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Determining the main factors of Islamic banks' profitability in Indonesia: Does Covid-19 crisis play an important role?

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Abstract

Purpose – This research aims to investigate the main factors of Islamic banks' profitability before and after the pandemic COVID-19 in Indonesia.

Methodology – The sample of this study is ten Islamic commercial banks that have complete data and are registered with Bank Indonesia. The data was analyzed by using a data panel regression estimation model based on the best estimation model which is the random effect model or REM.

Findings – Based on the result of the REM model, the study finds that both Islamic banks' internal variables such as NPF and OEF except CAR and FDR, and Islamic bank's external variables such as the Covid-19 crisis variables are significant in determining Islamic banking profitability In Indonesia.

Implications – The present research has implications for Islamic bank management and policy-makers as well as researchers.

Originality – This study will become one of the pioneers to examine empirically determining the main factors of Islamic banks' profitability before and post-Covid-19 in Indonesia. The findings will contribute to minimizing the negative impact of economic crises like the Covid-19 outbreak in Indonesia.

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Introduction

The Covid-19 or Coronavirus Disease-2019 pandemic has caused impact of global economic uncertainty and recession in various countries including Indonesia (Wuryandani, 2020). In Indonesia, the Covid-19 pandemic had a huge impact on all essential economic sectors (Tiara & Jayanti, 2022) such as micro small, and medium-sized enterprises or MSMEs (Sulaeman, 2020) the tourism sectors, transportation, and customer product (Ascarya, 2020), as well as banking industry (Riani & Ikhwan, 2022). Further, As part of the Indonesian economic system, Islamic banking has also been adversely affected by the presence of Covid-19, which has caused a decline in the performance of Islamic banks (Ristanto, 2021). The decline in the performance of Islamic banking

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can have implications for the level of profitability. Even though profitability is one indicator that can be used by investors or customers in investing or saving funds in banking institutions.

Furthermore, Syahri and Harjito (2020) stated that banking is a financial institution that has an important role as a driver of the national economy because it functions as an intermediary between parties who have excess funds and those who lack funds. Angraini et al., (2020) also mentioned that banking institutions including Islamic banks have a strategic role in developing the economy to improve the standard of living of the wider community. Islamic bank institutions are one of the important sectors of the national economy. Where banks distribute credit or financing to customers from the general public, MSMEs, as well as large corporations or companies, especially during the Covid-19 pandemic. So banks must evaluate and ensure that the projects to be funded are under the objectives of economic recovery. Also, maintaining financial performance and profitability is an obligation that must be carried out by the banks' management, especially during the current pandemic.

Since the pandemic, the Indonesian government has started issuing policies that can minimize the negative impact of Covid-19 on the banking industry, both conventional and sharia. Based on Shinozaki (2021) the policies are providing MSME subsidies, facilitating alternative financing services, restructuring credit or financing affected customers, and also Sulaeman (2021) mentioned maximizing the use of sharia Fintech (financial technology). Therefore, currently the Indonesian government continues to strive for recovery and recovery as well as rebounds in important sectors which have been heavily affected by the Covid-19 crisis with the aim of boosting the Indonesian economy. In addition, based on research from Sullivan and Widoatmodjo (2021), tested the financial performance of banks both before and during the pandemic to find out how bad the impact of the Covid-19 crisis was on the bank industry in Indonesia. Thus banking management can carry out policy strategies and appropriate steps in overcoming problems that are currently happening or that will occur in the future.

Furthermore, there are several researchers who have conducted research related to empirical analysis on the determinants of bank profitability both in Indonesia and in other countries. At the level of Indonesia scope, Anggraini et al., (2020), Anggraini et al., (2022), Anisa and Anwar (2021), Dongoran (2022), Hasanah and Hariyono (2022), Iman and Umiyati (2022), Imsar and Harahap (2022), Ken and Santioso (2022), Laili and Bawono (2022), Sahli and Kartika (2022), Syahri and Harjito (2020), Tumewang et al., (2019) who are study about the determinant of profitability in Indonesia. They found various results from empirical evidence. Meanwhile, at the global scope, Isayas (2022), and Mondol and Wadud (2022) currently analyzed the factors of bank profitability in Ethiopia and Bangladesh. We also followed the research from Ristanto (2021) and Sullivan and Widoatmodjo (2021). However, based on the authors' investigation, there is still space for further investigation into the determinant of Islamic bank profitability in Indonesia especially related to current problems such as Covid-19 outbreaks. This is because the research on Islamic both bank profitability and the Covid-19 crisis is still limited. Therefore, this is our motivation to extend further research and to examine the main factors of Islamic banks' profitability in Indonesia during the Covid-19 pandemic.

Based on the explanation of the background, this study aims to: (1) analyze empirically the main factors of the profitability of Islamic banks in Indonesia, and (2) analyze empirically the effect of the Covid-19 crisis on the profitability of Islamic banks in Indonesia. The research results are expected to be useful for policymakers as well as for Islamic banking circles, including: (1) For Islamic banks, it can be used as input for policies in improving financial performance and risk management in dealing with various possible financial risks that will be faced so that the level of profitability can be achieved. maintained, and (2) For the government, research results can be used as input in formulating policies in achieving sustainable development goals and economic and social recovery programs after the Covid-19 outbreaks in Indonesia.

Literature Review

Profitability

From the views of experts, profitability is the ability of a company's management to earn a level of profit (Sutrisno, 2003). Profitability theory reveals that financial performance can be an important reference in measuring the amount of profit and how the company runs its operations efficiently. Syamsuddin (2000) defines profitability as the ability of a company's management to obtain greater profits related to sales, total assets, and also long-run debt.

According to Hasanah and Hariyono (2022), profitability also is the ability of a company to earn a profit through optimization and efficiency of the company's resources to assist in accelerating the company to achieve the desired level of profit and the expected level of efficiency. In assessing a company in obtaining profits, it can be seen from the value of the profitability ratio as an indicator. Other perspectives from Iman and Umiyati (2022), profitability in a company is related to how the description of its financial performance or performance. Therefore, it can be said that financial performance is a review or investigation which can be seen to what extent an institution/corporation or company is carrying out its operations.

Furthermore, to measure the performance of a company, there are four measurements of profitability in existing literature (Al-akhiri, 2021). The detail explained as followed:

1. Gross profit margin (GPM): GPM is the margin of gross profit to know the gross profit of a company. GPM is used to measure the efficiency of controlling the cost of production or production costs in other words measuring the production capability of a company efficiently.
2. Net profit margin (NPM): NPM is an illustration of how much net profit a company earns in each sale. In other words, NPM measures profit or net profit after tax on sales.
3. Return on investment (ROI): ROI is a ratio which is also known as return on assets which shows how a company generates profit from the assets used. ROI illustrates the effectiveness of management in using assets to earn income.
4. Return on equity (ROE): ROE is also known as return on net worth or the company's ability to obtain greater profits available to parties or shareholders of the company or also to determine the amount of return given by the company of capital from owners. ROE is influenced by the size of the company's debt.
5. Return on assets (ROA): ROA is an illustration of the efficiency of the company's performance, including Islamic banking. This ratio is very important and is widely used as a tool to measure the value of a bank's profitability as measured by the value of productive assets whose funds are mostly derived from third-party funds or TPF. Many researchers used ROA as a measurement of the profitability of a company including banking. Thus, following the previous studies, we used ROA as Islamic bank’s profitability.

Theoretical Framework and Hypotheses Development

In this section, we explain the related theory and five hypotheses. Our theoretical framework in this study is shown in Figure 1. Generally, it is hypothesized that CAR, NPF, FDR, and OEF, as well as Covid-19, will impact the Islamic bank’s profitability (ROA) in Indonesia.

Capital Adequacy Ratio (CAR) and Islamic banks’ profitability

Based on the theory, the capital adequacy ratio or abbreviated as CAR is the ratio in measuring capital adequacy to risk-weighted assets. CAR is a bank’s capital adequacy ratio in which capital is one of the important factors in developing a business. CAR is an indicator to see the performance of a bank institution and also shows the ability of bank management to bear losses. So in theory that an increase in the value of the CAR ratio indicates that the bank can deal with possible risks that will occur. CAR also has a positive correlation with the level of bank profitability. There is previous research related to the relationship between CAR and bank profitability such as Imsar and Harahap (2022); Isayas (2022), and Mondol and Wadud (2022). Where Imsar and Harahap (2022) researched the relationship between CAR and the level of profitability of Islamic state-owned banks in Indonesia for the period 2011-2018. The results of their research found that there was a positive and significant relationship between CAR and profitability in Indonesia. Isayas (2022) and Mondol and Wadud (2022) also found CAR has a positive significant effect on the profitability of the bank. Therefore, the first hypothesis is followed:

H1. The CAR significantly affects the Islamic Banks’ Profitability in Indonesia

Non-Performing Financing (NPF) and Islamic banks' profitability

Based on the theory, NPF is an analogy of a non-performing loan or NPL in conventional banking which is the ratio of credit or loan risk. Where NPF is the ratio of financing risk in Islamic banking in which a difficult situation in paying off financing is done intentionally or by external factors beyond the control of the customer. Research related to the relationship between NPF and bank profitability has been carried out by Laili and Bawono (2022) who found that financing risk such as NPF has a negative and significant influence on the profitability level in Islamic banks in Indonesia. Other research conducted by Ristanto (2021) and Sullivan and Widoatmodjo (2021) also found that there was a significant relationship between financial risks such as NPLs and financial performance, especially during the Covid-19 pandemic. Therefore, the second hypothesis is followed:
H2. The NPF significantly affects the Islamic Banks' Profitability in Indonesia

Financing to Deposit Ratio (FDR) and Islamic banks' profitability

Based on the theory, FDR is a comparison between the amount of financing provided by the bank and the funds received by the bank from other parties. So it can be said that FDR measures the ability of banks to return funds. FDR is also an indicator of the level of banking liquidity in which when a customer withdraws funds, the bank can provide the required funds. FDR as a measure of a bank's ability to channel financing is offset by the bank's ability to meet customer withdrawals. There are previous studies that have also conducted empirical research related to the relationship of FDR to the level of bank profitability as carried out by Imsar and Harahap (2022) and Isayas (2022) who found that FDR has a significant increase in the level of profitability in the banking sector. Therefore, the third hypothesis is followed:
H3. The FDR significantly affects the Islamic Banks' Profitability in Indonesia

Operational Efficiency (OEF) and Islamic bank's profitability

Based on the theory, OEF is a measurement to see the level of banking efficiency, both Islamic banking, and conventional banking. OEF is a comparison between operating expenses and the level of operating income of a bank in a certain period. As Anisa and Anwar (2021) state that the higher the value of the OEF ratio, the higher the level of operational costs. This means that banks have a low level of efficiency. In addition, a high OEF value indicates that the bank's management is unable to optimize the management of its internal resources in its business operations. So a high OEF value indicates that the bank is not carrying out its operational activities efficiently (Ken & Santioso, 2022). Ascarya and Yumanita (2011) mentioned that the level of operational efficiency can reflect the quality of bank management. Several previous studies have also examined the relationship between OEF and profitability such as Anisa and Anwar (2021), Imsar and Harahap (2022), Ken and Santioso (2022), Mondol and Wadud (2022), Ristanto (2021), and Sullivan and Widoatmodjo (2021) who showed that different results but the majority of research found that OEF has a negative and significant relationship to the level of bank' profitability in Indonesia or other countries. Therefore, the fourth hypothesis is followed:
H4. The OEF significantly affects the Islamic Banks' Profitability in Indonesia

Covid-19 risis (Covid-19) and Islamic banks' profitability

In looking at the development of banking financial performance, especially the level of banking profitability, the external factors of the bank itself also have a significant influence, both directly and indirectly. The crisis became one of the external factors that also influenced the financial sector in 1997-1998 and 2007-2008. The crisis that never happened gave a lot of impetus to carrying out investigations of banking performance. This is done because the research results can become a policy reference. The resulting policies can be used as material for evaluating bank performance which will be able to determine the future of banking (Sullivan & Widoatmodjo, 2021). At present,

Covid-19 is a new crisis that also affects economic conditions and also includes the Islamic banking industry in Indonesia. As research conducted by Pamuncak and Wijaya (2022) that the Covid-19 crisis has a significant effect on the level of firms' profitability in Indonesia. In addition, other studies were conducted Ristanto (2021) who analyzed the effect of the Covid-19 crisis on banking performance in Indonesia. The findings show that Covid-19 has had a significant effect on the financial performance of 43 Indonesian banks. Therefore, the fifth hypothesis is followed:
H5. The Covid-19 significantly affects the Islamic Banks' Profitability in Indonesia

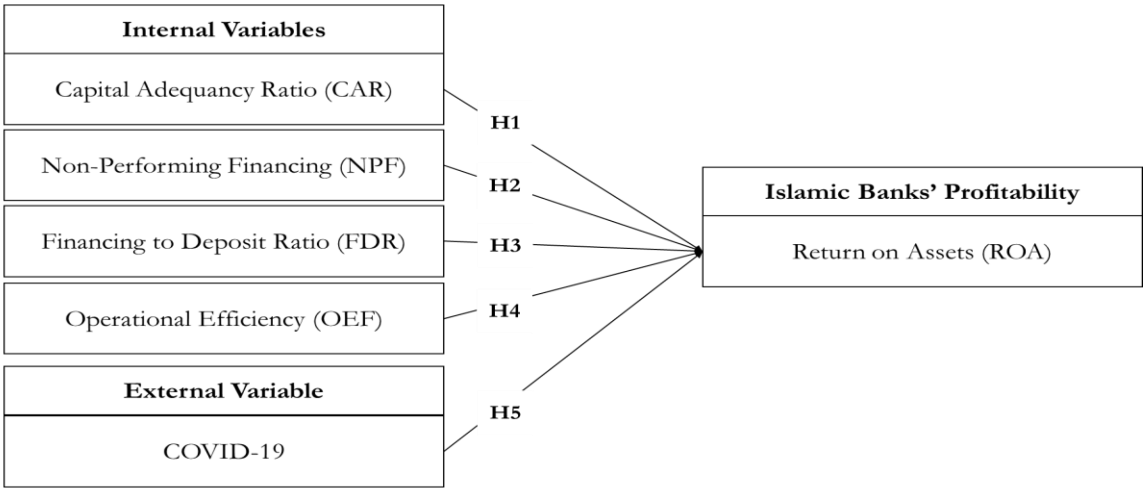

Figure 1. Theoretical Frameworks

Research Methods

Data, Sample, and Research Variables

The data used in this study is secondary data from the annual report of Islamic commercial banks in Indonesia from the period 2015 to 2021. The data period that we use in this study has limited data availability for all samples, so we only use data from the 2015-2021 period. The sample of this research is ten Islamic commercial banks that have complete data and are registered with Bank Indonesia. The ten Islamic commercial banks are Bank Mega Syariah, Bank Muamalat Indonesia, Bank Negara Indonesia (BNI) Syariah, Bank Nusa Tenggara Barat (NTB) Syariah, Bank Panin Dubai Syariah, Bank Rakyat Indonesia (BRI) Syariah, and Bank Syariah Mandiri (BSM). We followed Syahri and Harjit (2020) for the selection of the sample. The explanations of the individual variables are summarized in Table 1.

Table 1. Research Variables

Variables		Indicators	Exp.	Sign
Dependent Variable				
Islamic Bank's Profitability	ROA (Return on Asset)	Return on assets (ROA) is defined as the net profit after tax to total assets	%	n/a
Internal Variables				
Capital Adequacy	CAR (Capital Adequacy Ratio)	Capital adequacy is defined as the ratio of shareholders equity to total assets	%	(+)
Financing Risk	NPF (Non-Performing Financing)	Non-performing financing is defined as the ratio of financial risk to total financing	%	(-)
Liquidity Ratio	FDR (Financing Deposit Ratio)	A financing deposit is defined as the ratio of financing to third-party funds	%	(+)
Operational efficiency	OEF (Operating Efficiency)	Operating efficiency is computed as the ratio of total operating cost to total operating income of banks	%	(-)
External Variable				

Dummy Covid-19 Crisis	Covid-19	Measuring Crisis 0 = Pre Covid-19 1 = Post Covid-19	Dummy	(-)

Specification Empirical Models

In this research, the specification models are followed based on previous empirical research such as Pamuncak and Wijaya (2022) and Mondol and Wadud (2022), using ROA as an Islamic bank's profitability variable and CAR, NPF, FDR, and OEF as Internal Islamic banks variables, and Covid-19 as a dummy crisis or external variable. ROA is a dependent variable. Whereas independent variables in this study are internal and external variables.

To test all hypotheses for this study, we attempt to use longitudinal data or a data panel based on the econometrics guidelines by Gujarati and Porter (2012). There are three models of data panel namely: Pooled Least Square (PLS), Fixed Effect Model (FEM) dan Random Effect Model (REM). For the best model, according to Pindyck and Rubinfield (1998), and dan Wooldridge (2001), Chow test, Hausman test, and LM test are used to know the best estimation model in this study.

For the empirical examination, the following regression equation is as follows:

$$ROA_t = \beta_0 + \beta_1 CAR_1 + \beta_2 NPF_2 + \beta_3 FDR_3 + \beta_4 EOF_4 + \beta_5 COVID - 19_5 + \varepsilon_t$$

Where t = periods, β_0 = constant term; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = the regression model when the slope of the dependent variable change that will change the unit change in the independent variable; and ε = error terms.

Results and Discussion

Statistical Descriptive Analysis

In this section, descriptive statistical analysis for independent and dependent variables presents mean, standard deviation, minimum, and maximum as shown in Table 2. Statistical descriptive results explained 67 data observations which are unbalanced panel data. For Islamic banks' profitability, the mean value of ROA variable is 0.9034%. The maximum value for ROA is 4.27% whereas the minimum value is -10.77%. In the case of Islamic banks' internal factor variables, the mean values of CAR, NPF, FDR, and OEF are 21.9799%, 3.2710%, 85.1824%, and 93.1330% respectively. The maximum values of all internal factors are 45.30%, 12.52%, 196.73%, and 217.40% whereas the minimum values are 11.51%, 0.32%, 38.33%, and 64.64% respectively. In the case of the Islamic bank's external factor variable, the average values of Covid-19 are 0.2537. Covid-19 has a maximum value of one and a minimum value of zero.

Table 2. Statistical Descriptive Results

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
ROA	67	0.9034	2.0097	-10.7700	4.2700
CAR	67	21.9799	7.6294	11.5100	45.3000
NPF	67	3.2710	2.3826	0.3200	12.5200
FDR	67	85.1824	18.1374	38.3300	196.7300
OEF	67	93.1330	22.5334	64.6400	217.4000
Covid-19	67	0.2537	0.4384	0.0000	1.0000

Classical Assumption Analysis

Table 3. Classical Assumption Results

Classical Assumption Test	Indicators	
Multicollinearity Variance Inflation Factors (VIF)	Centered VIF < 10	1.42
Autocorrelation B-G Serial Correlation LM Test	P-value > 0.05	7.3130

Heteroscedasticity Breusch-Pagan-Godfrey Test	P-value > 0.05	4618.1300

Table 3 provides the results of the classical assumption test. In the multicollinearity test, based on variance inflation factors (VIF), there are no multicollinearity problems. This is because the centered VIF value is under ten for all variables in this study. Meanwhile, this study finds that there are autocorrelation and heteroscedasticity problems. However, these problems can solve with 'Robust Standard Errors for Panel Regressions with Cross-Sectional Dependence' developed by Daniel, Hoechle Daniel (2014).

Model Specification Analysis

Many researchers have used panel data regression methods to examine empirically the main factors of profitability of commercial banks. For the best selection estimation methods, we run the Chow test, LM test, and Hausman test as shown in table 4.

Table 4. Model Specification Results

Model Specification Test	Results	Decision
Chow Test	2.40(0.0231)	
LM Test	3.41(0.0323)	Random Effect Model (REM)
Hausman Test	6.45(0.2652)	

Table 4. presents three model specification results namely: (1) Chow test suggests that if the null hypothesis is accepted, then the fixed effect model or FEM may be more appropriate to be used compared to pooled least square (PLS). Based on the result of Chow test, the model is 0.0231 which is less than 0.05 (5%) significant level. It means that FEM is the best model; (2) LM test suggests that if null hypothesis is accepted, then the random effect model or REM may be more appropriate to be used compared to pooled least square (PLS). Based on the result of LM test, the p-value of the model is 0.0323 which is less than 0.05 (5%) significant level. It means that REM is the best model, and (3) Hausman test is the last test for choosing the best model estimation. If null hypothesis is accepted, then the fixed effect model or FEM may be more appropriate to be used compared to random effect model or REM. Based on the result of Hausman test, the p-value of model is 0.2652 which is excess of 0.05 (5%) significant level. It means that REM is the best model. Therefore, for final best estimation model is REM in this study.

Panel Data Regression Analysis

Table 5. Panel Data Regression Results

Dependent Variables	Islamic Banks' Profitability (ROA)		
Independent Variables	(1) PLS	(2) FEM	(3) REM
CAR	-0.0009	0.0152	0.0035
	0.9290	0.3560	0.7620
NPF	-0.1019489***	-0.1296203***	-0.1112056***
	0.0060	0.0030	0.0030
FDR	0.0044	0.0028	0.0032
	0.2270	0.4450	0.3510
OEF	-0.0813813***	-0.0764281***	-0.0790301***
	0.0000	0.0000	0.0000
Covid-19	-0.2183	-0.3241074**	-0.2546655*
	0.1390	0.0320	0.0630
Constant	8.518669***	7.950668***	8.337742***
R-Squared	0.9440	0.9380	0.9434
F/Wald Test	205.75(0.000)	137.11(0.000)	895.84(0.000)

Notes: ***,**,* denote significance of coefficients at 1 %, 5 %, 10 % levels, respectively.

Table 5 shows the panel data regressions results such as PLS, REM, and FEM. In general, the FEM and REM present similar results where three variables namely NPF, OEF, Covid-19 are significant at different levels of significance. Meanwhile, the result of PLS model stated that NPF and OEF are the variables who a significant effect on the Islamic bank's profitability in Indonesia at the 1% (0.01) level of significance. However, CAR and FDR are not the main factors of Islamic banks' profitability because both variables are insignificant determinants of Profitability for ROA model. Table 5 also provides the results of overall R^2. Where R^2 indicates about the variation in the dependent variable is explained by the included independent variables. The results of R^2 in this model are 0.9440 (PLS), 0.9380 (FEM), and 0.9434 (REM). It means that about 94.40%, 93.80%, and 94.34% of variation dependent in the Islamic banking sectors are explained by explanatory or independent variables and the remaining 5.60%, 6.20%, and 5.66% of variation are due to error terms. The F test or Wald test values are 205.75 (PLS), 137.11 (FEM), and 895.84 (REM) which measure the overall significance of panel data regression models.

Discussions

Capital Adequacy Ratio (CAR) and Islamic banks' profitability

CAR is a representation of the authorized capital adequacy that must be met by the management of Islamic banks. Thus, CAR becomes one of the indicators of Islamic banking financial performance. The higher CAR value means stronger the Islamic banking in addressing the risk of any productive assets that contain risks such as financing or also credit. Therefore, CAR influences the level of Islamic banks' profitability in Indonesia. However, according to the empirical results in Table 5, the CAR variable shows an insignificant effect on the level of Indonesian Islamic banks' profitability. In other words, an increase in the value of car in Islamic banking will not have a significant effect on increasing its profitability. This finding is in line with previous studies such as Anggraini et al. (2020), Anisa and Anwar (2021), and Hasanah and Hariyono (2022) who found that there was no significant relationship between CAR and profitability. Therefore, H1 is not supported as shown in Table 6.

Non-Performing Financing (NPF) and Islamic banks' profitability

NPF is a reflection of financing risk in the banking industry, including Islamic banking. Where the smaller NPF value means a lower of financing risk in Islamic banks. Based on the empirical finding in Table 5, NPF has a significant influence on the level of Islamic commercial banks' profitability with a coefficient value of -0.1112056 at a significant level of 1% (0.01). The result indicates a strong relationship between financing risk and Islamic banks' profitability in Indonesia. As the theory explains that the level of financing risk will decrease the profit level of banks. The high level of NPF can cause the growth of Islamic banking in Indonesia to tend to be small. This finding is in line with Laili and Bawono (2022), Ristanto (2021), Sullivan and Widoatmodjo (2021) who found that there is a negative significant relationship between NPF and Islamic banks' profitability in Indonesia. Therefore, H2 is supported as shown in Table 6.

Financing to Deposit Ratio (FDR) and Islamic banks' profitability

FDR is an indicator in measuring the level of liquidity in banks. Where the higher the FDR value, the higher the level of liquidity, or in other words the bank can meet customer needs for funds. However, if the FDR value is low, the bank has a risk of returning customer funds. However, based on the empirical results in Table 5, we find that FDR does not have a significant effect on the profitability of Islamic banks in Indonesia. In other words, these findings confirm that FDR is not the main factor in determining the level of profitability of Islamic banking in Indonesia. The results of this study are not in line with the theory which states that FDR is a factor in determining the level of bank profitability. Another empirical study that also found the same result is Anggraini et al. (2020) and Anisa and Anwar (2021) who found that there was no effect of FDR on banking profitability. Therefore, H3 is not supported as shown in Table 6.

Operational Efficiency (OEF) and Islamic banks' profitability

Another internal variable, OEF is a representation of operational cost efficiency. Based on the empirical results in Table 5, OEF has a significant relationship with Islamic banks' profitability in Indonesia with a coefficient value of -0.0790301 at the significant level of 1% (0.01). Our findings are following the existing theory which states that the higher operational costs indicate the less efficient management of Islamic banks. The findings also are in line with the research conducted by Anisa and Anwar (2021), Imsar and Harahap (2022), Ken and Santioso (2022), Mondol and Wadud (2022), Ristanto (2021), and Sullivan and Widoatmodjo (2021) who found that there was a negative significant relationship between OEF and banks' profitability. Therefore, H4 is supported as shown in Table 6.

Covid-19 Crisis (Covid-19) and Islamic banks' profitability

Furthermore, on the external variables of Islamic banking, Covid-19 as a dummy variable is a representation of the current crisis. Based on the empirical results in Table 5, the Covid-19 variable has a negative significant relationship with Islamic banks' profitability in Indonesia with a coefficient value of -0.2546655 and at the significant level of 10% (0.10). Our findings indicate that the Covid-19 crisis caused a slump in important sectors in Indonesia including the Islamic banking industry which has contributed to increasing national economic growth. It is evident that during the Covid-19 outbreak the national economic growth level decreased to a negative value. The finding also is in line with the theory and previous studies such as research conducted by Pamuncak and Wijaya (2022), and Ristanto (2021) which stated that the Covid-19 crisis has a negative impact on companies' profitability in Indonesia. Therefore, H5 is supported as shown in Table 6.

For the summary of the best model estimation in this research, Table 6 displays the result of random effect model (REM).

Table 6. Summary of REM Estimation Results

No.	Hypothesis	Relationship	Regression Results	Decision
1.	H1	CAR → ROA	(+) InSignificant	Not Supported
2.	H2	NPF → ROA	(-) Significant	Supported
3.	H3	FDR → ROA	(+) InSignificant	Not Supported
4.	H4	OEF → ROA	(-) Significant	Supported
5.	H5	Covid-19 → ROA	(-) Significant	Supported

Conclusion

Based on the empirical results of the panel data regression method especially REM model, conclusions in this study can be a drawn: (1) the main determinants of Islamic bank's profitability in Indonesia in the period of 2015 – 2021 are NPF and OEF as internal variables and Covid-19 as an external variable. Those variables show a significant relationship to the Islamic banks' profitability in Indonesia with the same expected sign. Meanwhile, other variables such as CAR and FDR do not have a significant effect on the profitability level of Islamic commercial banking in Indonesia especially before and during the Covid-19 pandemic era; (2) in addition, in terms of the external variable of Islamic commercial banks in Indonesia. the other main determinant in this research is the Covid-19 variable. Empirical results show that there is a relationship between the Covid-19 crisis and the profitability of Islamic banking in Indonesia. It means that Indonesian Islamic banks are still vulnerable to crises that occur especially the crisis caused by the global pandemic.

Based on the conclusion of this study, the policy recommendations are: For Islamic banking industry: The empirical results of the study are expected to be a reference in improving the performance of bank management. This is because our main variables are a representation of the financial performance of Islamic banks in Indonesia. Two of four variables have a significant influence on a profitability level. Islamic bank management should maintain important indicators of company financial performance at a safe level. Because financial performance is used by investors to see the performance of Islamic banking in Indonesia. Islamic commercial banks should have good risk management to be able to control any level of financing risk caused by failure to return financing funds from customers to Islamic banks. If the financing risk is under control it will have a negative impact on the growth of Islamic banks. Therefore, there needs policy to achieve financing risk at the level of 'very healthy' based on the Bank Indonesia which the level NPF ratio is under 2%. Moreover, Islamic bank management needs to manage operational costs and the level of 'very healthy' is less than 94%. Because OEF ratio will represent of efficiency of Islamic banks in Indonesia. Furthermore, Islamic bank management should be prepared to face uncertainty from other external risks such as the recent crisis like the Covid-19 pandemic.

In addition, our research has several limitations such as limitations in the sample and the data observation. Thus, future researchers should add more data and samples to capture comprehensive empirical results. Also, future research is required to observe the longer period of Covid-19 impact on Indonesian Islamic banks' profitability. And then, future researchers are needed to add other Islamic banks' profitability indicators for measuring the profitability for example return on equity (ROE), Net Profit Margin (NPM), or others variables.

Author Contributions

Conceptualization: Sulaeman, Ahmad Munawar
Data curation: Sulaeman
Formal analysis: Sulaeman
Investigation: Sulaeman
Methodology: Sulaeman
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