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The Determinant Factors of Islamic Bank's Profitability in Indonesia During COVID-19 Pandemic (Sep 2019 - Sep 2021)

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Keywords
Profitability
Inflation
Interest Rate
CAR
NPF
FDR

Abstract
In this study, we to examine and analyse some factors that will determine Islamic banks profitability level in Indonesia. Some factors such as the influence of inflation, interest rates, NPF, FDR, and CAR will have an impact especially on profitability levels. In this study, we use the quantitative method. We selected the sample using purposive sampling method then referred to three Islamic banks in Indonesia. The data used in this paper were secondary data from the Central Bureau of Statistics (BPS), the Central Bank of Indonesia (BI), and related official websites of Islamic banks. We used the form of quarterly data for the last two years from September 2019 to September 2021. The results indicated that only NPF shows a significant effect on profitability (ROA) in Islamic banks.

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1. Introduction

Just like the conventional bank, Islamic banks also have some indicators that must be fulfilled to compete and run well. Bank performance is one of the most important indicators. As we know from the 1997-1998 crisis, Bank Muamalat, one of the oldest Indonesian Islamic banks was able to survive the crisis without any help of state money. Bank Muamalat is considered more resistant to changes in shocks because the sharia system adopted forbids companies from speculative actions, which are thought to be the cause of the financial crisis. The crisis was caused by a weakening in the exchange rate (rupiah) during May 1997; this event caused many banks in Indonesia to become bankrupt.

As for the COVID-19 pandemic situation, the Islamic banking industry is likely more flexible in dealing with the ramifications. This is because the basic principle of Islamic banks is to put the concept of profit-sharing in financing distribution contracts first. The corona virus (COVID-19 pandemic) which originated from the city of Wuhan, China, has finally spread to all countries in the world. This spread has impacted all countries. Up to the beginning of 2020 it has put pressure on the world economy, including the Indonesian economy. Data released by the Central Bureau of Statistics (BPS), shows that, in August 2020, Indonesia's economic growth in the second quarter of 2020 was minus 5.32%. In addition to having an impact on Indonesia's negative economic growth, the spread of the COVID-19 pandemic also had a negative impact on almost all industrial sectors in Indonesia. One of the industrial sectors that are under pressure due to the outbreak of the COVID-19 pandemic is the banking sector. The banking sector is a service business sector that collects funds from the public and distributes them back to the community in the form of loans or credit.

However, with the COVID-19 pandemic, the banking sector cannot freely channel their potential credits, because the community is facing a difficult situation. Most companies were affected and therefore they had to reduce their workforce. This is why many people lost their jobs which then forced them to control their consumption levels. There is a possibility of a higher risk of default from creditors because most people, both individuals, and companies, tend to experience a decrease in income during pandemic. This demanding situation is not only experienced by the conventional banks, but also by Islamic banks.

In fact, the development of Islamic banks in Indonesia needs to be further improved. In addition, it is also important to monitor the progress of their performance to create a healthy company that has potential and can compete with conventional banks. One of the most appropriate means to measure the

performance of a bank is to look at its profitability. The profitability level of Islamic banks generally is an important indicator we need to improve and evaluate. These results can help Islamic bank to survive in the market. According to Brigham and Houston (2001), profitability is a net result of several decisions and policies. The profitability ratio shows the reflection of the final results of all a bank's financial policies and operational decisions, whereas a group of ratios shows the combination of the effects of asset management, debt on operating results, and liquidity.

The determinants of one indicator from Islamic bank's performance – profitability – can be divided into internal and external factors. In this paper, the external factors used were inflation and interest rate, while the internal factors used were Capital Adequacy Ratio (CAR), Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), operational cost and operational income, and Return On Assets (ROA). We used the effect in Return On Assets (ROA) to determine profitability. The Islamic banking system wants to provide real solutions to develop a safe and stable banking system. This is because Islamic banks apply the principle of being free from *usury, maisyir* and *gharar*. This principle is different from the banking system in conventional banks. The principle of being free from *usury, maisyir* and *gharar* is what then supports the Profit Loss Sharing (PLS) system in Islamic banking so that it can avoid a worsening of the balance sheet due to economic factors.

The stability in Islamic banks has been confirmed by various national and international studies. As a result, we believe that the Islamic bank has better stability compared to conventional bank systems. The result from a research study conducted by Shaharuddin (2013), revealed that domestic Islamic banks were more profitable than foreign Islamic banks. The result also showed that the determinant factors of profitability in domestic Islamic banks were different from those of foreign Islamic banks. Some variables used in this research including loans, overhead expenses, gross domestic product growth rate, bank size, and efficiency have a significant effect on determining a bank's profitability, in which all of them applies to the domestic banks.

It was also shown that the gross domestic product per capita had a significant effect on determining bank's profitability, but only for foreign banks. Meanwhile, in determining the profitability of both domestic and foreign banks, the study found that inflation, capital and reserves, the bank's age, and deposits also have a significant effect. Other variables used such as liquidity and concentration are not able to explain the variability of foreign and domestic Islamic bank's profitability. Shaharuddin (2013) also stated that the findings from this research indicated that the profitability level of foreign Islamic banks was not affected by the global financial crisis although domestic Islamic banks were affected.

Starting from the 2010-2015 period, the profitability level of Islamic banks and sharia units in the last five years grew by almost 73% to around Rp. 1.8 trillion. However, the slowdown in the domestic economy and the weakening of the rupiah exchange rate at that time made Islamic banking profits in 2015 only grow slightly by 3% from the previous year. This fact makes several research studies on the profitability of Islamic banks interesting to consider. One of the research projects conducted by Widyaningrum and Septiarini (2015) proved it was only Operational Efficiency Ratio (OER) had a significant effect on Return on Assets (ROA) partially, while simultaneously, Capital Adequacy Ratio (CAR), Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), and Operational Efficiency Ratio (OER) had a significant effect on Return On Assets (ROA).

Another research study conducted by Amzal (2016) aimed the effect of macroeconomic variables on the profits of Islamic banks in Indonesia. The results of this study indicated that partially, all explanatory variables (NPF, GDP, inflation rate, and BI level) had a significant effect on the profits of Islamic banks in Indonesia. Slightly different results were shown in research conducted on Islamic banks in Togo. The results of research conducted by Combey and Togbenou (2017) showed that, the real effective exchange rate and the growth of real gross domestic product had a negative and statistically significant effect on bank returns on assets, while the inflation rate had no effect. These results also imply that in order to stabilize bank profitability and make the Togo banking sector more resilient, the government and banking sector managers should seek to increase the real effective exchange rate, anticipate inflationary volatility, and grow real gross domestic product.

The more developed the Islamic bank, the more research studies are conducted. This interest is primed by the desire to maintain the level of competition, not only with fellow Islamic banks but also with conventional banks. The new findings presented by Widarjono (2018) showed that both internal and external factors affect the profit of Islamic banks. An important internal variable that affects profitability is poor Non-Performing Financing (NPF), while external factors are the exchange rate and inflation. The implication of this result is that the Islamic bank must be prepared to properly manage Non-Performing Financing (NPF) that possibly could happen in the future. In addition, the NPF also depends on macroeconomic conditions. In this case, the government must manage macroeconomic performance well in order to stabilize the exchange rate.

From this study, we found that bank age, inflation, capital and reserves, and deposits had a significant effect in determining bank profitability, both for domestic and foreign banks. Meanwhile, concentration and liquidity were not able to explain

the profitability variability of domestic and foreign Islamic banks. Therefore, these studies are expected to assist in analysing some of the factors that will affect the level of profitability of Islamic banks in Indonesia and to prevent a worse situation from occurring in the future.

The results of this study we are about to conduct were confirmed in a research study conducted by Purwasih and Wibowo (2021) where it was established that the Non-Performing Financing (NPF) variable equally affects Return On Assets (ROA) as an indicator to track the level of profitability of Islamic banks. The latest results we can find from the research study conducted by Purwasih and Wibowo (2021) show that in the short term, only the rupiah exchange rate, operating costs and operating income, and Non-Performing Financing (NPF) have an effect on Return On Assets (ROA). Meanwhile, inflation, industrial production index, Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), and interest rates have no effect on Return On Assets (ROA). But overall, the results are the same. The rupiah exchange rate variable is the most influential variable on the level of profitability of Islamic banks, both in the short and long term.

2. Literature Review and Economic Models

The Islamic bank is a banking system based on Islamic law. The effort to establish this system is grounded on avoiding the elements of *usury, maisyir,* and *gharar*. According to the provisions contained in Bank Indonesia Regulation Number 2/8/PBI/2000, Article I, states that Islamic Banks are commercial banks as referred to in Act Number 7 of 1992 concerning banking. This has been amended by Act Number 10 of 1998 which refers to the conducting of business activities based on sharia principles, including sharia business units and foreign bank branch offices conducting business activities based on sharia principles. Thus, according to Undang-Undang No. 19 of 1998, the task of the bank is to assist the government in regulating and maintaining the stability of the rupiah value, encouraging smooth production and development as well as expanding job opportunities in order to improve the standard of living of many people. The functions of banks in general are to:

a. provide mechanisms and means of payment that are more efficient in economic activities,

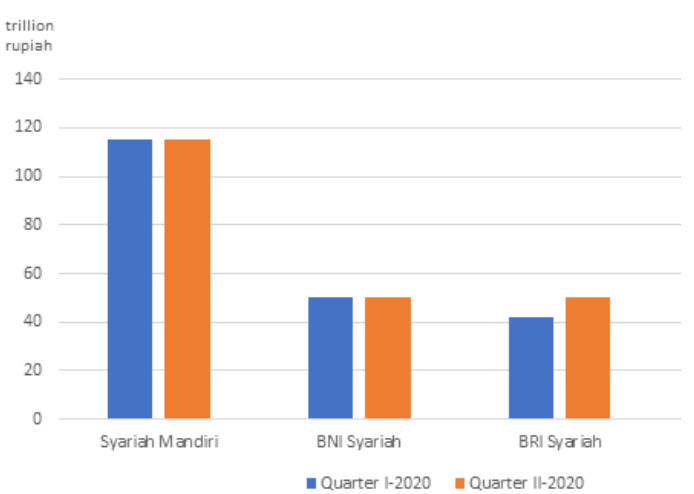
b. collect funds and distribute them to the community,

c. offers other financial services.

The Islamic bank aims to support the implementation of national development to improve justice, togetherness, and equitable distribution of people's welfare, and is not only profit-oriented but also based on *falah*. An Islamic bank's performance, similar to a conventional bank's, can be perceived from its main goal, which is to achieve the highest profit. Thus, profitability is the most appropriate indicator to measure the performance of a bank, which is accomplished by calculating its Return On Assets (ROA). Return On Assets (ROA) is the ratio of net income to total assets to measure the return on total assets after interest and taxes.

During the COVID-19 pandemic, almost all activities were affected, including the economic sector. One of those affected is the banking sector. The ability of banks to gain profitability has been slightly disrupted as a result of the COVID-19 pandemic. The difficult economic conditions of the people have an impact on the decline in banking activities, such as credit levels. According to data submitted by the Financial Services Authority (Otoritas Jasa Keuangan/OJK), it was recorded that until July 2020, the trend in bank lending tended to be sloping. Up until July 2020, the realization of bank credit only grew by 1.53% year on year (YoY). This shows that it did not move much from its position in the previous month. In fact, at the end of March 2020, industrial banking credit only grew by 7.95% on an annual basis.

Figure 1: Asset Value of Three State-Owned Islamic Banks 2020



Source: Financial Services Authority (Otoritas Jasa Keuangan/OJK), July 2020

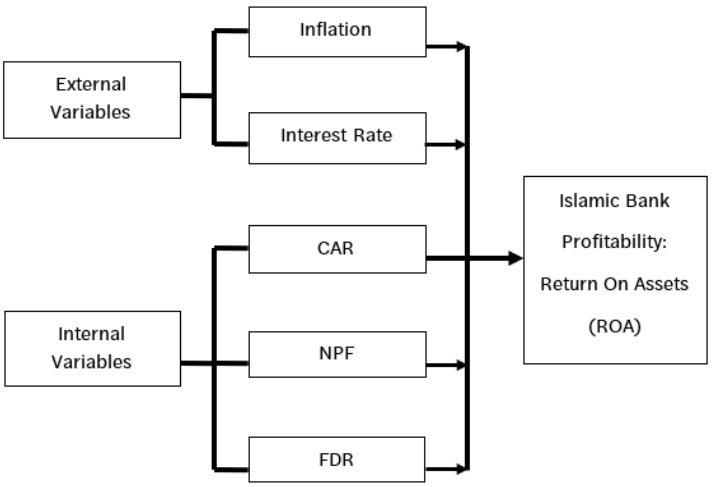
According to a report released by the Financial Services Authority (Otoritas Jasa Keuangan/OJK), the second quarter of 2020 showed that the total assets of two of the three Islamic banks owned by state-owned enterprises (BUMN) in Indonesia decreased compared to the previous quarter. It was noted that only BRI Syariah grew in this period, which was around 17.4% from Rp 42.29 trillion to Rp 49.58 trillion. Meanwhile, Bank Syariah Mandiri and Bank BNI Syariah respectively recorded total assets of Rp 114.40 trillion and Rp 50.76 trillion in the second quarter of 2020. Whereas in the previous quarter, both recorded total assets of Rp 114.74 trillion and Rp 51.12 trillion.

This situation made the ability of banks to gain profitability tends to decrease. This is reflected in the Net Interest Margin (NIM) ratio, which as of July 2020 has 4.44%, much lower than the last July 2019 period where it was 4.9%. The Net Interest Margin (NIM) ratio is used to measure the ability of the bank's management to manage its productive assets to generate net interest income. The downward trend in Net Interest Margin (NIM) is always in line with the increase in bank credit. During this pandemic, banks are also burdened with high credit restructuring. Automatically, the bank interest income will also decrease. Slowing credit growth and declining interest rates are currently the challenges for banks in maintaining their Net Interest Margin (NIM). Meanwhile, credit slowdown is also a challenge to the maintenance of the Net Interest Margin (NIM). The decline in profitability experienced by Islamic banks is certainly one of the most tangible impacts for banks in the midst of the COVID-19 pandemic situation.

2.1. Determinant Factors in the Profitability of Islamic Banks

The determinants of one indicator from the Islamic bank's performance, profitability, can be divided into external and internal factors. The external factors of bank profitability are not influenced by specific bank decisions and policies but rather are based on events outside the bank's influence, while internal factors on bank profitability can be defined as factors that are influenced by the goals and policy decisions of bank management (Duraj & Moci, 2015). In this paper, we use some determinant factors to see their effect on profitability in Islamic banks. For the external factors we use inflation and interest rate, while for the internal factors, we use Capital Adequacy Ratio (CAR), Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), operational cost and operational income, and Return On Assets (ROA). To determine profitability, we will use the effect on Return On Assets (ROA). Based on the explanation above, the theoretical framework used in this research is as follows:

Figure 2:Theoretical Thinking Framework



2.2. External Variables

2.2.1. Inflation

The data in this study were obtained from the official website of Central Bureau of Statistics (BPS), www.bps.go.id/. The data obtained is monthly information data so the authors summed the data into quarterly data using the following equation:

Quarterly Inflation = 1st month inflation + 2nd month inflation + 3rd month inflation

2.2.2. Interest Rate

The interest rate data in this study were obtained from the official website of Bank Indonesia, www.bi.go.id. The data obtained are monthly information data so the authors summed the data into quarterly data using the following equation:

$$\text{Interest Rate} = \frac{1^{st}\text{ month IR} + 2^{nd}\text{ month IR} + 3^{rd}\text{ month IR}}{3}$$

2.3. Internal Variables

2.3.1. Capital Adequacy Ratio (CAR)

CAR shows how far the bank's assets that contain risks (credit, investment, securities, claims on other banks) are also financed from the bank's own capital funds, in addition to obtaining funds from sources outside the bank, such as public funds, loans (debts), etc. The data in this study are quarterly data obtained from

the official quarter-monthly report of related Islamic Bank. The data are obtained from the following equation:

$$CAR = \frac{total\ capital}{total\ Risk\ Weighted\ Assets\ (RWA)} \times 100\%$$

2.3.2. Non-Performing Financing (NPF)

NPF is used in Islamic bank, to apply the concept of credit (loans). NPF can be interpreted as credit that has difficulty in payment. The data in this study are quarterly data obtained from the official quarter-monthly report of the related Islamic bank. The data are obtained from the following equation:

$$NPF = \frac{number\ of\ non\text{-}performing\ financing}{total\ financing} \times 100\%$$

2.3.3. 2.3.3 Financing to Deposit Ratio (FDR)

Financing to deposit ratio (FDR) is a term for the Islamic bank that functions as an intermediary for other Islamic banks. The data in this study are quarterly data obtained from the official quarter-monthly report of the related Islamic bank. The data are obtained from the following equation:

$$FDR = \frac{financing}{funds\ from\ third\ parties} \times 100\%$$

2.4. Profitability

2.4.1. Return On Assets (ROA)

Profitability is measured using the ROA ratio which serves to measure the return on total assets after interest and taxes. Within the framework of a bank soundness assessment, BI will determine whether a bank is healthy, that is, if the bank has a ROA above 1.215% (BI DIR Decree No. 30/12/KEP/DIR and SEBI No. 30/3/UPPB dated 30 April 1997, respectively). Based on Bank Indonesia stipulations, the calculation of ROA can be formulated as follows:

$$ROA = \frac{profit\ before\ tax}{average\ total\ assets} \times 100\%$$

3. Methodology

3.1. Data

The type of data used in this paper is secondary data. The data in this study were obtained from the official website of Bank Indonesia, www.bi.go.id as well as from the related official website of the Islamic banks. This secondary data is in the quarterly form, namely from September 2019 to September 2021. The reason the author chose quarterly data is to know in detail the effect of the independent variable on the dependent variable.

The method of collecting data in this research is by means of documentation, namely by collecting, copying, viewing, and evaluating reports and documents related to the object of research. In this study, the data collection method is implemented by taking data obtained from the official website belonging to Bank Indonesia and related official websites of the Islamic banks regarding the data in the report. The financial statements related to the research are regarding:

1. Total Capital
2. Risk Weighted Assets (RWA)
3. Capital Adequacy Ratio (CAR)
4. Net Performing Finance (NPF)
5. Financing to Deposit Ratio (FDR)

The population in this study are all Islamic commercial banks whose complete quarterly financial reports are reported or published from September 2019 to September 2021 through the Bank Indonesia website, namely www.bi.go.id and the Islamic Commercial Bank website itself. According to data on Sharia Banking Statistics issued by the Financial Services Authority (Otoritas Jasa Keuangan/ OJK) in September 2021, there are 12 Islamic commercial banks that have been recorded and recognized.

Table 1: List of Islamic Commercial Banks

1	PT. Bank Aceh Syariah
2	PT. BCA Syariah
3	PT. Bank Jabar Banten Syariah
4	PT. Bank Mega Syariah
5	PT. Bank Muamalat Indonesia Tbk.
6	PT. Bank Net Indonesia Syariah
7	PT. BPD Nusa Tenggara Barat Syariah

8	PT. Bank Panin Syariah Tbk.
9	PT. Bank Syariah Bukopin
10	PT. Bank Syariah Indonesia Tbk.
11	PT. Bank Tabungan Pensiunan Nasional Syariah
12	PT. Bank Victoria Syariah

Source: Sharia Banking Statistics, September 2021 (OJK)

In this study, the sampling was done using the purposive sampling method. The sample is determined by the following criteria:

1. Islamic banks that routinely publish quarterly financial reports during the observation period from September 2019 to September 2021.
2. Islamic commercial banks that have complete data based on the variables studied.

Based on the sample selection criteria above, there were three Islamic commercial banks that met the criteria, namely: the Bank Syariah Indonesia (BSI), Bank Muamalat, and Bank Panin Syariah. The data analysis method used is panel data regression analysis. Panel data regression is a combination of cross section data and time series data, where the same cross section unit is measured at different times. In other words, panel data are data from the same individuals who are observed over a certain period of time. The panel data equation model which is a combination of cross section data and time series data is as follows:

$$\gamma it=0+ 1 X1 + 2 X2 + 3 X3 + 4 X4 + 5 X5+ eit \quad (1)$$

$$\gamma it=0+ 1X1it + 2X2it + 3X2it + nXnit + eit \quad (2)$$

Description:

γit = dependent variable
Xit = independent variable
I = i-th entity
T = t-th period

Panel data regression is a regression that uses panel data which is a combination of data across time and across individuals. The use of panel data in this study has some advantages compared to time series or cross section data. These advantages including the estimation techniques that can take into account of subject heterogeneity and provide more informative data, more variation, less collinearity between variables, more degrees of freedom, and

better efficiency.

$$Yi = 0 + 1\,Xi + i : i = 1, 2, ..., N \quad (3)$$

where N is the number of cross section data. The equation of the model with the time series is as follows:

$$Yt = 0 + 1\,Xt + t ; t = 1, 2, ..., T \quad (4)$$

**where T is the number of time series data.

Considering that panel data are a combination of time series and cross section data, the model obtained is formulated as follows:

$$Yit = 0 + 1\,Xit + it \quad (5)$$

$$i = 1, 2, ..., N ; t = 1, 2, ..., T$$

Description:

N = number of observations
T = amount of time
N x T = number of panel data

$$\gamma it = \beta 0 + \beta 1\,X1 + \beta 2\,X2 + \beta 3\,X3 + \beta 4\,X4 + \beta 5\,X5 + eit \quad (6)$$

$$ROA = \beta 0 + \beta 1\,.INF + \beta 2\,.IR + \beta 3\,.CAR + \beta 4\,.NPF + \beta 5\,.FDR + eit \quad (7)$$

Description:

ROA = Return On Assets (ROA)
β0 = Constant
X1 = Inflation
X2 = Interest Rate
X3 = Capital Adequacy Ratio (CAR)
X4 = Net Performing Finance (NPF)
X5 = Financing to Deposit Ratio (FDR)

In the analysis of the panel data model, there are three kinds of approaches we can use namely:

1. *The Common Effects* approach assumes that the intercept and slope are constant over time and individually, the difference between the intercept and the slope is assumed to be explained by confounding variables. The formula for the common effects model is as follows:

$$\gamma it = \beta 0 + \beta 1\,X1it + \beta 2\,X2it + \beta 3\,X3it + \beta 4\,X4it + \beta 5\,X5it + eit \quad (8)$$

2. *The Fixed Effects* approach assumes that a consistent intercept and slope is difficult to meet. To overcome this, we enter a dummy variable to allow

for differences in the value of different parameters, both across units and between times. The Fixed Effects Approach model is as follows:

$$\gamma it=0 + 1\ X1it + 2\ X2it + 3\ X3it + \beta 4\ D1it + 5\ D2it + 6\ D3it + \cdots + eit \quad (9)$$

Where: D1 = for the value of A
D2 = for the value of B
D3 = for the value of C
D4 = for the value of D

3. *The Random Effects* approach considers that the decision to include dummy variables in the fixed effects model will reduce the number of degrees of freedom which will ultimately reduce the efficiency of the estimated parameters. The random effects approach model is as follows:

$$\gamma it= 0i + 1\ X1it + 2\ X2it + 3\ X3it + 4\ X4it + 5\ X5it + eit \quad (10)$$

3.2. Data Panel Model Selection

The selection of the model to be used in research is important as the aim is to find out whether the model is suitable or good for use in research or not. A good method for selecting the model in data processing is as follows:

1. *Chow Test*, is used to test the common effect model with the fixed effect. The initial stage is to determine the test hypothesis, namely if the chi-square prob < 5%, then Ho is rejected, which means that the correct model is the fixed effect model; and vice versa if the chi-square cross section prob> 5%, then Ho is accepted, which means that the common effect model is the right one to use.
2. *Hausman Test,* is used to test between the fixed effect model and the random effect model. If the Chow test (early stage) shows that the chi-square prob < 5%, which means that the correct model is fixed effect, then the next step is to test two models between fixed effect and random effect using the Hausman test with hypothesis testing. If the chi-square Prob value < 5% then H0 is rejected, meaning that the right model to use is the fixed effect and vice versa if the chi-square Prob value > 5% then H0 is accepted, which means that the random effect is a good model to use.

3.3. 3.3 Hypothesis Testing

1. *T-test* is conducted to test individually or partially, whether the independent variable has an effect on the dependent variable or not. If the p-value t

statistic < 5%, it means that the independent variable has a partial effect on the dependent variable, and H0 is rejected, and vice versa.

2. *F-test* is conducted to test simultaneously whether the independent variables simultaneously had an effect on the dependent variable or not. If the p-value f statistic < 5%, it means that the independent variable has a simultaneous effect on the dependent variable, and therefore H0 is rejected, and vice versa.

4. Results

4.1. Common Effect Model

Table 2: Dependent Variable: ROA (Common Effect)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.198032	0.989483	3.232022	0.0046
INF	0.373975	0.292703	1.277663	0.2176
IR	-0.293025	0.344769	-0.849917	0.4065
CAR	0.016233	0.014827	1.094763	0.2881
NPF	-0.401816	0.054683	-7.348075	0.0000
FDR	-0.016483	0.004551	-3.621845	0.0020
R-squared		0.825699	Mean dependent var	0.415000
Adj. R-squared		0.777282	S.D. dependent var	0.590724
S.E. of regression		0.278780	Akaike info criterion	0.495532
Sum squared resid		1.398932	Schwarz criterion	0.790046
Log likelihood		0.053615	Hannan-Quinn criterion	0.573667
F-statistic		17.05392	Durbin-Watson stat	1.674857
Prob(F-statistic)		0.000003		

4.2. Fixed Effect Model

Table 3: Dependent Variable: ROA (Fixed Effect)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.562572	1.061432	2.414259	0.0281

INF	0.496822	0.241392	2.058157	0.0562
IR	-0.591726	0.328072	-1.803648	0.0901
CAR	-0.015068	0.016687	-0.902946	0.3799
NPF	-0.320678	0.115720	-2.771154	0.0136
FDR	0.006797	0.008316	0.817370	0.4257

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.902939	Mean dependent var	0.415000
Adj. R-squared	0.860474	S.D. dependent var	0.590724
S.E. of regression	0.220654	Akaike info criterion	0.076760
Sum squared resid	0.779011	Schwarz criterion	0.469444
Log likelihood	7.078885	Hannan-Quinn criterion	0.180939
F-statistic	21.26342	Durbin-Watson stat	1.632283
Prob(F-statistic)	0.000001		

4.3. Chow Test

Redundant Fixed Effects Tests

Table 4: Test Cross-Section Fixed Effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.366236	(2.16)	0.0092
Cross-section Chi-square	14.050541	2	0.0009

Table 5: Dependent Variable: ROA (Cross-Section Fixed Effects Test Equation)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.198032	0.989483	3.232022	0.0046
INF	0.373975	0.292703	1.277663	0.2176
IR	-0.293025	0.344769	-0.849917	0.4065
CAR	0.016233	0.014827	1.094763	0.2881

NPF	-0.401816	0.054683	-7.348075	0.0000
FDR	-0.016483	0.004551	-3.621845	0.0020
R-squared	0.825699	Mean dependent var		0.415000
Adj. R-squared	0.777282	S.D. dependent var		0.590724
S.E. of regression	0.278780	Akaike info criterion		0.495532
Sum squared resid	1.398932	Schwarz criterion		0.790046
Log likelihood	0.053615	Hannan-Quinn criterion		0.573667
F-statistic	17.05392	Durbin-Watson stat		1.674857
Prob(F-statistic)	0.000003			

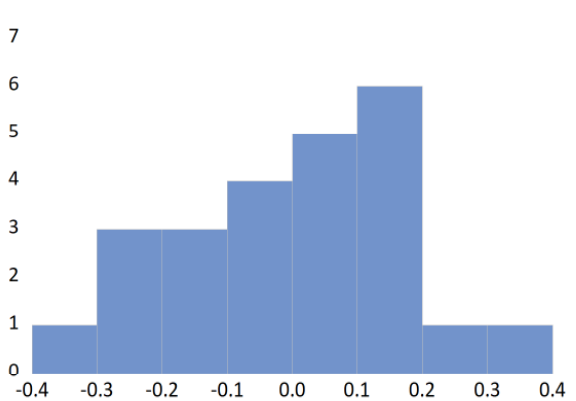
The probability as shown int the result on the Chow Test shows 0.0009 which is lower than 0.05 (5%). This means H0 is rejected and H1 is accepted, thus the Fixed Effect Method is the suitable model.

4.4. Random Effect Model

Since the Random Effect Model did not show the result, then we cannot use the Haussman Test. In this paper, we may be better off using the Fixed Effect Model. It is worthwhile pointing out that the Hausman Test is just a guide, so we should not rely on it solely.

4.5. Normality Test

Figure 3: Normality Test Result



Mean	-1.39e-17
Median	0.022316
Maximum	0.348402
Minimum	-0.375036
Std. Dev.	0.184038
Skewness	-0.120145
Kurtosis	2.258260
Jarque-Bera	0.607917
Probability	0.737891

The probability as shown in the table above is 0.73 which is greater than 0.05 (5%). This shows that the residual is distributed normally.

Table 6: Multicollinearity Test Result

	INF	IR	CAR	NPF	FDR
INF	1.000000	0.943716	-0.288322	0.260194	-0.007846
IR	0.943716	1.000000	-0.376809	0.273974	-0.021045
CAR	-0.288322	-0.376809	1.000000	-0.454725	0.624272
NPF	0.260194	0.273974	-0.454725	1.000000	-0.169414
FDR	-0.007846	-0.021045	0.624272	-0.169414	1.000000

Table 7: Heteroscedasticity Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.209254	0.359352	0.582309	0.5676
INF	-0.104514	0.106301	-0.983188	0.3385
IR	0.076484	0.125210	0.610845	0.5489
CAR	0.001188	0.005385	0.220631	0.8279
NPF	-0.013394	0.019859	-0.674441	0.6086
FDR	-0.001746	0.001653	-1.056564	0.3047
R-squared	0.199084	Mean dependent var		0.151196
Adj. R-squared	-0.023393	S.D. dependent var		0.100081
S.E. of regression	0.101245	Akaike info criterion		-1.530231
Sum squared resid	0.184510	Schwarz criterion		-1.235717
Log likelihood	24.36277	Hannan-Quinn criterion		-1.452096
F-statistic	0.894852	Durbin-Watson stat		2.223327
Prob(F-statistic)	0.505307			

From this test as shown in Table 7, we can conclude that interest rate, CAR, and NPF do not have heteroscedasticity. It is stated that only inflation and FDR have heteroscedasticity.

4.6. The Regression Result (Fixed Effect Model)

Table 8: Test Cross-Section Fixed Effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.366236	(2.16)	0.0092
Cross-section Chi-square	14.050541	2	0.0009

Table 9: Dependent Variable: ROA (Cross-Section Fixed Effects Test Equation)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.198032	0.989483	3.232022	0.0046
INF	0.373975	0.292703	1.277663	0.2176
IR	-0.293025	0.344769	-0.849917	0.4065
CAR	0.016233	0.014827	1.094763	0.2881
NPF	-0.401816	0.054683	-7.348075	0.0000
FDR	-0.016483	0.004551	-3.621845	0.0020
R-squared	0.825699	Mean dependent var		0.415000
Adj. R-squared	0.777282	S.D. dependent var		0.590724
S.E. of regression	0.278780	Akaike info criterion		0.495532
Sum squared resid	1.398932	Schwarz criterion		0.790046
Log likelihood	0.053615	Hannan-Quinn criterion		0.573667
F-statistic	17.05392	Durbin-Watson stat		1.674857
Prob(F-statistic)	0.000003			

The probability is shown int the result of the cross-section fixed effects test using the Chow Test in Table 8. shows 0.0009 which is lower than 0.05 (5%); this means H0 is rejected and H1 is accepted, thus the Fixed Effect Method is the suitable model. We can see that there is an impact from the independent variables used on the profitability level of Islamic banks in Indonesia during COVID-19 pandemic times.

Table 10: Dependent Variable: ROA (Regression-fixed effect)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.562572	1.061432	2.414259	0.0281

INF	0.496822	0.241392	2.058157	0.0562
IR	-0.591726	0.328072	-1.803648	0.0901
CAR	-0.015068	0.016687	-0.902946	0.3799
NPF	-0.320678	0.115720	-2.771154	0.0136
FDR	0.006797	0.008316	0.817370	0.4257

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.902939	Mean dependent var	0.415000
Adj. R-squared	0.860474	S.D. dependent var	0.590724
S.E. of regression	0.220654	Akaike info criterion	0.076760
Sum squared resid	0.779011	Schwarz criterion	0.469444
Log likelihood	7.078885	Hannan-Quinn criterion	0.180939
F-statistic	21.26342	Durbin-Watson stat	1.632283
Prob(F-statistic)	0.000001		

ROA = 2.562572 + 0.4968222 INF – 0.591729 IR – 0.015068 CAR – 0.320678 NPF + 0.006797 FDR

In this paper, the estimation model used is the panel data model. Panel data regression model combines cross section data and time series data, where the same cross section unit is measured at different times. Based on the result as shown in the Table 10, we can conclude that only NPF has a significant relation with the profit (ROA) of the Islamic bank, and that the other variables; inflation, interest rate, CAR, and FDR show no significant relation with the profit (ROA) of the Islamic Bank. Although all the variables show significant relation with the profit (ROA) of the Islamic bank simultaneously.

The result makes it clear that it is only NPF that has a significant effect on the profit (ROA) of the Islamic bank. This is shown in Table 9 with the probability value of the NPF is 0.0000. The other variables including inflation, interest rate, CAR, and FDR have no effect on the profitability of the Islamic bank. This is because the Prob. values shown are greater than 0,01 (1%) significance. These results are in line with the latest research conducted by Purwasih and Wibowo (2021) on the profitability of Islamic banks during the COVID-19 pandemic. From their results, it was confirmed that NPF along with the rupiah exchange rate, operating costs and operating income were the most influential indicators. Other results are in line with previous research conducted by Widyaningrum (2015), Zarrouk (2015), Amzal (2016), and Widarjono (2018) who found that profitability is positively affected by NPF activities due to allowing Islamic banks to earn higher profits.

5. Conclusions

This study aimed to determine the relationship between five variables that determined the level of profitability of Islamic banks in Indonesia during the COVID-19 pandemic, from September 2019 to September 2021. The variables used consist of internal and external variables. For the external factors we use inflation and interest rates, while the internal factors, we used Capital Adequacy Ratio (CAR), Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), operational cost and operational income, and Return On Assets (ROA). To determine profitability, we used the affected result of Return On Assets (ROA).

With this research, it is hoped that a theory can be built that functions to predict, control, and avoid declines in the profitability of Islamic banks. The data contained in this study are in the form of numbers so that they are quantitative. From the regression results with the Fixed Effect Model, it was shown that only NPF had a significant relationship with the profit (ROA) of Islamic commercial banks. Other variables; inflation, interest rates, CAR, and FDR do not show a significant relationship with the profit (ROA) of Islamic commercial banks. However, simultaneously, all variables show a significant relationship with Islamic bank profit (ROA).

NPF (Non-Performing Financing) is a comparison of the level of risk of non-performing financing with the level of financing disbursed by banks. This is clarified where the NPF reflects the level of financing risk; the lower the NPF level, the smaller the level of financing risk that will be borne by the bank. On the other hand, the higher the NPF level, the greater the level of financing risk that will be borne by the bank.

The results shown in this study are in accordance with several previous studies where NPF was proven to have an effect on the level of profitability of a bank; for example, a recent study conducted by Purwasih and Wibowo (2021) in which the Non-Performing Financing (NPF) variable equally affects Return On Assets (ROA) as an indicator to track the level of profitability of Islamic banks. Thus, this research is expected to assist Islamic banks in analysing the factors that affect the profitability of Islamic banks in Indonesia.

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Appendix

Table 11: Islamic banks data from September 2019 – September 2021 (quarterly reports).

Bank	Quarterly	Inflation	Interest Rate	CAR	NPF (Net)	FDR	ROA
Bank Syariah Indonesia (BSI)	Dec 2019	2.95	5.00	25.25%	3.38%	80.12%	0.31%
	Mar 2020	2.87	4.75	21.99%	2.95%	92.10%	1.00%
	June 2020	2.27	4.41	23.73%	2,49%	91,01%	0,90%
	Sep 2020	1.42	4.00	19.37%	1,73%	82,65%	0,84%
	Dec 2020	1.57	3.83	19.04%	1.77%	80.99%	0,81%
	Mar 2021	1.43	3.58	23.09%	0,92%	77,28%	1,72%
	June 2021	1.47	3.50	22.58%	0,93%	74,53%	1,70%
	Sep 2021	1.57	3.50	22.74%	1.02%	74.45%	1.70%
Bank Muamalat	Dec 2019	2.95	5.00	12.42%	4.30%	73.51%	0.05%
	Mar 2020	2.87	4.75	12.12%	4,98%	73,77%	0,03%
	June 2020	2.27	4.41	12.12%	4,97%	74,81%	0,03%
	Sep 2020	1.42	4.00	12.48%	4,95%	73,80%	0,03%
	Dec 2020	1.57	3.83	15.21%	3,95%	69,84%	0,03%
	Mar 2021	1.43	3.58	15.06%	4.18%	66.72%	0.02%
	June 2021	1.47	3.50	15.12%	3,97%	64,42%	0,02%
	Sep 2021	1.57	3.50	15.26%	3.97%	63.26%	0,02%
Bank Panin Syariah	Dec 2019	2.95	5.00	14.45%	2.80%	95.72%	0.25%
	Mar 2020	2.87	4.75	16.08%	2.90%	98.21%	0.26%
	June 2020	2.27	4.41	16.27%	2.59%	105.47%	0.04%
	Sep 2020	1.42	4.00	15.64%	2.62%	93.87%	0.004%
	Dec 2020	1.57	3.83	31.42%	2.45%	111.71%	0.06%
	Mar 2021	1.43	3.58	30.08%	3.53%	117.45%	0.10%
	June 2021	1.47	3.50	30.54%	3.24%	111.41%	0.05%
	Sep 2021	1.57	3.50	31.06%	3.16%	118.94%	0.04%