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Determinants of Murabahah Margin Income in Indonesian Islamic Commercial Banks, 2013–2018

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ABSTRACT

This study investigates the factors influencing murabahah margin income in Islamic commercial banks in Indonesia from 2013 to 2018, focusing on the BI Rate, overhead costs, and third-party funds or TPF (*Dana Pihak Ketiga* abbreviated DPK in Bahasa Indonesia). It aims to explore how these variables, individually and collectively, affect murabahah pricing, which is critical for ensuring competitiveness and adherence to Sharia principles in Islamic finance. A quantitative approach was employed, utilizing secondary data from quarterly financial reports of Islamic banks. Multiple linear regression analysis, complemented by classical assumption tests, was used to evaluate the relationships between the independent variables and murabahah margin income. The analysis ensures robust insights into the financial dynamics of Islamic banking. The findings reveal that overhead costs significantly and positively influence murabahah margin income, underscoring the role of operational efficiency in pricing. While the BI Rate demonstrated a positive association with murabahah margins, its effect was statistically insignificant, highlighting the need for alternative Sharia-compliant benchmarks. TPF exhibited a negative but insignificant relationship, suggesting that its liquidity impact on murabahah margins may be indirect and moderated by other factors. The combined analysis showed that these variables significantly influence murabahah margins collectively, with overhead costs being the most dominant determinant. These results emphasize the interplay between macroeconomic indicators and operational strategies in murabahah pricing. They highlight the need for operational efficiency, ethical benchmarks, and innovative deposit mobilization strategies. This study contributes to the broader discourse on Islamic finance, offering actionable insights for improving financial sustainability and aligning practices with Sharia principles.

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INTRODUCTION

Islamic banking has emerged as a significant component of global financial systems, offering alternatives that adhere to Sharia principles (Ahmed, 2010; Iqbal & Mirakhor, 1999; Khan & Bhatti, 2008). Among its various financing products, murabahah has gained prominence due to its operational simplicity and risk-averse nature compared to profit-sharing schemes such as mudarabah and musharakah (Erliyanti, 2022; Muhlis, 2020). As of recent years, murabahah has accounted for a substantial portion of financing portfolios in Islamic banks, highlighting its widespread acceptance by both financial institutions and customers. Murabahah financing constituted more than half of the total Islamic banking financing (Muchtar, 2021), underscoring its pivotal role in the sector's growth. However, this dominant reliance raises important questions regarding its alignment with the fundamental Islamic principle of risk-sharing, as murabahah effectively resembles fixed-income structures seen in conventional banking systems. This backdrop underscores the relevance of examining factors influencing murabahah margin income in Islamic banks.

The preference for murabahah can be attributed to several factors, including its predictable revenue generation, reduced risk exposure for banks, and its resemblance to conventional consumer credit products (Febrilyantri et al., 2023; Zamroni et al., 2023). The operational ease of murabahah, particularly in terms of documentation and risk mitigation, has further cemented its position as a preferred financing mode. Additionally, customers find murabahah appealing due to its fixed margins and transparency, where banks disclose the cost and agreed-upon markup (Diah & Zulhamdi, 2022; Siregar et al., 2022). However, this reliance has led to critical discourse on whether Islamic banks' use of murabahah compromises the ethical underpinnings of Islamic finance (Abbasi, 2020; Ainun, 2020; Andriansyah, 2009; Saleh et al., 2021). While banks claim to adhere to Sharia principles, some scholars argue that murabahah's structure leans closer to interest-based mechanisms, particularly when benchmarked against conventional interest rates such as the BI rate. Thus, understanding the determinants of murabahah margins is essential to ensure that Islamic banks remain competitive while adhering to Sharia principles.

Despite the increasing prominence of Islamic banking, especially murabahah-based financing, challenges persist regarding the determinants of its margin income. A key research issue is identifying how specific macroeconomic and operational variables impact murabahah margins. The BI rate, for instance, serves as a benchmark for determining margins, raising concerns about the Islamic banking sector's dependency on interest-rate proxies (Nouman et al., 2022; Saraç & Zeren, 2015). Overhead costs, representing the operational expenditures of banks, directly influence the pricing strategies of murabahah contracts (Ismail & Kadir, 2020; Rosyida, 2018). Third-party funds (TPF), comprising deposits from customers, also play a critical role in determining murabahah margins (Aziza & Mulazid, 2017; Mauluddi, 2020; Zulpahmi & Rizqiana, 2018). However, the interplay of these variables and their combined effect on murabahah income remains insufficiently understood, particularly in Indonesia's dynamic Islamic banking environment.

Broadly, the proposed solutions to these issues involve investigating the relationship between macroeconomic indicators and murabahah margins to devise strategies that align with Sharia principles while maintaining competitiveness. This includes exploring alternative benchmarks to replace reliance on interest rates and optimizing operational efficiency to reduce overhead costs. Additionally, strategies to effectively leverage TPF could enhance profitability while ensuring ethical alignment. These solutions require a nuanced understanding of the financial mechanisms within Islamic banking and how they interact with external economic factors.

Existing research provides insights into some of these factors. Rahma (2016) examined the role of overhead costs and profit-sharing ratios in determining murabahah margins, finding that operational costs significantly influence margin levels. Similarly, Yusuf & Sari (2013) analyzed the effects of overhead costs and administrative expenses, highlighting their critical impact on murabahah income. Meanwhile, studies by Anik (2017) and Arumdhani & Septiani (2012) addressed the BI rate's role, revealing its significant influence on murabahah margins despite its apparent incongruence with Islamic finance principles. These studies collectively underscore the importance of operational and macroeconomic variables in shaping murabahah margins, yet gaps remain in understanding their simultaneous effects.

While these contributions are valuable, they often focus on isolated variables or specific banking institutions, limiting the generalizability of their findings. Moreover, few studies have comprehensively analyzed the combined impact of the BI rate, overhead costs, and TPF on murabahah margins within a broader context. This gap is particularly pronounced in the Indonesian Islamic banking sector, where rapid growth and regulatory shifts have introduced unique dynamics. A systematic examination of these

variables in a unified framework is necessary to bridge this gap and provide actionable insights.

The current study aims to address this gap by examining the simultaneous effects of the BI rate, overhead costs, and TPF on murabahah margins in Indonesian Islamic commercial banks during 2013–2018. This research stands out by integrating these variables within a single analytical model, offering a holistic perspective on their interplay. Additionally, it employs rigorous statistical methods, including multiple linear regression and classical assumption testing, to ensure the robustness of its findings. By providing empirical evidence on these relationships, this study contributes to the literature on Islamic banking, offering practical recommendations for banks to enhance their murabahah practices.

This research also advances theoretical and practical understanding in Islamic finance by highlighting the implications of macroeconomic and operational factors on murabahah margins. It underscores the need for Islamic banks to reduce dependency on interest-rate benchmarks like the BI rate and emphasizes optimizing operational efficiency and resource allocation. By addressing these issues, the study contributes to the broader discourse on aligning Islamic banking practices with Sharia principles while ensuring financial sustainability and competitiveness.

LITERATURE REVIEW

Influence of BI Rate on Murabahah Margin Income

The impact of the BI Rate on Murabahah margin income is a critical issue in Islamic banking, particularly in Indonesia, where Murabahah financing dominates Islamic financial products. Research suggests that the BI rate has a significant negative effect on Murabahah margin income, as higher interest rate benchmarks reduce the margins Islamic banks can charge on Murabahah transactions. Mustikawati & Fikri (2021) found a direct negative correlation between the BI rate and Murabahah margin income, reinforcing the notion that rising BI rates put downward pressure on Islamic banks' profitability. Similarly, Wahyuni et al. (2021) emphasize the BI rate's role in shaping the competitive landscape between Islamic and conventional banks, highlighting its influence on Murabahah-based financing. Additionally, Dwiawani & Sudarsono (2021) support these findings by demonstrating that the BI rate significantly affects Murabahah financing, ultimately impacting overall margin income. These studies collectively indicate that fluctuations in the BI rate present a substantial challenge for Islamic banks in maintaining stable and competitive Murabahah margins.

Beyond the direct influence of the BI rate, other factors such as operational costs, third-party funds, and inflation also play a role in determining Murabahah margin

income. Anik (2017) notes that profitability, operational expenses, and third-party funds are key variables influencing Murabahah margins, with the BI rate being one of the critical determinants. However, Musaroh et al. (2020) offer a different perspective, suggesting that while operational costs and financing volumes have significant effects on Murabahah margins, the BI rate itself does not exert a direct positive influence. Additionally, the interplay between inflation and the BI rate adds complexity to this relationship, with some studies indicating that inflation can have a positive effect on Murabahah margins, even as the BI rate exerts downward pressure (Musaroh et al., 2020; Mustikawati & Fikri, 2021). These findings suggest that while the BI rate remains a crucial determinant, Islamic banks must also consider other economic variables in their financial strategies. As Islamic banking continues to evolve, understanding the multifaceted impact of the BI rate alongside operational and macroeconomic factors will be essential for maintaining profitability and competitiveness in the sector.

Influence of Overhead Costs on Murabahah Margin Income

Overhead costs play a crucial role in shaping Murabahah margin income within Islamic banking, particularly in Indonesia, where Murabahah financing is widely used. These costs, which include administrative expenses, salaries, and utilities, directly impact the profitability of Islamic banks and their ability to maintain competitive margins. Research indicates a significant negative relationship between overhead costs and Murabahah margins. Anik (2017) found that higher operational expenses lead to a decline in Murabahah margin income, highlighting the need for cost efficiency in Islamic banking. Similarly, Yulianto et al. (2021) confirm that increased overhead costs erode Murabahah profit margins, reducing the financial sustainability of Islamic banks. Furthermore, Ekawati & Shofawati (2019) emphasize the importance of managing operational expenses effectively, as excessive costs can diminish profitability and limit banks' ability to offer competitive Murabahah financing. These findings suggest that Islamic banks must implement strategic cost management practices to sustain Murabahah margin income while maintaining service quality.

Beyond direct operational costs, the broader financial environment also influences Murabahah margins, requiring banks to balance multiple financial factors. Serwadda (2018) highlights that managing overhead costs is crucial for overall profitability, a principle that applies to both conventional and Islamic banking institutions. Muhammad et al. (2020) further support this view, noting that internal factors such as operational efficiency significantly affect financial performance, including that of Islamic rural banks. Additionally, the relationship between overhead costs and Murabahah margins is interconnected with other financial metrics, such as the Financing to Deposit Ratio (FDR) and the Capital Adequacy Ratio (CAR). Widarjono &

Mardhiyah (2022) argue that Islamic banks must balance overhead costs with these key financial indicators to maintain stability and profitability. This interplay suggests that while managing operational costs is essential, a holistic approach that integrates financial ratios and economic conditions is necessary for optimizing Murabahah margins. As the Islamic banking sector continues to evolve, effective cost control strategies will be essential in sustaining profitability and ensuring long-term growth.

Influence of Third-Party Funds on Murabahah Margin Income

Third-party funds (TPF) play a crucial role in determining Murabahah margin income within Islamic banking, particularly in Indonesia, where Murabahah financing is a widely used instrument. TPF, which consists of customer deposits, serves as a primary funding source for Islamic banks, enabling them to extend financing, including Murabahah contracts. Research suggests that TPF has a positive impact on Murabahah margin income, as higher deposit levels enhance the bank's ability to generate financing and improve profitability. Mustikawati & Fikri (2021) found that an increase in TPF significantly influences Murabahah margin income, as greater funding availability allows Islamic banks to expand their financing activities and optimize their profit margins. Similarly, Anik (2017) demonstrated that TPF has a statistically significant relationship with Murabahah margins, reinforcing the importance of deposit mobilization in sustaining Islamic banks' financial performance. Rizqi & Dardiri (2021) further support this perspective, highlighting that TPF contributes positively to Murabahah profitability by providing the necessary liquidity to support financing growth. These findings suggest that effective management of third-party funds is essential for enhancing Murabahah margin income and ensuring long-term financial stability.

The relationship between TPF and Murabahah margin income is also influenced by other financial metrics, such as the Financing to Deposit Ratio (FDR) and operational costs. Yulianto et al. (2021) found that TPF, along with profit-sharing mechanisms and operational expenses, significantly affects Murabahah profit margins, underscoring the need for efficient fund allocation and cost control. Additionally, Ariani et al. (2022) highlight that increasing TPF contributes to asset growth in Islamic banks, further strengthening their capacity to offer competitive Murabahah financing. However, fluctuations in TPF can also impact financial performance, as noted by Ekawati & Shofawati (2019), who argue that changes in deposit levels may affect the stability of Murabahah income. This suggests that while TPF is a vital determinant of Murabahah profitability, its influence must be managed alongside other financial indicators to optimize income generation. As Islamic banking continues to expand, understanding the complex relationship between TPF, operational costs, and financing strategies will be essential for ensuring sustainable growth and competitiveness in the sector.

Combined Influence of BI Rate, Overhead Costs, and Third-Party Funds on Murabahah Margin Income

The combined influence of the Bank Indonesia (BI) rate, overhead costs, and third-party funds (TPF) on Murabahah margin income is a crucial consideration in the financial management of Islamic banks. The BI rate, serving as a benchmark for interest rates, has a significant effect on Murabahah margins, as fluctuations in this rate alter the cost of funds available to Islamic banks. Mustikawati & Fikri (2021) found that an increase in the BI rate negatively affects Murabahah margin income by raising the cost of capital, thereby reducing the profitability of Murabahah financing. Similarly, Anik (2017) confirmed that higher BI rates lead to lower Murabahah margins, indicating that Islamic banks must carefully adjust their pricing strategies to remain competitive. Given that Islamic banks do not charge interest but rely on profit margins from Murabahah transactions, managing the effects of BI rate fluctuations is essential for sustaining profitability.

In addition to the BI rate, overhead costs significantly influence Murabahah margin income, as increased operational expenses can erode profit margins. Yulianto et al. (2021) highlighted that higher overhead costs, including administrative expenses and staff salaries, reduce the profitability of Murabahah financing, underscoring the need for efficient cost management. Likewise, Ekawati & Shofawati (2019) emphasized that operational efficiency plays a critical role in maintaining Murabahah margins, as excessive costs can diminish overall bank performance. Given that Islamic banks must balance cost efficiency with service quality, optimizing operational expenses without compromising customer satisfaction is a key strategy for sustaining Murabahah margin income.

Third-party funds (TPF) also play a vital role in determining Murabahah margin income, as they provide the necessary capital for financing activities. Research indicates that higher TPF levels enhance a bank's capacity to offer Murabahah financing, ultimately leading to improved profit margins. Mustikawati & Fikri (2021) found that an increase in customer deposits positively impacts Murabahah margins, as it expands banks' ability to provide financing while maintaining profitability. Anik (2017) similarly observed that TPF significantly contributes to Murabahah margin income, reinforcing the importance of effective deposit mobilization. However, the interaction between TPF, overhead costs, and the BI rate presents a complex challenge for Islamic banks, as higher deposits can help mitigate some of the negative effects of rising BI rates, but excessive operational expenses may offset these gains. Therefore, maintaining an optimal balance among these three factors is essential for ensuring stable and competitive Murabahah margins in Islamic banking.

Gaps in the Literature and Research Opportunities

Despite the extensive research on individual determinants of murabahah margins, several gaps remain. First, the reliance on conventional benchmarks like the BI Rate raises ethical and operational concerns, necessitating the development of Sharia-compliant alternatives. Second, the inconsistent findings on TPF's influence highlight the need for more nuanced analyses that consider regulatory, institutional, and market-level factors. Lastly, the limited focus on the combined effects of BI Rate, overhead costs, and TPF restricts a holistic understanding of their interactions. These gaps present opportunities for future research to address critical issues in Islamic banking. By adopting integrated analytical frameworks and exploring context-specific factors, scholars can contribute to the development of sustainable and Sharia-compliant financial practices in the sector.

METHOD

Research Approach

This study employs a quantitative research approach, focusing on the relationship between selected variables and murabahah margin income in Islamic commercial banks in Indonesia. The research is explanatory in nature, aiming to identify and explain the impact of the BI Rate, overhead costs, and third-party funds (TPF) on murabahah margins during the 2013–2018 period. By adopting statistical tools and econometric models, this study ensures the empirical robustness of its findings, which contribute to theoretical and practical advancements in Islamic finance.

Population and Sample

The study's population comprises all Islamic commercial banks operating in Indonesia during the analysis period. These banks were selected due to their compliance with Sharia principles and their significant role in promoting Islamic financial practices. The sample was determined using a purposive sampling technique, where banks with complete quarterly financial data for the period 2013–2018 were included. This approach ensures that the sample represents banks with consistent reporting standards and operational stability, thereby improving the reliability of the results.

Data Source

The study utilizes secondary data, primarily drawn from quarterly financial reports of Islamic commercial banks, as published by the respective institutions and regulatory authorities such as the Financial Services Authority (OJK). Additional data regarding macroeconomic indicators, including the BI Rate, were obtained from Bank Indonesia. This comprehensive data collection approach ensures that the variables are well-documented and accurately reflect real-world conditions during the study period.

Variables and Operational Definitions

To address the research questions effectively, the study identifies key variables and defines their operational scope:

1. Dependent Variable
    - Murabahah Margin Income: This variable represents the profit earned from murabahah financing. It is calculated as the difference between the selling price and the purchase cost of goods, inclusive of agreed-upon profit margins.
2. Independent Variables
    - BI Rate (X1): The benchmark interest rate set by Bank Indonesia, which serves as a proxy for determining murabahah margins despite its incompatibility with Sharia principles.
    - Overhead Costs (X2): Operational expenses incurred by banks, including personnel salaries, administrative costs, and other indirect expenditures.
    - Third-Party Funds (X3): Funds mobilized from customer deposits, which constitute a primary source of liquidity for murabahah financing.
3. Control Variables
   Additional macroeconomic and financial factors, such as inflation and non-performing financing (NPF), were monitored to ensure that their potential influence was accounted for in the analysis.

Research Instrument and Data Analysis

The study employs multiple linear regression analysis to evaluate the relationship between the independent variables and the dependent variable. This statistical technique is suitable for assessing the simultaneous impact of multiple predictors on a single outcome variable, making it ideal for this research.

To enhance the validity and reliability of the regression results, the study incorporates classical assumption tests, including:

- Normality Test: Ensures the residuals of the regression model follow a normal distribution.
- Multicollinearity Test: Detects potential correlations among independent variables, which could distort the regression coefficients.
- Heteroskedasticity Test: Assesses whether the variance of residuals is constant across observations, ensuring that the model's assumptions hold true.
- Autocorrelation Test: Evaluates whether residuals are independent across time periods, particularly important given the time-series nature of the data.

The regression model is specified as follows:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \epsilon Y$$

Where:

Y: Murabahah margin income (dependent variable)

X_1: BI Rate

X_2: Overhead Costs

X_3: Third-Party Funds (TPF)

β_0, β_1, β_2, β_3: Regression coefficients

ϵ: Error term

Hypothesis Testing

The study formulates and tests hypotheses to address the research objectives:

1. H1: The BI Rate positively influences murabahah margin income.
2. H2: Overhead costs positively and significantly affect murabahah margin income.
3. H3: Third-party funds (TPF) negatively influence murabahah margin income.
4. H4: The BI Rate, overhead costs, and TPF collectively have a significant impact on murabahah margin income.

The statistical significance of the results is evaluated using t-tests for individual coefficients and an F-test for the overall model. Additionally, the coefficient of determination (R^2) is used to measure the model's explanatory power, indicating the proportion of variance in murabahah margin income explained by the independent variables.

RESULTS

Descriptive Statistics

Descriptive statistics provided insights into the distribution and characteristics of the dependent and independent variables. Table 1 presents the descriptive statistics of variables in this study.

1. Murabahah Margin Income: The dependent variable showed consistent growth across the study period, reflecting the increasing reliance on murabahah financing in Islamic banks.
2. BI Rate: The BI Rate displayed fluctuations influenced by monetary policy adjustments during the period, impacting the cost structures of Islamic banks.
3. Overhead Costs: Overhead costs exhibited steady increases, indicating the growing operational expenditures of banks as they expanded their service networks.
4. Third-Party Funds (TPF): DPK values showed significant variability, reflecting differing deposit mobilization capacities among banks.

Table 1

Descriptive Statistics of Variables

Description	X_1	X_2	X_3	Y
Mean	0.063875	11.09721	445.8312	10.86025
Median	0.070000	11.54618	440.5600	10.50000
Maximum	0.077500	19.35070	534.9629	20.08000
Minimum	0.042500	3.778850	399.0090	3.224180
Std. Dev.	0.013040	5.084003	37.46019	5.190893
Skewness	-0.522524	0.076166	0.700653	0.268348
Kurtosis	1.599489	1.747254	2.711332	1.859886
Jarque-Bera	2.544630	1.327149	1.705822	1.323252
Probability	0.280182	0.515007	0.426172	0.516012
Sum	1.277500	221.9443	8916.624	217.2049
Sum Sq. Dev.	0.003231	491.0946	26662.05	511.9621
Observations	20	20	20	20

Source: Primary data. Authors' estimation.

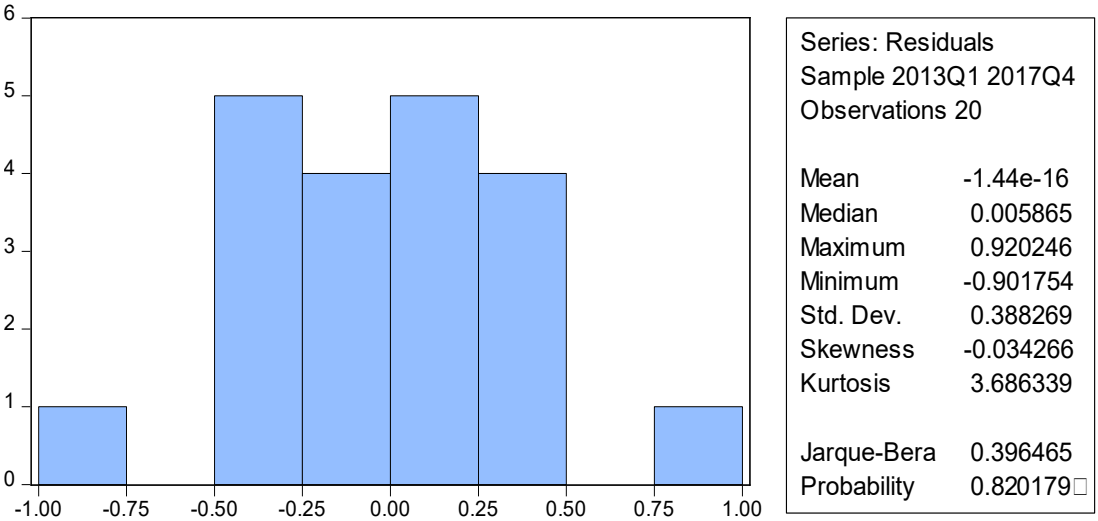
Classical Assumption Tests

Normality Test

The normality test aims to determine whether the data in a regression model follows a normal distribution. There are two primary methods for assessing normality in regression models: analyzing the residual histogram and comparing numerical values from statistical tables. The numerical comparison can be conducted using two approaches. The first approach involves comparing the Jarque-Bera (JB) value with the chi-square table value at a significance level (α) of 5%. If the JB value is smaller than the chi-square table value, the null hypothesis (H0) is accepted, indicating that the data is normally distributed. The second approach compares the probability value with the chosen α level. If the probability value is greater than α (0.05), H0 is accepted, confirming that the data follows a normal distribution. In this study, the normality test was conducted to assess whether the regression model's residuals were normally distributed. The method used involved comparing the probability value with $\alpha = 0.05$ to determine the distribution characteristics of the data.

Figure 1

Normality Test Results



Source: Primary data. Authors' estimation.

Based on the normality test results in Figure 1, the probability value in the regression model was found to be 0.820179 or 82.0178%. Additionally, the JB value was recorded at 0.396463. Since this JB value is lower than the chi-square table value at a 5% significance level, H0 is accepted, indicating that the residuals in the regression model are normally distributed. The probability value also exceeds $\alpha = 0.05$, further confirming that the data follows a normal distribution. These findings suggest that the regression model meets the assumption of normality, ensuring the validity of statistical inferences drawn from the analysis.

Multicollinearity Test

The multicollinearity test aims to detect the presence of correlations among independent variables in a regression model. A regression model is considered free from multicollinearity issues if the Variance Inflation Factor (VIF) value is less than 10 and the Tolerance (TOL) value approaches 1. If these conditions are met, the null hypothesis (H0) is accepted, indicating no multicollinearity problems. Based on the multicollinearity test results presented in Table 2, the Centered VIF values for all independent variables are below 10, specifically 1.026237 for X1, 1.065862 for X2, and 1.087893 for X3. Since all VIF values meet the criteria, it can be concluded that H0 is accepted, confirming the absence of multicollinearity in the regression model. This ensures that the independent variables do not exhibit strong correlations, maintaining the reliability of the regression analysis.

Table 2

Multicollinearity Test Results

Description Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	59.41373	6637.699	NA
X1	0.198930	171.8939	1.026237
X2	0.036043	22.13292	1.065862
X3	1.518706	6307.646	1.087893

Source: Primary data. Authors' estimation.

Heteroskedasticity Test

Heteroskedasticity occurs when there is a linear relationship between independent variables in a multiple regression model, often indicated by a high coefficient of determination (R^2) exceeding 0.8. However, based on the heteroskedasticity test results presented in Table 3, no signs of heteroskedasticity were detected in the model. The test results show that the probability values for the F-statistic, Obs*R-squared, and Scaled Explained SS are 0.7354, 0.5973, and 0.7048, respectively—all exceeding the significance level of 5% (0.05). Since the null hypothesis (H0) is accepted when the probability is greater than 0.05, it can be concluded that the model does not suffer from heteroskedasticity. This indicates that the variance of the residuals is constant, ensuring the validity and reliability of the regression analysis.

Table 3

Heteroskedasticity Test Results

Heteroskedasticity Test: White			
F-statistic	0.650143	Prob. F(9,10)	0.7354
Obs*R-squared	7.382726	Prob. Chi-Square(9)	0.5973
Scaled explained SS	6.346402	Prob. Chi-Square(9)	0.7048

Source: Primary data. Authors' estimation.

Autocorrelation Test

The autocorrelation test is conducted to determine whether there is a correlation between residuals in a regression model, which commonly occurs in time-series data but is rare in cross-sectional studies. Autocorrelation arises when sequential observations are related over time, potentially affecting the reliability of the regression results. The Breusch-Godfrey Serial Correlation LM Test was used in this study to detect autocorrelation issues. Based on the test results presented in Table 4.4, the probability value for the Chi-Square test is 0.1914, which is greater than the significance level (α) of 0.05. Since the null hypothesis (H0) is accepted when the probability exceeds 0.05, it can be concluded that there is no autocorrelation problem in the regression model. This

indicates that the residuals are independent, ensuring the validity of the model for further analysis.

Table 4

Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	1.386576	Prob. F(2,14)	0.2822
Obs*R-squared	3.306656	Prob. Chi-Square(2)	0.1914

Source: Primary data. Authors' estimation.

Regression Analysis Results

This study employs multiple linear regression analysis to examine the relationship between independent and dependent variables. The purpose of this method is to assess the impact of independent variables on the dependent variable, allowing for the identification of positive or negative relationships between them. Additionally, regression analysis helps determine whether the proposed hypotheses are accepted or rejected. The regression model in this study consists of three independent variables—BI rate (X1), overhead costs (X2), and third-party funds (TPF) (X3)—with Murabahah margin (Y) as the dependent variable. The estimated regression equation derived from the analysis is as follows:

$$Y = 5.845854 + 0.435255\ X_1 + 0.687786\ X_2 - 0.647976\ X_3 + \epsilon_Y$$

This equation provides insights into the individual effects of each independent variable on Murabahah margin, based on the coefficients obtained from the regression results in Table 5.

Table 5

Multiple Linear Regression Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.845854	7.708030	0.758411	0.4592
X1	0.435255	0.446016	0.975873	0.3437
X2	0.687786	0.189851	3.622768	0.0023
X3	-0.647976	1.232358	-0.525802	0.6062

Source: Primary data. Authors' estimation.

The regression results indicate that the constant value (α) is 5.845854, meaning that when all independent variables are zero, the predicted Murabahah margin remains at this level. The coefficient for the BI rate (X_1) is 0.435255, suggesting a positive relationship; for every one-unit increase in the BI rate, the Murabahah margin increases by 0.435255. Similarly, the coefficient for overhead costs (X_2) is 0.687786, indicating a positive effect, where an increase in overhead costs leads to a rise in Murabahah margin by 0.687786. Conversely, the coefficient for third-party funds (X_3) is -0.647976, meaning that an increase in TPF results in a decrease in Murabahah margin by

0.647976. These findings suggest that while the BI rate and overhead costs positively influence Murabahah margin, third-party funds have an inverse relationship, highlighting the need for careful financial management to optimize profitability.

DISCUSSION

Influence of BI Rate on Murabahah Margin Income

The study found a positive yet statistically insignificant relationship between the BI rate and Murabahah margin income, suggesting that while the BI rate may influence pricing mechanisms in Islamic banks, its direct impact on Murabahah margins is limited. This finding aligns with previous studies (Nurfitriani et al., 2022; Rosa & Kusumawaty, 2021; Yudiansyah, 2014) showing that the BI rate, derived from conventional interest-based systems, has a weak connection to Sharia-compliant financial principles. However, despite this limitation, Islamic banks in Indonesia continue to use the BI rate as a benchmark, reflecting a broader challenge in Islamic finance—the lack of alternative Sharia-compliant financial benchmarks (Katmas & Indarningsih, 2022; Maulidina & Anita, 2022; Ridlwan & Kumala, 2022; Safitri & Kurnia, 2022; Septiatin, 2022). While this dependency may facilitate practical implementation, it also raises concerns regarding the alignment of Islamic banking practices with core Sharia principles. The findings highlight the need to develop Islamic economic benchmarks rooted in profit-sharing or equity-based principles to reduce reliance on conventional interest-linked indicators.

Despite the limited statistical significance of the BI rate in this study, previous research suggests that it remains a critical factor influencing Murabahah margin income. Mustikawati and Fikri (2021) found a significant negative relationship between the BI rate and Murabahah margins, indicating that as the BI rate increases, the margins on Murabahah transactions decrease. Similarly, Wahyuni et al. (2021) emphasize the role of the BI rate in shaping the competitive dynamics between Islamic and conventional banks, particularly in determining profitability. Dwiawani & Sudarsono (2021) further support this perspective, noting that the BI rate significantly influences Murabahah financing, ultimately affecting overall margin income. These findings suggest that while the BI rate may not always show a statistically significant effect in every study, its broader economic influence remains relevant to Islamic banks' operational strategies.

In addition to the BI rate, other financial factors, such as operational costs and third-party funds (TPF), also play a crucial role in determining Murabahah margins. Anik (2017) found that profitability, TPF, and operational overheads significantly influence Murabahah margins, with the BI rate being just one of several important variables. Meanwhile, Musaroh et al. (2020) argue that operational costs and financing volumes

have a more substantial impact on Murabahah margin income than the BI rate. Additionally, inflation further complicates this relationship, as some studies suggest that inflation can positively influence Murabahah margins, even as the BI rate exerts downward pressure (Mustikawati & Fikri, 2021; Musaroh et al., 2020). These findings indicate that Islamic banks must take a holistic approach to financial management, considering multiple economic indicators to optimize profitability. Understanding the interplay between the BI rate, operational costs, and third-party funds will be essential for Islamic banks to navigate financial challenges while maintaining their competitive edge.

Influence of Overhead Costs on Murabahah Margin Income

The study found that overhead costs have a significant positive impact on Murabahah margin income, with a coefficient value of 0.687786 and a probability value of 0.0023, which is below the 5% significance level. This indicates that fluctuations in overhead costs directly influence Murabahah margins, and as these costs increase, the margins tend to decrease. Therefore, effective cost management strategies are essential for maintaining profitability in Islamic banking. The findings align with previous research by Anik (2017) and Fidyah (2017), both of whom emphasized the strong relationship between overhead costs and Murabahah margins. However, these results contrast with Rahma (2016), who argued that overhead costs do not significantly affect Murabahah margin income. The inconsistency in findings suggests that the impact of overhead costs may vary depending on bank-specific operational efficiencies and financial structures.

Existing literature further supports the argument that overhead costs are a crucial factor in determining Murabahah margins. Anik (2017) identified operational expenses as one of the main determinants of Murabahah profitability, while Yulianto et al. (2021) confirmed that higher overhead costs erode Islamic banks' profit margins. Similarly, Ekawati and Shofawati (2019) stressed the importance of managing operational expenses to maintain financial sustainability, as excessive costs can diminish overall bank performance. Serwadda (2018) extended this perspective by examining commercial banks, concluding that cost efficiency is vital for sustaining profitability, a principle that applies equally to Islamic banking. Furthermore, Muhammad et al. (2020) highlighted the role of internal financial factors, including operational costs, in shaping the financial health of Islamic rural banks. These studies collectively underscore the necessity of controlling overhead costs to optimize Murabahah margins.

The impact of overhead costs on Murabahah margin income also interacts with other financial variables, such as the Financing to Deposit Ratio (FDR) and the Capital Adequacy Ratio (CAR). Widarjono & Mardhiyah (2022) argue that Islamic banks must

balance overhead costs with these key financial indicators to ensure stability and profitability. The relationship between operational expenses and Murabahah margins is not isolated; rather, it is part of a broader financial framework that determines the overall efficiency of Islamic banks. This suggests that while controlling overhead costs is essential, banks must also consider other financial metrics to maintain a sustainable and competitive Murabahah financing structure. As Islamic banking continues to evolve, an integrated approach to financial management that includes cost control, deposit mobilization, and capital efficiency will be critical for sustaining long-term profitability.

Influence of Third-Party Funds on Murabahah Margin Income

The study found that third-party funds (TPF) had a negative but statistically insignificant effect on Murabahah margin income, with a coefficient of -0.435255 and a probability value of 0.3437, which exceeds the significance level of 5%. This indicates that fluctuations in TPF do not have a significant impact on Murabahah margins in this study. Consequently, the hypothesis (H3) was rejected, suggesting that an increase or decrease in customer deposits does not necessarily influence Murabahah profitability. This finding is consistent with Anisa & Tripuspitorini (2019) and Khotmi (2022), who also found a negative relationship between TPF and Murabahah financing, indicating that an increase in deposits does not always translate into higher margins. However, this result contradicts previous studies by Anik (2017) and Rahma (2016), both of whom found that TPF significantly influences Murabahah margin income, reinforcing the idea that variations in findings may stem from differences in bank policies, financial structures, and market conditions.

Despite the lack of significance in this study, other research has demonstrated that TPF plays a crucial role in Murabahah margin income. Mustikawati and Fikri (2021) found that higher deposit levels enhance banks' ability to finance Murabahah transactions, ultimately increasing profit margins. Anik (2017) similarly reported that TPF significantly contributes to Murabahah profitability, highlighting the importance of effective deposit management strategies. Rizqi & Dardiri (2021) also emphasized the positive impact of TPF on Murabahah margins, stressing that strong deposit mobilization supports the financial sustainability of Islamic banks. These findings suggest that while the present study did not establish a significant relationship, TPF remains a key factor influencing Murabahah profitability in different banking environments.

The interaction between TPF and other financial factors further complicates its role in Murabahah margin income. Yulianto et al. (2021) found that TPF, along with operational costs and profit-sharing mechanisms, significantly influences Murabahah profitability, suggesting that effective fund management is essential for optimizing

margins. Ariani et al. (2022) also noted that increased TPF contributes to overall asset growth, allowing Islamic banks to expand their financing capabilities. Additionally, Ekawati & Shofawati (2019) argued that fluctuations in TPF impact the broader financial stability of Islamic banks, particularly in relation to Murabahah financing. These findings highlight the need for Islamic banks to integrate TPF management with other financial strategies to maximize profitability. While the present study did not find a significant impact, the broader literature suggests that effective deposit management remains essential for sustaining Murabahah margin income in the long term.

Combined Influence of BI Rate, Overhead Costs, and Third-Party Funds on Murabahah Margin Income

The study found that the combined influence of the BI rate, overhead costs, and third-party funds (TPF) significantly affects Murabahah margin income. Based on the R^2 test results, the adjusted R-squared value was 0.364650, indicating that 36.45% of the variation in Murabahah margin income is explained by the independent variables, while the remaining 63.55% is influenced by other factors not included in this study. Since the adjusted R-squared value is below 50%, it suggests that the explanatory power of the independent variables is somewhat limited. However, the F-test results revealed a probability value of 0.016214, which is lower than the 5% significance level, leading to the rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis ($H\alpha$). This indicates that the BI rate, overhead costs, and TPF collectively have a positive and significant effect on Murabahah margin income. These findings suggest that financial management strategies should consider the combined impact of these variables to optimize profitability.

The BI rate plays a crucial role in determining Murabahah margins, as fluctuations in this benchmark affect the cost of funds available to Islamic banks. Mustikawati and Fikri (2021) found that an increase in the BI rate negatively impacts Murabahah margin income, as higher borrowing costs reduce profit margins on Murabahah transactions. Anik (2017) also supports this finding, highlighting that the BI rate significantly influences Murabahah margins, with higher rates leading to lower profitability. Meanwhile, overhead costs have been identified as another key factor influencing Murabahah margins. Yulianto et al. (2021) found that increased operational expenses negatively impact profitability, emphasizing the importance of cost management. Similarly, Ekawati & Shofawati (2019) demonstrated that controlling operational costs is essential for maintaining financial sustainability in Islamic banking. These findings reinforce the need for Islamic banks to balance financing costs and operational expenses to maximize Murabahah margin income.

In addition to the BI rate and overhead costs, TPF also plays a vital role in determining Murabahah profitability. Research by Mustikawati & Fikri (2021) indicates that higher TPF levels enhance banks' capacity to offer Murabahah financing, leading to increased margin income. Anik (2017) further supports this, demonstrating that effective deposit mobilization positively correlates with Murabahah profitability. However, while some studies emphasize the positive impact of TPF, others argue that TPF negatively affects Murabahah financing (Nurhasanah & Melzatia, 2019; Putri & Setiyowati, 2023), suggesting that excessive reliance on deposits may increase financial risks. The interaction between these three factors—BI rate, overhead costs, and TPF—creates a complex financial landscape for Islamic banks. Managing these variables effectively is essential for optimizing Murabahah margins while ensuring financial stability. As Islamic banking continues to evolve, a strategic approach that integrates cost management, deposit optimization, and interest rate considerations will be key to sustaining profitability.

Implications for Islamic Finance

The study's findings have broader implications for the development of Islamic finance, particularly in the context of murabahah-based financing.

1. Ethical Alignment and Benchmarking: The reliance on the BI Rate underscores the pressing need for Sharia-compliant benchmarks. Policymakers and industry stakeholders must collaborate to develop alternative pricing mechanisms that reflect Islamic economic principles. These benchmarks could be based on profit-sharing ratios, asset-backed transactions, or other equity-based measures.
2. Operational Efficiency: The significance of overhead costs highlights the importance of operational efficiency in Islamic banks. By adopting modern management practices and investing in technology, banks can reduce costs while maintaining service quality. This is particularly critical as competition intensifies in the Islamic finance sector.
3. Liquidity Management: The findings emphasize the need for effective TPF mobilization strategies. By diversifying deposit products and enhancing depositor engagement, Islamic banks can strengthen liquidity positions and reduce reliance on high margins for profitability.
4. Regulatory Support: Policymakers play a crucial role in creating an enabling environment for Islamic banks. Regulatory frameworks should encourage innovation in product design and pricing, while ensuring compliance with Sharia principles.

CONCLUSION

This study examined the effects of the BI Rate, overhead costs, and third-party funds (TPF) on murabahah margin income in Indonesian Islamic commercial banks during 2013–2018. The findings reveal that overhead costs have a significant positive influence on murabahah margins, highlighting the central role of operational expenses in determining pricing structures. The BI Rate, while positively associated with murabahah margins, exhibited no statistical significance, emphasizing the need for alternative Sharia-compliant benchmarks. TPF, though negatively correlated with margins, also lacked statistical significance, suggesting that liquidity from deposits may have an indirect but limited role in shaping murabahah income.

The results underscore the interplay of macroeconomic indicators and operational factors in murabahah pricing, contributing to the discourse on Islamic finance by emphasizing the need for efficiency, ethical alignment, and innovation in financial practices. By addressing the dependencies on conventional benchmarks and improving cost management, Islamic banks can enhance their competitiveness and adherence to Sharia principles.

This study contributes to the existing knowledge by offering a holistic understanding of murabahah margin determinants and highlighting the necessity for integrated management strategies. Future research should focus on developing alternative benchmarks and exploring contextual and qualitative factors that influence murabahah margins.

Limitations of the Study

While this research provides valuable insights, several limitations must be acknowledged. First, the study's reliance on secondary data restricts the ability to capture qualitative factors such as customer perceptions, which are critical in understanding murabahah's appeal and pricing strategies. The quantitative focus also limits the exploration of institutional nuances that may influence operational efficiency and deposit mobilization strategies.

Second, the study uses the BI Rate as a proxy for murabahah pricing, despite its conceptual divergence from Sharia principles. This reliance reflects a broader challenge in Islamic finance—the absence of widely accepted alternative benchmarks. Future research should investigate additional variables or indices rooted in Islamic economic principles to address this limitation.

Third, the study is confined to the Indonesian context, which, while providing rich insights, limits the generalizability of findings to other markets with differing regulatory frameworks and banking dynamics. Expanding the scope to include cross-country

comparisons could provide a more comprehensive understanding of murabahah margin determinants.

Lastly, while the study focuses on the BI Rate, overhead costs, and TPF, other factors such as competition, regulatory policies, and external economic shocks were not examined. Including these variables in future analyses could offer a more nuanced perspective on murabahah margins.

Recommendations for Future Research

To advance the understanding of murabahah margin determinants, future research should prioritize several key areas. First, developing and testing alternative benchmarks that align with Sharia principles is critical. These could include profit-sharing ratios, asset-backed indices, or other equity-based metrics that provide a fair and ethical basis for pricing.

Second, qualitative research methods such as interviews with industry practitioners and customer surveys could complement quantitative analyses by capturing perceptions, preferences, and behavioral insights related to murabahah financing. Such approaches could enhance the understanding of customer-centric pricing and operational strategies.

Third, longitudinal studies that examine murabahah margins over extended periods could provide deeper insights into how macroeconomic and operational factors evolve and interact over time. These studies could also consider the impact of external shocks, such as economic crises or regulatory changes, on murabahah pricing.

Lastly, expanding the research scope to include comparative analyses across different Islamic banking markets could uncover regional variations and best practices. Investigating markets with distinct regulatory environments or higher adoption of Islamic finance could yield valuable lessons for enhancing murabahah financing globally.

Author Contributions

Conceptualization: R.G. & Y.A.; Data curation: R.G.; Formal analysis: R.G., Y.A., & M.M.; Funding acquisition: R.G. & Y.A.; Investigation: R.G. & Y.A.; Methodology: R.G. & Y.A.; Project administration: R.G.; Resources: Y.A.; Software: R.G. & Y.A.; Supervision: Y.A.; Validation: R.G., Y.A., & M.M.; Visualization: R.G. & Y.A.; Writing – original draft: R.G. Y.A., & M.M.; Writing – review & editing: R.G., Y.A., & M.M. All the authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement

Informed consent was not required for this study.

Data Availability Statement

The data presented in this study are available upon request from the corresponding author. The data are not publicly available because of the institution's policies.

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this work, the authors used ChatGPT, DeepL, Grammarly, and PaperPal to translate from Bahasa Indonesia into American English and improve the clarity of the language and readability of the article. After using these tools, the authors reviewed and edited the content as needed and took full responsibility for the content of the published article.

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