



MACROECONOMIC INFLUENCE ON THE FINANCIAL PERFORMANCE OF ISLAMIC COMMERCIAL BANKS IN INDONESIA

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Abstract

This study aims to analyze the effect of economic growth (GDP), inflation, rupiah exchange rate, and reference interest rate (BI Rate) on the financial performance of Sharia commercial banks (BUS) in Indonesia for the period 2021-2025 which is proxied by Return on Assets (ROA). This study uses a quantitative approach with secondary data obtained from the financial statements of seven Islamic commercial banks selected using purposive sampling technique. Data analysis was conducted using panel data regression with the best model is Random Effect Model (REM). The results showed that partially GDP has no significant effect on the ROA with a probability value of 0.8949, the rupiah exchange rate has no significant effect with a probability value of 0.8597, and the BI Rate has no significant effect with a probability value of 0.5498. In contrast, inflation has a positive and significant effect on ROA with a coefficient of 0.249194 and a probability value of 0.0019. Simultaneously, variable GDP, inflation, exchange rate, and BI Rate significantly affect the ROA with F-statistic value of 3.034803 and Prob (F-statistic) of 0.019649. The value of the coefficient of determination (R²) of 0.082502 indicates that 8.25% of ROA variation can be explained by macroeconomic variables in the model, while 91.75% is influenced by other factors outside the study. This finding indicates that inflation is the most influential macroeconomic factor on the financial performance of Islamic commercial banks during the study period.

Keywords: Economic Growth, Inflation, Exchange Rate, BI Rate, Return on Assets, Islamic Commercial Banks



INTRODUCTION

The Islamic banking industry in Indonesia has shown significant development in the last two decades, both in terms of assets, number of networks, and volume of financing. As the country with the largest Muslim population in the world, Indonesia has great potential to make Islamic banks a major pillar in the national financial system. However, the facts show that the market share of Islamic banking is still around 6-7% of the total national banking industry, far below its ideal potential. This gap between potential and realization indicates the need for further research related to economic factors that affect the financial performance of Islamic banks (Marlina & Sudana, 2022).

The financial performance of Islamic banks is strongly influenced by dynamic national macroeconomic conditions. Factors such as economic growth (GDP), inflation, the benchmark interest rate (BI Rate), and the rupiah exchange rate against the US dollar are important variables that determine the stability and profitability of Islamic banks. Although Islamic banks operate on the principle of profit sharing, Prohibition of usury, and real asset-based activities, macroeconomic impacts still have a significant influence on the performance of Islamic financial institutions.

Table 1.
Economic growth (GDP) of Indonesia for the period 2021-2025

Tahun	GDP Indonesia (%)
2021	3,70
2022	5,31
2023	5,05
2024	5,03
2025	5,11

Source: Central Bureau of Statistics (BPS) and Trading Economics

Based on data on the growth of Indonesia's Gross Domestic Product (GDP) for the period 2021-2025, the national economy showed a relatively stable trend after entering the recovery phase after the COVID-19 pandemic. Economic growth increased from 3.70% in 2021 to 5.31% in 2022, then remained in the range of 5% during the period 2023-2025, which amounted to 5.05%, 5.03%, and 5.11%, respectively. The stability of economic growth reflects the improvement in national economic activity that has the potential to boost the performance of the



banking sector, including Islamic commercial banks. Therefore, GDP growth is one of the important macroeconomic indicators to assess its influence on the financial performance of Islamic banking in Indonesia.

Positive GDP growth, for example, generally increases demand for financing, encourages consumption, and expands business opportunities so that it has an impact on the profitability of Islamic banks. However, the impact of GDP on the performance of Islamic banking is not always homogeneous, because it depends on the type of financing disbursed. Some studies show that consumptive financing can actually weaken productivity and does not contribute greatly to economic growth, in contrast to productive financing such as working capital or investment (Lestari, 2025). Thus, the linkage of GDP and the performance of Islamic banks requires a deeper analysis.

Inflation is also an important variable that affects the durability of Islamic banks. Controlled inflation creates a conducive business climate, but high inflation has the potential to suppress purchasing power, increase problem financing, and reduce profitability. Some studies have found a negative relationship between inflation and Return on Assets (ROA), although the results are not consistent between periods of study. The variability of these findings indicates the need for further empirical studies focusing on Indonesia's post-pandemic conditions (Al Sharif, 2021). Inflation is an important indicator that affects the stability of Islamic banking. During the 2021-2025 period, Indonesia's inflation rate was relatively stable with an average of below 4%. In 2021, inflation was recorded at a low of 1.56% due to weak domestic demand. However, this figure increased significantly in 2022 to 4.21% as a result of global supply chain disruptions and rising energy prices. Entering 2023, inflation began to show a downward trend to 3.69%.

Economic conditions are increasingly stable in 2024 with the inflation rate falling to 2.30%. This positive trend continues until 2025, when the average annual inflation is at the level of 1.91%. Stable inflation is able to maintain people's purchasing power and create a conducive business climate for Islamic banks, thereby reducing the potential for deterioration in asset quality and supporting an increase in Net Profit. Conversely, high inflation can reduce the real value of financing and reduce bank profit margins, which has a negative impact on Return on Assets (ROA).

The rupiah exchange rate proved to be the most dominant variable affecting the financial performance of Islamic banking. Depreciation of the rupiah increases the risk of default (as the customer's foreign exchange debt burden increases) and depresses the bank's net income, ultimately lowering profitability



as measured by ROA. The results of recent research with a Panel approach show that the exchange rate contributes the most to the variation in the performance of Islamic banking compared to inflation and interest rates (Nurajizah et al., 2025). Exchange rate stability is therefore a crucial factor in maintaining the financial health and sustainability of Islamic banking, especially in maintaining the achievement of ROA.

The rupiah exchange rate against the US dollar has experienced significant fluctuations in the last five years. Entering 2021, the rupiah tends to strengthen and stabilize at an average of Rp14,312. However, in 2022, global pressures began to cause depreciation so that the average exchange rate sank to Rp14,850, even breaking the Rp15,731 mark at the end of the year. The weakening trend continued in 2023 with an annual average in the range of Rp15,250–Rp15,500, and in 2024 the rupiah moved more volatile in the range of Rp15,700–Rp16,200. Until 2025, the average exchange rate was recorded at Rp15,866 per USD. This depreciation of the rupiah increases the risk of foreign currency-denominated financing and reduces profitability, especially for banks that have exposure to export-import transactions. Exchange rate stability is very important to maintain the health of Islamic banking and reduce the potential for customer default.

The reference interest rate (BI Rate) although not used in principle in the Sharia system, still gives indirect influence. Customers tend to compare the profit margins of Islamic products with conventional product interest rates. The increase in BI Rate has the potential to reduce the attractiveness of Islamic products and suppress financing interest, so that Islamic banks remain sensitive to fluctuations in interest rates (Nurajizah et al., 2024). This underscores the importance of studying the competitiveness of Islamic banks within the framework of the dual banking system in Indonesia. The BI Rate (or BI 7-Day Reverse Repo Rate) is a very dynamic monetary policy instrument in the 2021–2025 period. In 2021 as a stimulus measure to support post-pandemic economic recovery. However, entering the second half of 2022, Bank Indonesia began to raise interest rates aggressively to respond to global inflation, reaching 5.50% by the end of the year. The increase continued in 2023 to be at the level of 6.00%, and was maintained in the range of 6.00%–6.25% throughout 2024 and 2025 in order to control inflation and maintain rupiah exchange rate stability from external pressures.

This BI Rate change has an indirect effect on the attractiveness of Islamic financing products because customers tend to compare the profit margins of Islamic products with conventional product interest rates. The increase in



benchmark interest rates has the potential to reduce the competitiveness of Islamic banks and suppress financing interest if Islamic banks are unable to make competitive margin adjustments.

Banking stability is very important for the growth of Islamic banking and the national economy as a whole. Indonesia, as a developing country, still faces various shocks that can disrupt the stability of the financial system (Pambuko et al., 2018). For this reason, good banking performance must be supported by stable economic and monetary conditions, in order to improve bank performance and reduce risks. This phenomenon supports Retnasih's view that the financial systems of developing countries, including Indonesia, are vulnerable to global shocks (Retnasih, 2023). Islamic banks are relatively more resistant to speculation, but not completely immune to macroeconomic crises. In addition, previous studies have also shown mixed results related to the influence of macro variables on the performance of Islamic banks. Istan and Fahlevi found that GDP had a significantly positive effect on ROA, while inflation and interest rates were not significant (Istan & Fahlevi, 2020). Salah Alhammadi even found the existence of a long-term relationship between bank stability and macro variables using the ARDL method (Alhammadi et al., 2022). The inconsistency of these results confirms the existence of a research gap.

In addition to the financial aspect, the dimension of *maqāṣid al-Sharī'ah* is also increasingly important. Sharia banks are required not only to pursue profitability, but also to support Sharia objectives such as social justice, property protection, and public welfare. Several studies have shown a trade-off between the achievement of the objectives of the *maqāṣid* and financial efficiency, especially in crisis conditions. This makes Islamic banking face a double challenge, namely maintaining financial stability while fulfilling its social mission.

The main problem that underlies this study is the low resilience of the financial performance (ROA) of Islamic commercial banks to macroeconomic shocks, which led to stagnation in market share at 7%. There is a paradox where Islamic banks, which are theoretically based on the real sector, are still very sensitive to monetary variables such as the BI Rate and exchange rate. The increase in the BI Rate to 6.00% in the 2021-2025 period triggered the displacement risk phenomenon, where customers tend to compare Sharia margins with conventional interest, thereby suppressing the profitability of Islamic banks. This problem is complicated by the uncertainty of the impact of post-pandemic GDP recovery, which is not always followed by a linear strengthening of ROA, given the dynamic pressure of exchange rate volatility.



The vagueness of the relationship between variables is also confirmed by the research gap from previous studies that showed inconsistent results. This inconsistency, coupled with the limitations of the previous analysis model, which is mostly static, makes the mapping of the effects of economic shock on Islamic banking inaccurate. The relationship between economic strength and bank performance is reciprocal and dynamic, so without in-depth analysis, it is difficult for regulators to formulate policies that are adaptive to the stability of Islamic banking in the future.

Previous research studies have shown that macroeconomic factors are related to the performance of Islamic banking, although the results obtained are still mixed. Research Nurajizah et al. (2025) found that exchange rate and inflation are closely related to the stability of Indonesia's economic growth (Nurajizah et al., 2024). Retnasih (2023) indicates that the exchange rate is the most dominant variable in influencing various performance indicators of Islamic banks, including ROA (Retnasih, 2023). Marlina and Sudana (2022) found that economic growth and inflation did not significantly affect the growth of Islamic banks during the COVID-19 pandemic (Marlina & Sudana, 2022). Meanwhile, Al Sharif (2021) proved that the real exchange rate and real interest rates have a significant effect on the performance of Islamic banks (Mustafa & Sharif, 2021). while Istan and Fahlevi (2020) found that GDP had a significant positive effect on ROA, while inflation did not have a significant effect (Istan & Fahlevi, 2020). The difference in the results of the study shows that there is still a research gap regarding the influence of macroeconomic variables on the financial performance of Islamic banks, so further research is needed to analyze the effect of economic growth (GDP), inflation, rupiah exchange rate, and reference interest rates on the Return on Assets (ROA) of Islamic commercial banks in Indonesia for the period 2021-2025.

Based on the dynamic description of the relationship between macroeconomic factors and Islamic banking, there are urgent research gaps that need to be addressed. First, the results of previous studies on the effect of Gross Domestic Product (GDP), inflation, interest rates, and exchange rates on the profitability (ROA) of Islamic banks still show inconsistencies, requiring revalidation with the latest data. Second, most of the existing studies have not specifically covered post-pandemic market dynamics, whereas the period 2021 to 2025 presents unique and significant economic fluctuations for Islamic Commercial Bank ROAS. Third, many previous studies still rely on traditional statistical methods such as linear regression or VECM, whereas the relationship



between macroeconomic variables and ROA is dynamic and interrelated (bidirectional), which is more accurately analyzed using Panel models to measure shock response interactively. Fourth, the lack of research that seeks to integrate financial analysis (ROA) with the objective dimension of Sharia (maqāṣid al-sharī'ah) further emphasizes the need for comprehensive studies.

Islamic banking in Indonesia continues to grow, but its market share is still relatively low compared to its potential, while its financial performance faces various challenges due to the dynamics of macroeconomic conditions. Fluctuations in economic growth (GDP), inflation, the rupiah exchange rate, and benchmark interest rates have the potential to affect the stability and profitability of Islamic commercial banks, although the results of previous studies on these relationships still show mixed and inconsistent findings. In addition, the existence of a dual banking system in Indonesia causes Islamic banks to remain affected by changes in monetary policy, including movements in benchmark interest rates. Based on these conditions, this study was conducted to analyze the effect of economic growth (GDP), inflation, rupiah exchange rate, and reference interest rate (BI Rate) on the financial performance of Sharia commercial banks as measured by Return on Assets (ROA) in seven Sharia commercial banks registered with the Financial Services Authority (OJK) during the period 2021-2025, either partially or simultaneously.

LITERATURE REVIEW

Business Cycle Theory

Business Cycle Theory is a theoretical framework used to understand economic fluctuations that occur repeatedly over a period of time. This theory explains that the economy does not grow linearly, but rather moves in cycles consisting of four main phases, namely expansion, peak, contraction and bottom. The expansion phase is characterized by increased economic activity, production growth, employment, and increased aggregate demand. The peak represents the highest point of economic activity before entering the contraction phase, where growth begins to slow. The contraction or recession phase is characterized by a decrease in output, rising unemployment, and declining economic activity. The base phase represents the lowest point of the economic cycle before returning to the expansion phase (Mankiw, 1997).

Financial Intermediation Theory

The Theory of financial intermediation explains the role of banks as intermediaries between savers and borrowers in the economy. Banks collect



funds from people or institutions that have surplus funds and distribute them to those who need funds for consumption and investment purposes. This intermediation function becomes very important because it facilitates the flow of capital, increases the efficiency of resource allocation, and supports economic growth (Frederic S. Mishkin, 2010).

Economic Growth

Economic growth is one of the main indicators of a country's economic health, which shows the ability of a country to increase the production capacity of goods and services in a sustainable manner. Sukirno (2016) defines economic growth as the process of increasing per capita output in the long term, which reflects an increase in the capacity of a country to produce goods and services (Sukirno, 2013). In other words, economic growth indicates the extent to which a country is able to create jobs, increase people's incomes, and improve general well-being.

Inflation

Inflation is the increase in prices of goods and services in general in a certain period that results in a decrease in people's purchasing power. Inflation is a tendency to increase the general prices of goods and services continuously, thus affecting economic stability and financial planning of the community and business actors (Nopirin, 2012). Moderate inflation can reflect healthy economic growth, but high or uncontrolled inflation can cause economic uncertainty, reduce people's purchasing power, and increase credit risk for financial institutions, including Islamic banks.

Exchange Rate

The rupiah exchange rate is the price of the domestic currency against foreign currencies that reflects the purchasing power of the rupiah in the international market and plays an important role in trade, investment, and national economic stability. According to Madura (2000), exchange rate fluctuations can affect import costs, export earnings, competitiveness of domestic products, and directly impact the financial performance of banks, including Islamic banks that have assets and liabilities denominated in foreign currencies (Jeff Madura, 2000). Exchange rate stability increases investor and customer confidence, while high volatility can trigger credit risk, liquidity risk, and affect the price of goods and people's purchasing power.

Benchmark Interest Rate



The benchmark interest rate or BI Rate is the main monetary policy instrument set by the central bank to direct market interest rates, control liquidity, and maintain national economic stability. The BI Rate serves as an indicator of the cost of interbank funds, influencing investment decisions, financing, as well as capital flows in the financial market (Frederic S. Mishkin, 2010). In the context of Islamic banking, although the principle of profit sharing or buying and selling is the basis of the contract, the BI Rate remains a strategic reference for determining financing margins, market risk management, and profitability stability in a Sharia manner. This shows that Islamic banks cannot be separated from the dynamics of conventional interest rates, even though their operations are *riba*-free.

Financial Performance

The financial performance of Islamic banks is a measure of the bank's ability to manage assets, liabilities, capital, and all resources owned to achieve the main objectives, namely generating optimal profits, maintaining financial stability, and supporting sustainable economic growth in accordance with Sharia principles. According to Rivai & Arifin (2010), good financial performance reflects the effectiveness of banks in channeling productive financing, managing credit risk, liquidity, and profitability, while minimizing operational risk (Veithzal Rivai dan Arviyan Arifin, 2010). In this study, the financial performance of Islamic banks focused on aspects of profitability as measured by one main ratio, namely Return on Assets (ROA).

RESEARCH METHOD

This study aims to analyze the effect of economic growth (GDP), inflation, the rupiah exchange rate, and the benchmark interest rate (BI Rate) on the financial performance of Sharia commercial banks in Indonesia for the period 2021-2025. The Data used are secondary and obtained from the financial statements of Sharia commercial banks registered with the OJK (BSI, BCA Syariah, BTPN Syariah, Bank Mega Syariah, Bank Muamalat, Bank Panin Syariah, and Bank Bukopin Syariah), as well as from OJK official publications, Sharia banking statistics (SPS), Central Statistics Agency (BPS), and Bank Indonesia.

The approach used in this study is a quantitative approach in which researchers aimed to obtain significance between the variables studied (Darwin, 2021). Data collection techniques using official documents and data analysis are quantitative/statistical, which aims to test established hypotheses. The type of research used is Library research. Literature research is Research whose main data is obtained from secondary sources in the form of literature, scientific journals, Bank annual reports, OJK publications, Sharia banking statistics (SPS),



as well as official data from the Central Statistics Agency (BPS) and Bank Indonesia (BI).

All data used in this study are quarterly time series and combined with cross-section (panel data) on seven Sharia commercial banks in Indonesia, namely Bank Syariah Indonesia (BSI), BCA Syariah, BTPN Syariah, Bank Mega Syariah, Bank Muamalat, Bank Panin Syariah, and Bank Bukopin Syariah, during the period 2021 quarter 1 to 2025 quarter.

The population in this study is all Sharia commercial banks (BUS) registered and supervised by the Financial Services Authority (OJK) in Indonesia during the period 2021 to 2025. Based on OJK data, until 2025 there are 13 Sharia commercial banks operating in Indonesia with various tati scales and service ranges. The research sample consisted of 7 Sharia commercial banks, namely: Bank Syariah Indonesia (BSI), BCA Syariah, BTPN Syariah, Bank Mega Syariah, Bank Muamalat, Bank Panin Syariah and Bank Bukopin Syariah.

The research Data were obtained by the documentation method, that is, the collection of secondary data from official sources. Macroeconomic Data is sourced from the Central Statistics Agency (BPS), Bank Indonesia (BI), as well as international publications such as the World Bank and IMF. Meanwhile, banking financial data obtained from the annual report of each bank, Islamic banking statistics (SPS) OJK, as well as the official publication of the Financial Services Authority (FSA). This technique was chosen because all research variables are quantitative and have been officially documented so that they can be analyzed using a panel data approach in accordance with the objectives of the study. In addition to the documentation method, this study also uses a questionnaire/questionnaire as an instrument to obtain primary data from respondents.

**RESULTS AND DISCUSSION****Panel Data Regression Model Estimation Results****Chow Test****Table 3****Chow Test Results**

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	114.852341	(6,129)	0.0000
Cross-section Chi-square	258.606508	6	0.0000

Source: data processed by researchers, 2026

Based on the results of the Chow Test, a probability value of 0.000 is obtained, which is smaller than the significance level of 0.05. The result shows that H_0 is rejected and H_a is accepted, so the model that is more appropriate to use is Fixed Effect Model (FEM) than Common Effect Model (CEM). Thus, it can be concluded that there are differences in the characteristics or heterogeneity between each Islamic bank that is the object of research, so that the use of fixed effect model is considered more able to capture individual differences between cross-sections in the data of this research panel.

Hausman Test**Table 4****Hausman Test Results**

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	4	1.0000

Source: data processed by researchers, 2026

Based on the results of the Hausman test, a probability value of 1.000 is obtained which is greater than the significance level of 0.05. The result shows that H_0 is accepted and H_a is rejected, so the more appropriate model is Random Effect Model (REM) than Fixed Effect Model (FEM). This shows that differences in individual characteristics between banks are considered random and not correlated with independent variables in the research model. Therefore, the



random effect model is considered more efficient and appropriate to be used in the regression estimation of this research panel data.

Lagrange Multiplier (LM) Test

Table 5

Lagrange Multiplier (LM) Test Result

Lagrange Multiplier Tests for Random Effects

Null hypotheses: No effects

Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
(all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	86.24515 (0.0000)	4.074913 (0.0435)	90.32007 (0.0000)
Honda	9.286827 (0.0000)	-2.018641 (0.9782)	5.139383 (0.0000)
King-Wu	9.286827 (0.0000)	-2.018641 (0.9782)	5.139383 (0.0000)
Standardized Honda	9.265852 (0.0000)	-1.043143 (0.8516)	4.128341 (0.0000)
Standardized King-Wu	9.265852 (0.0000)	-1.043143 (0.8516)	4.128341 (0.0000)
Gourieroux, et al.	--	--	86.24515 (0.0000)

Source: data processed by researchers, 2026

Based on the results of the LaGrange Multiplier (LM) test, a probability value of 0.000 is obtained which is smaller than the significance level of 0.05. The result shows that H_0 is rejected and H_a is accepted, so the model that is more appropriate to use is Random Effect Model (REM) than Common Effect Model (CEM). Thus, the random effect model is considered more able to explain the variation of panel data than the common effect model, because it considers the existence of random individual effects on each Islamic bank during the study period.

Selection of Random Effect Model (REM) based on Chow test and Hausman test has implications for the implementation of classical assumption test. REM is estimated using Generalized Least Squares (GLS) approach, so classical assumption testing cannot be completely equated with Ordinary Least Squares (OLS) regression. Gujarati and Porter (2009) explain that GLS is designed to overcome the problems of heteroscedasticity and structural



autocorrelation, (Gujarati, 2012) while Basuki and Prawoto (2016) stated that the classical assumption test in panel data regression, especially REM, is more complementary and not an absolute requirement for Model acceptance. (Basuki & Prawoto, 2016)

In addition, the independent variables in this study are macroeconomic variables, such as inflation, BI Rate/BI7DRR, exchange rate, and GDP growth, which are the same for all cross-section units in the same period. Widarjono (2018) explained that these characteristics can cause a high correlation between macroeconomic variables because of movement patterns that are influenced by the same economic dynamics. (Widarjono, 2007) Therefore, high multicollinearity needs to be understood as a possible structural limitation of the data, as Baltagi (2021) explains, and not necessarily indicative of Model Specification errors. (Baltagi, 2005) Ghazali dan Ratmono (2017) it also emphasizes the importance of interpreting the results of multicollinearity testing contextually according to the characteristics of the data and models used. (Ghazali & Ratmono, 2017)

Thus, the classical assumption test can still be carried out as part of the methodological transparency of the research, but the results need to be interpreted according to the characteristics of the brakes and the macroeconomic variables used. High multicollinearity findings on macroeconomic variables can be reported as structural limitations of the data and are not automatically grounds for rejecting REM models that have been selected through panel data model testing.

Hypothesis Test Results

Panel Data Regression Equation

Based on the estimation results using the EGLS (Cross-section Random Effects) Panel method, the following regression equation is obtained:

$$Y = 0.352604489572 - 0.0066359859301X_1 + 0.2491940112X_2 \\ + 0.032770267236X_3 + 0.087924722779X_4$$

The explanation of the regression equation is as follows:

1. The constant value of 0.352604 indicates that if the variables X_1 , X_2 , x_2 , and x_2 are considered constant or zero, then the value of the dependent variable Y is 0.352604.
2. The regression coefficient of variable X_1 -0.006636 indicates that every increase of 1 unit in the variable X_1 will cause the variable y decreased by 0.006636 assuming other variables remain. This indicates the existence of a negative relationship between the variables X_1 and Y .



3. The regression coefficient of variable X_2 of 0.249194 shows that every 1 unit increase in variable X_2 will cause variable Y to increase by 0.249194 assuming other variables are constant. This indicates a positive relationship between the variables X_2 and Y .
4. The regression coefficient of the variable $X_{\text{integration}}$ of 0.032770 indicates that each increase of 1 unit in the variable $X_{\text{integration}}$ will cause the variable y to increase by 0.032770 assuming other variables remain. This indicates the existence of a positive relationship between the variables x_2 and Y .
5. The regression coefficient of the variable X_4 by 0.087925 indicates that every increase of 1 unit in the variable X_4 will cause the variable Y to increase by 0.087925 assuming other variables are constant. This indicates the existence of a positive relationship between the variables X_4 and Y .

Partial Test (T Test)

Partial test or T test performed in the regression analysis of panel data in this study which is intended to see the relationship between the independent variable and the dependent variable in this study. The results of the partial test can be seen as follows:

Table 6
Partial Test Results (T Test)

Dependent Variable: Y				
Method: Panel EGLS (Cross-section random effects)				
Date: 06/04/26 Time: 20:47				
Sample: 2021Q1 2025Q4				
Periods included: 20				
Cross-sections included: 7				
Total panel (balanced) observations: 140				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.352604	2.697782	0.130702	0.8962
X1	-0.006636	0.050133	-0.132367	0.8949
X2	0.249194	0.078728	3.165252	0.0019
X3	0.032770	0.185079	0.177061	0.8597
X4	0.087925	0.146631	0.599631	0.5498

Based on the partial test results that have been done, it can be said that:

1. The variable X_1 has a probability value of 0.8949, which is greater than the significance level of 0.05 ($\alpha = 5\%$). In addition, the t-count value of -0.132367 has an absolute value that is smaller than the T-table value of ± 1.977 ($df = 135$; $\alpha = 5\%$). Thus, the test results based on both p-value and T-statistics showed consistent results, namely H_0 was accepted and H_a was rejected. Therefore, it can be concluded that the variable X_1 has no significant effect on the variable



- Y. These results indicate that changes in the variable X_1 is not able to have a significant effect on Y during the study period.
2. Variable X_2 has a probability value of 0.0019 which is smaller than 0.05. In addition, the T-calculated value of 3.165252 is greater than the T-table value of 1.977. Thus, the test results based on both p-value and T-statistics show consistent results, namely H_0 rejected and H_a accepted. Therefore, it can be concluded that the variable X_2 has a positive and significant effect on the variable Y. This result indicates that the increase in variable X_2 will be followed by an increase in variable Y.
 3. The variable x_2 has a probability value of 0.8597 which is greater than 0.05. In addition, the t-count value of 0.177061 is smaller than the T-table value of 1.977. Thus, the test results showed that H_0 was accepted and H_a was rejected. Therefore, it can be concluded that the variable x_2 does not have a significant effect on the variable Y. This shows that the change in the variable x_2 does not have a significant effect on Y in this study.
 4. The variable X_4 has a probability value of 0.5498 which is greater than 0.05. In addition, the t-count value of 0.599631 is smaller than the T-table value of 1.977. Thus, the test results showed that H_0 was accepted and H_a was rejected. Therefore, it can be concluded that the variable X_4 has no significant effect on the variable Y. This shows that the change in the variable X_4 does not have a significant effect on Y in this research model.

Simultaneous Test (F Test)

Table 7
Simultaneous Test Results (F Test)

R-squared	0.082502	Mean dependent var	0.182475
Adjusted R-squared	0.055316	S.D. dependent var	1.268001
S.E. of regression	1.232431	Sum squared resid	205.0497
F-statistic	3.034803	Durbin-Watson stat	0.193482
Prob(F-statistic)	0.019649		

Source: data processed by researchers, 2026

Based on the results of the F test on the regression output, obtained F-statistic value of 3.034803 with the value of Prob (F-statistic) of 0.019649. In simultaneous testing (f-Test), decision making can be done with two approaches, namely based on the probability value (p-value) and the comparison between f-count with F-table. At a significance level of 5% ($\alpha=0.05$) with degrees of freedom $df_1 = 4$ and $df_2 = 135$, obtained the value of F-table of 2.44. Based on the test results,



it is known that the value of F-count (3.034803) is greater than F-table (2.44). In addition, the probability value of 0.019649 is also smaller than 0.05.

Thus, both based on the p-value approach and the comparison of the F-count with the F-table, the test results showed consistent conclusions, that is, H_0 was rejected and H_1 was accepted. That is, simultaneously the independent variables in the research model significantly affect the dependent variable (Y). This indicates that together the variables X_1 , X_2 , Xintegra, and x_2 are able to explain the variation of variable Y significantly in the regression model used.

Coefficient of Determination (R^2)

Table 8
Result Coefficient of Determination

R-squared	0.082502	Mean dependent var	0.182475
Adjusted R-squared	0.055316	S.D. dependent var	1.268001
S.E. of regression	1.232431	Sum squared resid	205.0497
F-statistic	3.034803	Durbin-Watson stat	0.193482
Prob(F-statistic)	0.019649		

Source: data processed by researchers, 2026

The coefficient of determination on the regression output is shown by the R-squared value of 0.082502. The value is then converted into a percentage to facilitate interpretation, which is as follows:

$$R^2 = 0,082502 \times 100\% = 8,2502\%$$

Based on the results of panel data regression, the coefficient of determination value of 8.25% indicates that the independent variables in the research model, namely X_1 , X_2 , Xintegra, and x_2 , simultaneously able to explain the variation of the dependent variable (Y) of 8.25%. In other words, the changes that occur in variable Y can be explained by the four independent variables by 8.25%. Meanwhile, the remaining 91.75% were explained by other factors outside the research model that were not included in this study.

Discussion

Variable gross domestic product (GDP) in this study obtained a probability value of 0.9375 which is greater than 0.05, indicating that GDP has no significant effect on the ROA of Islamic banks. The results of this study are in line with research conducted by Zuhdi, Wulandari, and Setyowati (2024) which found that GDP had no significant effect on the ROA of Bank Muamalat for the period 2007-2023. The study used multiple linear regression method with time series approach. A similar conclusion was also found by Selayan et al., which states that GDP has no direct effect on the profitability of Islamic commercial banks in Indonesia. The study explains that the influence of GDP can only occur through



financing as an intervening variable (Selayan et al., 1970). Other research conducted by Muzakki helped strengthen the results of this study through the analysis of the effect of economic growth on the profitability of Islamic commercial banks for the period 2016-2020. The insignificance of GDP to ROA shows that changes in national economic growth have not been able to directly improve the profitability of Islamic banks because the operational system of Islamic banks relies more on profit-sharing mechanisms and real sector activities (Muzakki, 2024).

The results of partial hypothesis testing showed that inflation variables have a positive and significant effect on the Return on assets (ROA) of Islamic commercial banks. These findings indicate that increased inflation is followed by increased profitability of Islamic banks. Theoretically, this condition occurs because Islamic banks have the ability to adjust margins and profit-sharing ratios when there is a general increase in prices so that financing income increases along with increased economic activity of the community (Cholilah et al., 2024). In addition, rising inflation also encourages businesses to increase working capital needs due to rising production costs and raw material prices so that the demand for financing in Islamic banks increases. The increase in the distribution of financing will enlarge the bank's revenue sources and have a positive impact on ROA (Pohan et al., 2023). These conditions ultimately encourage an increase in revenues of Islamic banks and a positive impact on ROA (Masrina, 2024). The results of this study are also in line with research that states that inflation has a positive and significant effect on the profitability of Islamic commercial banks in Indonesia (I. Fikri et al., 2025).

The positive influence of inflation on ROA can also be explained through the characteristics of the Islamic financing system based on profit and loss sharing, so that Islamic banks have flexibility in adjusting the profit sharing ratio according to economic conditions. When inflation occurs in conjunction with increased economic activity in the trade and industry sector, the profits of financing customers also increase so that the revenue share received by Islamic banks also increases (Solihin et al., 2022). Thus, the positive effect of inflation on ROA in this study shows the adaptive ability of Islamic banks to manage inflation risk through financing instruments that are responsive to economic changes. The findings of this study are supported by previous research that found that inflation has a significant effect on the profitability of Islamic banks in Indonesia (Anindya et al., 2022). Other research also confirms that inflation is one of the macroeconomic factors that affect the profitability of Islamic banking (Juanda, 2025). In addition, research on the profitability of Islamic banking shows that



inflation has an influence on the financial performance of Islamic banks in Indonesia (Khotimah et al., 2024).

Variable exchange rate of rupiah against the United States dollar in this study obtained a probability value of 0.8703 which is greater than 0.05, indicating that the exchange rate has no significant effect on the ROA of Islamic banks. The results of this study are in line with research conducted by Fikri and Manda which found that exchange rate risk had no significant effect on the profitability of Bank BNI Syariah for the period 2012-2019. The study shows that changes in exchange rates have not been able to directly affect the profitability of Islamic banks (P. M. Fikri & Manda, 2021). Similar results were also found by Selayan et al., which states that the exchange rate has no significant effect on the ROA of Islamic commercial banks in Indonesia, either directly or through variable financing (Selayan et al., 1970). Research sa'diyah and Nasrulloh also showed that the exchange rate does not significantly affect the ROA in the short term. The study explains that Islamic banks' response to macroeconomic fluctuations tends to be inertial in the short term (Sa'diyah & Nasrulloh, 2025). Nonetheless, the research of Zuhdi et al., shows that the exchange rate has a significant effect on ROA Bank Muamalat (Zuhdi et al., 2024). Differences in the results indicate a research gap that can be influenced by differences in research objects, observation periods, and analytical methods used. In general, the influence of exchange rates on Islamic banks tends to be weak because the exposure to foreign exchange transactions of Islamic banks is relatively smaller than conventional banks.

BI Rate variable in this study obtained a probability value of 0.8612 which is greater than 0.05, indicating that the BI Rate has no significant effect on the ROA of Islamic banks. The results of this study are in line with research conducted by Fikri and Manda which found that BI interest rate risk has no significant effect on the profitability of Bank BNI Syariah. The study shows that changes in benchmark interest rates have not been able to directly affect the profitability of Islamic banks (P. M. Fikri & Manda, 2021). Similar results were also found by Tursina who stated that the BI Rate had a negative but insignificant influence on the Islamic banking ROA post-COVID period 2022-2023 (Tursina, 2024). Research sa'diyah and Nasrulloh also showed that the BI Rate has no significant effect on ROA in the short term despite having a positive influence direction (Sa'diyah & Nasrulloh, 2025). Research Juanda et al., again proving that the BI Rate has no significant effect on the profitability of Islamic banks in Indonesia for the period 2019-2023 (Juanda, 2025). Husen and Fahlevi's research also shows that the BI Rate only has a very weak influence on the ROA of Islamic banks (Husen &



Fahlevi, 2024). The UNSIGNIFICANCE of the BI Rate in this study shows that the operational system of Islamic banks based on the principle of profit sharing causes changes in Bank Indonesia's benchmark interest rate does not directly affect the profitability of Islamic banks.

The results of partial hypothesis testing (t test) in this study showed that all independent variables, namely GDP, exchange rate, and BI Rate, have a probability value greater than 0.05 so that no significant effect on the ROA of Islamic banks in Indonesia. The results of this study are in line with research conducted by Fikri and Manda (2021) which shows that the risks of BI interest rates, inflation, and exchange rates all have no significant effect on the profitability of Bank BNI Syariah. The study became one of the strongest supporters of the null hypothesis in this study. Similar results were also found by Tursina, which showed that inflation and the BI Rate had no significant effect on ROA in post-COVID Islamic banking (Tursina, 2024). Research Juanda et al., again proving that inflation and the BI Rate have no significant effect on the ROA of Islamic banks in Indonesia for the period 2019-2023 (Juanda, 2025). Fadila et al's research also shows that inflation and the BI Rate do not have a significant effect on the profitability of individual Islamic commercial banks. These results indicate that the profitability of Islamic banks is more influenced by internal banking factors than changes in macroeconomic variables partially (Sagita et al., 2025).

The results of simultaneous testing (F test) in this study obtained the value of F-count (3.034803) is greater than F-table (2.44). In addition, the probability value of 0.019649 is also smaller than 0.05. The results of this study are in line with research conducted by Rahmat, Afif, and Daud (2024) on the effect of inflation and Non-Performing Financing (NPF) on the profitability of Sharia commercial banks in Indonesia for the period 2018-2022. The study showed that simultaneously inflation and NPF variables have a significant effect on profitability (Return on Assets / ROA), as evidenced by the significance value of 0.000 (<0.05) and the calculated F value of 48.487 which is greater than the Ftable of 3.16 (Rahmat et al., 2024). The same result was also found by Rialita and Abdurrahman (2023), who concluded that inflation and the rupiah exchange rate simultaneously have a significant effect on the profitability of Islamic commercial banks. In addition, various studies on the influence of macroeconomic variables on the performance of Islamic banking also show that a combination of factors such as inflation, exchange rates, benchmark interest rates, and internal bank indicators are able to explain significant changes in profitability. The similarity of the results indicates that the financial performance of Islamic commercial banks is not only influenced by one variable separately, but is an accumulation of the



influence of various macroeconomic factors that work simultaneously, so that the bank's ability to manage risk and respond to changes in economic conditions is an important aspect in maintaining stability and profitability (Rialita & Abdurrahman, 2023).

CONCLUSION

During the 2021-2025 period, collective macroeconomic conditions significantly influenced the financial performance (ROA) of Indonesian Sharia commercial banks, with inflation acting as the sole individual variable showing a positive and significant impact due to adaptive profit-sharing margins, whereas GDP, exchange rate fluctuations, and the BI Rate showed no direct significance owing to lower foreign exchange exposure and non-interest-based models. These findings imply that while Islamic banks demonstrate structural resilience against conventional interest rate and currency shifts, bank management must strategically leverage inflationary cycles to optimize revenue from financing needs. For future research, scholars are recommended to incorporate internal bank-specific variables such as the Capital Adequacy Ratio (CAR) or Financing to-Deposit Ratio (FDR) and expand the observation window to capture evolving post-2025 economic dynamics more comprehensively.

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