



## Analyzing Performance Determinants: Islamic Rural Bank Performance in Indonesia

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### Abstract

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Islamic Rural Banks are unique in terms of financing distribution because they are limited to the scope of certain areas in Indonesia. This study examines internal and external factors on the performance of Islamic Rural Banks in Indonesia which present financial products, especially for the micro, small and medium business sectors. ROA measures performance variables, internal variables consist of NPF, FDR, CAR, and PLS, external variables consist of economic growth, inflation, and the BI rate. The data comes from the IRBs Statistical Annual Report for 2015-2021 using the Auto Regressive Distributed Lag (ARDL) analysis method to see long-term and short-term relationships between variables. This study found that two internal variables, namely FDR and PLS, experienced delays but had an effect on ROA in the short term, for NPF and CAR in the short-term research had no effect on ROA. As for external variables, only the BI rate affects ROA, while GDP and inflation do not affect ROA. Furthermore, the results of long-term research show that all internal factors affect ROA, while external factors, only the BI rate, affect ROA. From the results of this study, it was found that IRBS should focus on managing their business rather than expanding the scope of business because the revenue that IRBS gets comes from their performance which tends to be influenced by internal IRBS factors.

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## INTRODUCTION

The development of the Islamic financial services industry in Indonesia is more oriented toward the retail sector (Fithria et al., 2021). This is shown through Islamic financial practices in Indonesia with a developed type, such as in the Islamic Rural Banks (OJK, 2015). IRBs have a uniqueness and transaction specificity slightly different from Islamic commercial banks. Islamic Rural Banks operate traditionally with a financing mechanism for the community (Risfandy & Pratiwi, 2022a). IRBs customers from rural areas, such as farmers, fishermen, small traders, and communities with minimum capital in the provincial area ((Devi & Firmansyah, 2018; Wasiaturrahma et al., 2020)

IRBs is a Sharia bank that serves to finance, especially in the micro sector. There are 64.2 million MSMEs with a GDP contribution of 61% or Rp8.573 trillion (KNKS, 2021). However, many MSMEs are not reached by access to banking services ([www.bi.go.id](http://www.bi.go.id), 2019). The presence of IRBs in the micro sector is expected to be able to increase community economic activity,

especially in rural areas where MSMEs face many obstacles in obtaining business capital services (Amelia & Hardini, 2017; Priyadi et al., 2021).

In addition to the service orientation that tends to be only in the micro sector, IRBs also cannot carry out transactions such as Islamic banks such as foreign exchange and insurance (Fatmawati et al., 2019). As an Islamic-based bank, IRBs can only perform services on transactions that are per sharia principles (Risfandy & Pratiwi, 2022b; Trinugroho et al., 2018). With the limitations in the transaction, it will be interesting to investigate further the performance of IRBs and how IRBs mitigates credit risk by diversifying financing to improve their performance.

Several internal and external factors can influence performance in Islamic banks. Previous research on the performance of IRBs during the Covid-19 pandemic by (Risfandy & Pratiwi, 2022) is influenced by internal variables, namely credit differentiation, CAR, CIR, and external factors of covid. In addition, the internal factors that affect performance are NPF, Size, BOPO, FDR, and ROA (Endri et al., 2022; Fakhrunnas et al., 2019; Muhammad et al., 2020; Priyadi et al., 2021). In their research, Hosen & Muhari (2013); Masood & Ashraf (2012) revealed that internal factors such as NPF would have a direct effect on banking performance, they found that Return on Asset (ROA) and Return on Equity (ROE) were influenced by NPF. Meanwhile, external factors also affect banking performance, such as inflation, interest rates, and GDP (Kosmidou, 2008; Widarjono et al., 2021). Lin et al. (2016) found that inflation would negatively and significantly affect bank performance. Some researchers like Rashid & Jabeen (2016); Trad et al. (2017) found that GDP had a negative effect, but (Cupian & Abduh, 2017) found different results where GDP has a positive and significant impact on Islamic banks.

From the limitations of IRBS transactions described above and the differences in the results in these previous studies, this study aims to analyze internal and external factors for the performance of rural banks in Indonesia for the 2015-2021 period. Performance is measured using ROA variables, internal variables with NPF, FDR, CAR, and PLS, and external factors with GDP, Inflation, and BI rates.

## LITERATURE REVIEW AND HYPOTHESIS

### IRBs Performance in Indonesia

Many poor households and MSMEs still do not take advantage of legal loan services and do not have access to banking services. Even people below the poverty line opt for non-formal loans that set much higher interest rates (Priyadi et al., 2021). The presence of IRBs can certainly facilitate public access to financing, especially for small and medium enterprises, which can solve the lack of available funds. According to Widarjono et al. (2020), The role of IRBs is vital in the economic sector of Indonesia because it focuses on providing financing and micro and medium enterprises. In addition, the presence of IRBs not only provides funding but is expected to improve living standards through the empowerment of small communities (Nur et al., 2020).

We are seeing how important the existence of IRBs certainly needs to be a common concern about the performance of IRBs in carrying out their role as an Islamic financial institution. As an Islamic financial institution that provides access to services at the microfinance level, IRBs certainly cannot avoid the same risks as other Islamic banks (Fakhrunnas et al., 2019). There are internal and external risks in rural banks, internal risks, namely risks related to the internal financial condition of rural banks, and external risks, namely several macroeconomic factors, such as inflation, interest rates, and GDP. The impact of these two risks can be directly or indirectly on the performance of Islamic banking (Almazari, 2014).

The performance of IRBs can be measured by looking at how much profit it has using the ROA (Return on Assets) indicator. ROA is one of the profitability indicators of financial performance. The Return on Asset (ROA) ratio is used to measure the ability of bank management

to obtain profits or overall profits (Risfandy & Pratiwi, 2022). ROA shows the effectiveness of IRBs in managing its assets, therefore a high ROA level means that the bank's performance is also better (Priyadi et al., 2021).

### **IRBs Performance and Non-Performing Financing**

Financing is the largest source of income in banks. Most banking assets are obtained from financing (Priyadi et al., 2021). However, some risks often arise in the financing, namely bad debts or NPF. Fakhrunnas et al. (2019) revealed internal risks that are often challenging for IRBs, namely financing risks in the form of Non-Performing Financing (NPF). NPF is an indicator for analyzing financing risks. By looking at the NPF level, banks can evaluate their performance, then NPF is also used to show liquidity, rentability, and solvency ratios (Paulin & Wiryono, 2015).

Internal factors such as NPF directly affect banking performance (Hosen & Muhari, 2013; Masood & Ashraf, 2012). A low NPF on financing will indicate a high profit, and vice versa. If the bank provides financing to customers who are not in trouble with bad debts / NPF, then this will increase the bank's profitability (Priyadi et al., 2021).

Hosen & Muhari (2013) ; Masood & Ashraf (2012) found that NPF affects Return on Asset (ROA) and Return on Equity (ROE). High NPF will affect the financial performance of IRBs, then financial performance will affect profitability (Said, 2015). Moreover, Umami & Rani (2021), in their research on IRBs in Indonesia, stated that ROA and NPF have a negative relationship.

H<sub>1</sub>: NPF has a significant effect on ROA

### **IRBs Performance and Financing to Deposit Ratio**

The comparison between how much funds can be raised from customers and the financing that can be distributed to the public can be seen from FDR (Pravasanti, 2018; Priyadi et al., 2021). Funds collected from the community are in the form of deposits or savings and other deposits. The financing provided consists of debt financing and equity financing. The higher FDR will improve the company's performance. Then, the increased performance of the bank will also increase the profit generated by the bank (Ahmadi, 2017)

H<sub>2</sub>: FDR has a significant effect on ROA

### **IRBs Performance and Capital Adequacy Ratio**

(Sukmana, 2015) states CAR is a ratio used to measure a bank's capital adequacy, CAR is used as a valuable indicator to manage the risk of loss of productive assets, especially those derived from financing risk. The increase in CAR will impact public confidence, high in turn can increase bank profitability (Ahmadi, 2017).

Bank Indonesia has set a minimum requirement for the CAR ratio at 8%. With these provisions, it is expected that the capital adequacy of Islamic banks will be high. Because bank management will be free to channel its funds into activities with high capital and will undoubtedly be profitable to increase profitability (Archer & Karim, 2009)

H<sub>3</sub>: CAR has a significant effect on ROA

### **IRBs Performance and Profit-Loss Sharing**

Sharia principles in Islamic religious doctrine are the foundation of Islamic banks in carrying out their operational activities, one of which is profit-loss sharing (Abbas & Arizah, 2019). Based on Islamic banking data in the 2021 Financial Services Authority Report, Murabaha is still the dominant contract in Islamic banking, including the IRBs. If it is concentrated, about 60% of activities are with murababah contracts, while 30% are with mudharabah and musyarakah contracts, while the rest are with contracts outside of the three (Statistik Perbankan Syariah, 2021)

The research conducted by Haron (1996) identified that profit sharing is a significant factor in profitability in Islamic banks. Another study conducted by Wiros (2005) states that when the profit share increases, the income also increases, and with the increase in bank income, the profit that Islamic banks will receive will also increase. In other words, the greater the level of profitability of Islamic banks, the better the performance of Islamic banking.

H<sub>4</sub>: PLS has a significant effect on ROA

### **IRBs Performance and Inflation**

Inflation is a continuous increase in the price of goods and services in the economy from time to time (Haniifah, 2015; Priyadi et al., 2021). Rising inflation can result in a decrease in bank income or profits, because inflation will weaken the ability of people who become bank debtors to pay their installments (Fakhrunnas et al., 2019; Priyadi et al., 2021). Therefore, banks will reduce their financing expansion in the event of inflation.

Al-Wesabi & Ahmad (2013); Fakhrunnas et al. (2019), they used panel data analysis and stated that inflation positively impacted the performance of Islamic banks. This means that the higher the inflation, the higher the performance of Islamic banks. But (Lin et al., 2016) finding something different, they stated that inflation would negatively affect the performance of banks. They analyzed that Islamic banks are more sensitive when a financial crisis occurs because it is difficult to face financial risks, one of which is macroeconomic risks.

H<sub>5</sub>: Inflation has a significant effect on ROA

### **IRBs Performance and GDP**

Gross Domestic Product is a macroeconomic factor in measuring the condition of economic growth through the summation of the value of goods and services in a country in a certain period (Sukirno, 2013). A fast-growing economy can stimulate banks to increase financing (Priyadi et al., 2021). It is expected that by expanding the financing, the returns obtained will increase and can increase profitability.

The research conducted by Cupian & Abduh (2017) states that economic growth projected with GDP has a significant positive effect on the performance of Islamic banks. Moreover, Kanwal & Nadeem (2013), who examined the impact of GDP on ROA in conventional banks in Pakistan found that GDP had a positive but not significant effect on ROA.

H<sub>6</sub>: GDP has a significant effect on ROA

### **IRBs Performance and Interest Rates**

The BI rate or Bank Indonesia interest rate is a projection of the guideline interest rate for determining deposit and loan rates. The BI Rate is one of the factors of bank profitability in setting the interest rate distributed to the public (Fuadi et al., 2022). The increase in the BI rate does not directly affect Islamic banks. Because in their operating activities, Islamic banks are not guided by interest rates, and Islamic banks also make internal regulations, such as anticipation of interest rate increases by increasing the competitive profit-sharing ratio (Syah, 2018).

Research conducted by (Fuadi et al., 2022; Syah, 2018) mentioned that the BI rate has a positive and significant effect on the performance of Islamic banking, which is projected with ROA. (Karim, 2008) stated that Bank Indonesia's interest rates can influence the profitability of Islamic banks. When the interest rate increase occurs, the deposit rate also increases, this has a direct effect on increasing third-party sources of funds from Islamic banks.

H<sub>7</sub>: BI rate has a significant effect on ROA

## RESEARCH METHODS

This study uses secondary data on the IRBs Report in Indonesia published by the Otoritas Jasa Keuangan for January 2015-December 2021 and Bank Indonesia Statistics. The research method uses ARDL (Auto Regressive Distributed Lag). This method can estimate the relationship between variables in the short and long term (Sukmana & Setianto, 2018).

First, this method's analysis step is a descriptive data analysis. Second, the Stationarity test (unit root test) with Augmented Dickey-Fuller Test. Third, test classical assumptions and test data cointegration. Then, estimate the short and long-term model and determine the lag.

In this study, the ARDL model can be written as follows:

$$ROA_t = a_0 + \sum_{i=1}^n a_{1i} NPF_{t-1} + \sum_{i=1}^n a_{2i} FDR_{t-1} + \sum_{i=1}^n a_{3i} CAR_{t-1} + \sum_{i=1}^n a_{4i} PLS_{t-1} + \sum_{i=1}^n a_{5i} GDP_{t-1} + \sum_{i=1}^n a_{6i} IF_{t-1} + \sum_{i=1}^n a_{7i} IR_{t-1} + \beta_1 NPF_{t-1} + \beta_2 FDR_{t-1} + \beta_3 CAR_{t-1} + \beta_4 PLS_{t-1} + \beta_5 GDP_{t-1} + \beta_6 IF_{t-1} + \beta_7 IR_{t-1} + e_t \quad (1)$$

Where:

- ROA = Return On Assets (percent)
- NPF = Non-Performing Financing (percent)
- FDR = Financing to Deposit Ratio (percent)
- CAR = Capital Adequacy Ratio (percent)
- PLS = Profit-Loss Sharing (percent)
- GDP = Gross Domestic Product (percent)
- IF = inflation (percent))
- IR = BI rate (percent)
- e = error term

## RESULTS AND DISCUSSION

The data used in this study is monthly data from IRBS in Indonesia from 2015 – 2021. The following table 1 are the results of the descriptive analysis of this study.

Table 1. Results Of Descriptive Statistics

	ROA	NPF	FDR	CAR	PLS	GDP	IF	IR
Mean	2.271190	9.406071	116.9219	22.36494	13.91405	1.274286	3.363571	5.211310
Median	2.300000	9.260000	116.6000	21.22000	13.52000	1.660000	3.220000	4.750000
Maximum	2.730000	11.80000	135.6800	33.26000	20.51000	2.520000	7.260000	7.750000
Minimum	1.730000	6.950000	103.3800	17.99000	10.83000	-2.060000	1.320000	3.500000
Std. Dev.	0.249855	1.212686	6.509470	3.237257	2.441713	0.983955	1.550408	1.316310

Source: author

Table 2. Results Of Stationary Test

No	Variabel	T statistik ADF	Prob	Keterangan
	ROA	-11,66893	0.0001	Stasioner (1)
	NPF	-9,42080	0.0000	Stasioner (1)
	FDR	-3,66755	0,0303	Stasioner (0)
	CAR	-7,389598	0.0000	Stasioner (1)
	PLS	-6,4222016	0.0000	Stasioner (1)
	GDP	-3,70589	0,0279	Stasioner (0)
	IF	-7,24692	0.0000	Stasioner (1)
	IR	-6,548390	0.0000	Stasioner (1)

Source: author

There are as many as 164 IRBs in Indonesia. From the descriptive analysis above, it is known that the standard deviation of the ROA variable is 0.24. The maximum value is 2.73, and the minimum value is 1.73. The maximum value was found in the March 2020 time period, and the minimum was in the 2018 and 2021 year-end periods.

The following table 2 is a table of stationariness test results. Stationaryness tests using Augmented Dickey-Fuller (ADF) showed that ROA, NPF, CAR, PLS, IF, and IR were stationary at the first difference level, two variables namely FDR and stationary GDP at the level. Thus, using the ARDL model in this study is appropriate (Akinlo, 2006).

Table 3. Results Of Diagnostic Test

Test	Result (Probability)
Autocorrelation	0.7711
Heteroscedasticity	0.3881

Source: author

The model is declared to have passed diagnostic tests from these results and can use the ARDL model. Next is the Bound test in the table 4.

Table 4. Results Of Bound Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif	I(0)	I(1)
F-statistic	5.619747	10%	1.92	2.89
k	7	5%	2.17	3.21
		2.5%	2.43	3.51
		1%	2.73	3.9

Source: author

The results of the bound test in the table above show that the statistical F value is greater than the F of the table with a signification of 0.05%, which is  $5.619747 > 2.17$ . Then it can be said that there is a cointegration between the dependent and determinant variables.

Next is the short-term and long-term ARDL test results describe on table 5. From table 5 short-term estimates with the ARDL, it can be seen that the ROA variable does not affect the increase or decrease in ROA in the current month. Then, the variable NPF variable also has no effect on ROA in the short term. In the monthly period the increase and decrease in NPF will not directly affect the performance of IRBs, this is because bad debts do not provide any results (Septiani & Lestari, 2016). (Lukitasari & Kartika, n.d.; Septiani & Lestari, 2016; Widyastuti et al., 2021). These results are supported by previous research (Lukitasari & Kartika, n.d.; Septiani & Lestari, 2016; Widyastuti et al., 2021).

FDR also did not affect ROA. However, based on the profitability of FDR(-1), it negatively affects the ROA by 0.022. This means that an increase in FDR by 1% will lower ROA by 0.022 in the first month. Financing disbursements are expected to increase banking profits, but the effect of high financing disbursements without being followed by short-term credit risk control can cause third-party disbursements to reduce bank profitability (Ahmadi & Rahmani, 2012). These results are the same as previous studies by (Ahmadi & Rahmani, 2012; Ayadi & Boujelbene, 2012).

The following internal factor, namely PLS, does not influence ROA. However, PLS(-3) has a significant positive influence on ROA. This means that a 1% increase in PLS will increase ROA by 0.125 in the third month. One of the sources of IRBS profitability is income through its PLS scheme, this is in line with research (Haron, 1996; Risalah et al., 2018; Wiros, 2005).

Then the macroeconomic variable GDP in the short-term estimation results does not affect ROA. IRBs as a bank in the micro sector are not too affected by the macroeconomic conditions. This is in line with previous research, namely studies by (Kanwal & Nadeem, 2013).

Table 5. Estimation Of Short-Run Dynamic ARDL

ECM Regression		
Case 2: Restricted Constant and No Trend		
Variable	Coefficient	Prob
D(ROA(-1))	0.212087	0.0629
D(ROA(-2))	0.157791	0.1117
D(NPF)	-0.045478	0.1203
D(FDR)	0.007076	0.2572
D(FDR(-1))	-0.022880	0.0042
D(FDR(-2))	-0.013276	0.0564
D(PLS)	0.021145	0.6365
D(PLS(-1))	-0.087983	0.0504
D(PLS(-2))	0.014707	0.7478
D(PLS(-3))	0.125453	0.0084
D(GDP)	-0.004774	0.9152
D(GDP(-1))	-0.077795	0.1105
D(IR)	-0.107299	0.1747
D(IR(-1))	0.139961	0.0860
D(IR(-2))	-0.066361	0.4087
D(IR(-3))	-0.157618	0.0408
CointEq(-1)*	-1.049445	0.0000

Source: author

Table 6. Results Of Estimation Of Long-Term Coefficient ARDL

Levels Equation		
Case 2: Restricted Constant and No Trend		
Variable	Coefficient	Prob.
NPF	-0.062636	0.0026
FDR	0.034411	0.0002
CAR	0.026473	0.0079
PLS	-0.103496	0.0000
GDP	0.051772	0.1606
IF	-0.030358	0.2471
IR	-0.125862	0.0000
C	0.367023	0.6450

Source: author

The interest rate (IR) factor also does not affect ROA in the short term. However, IR(-3) has a significant negative effect on ROA. This means that any 1% increase in interest rates will lower the ROA by 0.157 in the third month. Rising interest rates can have an impact on decreasing people's decisions to use IRBS as a means of financing, financing distribution to micro-sector communities will be hampered because the margin and profit-sharing ratio that debtors must pay will also increase according to the increase in interest rates (Lopez et al., 2020). The obstruction of financing that is channeled to the community will also affect the profitability obtained by banks in terms of financing, this is in line with previous research (Rashid & Jabeen, 2016)

## Discussion of Long-Term Results

Based on the long-term estimation analysis results, it is known that different results are obtained for each variable. In the long run, NPF has a significant negative effect on ROA. This is by the theory that if bad debts continue to increase, it will disrupt the performance of Islamic banking and will further reduce banking revenue (Hosen & Muhari, 2013; Masood & Ashraf, 2012; Nugrohowati & Bimo, 2019)

Furthermore, in this study, it was found that FDR had a significant positive effect on ROA. FDR will demonstrate IRBs ability to disburse financing based on the number of deposits that can be collected. If the distribution increases and is on target, it will certainly improve the performance of the IRBs. This increased performance will undoubtedly increase banking profitability (Ahmadi & Rahmani, 2017; Pravasanti, 2018; Priyadi et al., 2021).

In addition, CAR has a significant positive influence on ROA. Because IRBs's capital adequacy standards are met and high, it will make IRBs free to channel funds to sectors that require high capital and bring large profits (Archer & Karim, 2009; Priyadi et al., 2021). Such as distribution to financing that has high risks but can also provide high profitability. With a stable CAR condition, from 2015 to 2021 around 60% of the total financing in IRBS mainly was channeled to the credit sector (Statistik Perbankan Syariah & OJK, 2021)

Later in this study also found that PLS had a significant negative effect on ROA. From OJK 2021 data, 67% of IRBS NPF in this research period came from the working capital and investment financing sector using the PLS scheme. So that problematic financing in this PLS scheme can slow down IRBS from getting profits (Afkhar, 2021).

In macroeconomic variables, GDP does not affect ROA in the long term. Changes in GDP do not directly affect ROA. An increase in GDP that affects the increase in consumer income, does not necessarily increase people's saving patterns in banking (Cahyani, 2018). This result is also the same as the discovery by (Alper & Anbar, 2011; Athanasoglou et al., 2006; Demirgiic & Huizinga, 2014; Flamini et al., 2009; Kanwal & Nadeem, 2013).

Furthermore, inflation also has no effect in the long term on the ROA of the IRBS for the 2015-2021 research period. These results are supported by previous studies such as (Alper & Anbar, 2011; Demirgiic & Huizinga, 2014; Havrylchuk & Jurzyk, 2011). The impact of inflation on banking profitability will be minimal or even nonexistent if the benefits of rising interest rates are followed by an increased business operating cost in banks (Kanwal & Nadeem, 2013).

This corresponds to the result of the effect of interest rates on ROA, where interest rates affect ROA. Although the effect of interest rates on ROA is negative in the long run, an increase in interest rates by 1 % will lower ROA by 0.125%. Although IRBs provide services not based on the interest rate mechanism, there is no difference in the securities obtained related to interest rate conditions in both Islamic and conventional banks (Risfandy & Pratiwi, 2022). This is because the operational cost of financing will also increase following the increase in interest rates, resulting in people being reluctant to choose IRBs as their funding source (Lopez et al., 2020). Thus, it will result in a decrease in banking profitability.

## CONCLUSION

IRBS as the forerunner of Islamic banks that focus on providing financing to the micro sector is inseparable from the influence internally or externally of banking in its operations.

From the results of this study, it can be seen that IRBS profitability is still very dominated by internal banking factors such as FDR and PLS, which affect in the short term on ROA. Also, NPF, FDR, CAR, and PLS affect ROA in the long run. Meanwhile, external factors such as GDP, inflation, interest rates, and only interest rates affect ROA in the short and long term.

This result is certainly understandable that IRBS is a financial institution that operates locally limited to certain areas and will face a different environmental scale from Islamic banks



nationwide. Of course, this requires a complex understanding of operational and risk management by IRBS management to control the potential for problematic financing and efforts to increase banking profitability.

For the record, the findings of this study will be different from previous studies because there are differences in the characteristics of factors, periods, and objects of study. The difference in short-term and long-term results for these factors is expected to be used to implement the right strategy to improve IRBS performance.

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