (Harahap et al., 2023)

Research conducted by Yulia Prastika found that fintech services, it can increase the profitability of Islamic banking and help people easily access Islamic banking. Likewise, the results of research conducted by Ita Udi Wijaya can improve the financial performance (ROA, ROE, BOPO, CAR, FDR) of Islamic banking in Indonesia.. This is what underlies the study by trying to examine the influence of financial technology on the financial performance of Islamic banking in Indonesia using ROA. Based on the above problems, the researcher intends to conduct a research entitled "The Influence of Financial Technology on Sharia Banking Financial Performance in Indonesia".

## **LITERATURE REVIEW**

### **Understanding Financial Technology**

Financial technology is an industry consisting of companies that use technology to make the financial system and the delivery of financial services more efficient. Meanwhile, according to the Financial Services Authority (OJK), fintech



is an innovation in the financial services industry that utilizes the use of production technology is a system used to run an easier and more efficient financial transaction mechanism (Rizky Wicaksono, 2020).

Fintech is a technological innovation in financial services that can produce business models, applications, and products fintech innovation also expands the menu and services of financial products, fintech companies mainly rely on the ability to continue to develop new financial products and customers who seek greater ease and speed of transactions (Irish Chiu , 2021). Fintech is a financial technology that refers to new solutions that show innovation in the development of applications, products, or business models in the financial services industry that use technology (David LEE Kuo Chuen, dkk , 2018).

Here are some fintech services in banking:

1. Internet Banking (Via internet/computer)

Namely one of the banking services that allows customers to obtain information to communicate and conduct banking transactions via the internet. There are several features that can be accessed in internet banking, namely account balance information, payments (electricity, telephone, credit cards and others), and others.

2. Mobile Banking

Mobile Banking is one of the results of the development of mobile technology used by customers because this service makes customers of a bank able to conduct banking transactions and view information about their accounts using mobile phones only. (Alfadri et al., 2021)

3. SMS Banking

SMS Banking is a service provided by banks using SMS facilities to conduct financial transactions and requests for financial information, such as balance inquiry, account mutation and so on.

### **Benefits of Financial Technology**

The benefit of fintech in Islamic banking is the convenience of financial services, because the process of financial transactions becomes easier. Customers can also use this financial service to get financial services, including financing services, payments, money transfers or for buying and selling shares in a simple and safe way. Customers can access financial services using smartphone and laptop technology. (Alfadri, 2022)

### **Legal Basis of Financial Technology**

It is found in surah Al-Anbiya verse 80:

Which means: "And We taught David to make armor for you, to preserve you in your battles; Then give thanks (to Allah)". In this verse Allah Almighty mentions the gift given to David, namely the knowledge and skill of making armor. This assumption was used for centuries by people who came later. The knowledge and skills bestowed by Allah Almighty upon David have been widespread and beneficial to other peoples and nations. Therefore, at the end of this verse, Allah SWT warned the Prophet Muhammad SAW to be grateful for the gift (Dwi Suwiknyo, 2010).



## **Understanding Financial Performance**

Financial performance is an assessment of the level of efficiency and productivity carried out periodically on the basis of management reports and financial statements which are a reflection of the achievements achieved by the company. Sharia Bank is a financial institution whose main business is to collect funds, distribute funds, and provide other banking services in payment traffic and money circulation and its operations are based on Islamic sharia (Abdul Nasser Hasibuan , 2014).

According to the Sharia Banking Law of the Republic of Indonesia No. 21 of 2008 states that Sharia banking is everything that concerns sharia banks and Sharia business units, including business activity institutions, as well as ways and processes in conducting their business activities. Sharia banks are banks that carry out their business activities based on sharia principles and by type consist of sharia commercial banks (BUS), sharia business units (UUS), and sharia people's financing banks (BPRS) (Ascarya, 2011).

## **Understanding Return On Assets (ROA)**

ROA in the banking industry is a ratio that describes the ability of banks to manage funds invested in overall assets that generate profits. ROA is a picture of bank productivity in managing funds so as to generate profits (Ishak, dkk , 2020). ROA is a ratio that shows the comparison between profit (before tax) and total bank assets, this ratio shows the level of efficiency of asset management carried out by the bank concerned (Muhammad Wandisyah R Hutagalung, 2019). ROA has a very crucial role for banks, ROA is used to assess the effectiveness of companies in obtaining profits by utilizing their assets. The greater the ROA owned by a company, the more efficient the users of its assets so that it will increase profits (Ali Hardana, dkk, 2022). The smaller or lower the ratio, the less good this ratio is, as well as better (Nurhaliza, dkk, 2021).

ROA shows the ability of bank management to earn overall profit. The increase in the ROA of a bank indicates the greater the profit earned by the bank, and the better the position of the bank in terms of asset use. ROA measurement indicators are:

$$\text{ROA} = \frac{\text{Profit Before Tax}}{\text{Total Assets}} \times 100\%$$

## **RESEARCH METHODS**

This research was conducted in Indonesian Sharia Banking. This research was conducted from June to July 2022. The type of research conducted in this study is quantitative research, namely research that works with numbers, whose numbers are in the form of numbers that are analyzed using statistics to answer specific research questions or hypotheses (Asmadi Alsa, 2010)..

In this study, researchers used secondary data. Secondary data is data that has been collected by data collection institutions and published to the data user community (Anak Agung Putu, 2016). According to Suharsimi Arikunto, population is the entire subject of research (Suharsimi Arikunto, 2006). The sample is part of the population to be used as study material to be studied (Dwi



Priyatno , 2008). The population in this study is all financial statements that have been published by Islamic banks that have started using fintech, namely Bukopin Syariah, BRI Syariah, BNI Syariah, Bank Muamalat Indonesia, Bank Mandiri Syariah, BCA Syariah, Bank Panin Dubai Syariah, Maybank Syariah, Bank Aceh Syariah, Bank Victoria Syariah, BJB Syariah and BPD West Nusa Tenggara Syariah for the 2018-2020 period.

Sample determination using saturated sample techniques, then the sample used in this study is BUS which uses fintech services such as Internet banking, mobile banking and sms banking. The population and sample in this study were 36. Processed using the statistical program Eviews 10. Data collection techniques in this study are documentation studies and literature studies. Documentation study is a way used to collect data in the form of written data containing information and explanations as well as thoughts about phenomena that are still actual in accordance with the research problem (Muhammad, 2008). The literature study used in this study is with sources of books, journals, and theses related to research variables listed in the theoretical framework (Asep Saiepul Hamdi, dkk, 2014).

The data analysis techniques used are descriptive analysis, normality test, selection of panel data models through common effect, fixed effect, random effect, panel data models including Chow test, Hausman test, classical assumption test including multicollinearity, hypothesis autocorrelation test including t-test, coefficient of determination test ( $R^2$ ), and simple linear regression analysis.

## **RESULTS AND DISCUSSION**

### **Descriptive Statistical Test**

The results of the descriptive statistical test calculation can be seen in the table below.

**Table. 2**  
**Descriptive Statistical Test Results**

	FINTECH	ROA
Mean	1.064824	-0.692971
Median	1.098612	-0.169277
Maximum	1.098612	0.940007
Minimum	0.693147	-3.912023
Std. Dev.	0.113654	1.439919
Skewness	-3.015113	-0.867898
Kurtosis	10.09091	2.478218
Jarque-Bera	129.9669	4.927871
Probability	0.000000	0.085099
Sum	38.33365	-24.94696
Sum Sq. Dev.	0.452105	72.56784
Observations	36	36

Source: Eviews 10 Data Processing Results

The results of the descriptive statistical analysis test in the table above show that fintech variables with the amount of data (n) are 36, the mean value is



1.064824, the maximum value is 1.098612, the minimum value is 0.693147 and the standard deviation is 0.113654. The variable return on assets with the amount of data (n) is 36, the mean value is -0.692971, the maximum value is 0.940007, the minimum value is -3.912023 and the standard deviation is 1.439919.

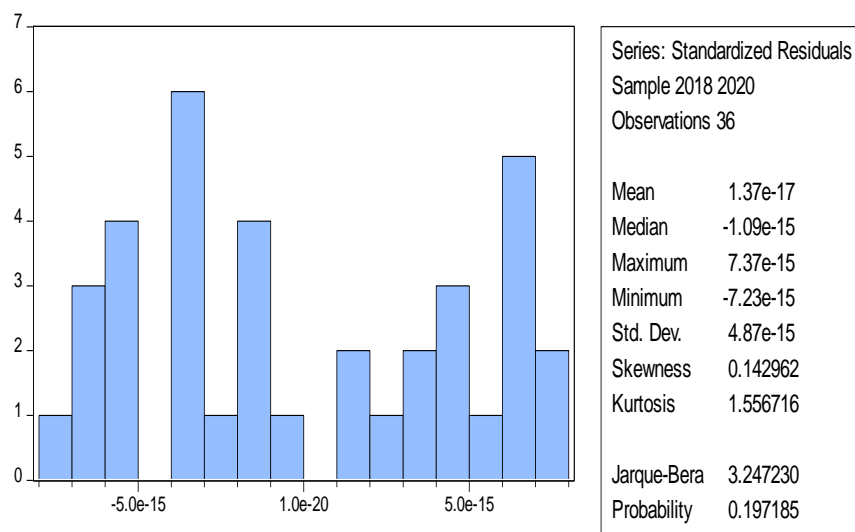
### Normality Test

The normality test with evIEWS used is the Jarque –Bera (JB) test with normal test provisions or not data with the following conditions:

1. If the probability value of JB is  $> 0.05$  then the data is declared normal.
2. If the probability value of JB  $< 0.05$  then the data is declared abnormal

Here are the normality test results with Jarque-Bera (JB) in the table below:

**Table. 3**  
**Result Normality Test**



Source: EvIEWS 10 Data Processing Results

Based on the results of the normality test in the Jarque-Bera table above, it can be seen that the probability value of Jarque-Bera with a value of 0.197185 is above 0.05, so it can be concluded that the data is normal.

### Panel Data Models

#### 1. Common Effect

Common Effect is the simplest model because it assumes that the objects studied are the same in individual dimensions and time, even though in reality the objects studied are different (Zulaika Matondang, et al, 2021). In the common effect approach does not pay attention to individual dimensions or time, it is assumed that data behavior between companies is the same in various time periods.

#### 2. Fixed Effect

The term fixed effect indicates that although the intercept may be different for each individual, it does not vary with time, so in the fixed effect model it is also assumed that the slope coefficient does not vary with either individual



or time (constant). In order for the intercept to vary for each individe, it can be done with the technique of dummy variables or dummy variables.

### 3. Random Effect Model

The technique used in the random effect is to add disturbance variables that may appear in the relationship between time and individual or place or other. So that in the random effect model there is a disorder variable consisting of two components, namely the overall disturbance variable, namely a combination of time series and cross section, and the individual interference variable. In this case the variable of interference is different between individuals but still between times, therefore the random effect model is also often called the error component model (ECM).

## Panel Data Model Selection

### 1. Chow Test

The Chow test or also called likelihood ratio is used to determine whether the pooled lease square model (common effect) or fixed effect model will be chosen for data estimation. This test can be done with a restricted f-test or chow test. To determine which model is best, it can be seen from the probability value (prob.) for cross section F, which is the condition:

- a. If the value of Prob. > 0.05 then the selected model is common effect
- b. If the value of Prob. < 0.05 then the selected model is fixed effect

**Table 4. Chow Test Results**

Redundant Fixed Effects Tests			
Equation: FIXED_EFFECT.			
Test cross-section fixed effects			
Effects Test	Statistics	d.f.	Prob.
Cross-section F	339648173600570760000000000000	(11,23)	0.0000
Cross-section Chi-square	2338.470856	11	0.0000

Source: EViews 10 Data Processing Results

Based on the chow test shown in the table above, the probability value of the cross section of Chi-Square and cross-section is 0.0000 (less than 5%), so that statistically Ho is rejected and Ha is accepted, then the appropriate estimation model used in panel data regression is the fixed effect model.

### 2. Hausman Test

If the result on the chow test, the selected model is a fixed effect model then we should continue testing our model on the hausman test. The hausman test is performed to determine whether a fixed effect model or a random effect model is the best model. To carry out the test, what needs to be considered is the value of probability (Prob.) Cross Section Random, provided that:

- a. If Prob. Cross section random > 0.05, then the selected model is a random effect model



- b. If Prob. Cross section random  $< 0.05$  then model; The chosen one is the fixed effect model

**Table 5. Hausman Test Results**

Correlated Random Effects - Hausman Test			
Equation: RANDOM_EFFECT			
Test cross-section random effects			
Test Summary	Chi-sq. Statistics	Chi-sq. d.f.	Prob.
Cross-section random	13265883950111070	1	0.0000

Source: EViews 10 Data Processing Results

Based on the hausman test shown in the table above, the probability value of the random cross-section is 0.0000 (smaller than 0.05) so that statistically  $H_0$  is rejected and  $H_a$  is accepted. So the appropriate estimation model used in this regression is the fixed effect model.

### Test the hypothesis

A hypothesis is a provisional explanation of a particular behavior, phenomenon or circumstance that has occurred or will occur.c.

- a. Partial Test (Test t)

This statistical test is carried out to determine whether partially the independent variable and the dependent variable have a significant effect or not on economic profitability. The test used a significance level of 0.05. The following partial test results described by the t test in this study can be seen in the table below:

**Table 8. Partial Test Results (Test t)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.064824	4.08E-16	2.61E+15	0.0000
ROA	2.53E-15	5.28E-16	4.791884	0.0001

Source: Eviews 10 Data Processing Results

If  $t_{count} > t_{table}$  then  $H_0$  is rejected and  $H_a$  is accepted. Test t when viewed based on the value of significance.

- 1.If the signification value  $> 0.05$  then  $H_0$  is accepted and  $H_a$  is rejected.
- 2.If the significance value  $< 0.05$  then  $H_0$  is rejected and  $H_a$  is accepted.

Based on the test criteria and the results of the t test above, it can be seen that the tcount for the fintech variable (X) is 4.791884 and for the ttable obtained from the formula df, namely  $(n-k-1)$ , df  $(36-1-1)$  is equal to 34, the result obtained for ttable is 2.03224, which means that it can be known that  $t_{calculate} < t_{table}$  ( $4.791884 > 2.03224$ ) then  $H_0$  is rejected and  $H_a$  is accepted. And with a significance value of  $0.0001 < 0.05$  then  $H_0$  is rejected and  $H_a$  is accepted. So it can be concluded that fintech partially affects ROA.

- b. Test Coefficient of Determination (R2)

The coefficient of determination (R2) essentially measures how far the quality of the model is and explains the variation in the dependent variable.



The value of coefficient determination is between zero and one. The results of the coefficient of determination (R<sup>2</sup>) test can be seen in the table below:

**Table. 9**  
**Test Results of Coefficient of Determination (R<sup>2</sup>)**

R-squared	1.000000	Mean dependent var	1.064824
Adjusted R-squared	1.000000	S.D. dependent var	0.113654

Source: EViews 10 Data Processing Results

Based on the table, an Adjusted R-squared value of 1.000000 is obtained. This shows that only 1 percent of variations or changes in Islamic banking financial performance in the 2018-2020 period are explained by fintech variables. While the remaining 99 percent was influenced by other factors that were not included in this regression model. In the sense that there are still other factors that influence it.

### Simple Regression Analysis

Can be used to determine the direction of the relationship between the independent variable and the dependent variable, whether it has a positive or negative relationship and to predict the value of the dependent variable if the value of the free variable increases or decreases. The results of simple linear regression in this study are as follows:

**Table 10. Simple Linear Regression Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.064824	4.08E-16	2.61E+15	0.0000
ROA	2.53E-15	5.28E-16	4.791884	0.0001

Source: Eviews 10 Data Processing Results

Based on the results of a simple linear test in the table above, it is obtained:

$$ROA: a + bx$$

The explanation of the linear equation above is as follows:

The constant value (a) of 1.064824 means that if the fintech value is 0, the return on assets is 1.064824 percent.

### CONCLUSION

Based on the results of research and discussion which aims to determine the influence of Financial Technology on the financial performance of Islamic banking in Indonesia in 2018-2020. Based on the results of the study, it can be concluded that Financial Technology has a significant effect on financial performance as measured by ROA. As for the data processing from the study entitled "The Influence of Financial Technology on Sharia Banking Financial Performance in Indonesia" researchers concluded that Financial Technology has a partial effect on the financial performance of Islamic banking in Indonesia, where Ho is accepted and influential, as well as the significant value Ho received or influential. Financial Technology has that  $t_{calculate} > t_{table}$  ( $4.791884 >$



2.03224) with a significance value of  $0.0001 < 0.05$  then  $H_0$  is rejected and  $H_a$  is accepted. So it can be concluded that Financial Technology partially affects the financial performance of Islamic banking in Indonesia as measured by Return On Assets (ROA).

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