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The Determinants of Inflation, Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), Size, and Age of Banks on the Profitability of Islamic Banks

Rizki Irham[1]*, Mirna Indriani[2], Nuraini[3]
Fakultas Ekonomi dan Bisnis, Universitas Syiah Kuala
Corresponding Author: Rizki Irham rizki.irham@gmail.com

A R T I C L E I N F O

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A B S T R A C T

This study aims to examine the effect of inflation, NPF, FDR, size, and age on the profitability of Islamic banks. The study was conducted on 12 Islamic commercial banks in Indonesia using unbalanced panel data regression analysis. Since one of the variables in this study is bank age, measured from the time a bank converted to Islamic banking until the year of study, the number of observation years differs across banks. The data were obtained from the financial reports of each bank for the period 2014–2023. The study employs the Random Effect Model (REM). The results indicate that NPF has a significant negative effect, bank size has a significant positive effect, while inflation, FDR, and age have no significant effect on the profitability of Islamic banks.

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INTRODUCTION

In today's increasingly complex global financial system, Islamic banking has emerged as one of the sectors showing significant growth, including in Indonesia (Alhalimi & Andrini, 2024). Even though Islamic banking in Indonesia has been growing steadily, its financial efficiency still needs deeper investigation. One major way to assess a bank's financial health is by looking at its Return on Assets (ROA), which shows how well the bank earns profits from what it owns (Murhadi, 2013). Right now, Indonesia holds strong potential for further economic development, especially in finance. Islamic banks are central to this progress since nearly every financial activity depends on the services banks offer (Yusuf & Hidayat, 2022).

That said, the ROA for Islamic banks in Indonesia remains behind when compared to those in other Muslim-majority nations (Al Umar & Haryono, 2022). For example, Al Rajhi Bank in Saudi Arabia shows a higher ROA at 2.74%. Abu Dhabi Islamic Bank (ADIB) from the UAE posts 1.75%, while Malaysia's Maybank Islamic Berhad falls between 1.26% and 1.50%. These figures highlight how Indonesian Islamic banks still have work to do to reach the financial performance levels seen in neighboring countries. Meanwhile, Bank Muamalat Indonesia recorded an average ROA of only 0.00% to 0.05% during the 2014–2021 period.

Furthermore, in terms of the Muslim population, Indonesia has great potential to develop an Islamic banking industry that can maximize profitability. According to Reuters.com (2024), from 2014 to 2023, the proportion of Muslims in Indonesia consistently stood at around 87% of the total population, increasing from 252 million in 2014 to around 280 million in 2023. This fact indicates the existence of a very large market that has not yet been optimally tapped by Islamic banks.

Based on the above explanation, it indicates the need for further research into the factors influencing the profitability of Islamic banks in Indonesia. Moreover, Indonesia, having the largest Muslim population in the world, should be able to optimize the available profit. Therefore, this topic is interesting for further research. To distinguish it from previous studies, this research examines both internal and external factors affecting banks.

One external factor that can affect the profitability of Islamic banks is inflation. Rahmansyah & Ashar (2023) in their research revealed a negative relationship between inflation and ROA. When inflation occurs, it automatically disrupts economic growth. This, in turn, can potentially lead to a decline in public income, as income is closely linked to economic growth. Declining public income also impacts purchasing power. This automatically leads people to spend more of their income on consumption rather than saving or investing in banking, thus decreasing bank profitability. These findings align with those of Oktaviani et al. (2024; Suryadi et al. 2020).

The profitability of Islamic banks is often influenced by internal elements, one of the most significant being Non-Performing Financing (NPF). This issue starts from inside the bank itself. According to Yusuf and Hidayat (2022), there's a negative link between NPF and Return on Assets (ROA). When NPF levels go

up, costs rise too, which could lead to financial losses. A higher NPF signals poor loan quality, often caused by a growing number of loans that aren't being repaid. NPF is basically a way to measure how much of the money collected—mostly from the public—is tied up in loans that aren't performing well. If the results of this measurement exceed the expected range, the bank might face liquidity issues, which could hurt its earnings. The relationship is clear: as NPF climbs, the bank's profits are likely to fall, and vice versa. These insights are supported by several studies, including those by Elekdag et al. (2020), Windriya (2019), Haryati et al. (2019), Aspiranti et al. (2019), Limajatini et al. (2019), Katharina & Novita (2022), and Al Almer & Hidayah (2023).

Another important internal factor is the Financing to Deposit Ratio (FDR). This ratio checks how much of the bank's collected funds—mostly from depositors—are given out as loans. When this number goes beyond the set limit, the bank may run into liquidity trouble, which can also drag down profits (Yusuf & Hidayat, 2022). But here's the other side: research by Windriya (2019), Yusuf & Hidayat (2022), and Al Almer & Hidayah (2023) found that FDR has a positive link with ROA. So, if the bank manages to lend money effectively without increasing bad loans, a higher FDR can actually boost profitability.

A bank with large total assets reflects a well-established company, thus, it can be said to be in a stable financial position. A large company size also indicates that a bank with large assets has resources that can be utilized optimally and efficiently to generate profits. This is because the bank has sufficient funding to finance its operational activities, one of which is through selective lending, resulting in returns that can increase bank profits. This explains that large banks have more resources, investment channels, and even more advantages for managers compared to small banks (Haryono & Widiyanti, 2024). These findings align with those of Windriya, 2019; Isayas, 2022; A. Al-Homaid et al., 2020; Haryono & Widiyanti, 2024; Hananto & Amijaya, 2021).

The age of a bank is usually measured by how long it's been in operation since it was first established. Older banks are often seen as stronger and more capable compared to newer ones because they've had more time to build up experience and stability. Their long-standing presence also helps shape how the public sees them. On the other hand, banks that are still fairly new tend to focus more on growing their customer base rather than maximizing efficiency (A. Al-Homaid et al., 2020). Studies by Haryati et al. (2019) and A. Al-Homaid et al. (2020) show a clear pattern: the longer a bank has been around, the better its chances are at making and keeping profits.

LITERATURE REVIEW

Agency Theory

This research adopts agency theory because it emphasizes the working relationship between the principal (owner) and the agent (manager).
In the context of Islamic banking, agency theory explains the relationship between principals (capital owners or depositors) and agents (fund managers or bank management). This theory highlights the potential for conflicts of interest that arise when agents, who are authorized by principals, do not act entirely in the interest of the principals especially due to information asymmetry, moral

hazard, and adverse selection (Jamaluddin & Enre, 2023). Agency theory describes how managers may disclose more detailed information if they achieve high profits, with the aim of gaining personal benefits such as promotions or compensation. If managers fail to disclose information transparently (e.g., hiding reasons for declining profits), it may reflect poorly on the bank's financial condition (Ramadhani & Kurniawati, 2024).

Profitability

Profitability illustrates a company's ability to generate profits using all its available resources, such as sales activities, cash, capital, number of employees, number of branches, etc. (Harahap, 2013). A company with good profitability reflects a strong business outlook and is more likely to sustain its long-term operations (Haryanto, 2016).

Inflation

Inflation refers to the general and continuous increase in prices. An increase in the price of one or two items alone is not considered inflation. From the producer's perspective, higher inflation results in increased product prices in the market. If this price increase is not offset by rising incomes, it may lead to reduced consumer purchasing power. As a result, producers may face difficulty in selling their goods, which can affect financial performance especially when funding is sourced from bank loans. Therefore, high inflation can negatively impact the profitability of banks (Solihin et al., 2022).

Non-Performing Financing (NPF)

NPF refers to the failure of debtors to meet their payment obligations on financing principal installments. It is a common phenomenon in the banking sector because financing is one of the primary activities of Islamic banks (Wardhani et al., 2022). Financing risk arises if banks fail to receive returns from the loans or investments given to debtors (Muhammad, 2014).

Financing to Deposit Ratio (FDR)

The FDR is a ratio that measures a bank's ability to repay customer funds by relying on financing as its liquidity source. The FDR can also be defined as the ratio of the amount of loans provided by a bank to the deposits received from customers (Pohan et al., 2023). A high FDR can indicate a higher risk of liquidity problems, as it indicates that a large portion of deposits are used for financing. This can pose challenges if the bank faces unexpected withdrawals or financial stress. Banks must consider various economic and operational factors when managing the FDR. An effective management strategy is needed to address these challenges and ensure sustainable financial performance (Larasati & Irkhami, 2023).

Bank Size

Bank size is defined as the scale of a bank, typically measured by total assets, sales, or market capitalization. Larger banks have competitive advantages in terms of cost efficiency and risk diversification, which ultimately support

higher profitability (Sutandijo & Sugiyarti, 2022). Large banks offer larger credit facilities compared to smaller banks, enabling them to achieve higher profits and return on assets (Arif & Masdupi, 2020).

Bank Age

Bank age reflects the length of time a company has been established and operating. It indicates a bank's ability to handle business complexities and growth challenges. Older banks tend to be more trusted by investors compared to newer banks, as they are generally more capable of generating higher profits (Harahap et al., 2017).

Hypothesis

H1 = Inflation has a negative effect on the profitability of Islamic banks
H2 = Non-Performing Financing (NPF) has a negative effect on the profitability of Islamic banks
H3 = Financing to Deposit Ratio (FDR) has a positive effect on the profitability of Islamic banks
H4 = Bank size has a positive effect on the profitability of Islamic banks
H5 = Bank age has a positive effect on the profitability of Islamic banks
H6 = Inflation, NPF, FDR, bank size, and bank age together have a significant effect on the profitability of Islamic banks

METHODOLOGY

This research involves all Islamic Commercial Banks (ICBs) within the period from 2014 to 2023. The criteria and considerations for selecting the sample, using the purposive sampling technique, are as follows:

1. The bank must be a full-fledged Islamic Commercial Bank (ICB), not a Sharia Business Unit (SBU) that operates as a subsidiary of a conventional bank.
2. The bank must have been operating based on Islamic principles during the observation period.
3. The bank must publish an annual report containing complete and required information up to 2023.

The analytical method used in this research is the unbalanced panel data regression method. An unbalanced panel occurs when cross-sectional units have different numbers of time-series observations (Basuki, 2021). Since one of the variables in this research is bank age, which is calculated from the year the bank became sharia-compliant to the year of the study, the number of observation years differs among banks. The table below lists the Islamic banks and their respective observation periods.

Table 1. Research Sample

No.	Bank Name	Year Converted to Islamic Bank	Years Observed
1.	PT Bank Aceh Syariah	2016	8
2.	PT Bank NTB Syariah	2018	6
3.	PT Bank Syariah Indonesia	2021	3
4.	PT Bank Victoria Syariah	2010	10
5.	PT Bank Panin Dubai Syariah	2009	10
6.	PT Bank Aladin Syariah	2021	3
7.	PT Bank BTPN Syariah	2010	10
8.	PT Bank BCA Syariah	2010	10
9.	PT Bank KB Bukopin Syariah	2008	10
10.	PT Bank Mega Syariah	2004	10
11.	PT Bank BJB Syariah	2010	10
12.	PT Bank Muamalat Indonesia	1991	10
	Total Data		**100**

Dependent Variable

Profitability is measured using the Return on Assets (ROA) ratio (R. Murhadi, 2013), calculated using the following formula:

$$\text{ROA} = \frac{Net\ Income}{Total\ Assets} \text{ x } 100\ \%$$

Inflation

To keep track of inflation, one of the most common tools used is the Consumer Price Index (CPI). This index reflects how the prices of goods and services used by the public change over time (Hidayati, 2014). You can find CPI data on Indonesia's Central Statistics Agency website at www.bps.go.id.

Non Performing Financing (NPF)

In banking—especially Islamic banking—issues with Non-Performing Financing (NPF) are not unusual, since lending is one of their main operations (Wardhani et al., 2022). NPF helps measure how much of the bank's financing isn't being paid back on time. The formula used is:

$$\text{NPF} = \frac{Non\ Performing\ Financing}{Total\ Financing} \text{ x } 100\ \%$$

Financing to Deposit Ratio (FDR)

The FDR shows how much of the money a bank collects from customers has been turned into loans (Pohan et al., 2023). It reflects how actively a bank is using its deposits to support financing. Here's how it's calculated:

$$\text{FDR} = \frac{Total\ Financing}{Total\ Deposits} \text{ x } 100\ \%$$

Bank Size

A bank's size refers to how big it is, often measured by the value of its assets, total sales, or its market worth (Arif & Masdupi, 2020). A bank with higher sales, more assets, and larger market capitalization is considered bigger. One way to calculate bank size is by using this type of measurement:

$$\text{Size} = \text{Ln (Total Assets)}$$

Bank Age

Bank's age reveals its ability to weather the complications and obstacles of life's business growth (Dewi & Keni, 2013). In this study, the focus is on the years from when the bank became Sharia-compliant to the year of the study. The goal was to determine whether there was an increase in profits after the bank converted to Sharia. Bank age can be calculated using the following formula:

$$\text{Age} = \text{Research Year - Year Converted to Islamic}$$

Since panel data combines cross-sectional and time-series data, the regression equation can be formulated as follows:

$$Y = a + b_1X_{1it} + b_2X_{2it} + b_3X_{3it} + b_4X_{4it} + b_5X_{5it} + e$$

Description:

Y : Profitability (ROA)
a : Intercept
b : Regression coefficients for each independent variable
X_1 : Inflation
X_2 : NPF
X_3 : FDR
X_4 : Bank Size
X_5 : Bank Age
i : Islamin Bank
t : Year
e : *Error term*

RESEARCH RESULT

This research explores how inflation, Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), bank size, and bank age affect profitability. The study uses secondary data collected from Islamic Commercial Banks in Indonesia covering the years 2014 to 2023. The analysis focuses specifically on these banks, and the data was analyzed using EViews version 12.

Descriptive Statistics

Table 2. Descriptive Statistics

	ROA	INFLATION	NPF	FDR	SIZE	AGE
Mean	0.009580	0.034853	0.032526	0.869613	16.19915	10.29
Median	0.008450	0.030200	0.023150	0.902000	15.98622	9
Maximum	0.135800	0.083600	0.220400	1.967300	19.68375	32
Minimum	-0.108500	0.016800	0.000000	0.000000	14.13706	1
Std. Dev.	0.039547	0.018028	0.034281	0.209990	1.081265	7.074345

Sumber: Eviews 12, 2025

Looking at Table 2, the descriptive statistics show that the lowest Return on Assets (ROA) recorded was -0.108500, or -10.85%, which came from PT Bank Aladin Syariah in 2022. On the other end, the highest ROA was 0.135800, or 13.58%, reported by PT Bank BTPN Syariah in 2019. Across the board, the average ROA was 0.009580, equal to 0.96%, with a standard deviation of 0.039547. By seeing the standard deviation value is greater than the average, the level of distribution of ROA data has a high variation. This means that ROA varies greatly between banks or between years, and there are extreme values (outliers), for example, some banks are very unprofitable or very profitable, which makes the distribution of data far from the average..

Inflation had the lowest value of 0.016800 (1.68%) which occurred in 2020 while the highest value of 0.083600 (8.36%) occurred in 2014. The average value of inflation was 0.034853 or 3.49%, which means that in the 2014-2023 period, inflation in Indonesia was still classified as moderate inflation. At this inflation rate, people still prefer to store their wealth in the form of cash rather than in the form of assets, so it is still profitable for banks. Then the standard deviation is 0.018028 which is still smaller than the average, so the level of distribution of inflation data has low variation. This means that it can be said that inflation data is relatively stable and does not fluctuate sharply and reflects a fairly controlled macroeconomic condition, so that the risks posed to the profitability of Islamic banks tend to be moderate.

The lowest NPF value of 0.000000 (0%) was held by PT Bank Aladin Syariah in 2019-2023, which means that there was no problematic financing in that period. While the highest value of 0.220400 (22.04%) was held by PT Bank BJB Syariah in 2017, which means that there was a lot of problematic financing in that bank. The average value of the NPF is 0.032526 or 3.25%, which means that the average Islamic commercial bank in Indonesia in the 2014-2023 period is still considered healthy because it is still below 5%. Then the standard deviation is 0.034281 which is greater than the average, so the level of distribution of NPF data has a high variation which reflects that the quality of financing between Islamic banks is uneven, and there are banks that experience quite extreme levels of problematic financing.

The lowest FDR value of 0.000000 (0%) was held by PT Bank Aladin Syariah in 2021, meaning the bank did not disburse any financing at all. The highest value was 1.967300 (196.73%) at PT Bank KB Bukopin Syariah in 2020, meaning the bank disbursed financing exceeding third-party funds, in other words, the bank

used other funding sources to disburse financing. The average FDR value was 0.869613 or 86.96%, indicating that the average Islamic bank in Indonesia for the 2014-2023 period was considered healthy because the FDR ranged between 84% and 94%. Furthermore, the standard deviation was 0.209990, which is smaller than the average, meaning that FDR values were not too spread out or varied significantly. This also reflects consistency in financing policies and a relatively well-maintained level of liquidity in the Islamic banking sector during the study period.

Size has the lowest value of 14.13706 or 1,379,266 (trillion) owned by PT Bank Victoria Syariah in 2015 while the highest value of 19.68975 or 353,624,124 (trillion) owned by PT Bank Syariah Indonesia in 2023. PT Bank Syariah Indonesia has the highest assets because it is a combination of 3 banks namely PT Bank Syariah Mandiri, PT BNI Syariah, and PT BRI Syariah. The average value of Size is 16.19915 or 23,833,062.88 (trillion), while the standard deviation is 1.081265. By seeing the standard deviation value is smaller than the average, the level of distribution of Size data has low variation or it can be said that the Islamic banks studied have relatively equal sizes and do not vary too much in the size of their total assets.

Age has the lowest value of 1 (year) owned by PT Bank Aceh Syariah (2016), PT Bank NTB Syariah (2018), PT Bank Aladin Syariah (2019), and PT Bank Syariah Indonesia (2021), which means it became sharia in each of those years. The highest value of 32 (years) is owned by PT Bank Muamalat Indonesia, which is also the oldest sharia bank in Indonesia. The average value of Age is 10.29000 while the standard deviation is 7.074345. By seeing the standard deviation value is smaller than the average, the level of distribution of Age data has low variation, meaning that only a few banks have recently become sharia during this research period.

Chow Test

Table 3. Result Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	24.731087	(11,83)	0.0000
Cross-section Chi-square	145.339535	11	0.0000

Source: Eviews 12, 2025

Referring to Table 3, the Cross-section F probability is 0.0000, which is lower than the significance level of 0.05. This result indicates that the Fixed Effect Model (FEM) is the appropriate choice for the panel data regression in this case. However, to confirm that this model is valid, a Hausman test still needs to be done.

Hausman Test

Table 4. Result Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.296450	5	0.3808

Source: Eviews 12, 2025

Then, looking at Table 4, the probability value for the random cross-section is 0.3808. Since this number is higher than the 0.05 significance threshold, the results suggest that the Random Effect Model (REM) fits the data better. But to double-check the accuracy of this model, the next step should be to run the Lagrange Multiplier (LM) test.

Breusch-Pagan LM Test

Table 5. Result Breusch-Pagan LM Test

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	131.3739	1.298772	132.6727
	(0.0000)	(0.2544)	(0.0000)

Source: Eviews 12, 2025

Based on table 5 above, it can be seen that the Breusch-Pagan (Both) probability value of 0.0000 is smaller than the significance of α (0.0000 < 0.05), which means that the panel data model selected in this study is REM.

Normality Test

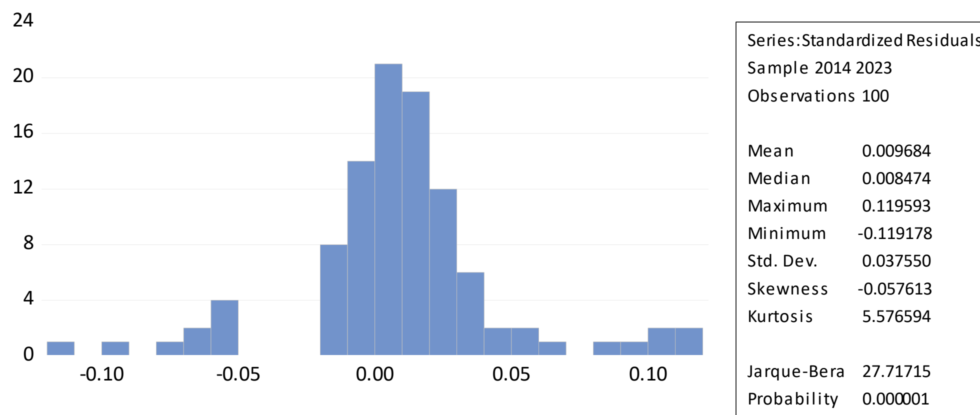

Figure 1. Result Normality Test
Source: Eviews 12, 2025

Based on Figure 1 above, it can be seen that the Jarque-Bera (J-B) value of 27.71715 with a probability of 0.000001 is smaller than the significance value of α (0.000000 < 0.05). This condition indicates that the research data used in this study is not normally distributed. However, based on the Central Limit Theorem, if the data (N) is greater than 30 (N > 30), then it can be assumed that the data is normally distributed (Pranadipta & Natsir, 2023).

Multicollinearity Test

Table 6. Result Multicollinearity Test

	INFLATION	NPF	FDR	SIZE	AGE
INFLATION	1.000000	0.005089	0.081375	-0.118932	-0.097272
NPF	0.005089	1.000000	0.182551	-0.234659	-0.041587
FDR	0.081375	0.182551	1.000000	-0.257774	-0.245741
SIZE	-0.118932	-0.234659	-0.257774	1.000000	0.391954
AGE	-0.097272	-0.041587	-0.245741	0.391954	1.000000

Source: Eviews 12, 2025

Based on Table 6 above, it can be seen that the correlation value between the independent variables is not above 0.80. Therefore, it can be concluded that there is no multicollinearity.

Heteroscedasticity Test

Table 7. Result Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.015983	0.075800	-0.210859	0.8335
INFLATION	-0.089973	0.090492	-0.994264	0.3226
NPF	0.102808	0.059058	1.740790	0.0850
FDR	0.007094	0.008122	0.873387	0.3847
SIZE	0.002290	0.004793	0.477757	0.6339
AGE	0.000268	0.000691	0.387144	0.6995

Source: Eviews 12, 2025

Based on Table 7 above, the probability values for all independent variables in the table above are greater than the significance value α (>0.05 or 5%). Thus, it can be concluded that the selected panel data regression model does not experience heteroscedasticity.

Autocorrelation Test

Table 8. Result Autocorrelation Test

Root MSE	0.018452	R-squared	0.317955
Mean dependent var	0.001240	Adjusted R-squared	0.281676
S.D. dependent var	0.022439	S.E. of regression	0.019032
Sum squared resid	0.034049	F-statistic	8.764166
Durbin-Watson stat	1.844254	Prob(F-statistic)	0.000001

Source: Eviews 12, 2025

Based on Table 8 above, the Durbin-Watson stat value is 1.844254. This value is between -2 and +2, so it can be concluded that there is no autocorrelation in the research data.

Regression Test

Table 9. Result REM Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.234149	0.102209	-2.290881	0.0242
INFLATION	-0.026549	0.114367	-0.232139	0.8169
NPF	-0.447736	0.074718	-5.992347	0.0000
FDR	-0.003498	0.010238	-0.341651	0.7334
SIZE	0.016631	0.006486	2.564208	0.0119
AGE	-0.001636	0.000921	-1.775343	0.0791

Source: Eviews 12, 2025

Based on table 9 above, the results of the panel data regression equation model with the REM model are as follows::

$$ROA = -0{,}234149 - 0{,}026549(INFLATION)_{i,t} - 0{,}447736(NPF)_{i,t} - 0{,}003498(FDR)_{i,t} + 0{,}016631(SIZE)_{i,t} - 0{,}001636(AGE)_{i,t} + e_{i,t}$$

Coefficient of Determination

Table 10. Result of Determination

Root MSE	0.018452	R-squared	0.317955
Mean dependent var	0.001240	Adjusted R-squared	0.281676
S.D. dependent var	0.022439	S.E. of regression	0.019032
Sum squared resid	0.034049	F-statistic	8.764166
Durbin-Watson stat	1.844254	Prob(F-statistic)	0.000001

Source: Eviews 12, 2025

Based on Table 10, the Adjusted R-squared value is 0.281676 (28.17%). The coefficient of determination (R2) also indicates that the dependent variable, Profitability, in this study can be explained by the independent variables Inflation, NPF, FDR, Size, and Age, amounting to 28.17%. Meanwhile, the remaining 71.83% can be explained by other variables not used in this study.

DISCUSSION

The Effect of Inflation on Profitability

From the regression results, the inflation variable shows a t-statistic of -0.232139 and a significance value of 0.8169. Since this value is higher than the 0.05 threshold, it means inflation doesn't have a meaningful impact on the profitability of Islamic banks between 2014 and 2023. So, the first hypothesis (H1) isn't supported.

Although inflation can affect a bank's financial performance by increasing the prices of goods and services (which affects asset values, operational costs, and consumer behavior), in Islamic banking, this effect is not always direct. Islamic banks use profit-sharing contracts such as *mudharabah* and *musyarakah*, where

returns depend on the success of the real sector. Thus, inflation fluctuations do not directly impact profits.

These results are inconsistent with agency theory, which explains the relationship between the principal (owner or shareholder) and the agent (management or administrator). In conditions of high inflation, Islamic bank management faces pressure to maintain profitability (Mollah et al. 2017). This pressure can encourage risky decisions, such as increasing risky financing or changing profit-sharing margin policies. Islamic banks' ability to adjust financing margins based on flexible and more stable agreements in the long term (Haneztia et al. 2025). Islamic banks channel more long-term financing to productive sectors that are not directly affected by short-term inflationary changes. Furthermore, risk mitigation mechanisms in Islamic banking apply the prudential principle. In practice, Islamic banks tend to be more conservative in disbursing financing, thus maintaining profit stability despite price fluctuations (Puji Sakti & Ahmad, 2023)..

Judging from the regression results in this study, the coefficient of inflation is negative on profitability. This means there is an inverse relationship, whereby if inflation increases, profitability will decrease, and vice versa. However, this effect is not significant. This finding is in line with a study by Oktaviani et al. (2024), which explained that while inflation does play a role in profitability, the effect is too small to be significant. In other words, shifts in inflation may influence profits, but not in a strong or consistent way. Similarly, Suryadi et al. (2020) found that inflation doesn't significantly impact the earnings of Islamic banks. These banks tend to focus more on moving money through actual economic activities instead of treating money as an investment. In Islamic finance, money is seen more as a tool for trade—not something to be stored or grown on its own—so it's expected to circulate in ways that support real, productive ventures.

The Effect of Non-Performing Financing (NPF) on Profitability

The findings show that the Non-Performing Financing (NPF) variable has a t-statistic of -5.992347 and a significance probability of 0.0000. Since this number is lower than the standard alpha level of 0.05, it means the results are statistically significant. So, the second hypothesis (H2) is confirmed—NPF has a clear negative effect on the profitability of Islamic banks from 2014 to 2023.

NPF is a key sign of how well a bank's financing activities are performing. A rising NPF means more loans aren't being repaid as expected, which cuts into the bank's profits. Defaults like these reduce the returns banks earn from both profit-sharing schemes and financing margins, making it harder for them to stay financially healthy.

A high NPF forces banks to establish allowances for possible financing losses (CKPN), thereby reducing recordable net profit. A high NPF not only reduces bank income but also increases operational costs for the recovery of non-performing assets, as well as the administrative burden of collectibility. In the Islamic banking system, which prioritizes profit-sharing and fairness in financing contracts, non-performing financing poses a dual risk: the risk of default and failure to comply with sharia principles. Therefore, an increase in the NPF

triggers a decline in operational efficiency, which has a significant impact on profitability.

These findings support agency theory, which views banks as agents that manage funds on behalf of others. When banks provide financing, they take on the role of handling those resources responsibly. On the other side, customers who receive the financing are expected to manage the money wisely and repay the bank (Hamzah, 2018). The clear link between higher NPF and lower profitability carries serious implications for how Islamic banks should manage their risk. Banks need to strengthen financing risk management, implement prudent principles in fund distribution, and improve monitoring and collection systems. Furthermore, strengthening feasibility analysis and risk mitigation schemes (such as collateral and musyarakah contracts with flexible proportions) can be strategies to reduce NPF figures and maintain the stability of Islamic banks' profits in the future.

These findings are consistent with earlier research by Haryati et al. (2019), Limajatini et al. (2019), Yusuf & Hidayat (2022), and Katharina & Novita (2022), which also showed that Non-Performing Financing (NPF) negatively affects the profitability of Islamic banks. When a bank keeps its NPF low, it usually means the financing it provides is well-managed. That reflects strong oversight and careful monitoring of where and to whom the money is going. On the flip side, if NPF rises, it suggests weaker credit control. This leads to more unpaid loans and eventually cuts into the bank's earnings.

Effect of Financing to Deposit Ratio (FDR) on Profitability

In this study, the FDR variable had a t-statistic of -0.341651 and a significance level of 0.7334. Since this value is higher than the 0.05 benchmark, it means the result isn't statistically significant. As a result, the third hypothesis (H3) doesn't hold, and there's no strong evidence that FDR affects the profitability of Islamic banks during the 2014–2023 period.

To achieve optimal financial performance, Islamic banks need to maintain a balance between the amount of financing provided and profitability. A too-low FDR can reflect an underutilization of public funds for productive activities, thus under-maximizing potential revenue from financing margins. However, an excessively high FDR also risks reducing profitability by causing liquidity pressures, increasing the risk of non-performing financing, and degrading asset quality. Therefore, Islamic banks need to be careful in disbursing financing, ensuring that the funds disbursed are not only large in quantity but also of high managerial and risk-based quality. Strategies such as strengthening financing feasibility analysis, portfolio diversification, and regular monitoring of business partners are crucial to ensure that an increase in the FDR actually has a positive impact on profits, rather than a negative one. With this approach, Islamic banks can maintain sustainable profitability without sacrificing liquidity stability.

This outcome doesn't line up with agency theory, which describes the relationship between the owners—like shareholders—and those managing the bank. According to the theory, managers (agents) are expected to use tools like the FDR to make the most of customer deposits and meet the goals of the bank's

owners (principals). But in this case, FDR didn't show a strong link to profitability, suggesting that just increasing loan activity doesn't always translate to better financial results. In this context, bank management (agents) seeks to maximize profits and company value, and the FDR is one indicator used to achieve this goal, by channeling deposits into profitable loans. The regression results in this study show a negative FDR coefficient on profitability. This means there is an inverse relationship: an increase in the FDR decreases profitability, and vice versa. However, this effect is not significant. This indicates that Islamic banks are very cautious in disbursing financing. Although the FDR is small, the rate of return generated from the financing provided is quite optimal, which contributes to increased profits. Furthermore, Islamic banks only provide financing based on sharia and halal principles. Halal financing in Islamic banks means all financial transactions are conducted based on Islamic principles and in accordance with sharia law. This means freedom from riba (interest), gharar (uncertainty), and maisir (gambling).

These results align with research conducted by (Haryati et al. 2019; Aspiranti et al. 2019; Katharina & Novita, 2022), which found that if the FDR is too high, banks may disburse financing aggressively, exceeding their risk management capabilities. A high FDR can also lead to high levels of non-performing loans, which can lead to declining profits. Furthermore, excessively high financing can reduce liquidity, forcing banks to seek alternative funding to reduce profits. A high FDR does not necessarily lead to high profits, as overfinancing or inefficiency can occur, resulting in declining or stagnant profits.

The Effect of Bank Size on Profitability

The study found that bank size has a t-statistic of 2.564208 and a significance value of 0.0119. Since this number is below the 0.05 threshold, the result is considered statistically significant. This supports the fourth hypothesis (H4) and suggests that bigger Islamic banks had better profitability between 2014 and 2023.

This outcome is in line with earlier studies by Isayas (2022), A. Al Homaid et al. (2020), and Hananto & Amijaya (2021), which pointed out that larger banks often benefit from cost savings, more efficient operations, and a wider variety of services. These advantages can help boost profits by allowing the bank to serve more customers while keeping expenses in check. Large banks tend to have broader access to low-cost funding sources, strong distribution networks, and higher public trust, all of which can support increased profits. Furthermore, with large total assets, banks also have a greater ability to disburse large amounts of financing and reach more market segments. In the context of Islamic banks, large size allows for the development of more innovative Sharia-compliant products and investment in financial technology (Islamic fintech), which has the potential to increase efficiency and competitiveness.

These results align with agency theory, which provides a framework for understanding conflicts of interest in principal-agent relationships, including in banks. Bank size can influence the complexity of these relationships and the associated agency costs. Bank size is closely related to issues in agency theory. Larger banks generally have complex organizational structures and more mature

oversight systems. This allows them to implement corporate governance more effectively, such as through the existence of independent boards of commissioners, audit committees, rigorous risk management systems, and transparent information disclosure. Thus, bank size can help reduce agency costs, namely the costs arising from conflicts between principals and agents. The larger a bank, the greater its ability to absorb the costs of management oversight and control. Large size also tends to increase transparency and accountability, thereby reducing management's room to act deviantly from the interests of shareholders. Furthermore, large banks typically have a high reputation and credibility, which encourages management to maintain the bank's image and performance in the eyes of the public, regulators, and investors. This external pressure also acts as a disciplinary mechanism for management, contributing to mitigating agency conflicts..

The Effect of Bank Age on Profitability

The research found that the age variable has a t-statistic of -1.775343 and a significance value of 0.0791. Since this value is higher than the standard 0.05 cutoff, the result isn’t statistically significant. That means the fifth hypothesis (H5) isn’t supported, and age doesn’t appear to have a strong effect on the profitability of Islamic banks from 2014 to 2023.

While it's commonly believed that older banks are better at managing resources, handling risk, and building solid business strategies, that doesn’t seem to hold true here. In the case of Islamic banks in Indonesia, just being around longer doesn’t guarantee better financial performance. This study shows that a bank’s age doesn’t play a major role in determining how profitable it is—other factors may be more important when it comes to financial outcomes. The regression results in this study show a negative coefficient of age on profitability. This means that older banks will reduce their profits, although the negative effect was not significant in this study.

These results are inconsistent with agency theory, which suggests that older banks may face more challenging monitoring challenges, particularly if ownership and management structures have changed over the years. This can lead to increased agency costs (the costs of monitoring and controlling agents) and potentially opportunistic behavior by management. One reason for this influence may stem from the fact that older Islamic banks face structural challenges, such as organizational rigidity, high operational costs, or reliance on legacy, less innovative business models. This is in line with findings (Haryono & Widiyanti, 2024) that state that company age is not always positively correlated with financial performance, particularly if innovation and efficiency do not keep pace with the company's age. In other words, long-established banks are not automatically more efficient than relatively new banks.

Furthermore, in the context of the ever-evolving Islamic banking sector in Indonesia, younger banks have the flexibility and quicker adoption of digital technology to respond to market needs. This can lead to increased efficiency and profitability in the short term, compared to older banks. At certain points,

organizations experience growth saturation and face high competitive pressure, including long-established banks.

The Simultaneous Effect of All Variables

The F-statistic test showed a value of 0.000001, which is much smaller than the 0.05 significance level. Because of this, the sixth hypothesis (H6) is supported. It means that when considered together, inflation, Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), size, and age all have a meaningful impact on the profitability of Islamic banks between 2014 and 2023.

CONCLUSIONS AND RECOMMENDATIONS

The research shows that NPF has a clear negative effect on profitability, while bank size has a positive and significant impact. On the other hand, inflation, FDR, and bank age don't show a noticeable influence on profits. A high NPF doesn't just lower income—it also raises costs related to recovering bad loans and handling more administrative tasks. In Islamic banking, where fairness and profit-sharing are central, non-performing financing brings added risk—not only from borrowers failing to pay, but also from falling short of Islamic financing principles. This hurts efficiency and, in turn, lowers profits.

On the flip side, larger banks tend to perform better financially. When an Islamic bank has more assets, it usually runs more efficiently and holds a stronger position in the market, helping boost its overall profitability.

Judging from descriptive statistics, the average ROA of Islamic commercial banks in Indonesia during the 2014–2023 period was 0.96%, indicating a relatively low level of profitability. This finding supports the research background stating that the ROA of Indonesian Islamic banks lags behind that of countries with more established Islamic banking industries. One of the causes of the low ROA is the dual banking system (dualism) between conventional and Islamic banks in Indonesia. In this system, Islamic banks must compete directly with conventional banks that have a much larger and more established market share, infrastructure, and customer network. This presents Islamic banks with significant challenges in raising funds, efficiently channeling financing, and reducing operational costs to generate optimal profits. Furthermore, considering the Muslim population in Indonesia, which constitutes 87% of the total population, it appears that the existing Islamic banks are unable to raise the ROA.

Based on the results obtained in this study, the researcher recommends that stakeholders, such as Islamic bank management and regulators (OJK and BI), improve the effectiveness of financing risk management to reduce NPF, considering that NPF has a significant impact on profitability. Islamic banks need to optimally manage FDR to maintain a healthy level, not too high that it poses a risk to liquidity, and not too low so that potential profits from financing are not lost.

Islamic banks emphasize the importance of strengthening financing risk management, with a focus on the quality of fund disbursement and the selection of credible financing partners to reduce the potential for problematic financing. Furthermore, Islamic banks need to balance asset growth strategies with

operational efficiency to ensure that the bank's size and age truly reflect healthy and sustainable profitability.

ADVANCED RESEARCH

Based on the limitations of this study, the following are suggestions for future research:

1. The low coefficient of determination (only 23.39 percent). This indicates that other variables need to be included in this research model to increase the "predictor coverage."
2. Consider a quantitative-qualitative (mixed methods) approach to delve deeper into the managerial context and internal policies that are not reflected in statistical figures alone.
3. Conduct a comparative study between Islamic banks and conventional banks to analyze and identify differences in structural characteristics, business models, and the sensitivity of each type of bank to the macro and micro variables studied.

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