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THE ROLE OF THIRD-PARTY FUNDS IN MODERATING THE INFLUENCE OF NPM AND CIR ON ROA

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ABSTRACT

Research Objectives - This study aims to analyze the effect of Net Profit Margin (NPM) and Cost to Income Ratio (CIR) on Return on Assets (ROA) in the banking sector listed on the Indonesia Stock Exchange (IDX) during the period 2018-2022, as well as the role of Third-Party Funds (TPF) as a moderating variable.

Method - This research uses a correlational approach with secondary data from the financial statements of banking companies listed on the IDX for the period 2018-2022. Multiple linear regression analysis and Moderated Regression Analysis (MRA) with the Hayes (2022) approach are used to test the direct and moderating effects.

Research Findings - The results show that NPM has a positive and significant effect on ROA, while the Cost to Income Ratio (CIR) has a negative and significant effect on ROA. Furthermore, TPF was found to positively and significantly moderate the effect of NPM and CIR on ROA. This means that with higher levels of TPF, the positive effect of NPM on ROA becomes stronger, and the negative effect of CIR on ROA weakens.

Theory and Practical Implications - This study contributes theoretically by integrating the role of TPF as a moderator in the relationship between efficiency and profitability on bank asset performance. The policy implications suggest the importance of banks not only focusing on operational efficiency and profitability but also on managing and enhancing Third-Party Funds to optimize asset performance.

Novelty – This study provides novelty by examining the moderating role of Third-Party Funds (TPF) in analyzing the effects of Net Profit Margin (NPM) and Cost to Income Ratio (CIR) on Return on Assets (ROA) in the Indonesian banking sector, an area that has not been extensively explored in previous research.

INTRODUCTION

The current dynamics of the global banking sector are characterized by increasingly intense competition and the demand for adaptation to regulatory changes as well as advancements in financial technology (Fintech). Amid a continuously transforming economic and social landscape, operational efficiency and profitability have become key drivers for the sustainability and growth of banks (Y, A., et al., 2020; Perwej, 2020). A bank's ability to manage operational costs effectively and generate optimal returns from its assets is not only crucial for internal performance but also contributes significantly to the overall stability of the financial system. Therefore, a deep understanding of the factors influencing bank profitability, such as Net Profit Margin (NPM) and the Cost to Income Ratio (CIR), is critical within the interconnected economic and social context.

Various empirical studies have examined the influence of NPM and CIR on Return on Assets (ROA) as a primary indicator of bank profitability. For example, a study by Nguyen et al. (2021) published in the *Journal of Asian Finance, Economics and Business* (Scopus-indexed) on the banking sector in developing countries found that NPM has a significant positive correlation with ROA, indicating that higher profit margins directly enhance asset returns. In line with these findings, a study conducted by Demirgüç-Kunt et al. (2020) published in the *Journal of Financial Stability* (Scopus-indexed) emphasized the importance of operational efficiency, reflected in lower CIR ratios, as a key driver of bank profitability, particularly in emerging markets that are vulnerable to economic shocks.

Nevertheless, some studies have also indicated inconsistencies or complexities in the relationship between NPM, CIR, and ROA. For instance, a study by Tan (2019) in *Emerging Markets Finance and Trade* (Scopus-indexed) found that the impact of operational efficiency on profitability may vary depending on the size and specific characteristics of banks. Moreover, previous research has generally paid less attention to contingency factors that might moderate the relationships among these key variables. This research gap provides a critical background for investigating the role of Third-Party Funds (TPF) as a moderating variable. As a primary funding source for banks, TPF is assumed to have the potential to influence the extent to which efficiency and profitability are translated into better asset performance.

The novelty of this study lies in the integration of Third-Party Funds (TPF) as a moderating variable in analyzing the influence of Net Profit Margin (NPM) and Cost to Income Ratio (CIR) on Return on Assets (ROA) in the banking sector listed on the Indonesia Stock Exchange (IDX) during the period 2018–2022. Previous studies have generally focused on the direct relationship between these variables without thoroughly considering how a bank's primary funding source might affect this dynamic. By examining the moderating role of TPF, this study seeks to provide a more comprehensive theoretical and empirical contribution to understanding the determinants of bank profitability in Indonesia.

This study aims to analyze the influence of Net Profit Margin (NPM) and Cost to Income Ratio (CIR) on Return on Assets (ROA) among banking companies listed on the Indonesia Stock Exchange (IDX) during the 2018–2022 period, as well as to examine whether Third-Party Funds (TPF) serve as a moderating variable in this relationship. The limitations of this study include its focus on secondary data from banking companies on the IDX during a specific period, which may limit the generalizability of the findings to other financial sectors or different time periods. Additionally, other factors outside the scope of this research model that may influence bank profitability are not considered in this analysis.

METHOD

This study employs a correlational research design to analyze the relationship between Net Profit Margin (NPM) and Cost to Income Ratio (CIR) on Return on Assets (ROA), with Third-Party Funds (TPF) acting as a moderating variable, in banking companies listed on the Indonesia Stock Exchange (IDX) during the 2018–2022 period. The correlational design was chosen to examine the strength and direction of relationships between variables, as well as the moderating role of TPF in influencing the relationship between the independent and dependent variables (Creswell & Creswell, 2018).

Previous studies adopting correlational designs in the banking context include research by Tan (2019), which analyzed the relationship between bank efficiency and profitability, and research by Garcia-Herrero et al. (2016), which investigated the determinants of bank profitability. Both studies, published in reputable international journals, utilized secondary data and regression analysis techniques to identify correlations among variables. The selection of a correlational design in this study is based on the objective of understanding how NPM and CIR are associated with ROA, and how this relationship might be strengthened or weakened by the presence of TPF.

The data collection technique used in this study is document analysis. Document analysis refers to the collection of secondary data by reviewing the annual financial reports of banking companies listed on the IDX during the 2018–2022 period. These financial reports were accessed through the official website of the Indonesia Stock Exchange (www.idx.co.id). The use of secondary data allows for the efficient analysis of historical data over a specified period (Bryman, 2016).

Data analysis was carried out in several stages. First, the direct effects of NPM (X1) and CIR (X2) on ROA (Y) were tested using multiple linear regression analysis. Subsequently, to examine the moderating role of TPF (Z), Moderated Regression Analysis (MRA) was applied following the approach proposed by Hayes (2022). The regression model used is as follows:

$$Y=\alpha+\beta 1X1 + \beta 2X2 + \beta 3Z + \beta 4(X1\times Z) + \beta 5(X2\times Z) + e$$

where α\alphaα represents the constant, β1\beta_1β1 to β5\beta_5β5 are the regression coefficients, and eee is the error term. Interaction variables (X1 × Z and X2 × Z) were included to assess whether the effects of NPM and CIR on ROA differ across various levels of TPF. Visually, the research framework can be illustrated as follows.

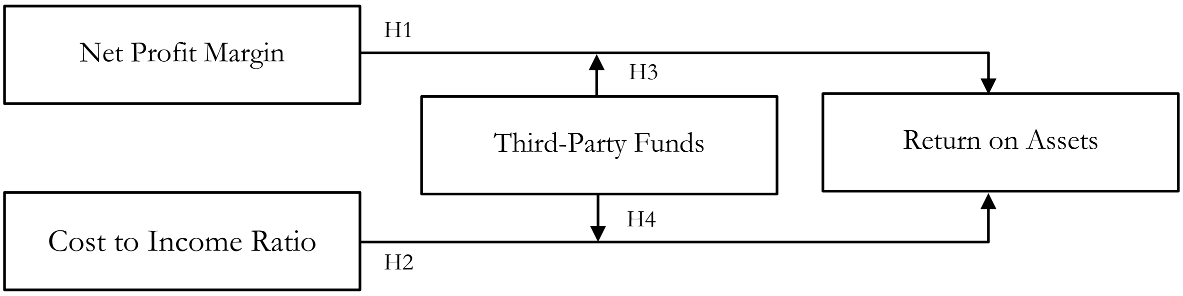

Figure 1. Research Framework

RESULTS AND DISCUSSION

Regression Analysis and Hypothesis Testing. A linear regression model with moderation (MRA) was used to examine the impact of NPM, Cost to Income Ratio (CIR), and Third-Party Funds (TPF) on Return on Assets (ROA). The results of the classical assumption tests showed that for multicollinearity testing, the aim was to check whether there were high correlations among the independent variables in the regression model. Based on the analysis results presented, all variables had tolerance values above 0.10 and Variance Inflation Factors (VIF) below 10. The VIF values for NPM were 1.274, CIR 1.963, TPF 4.214, and for the interaction terms NPM x TPF and CIR x TPF, they were 2.144 and 4.021, respectively. These results indicate that there are no multicollinearity problems in the research model, so all variables can be used simultaneously in the regression analysis. Meanwhile, the heteroscedasticity test showed that the variance of residuals in the regression model was constant. The Glejser test results showed significance values above 0.05 for all variables. These findings confirm that the regression model meets the homoscedasticity assumption, meaning there is no specific pattern in the residual distribution. Thus, the model satisfies the BLUE (Best Linear Unbiased Estimator) criteria. Similarly, the autocorrelation test, which is intended to detect correlations among residuals at different time periods, showed that the Durbin-Watson value was 1.474, falling between the upper limit (du = 1.782) and 4-du (2.218) at a 5% significance level. This result is consistent with Sujarweni's (2016) criteria, which state that a DW value within this range indicates no positive or negative autocorrelation. Therefore, the regression model has met the non-autocorrelation assumption and is suitable for prediction.

Based on the overall data analysis, the classical assumption testing results confirm that the regression model satisfies all the analytical requirements, including non-multicollinearity, homoscedasticity, and non-autocorrelation. These findings reinforce the validity of the estimation results and ensure that hypothesis testing can be conducted with a high level of confidence. These results are also consistent with previous studies that used a similar approach to analyze banking performance.

The Effect of Net Profit Margin (NPM) on Return on Assets (ROA). The results of this study indicate that Net Profit Margin (NPM) has a positive and significant effect on Return on Assets (ROA) in the banking sector on the Indonesia Stock Exchange (IDX) during the observation period. This finding is in line with the profitability theory, which states that a company's ability to generate net profit from every sale will positively contribute to the efficient use of assets, ultimately increasing the return on assets (Brigham & Houston, 2019). A high NPM reflects the bank's efficiency in managing cost of goods sold and operational expenses relative to revenue generated.

Banks with higher NPM are likely more effective in converting revenue into profit, which in turn increases ROA, as net profit is the numerator in the ROA calculation.

Previous studies also support this result. For example, research conducted by Sari and Rahman (2020) in the banking sector in Indonesia found a positive and significant correlation between NPM and ROA, indicating that banks with better profit margins are able to generate higher returns on their assets. Furthermore, a study by Chen et al. (2021) in an international context also confirmed that NPM is an important determinant of ROA, especially for banks with effective risk management. Operational efficiency and cost control, reflected in a high NPM, enable banks to optimize the use of their assets in generating profits.

However, some studies show mixed results. Prasetyo and Wibowo (2019) found that the effect of NPM on ROA was not always significant for all banks in Indonesia, which could be influenced by external factors such as macroeconomic conditions or specific characteristics of the banks. Nevertheless, in general, the results of this study reinforce the view that good operational profitability, measured by NPM, is an important driver of banking asset performance.

The Effect of Cost to Income Ratio (CIR) on Return on Assets (ROA). The results of this study also show that the Cost to Income Ratio (CIR) has a negative and significant effect on Return on Assets (ROA). This finding is consistent with the principle of operational efficiency in the banking industry. A high CIR indicates inefficiency in managing operational costs relative to operational income. The higher this ratio, the greater the proportion of income used to cover operational costs, reducing the net profit available to shareholders and decreasing ROA.

Research by Sari and Rahman (2020) also found a negative relationship between CIR and ROA, highlighting the importance of cost control in improving a bank's financial performance. Banks that are able to reduce their CIR tend to have higher ROA, as a larger proportion of operational income can be converted into net profit. Similarly, a study by Rose and Hudgins (2019) in the book *Bank Management and Financial Services* emphasizes that operational efficiency is key to a bank's profitability, and CIR is an important metric to measure that efficiency. Effective cost management, including labor, technology, and administrative expenses, is crucial for improving ROA.

However, as with NPM, some studies present different nuances. Chen et al. (2021) noted that, in some cases, higher operational costs may be necessary for business expansion or technological investments, which could eventually increase revenue and ROA in the future. Nevertheless, in the short term, a high CIR is generally seen as an indicator of inefficiency that negatively impacts asset profitability. This study supports the dominant view that managing a low CIR is important for achieving high ROA in the banking sector.

The Effect of Net Profit Margin (NPM) Moderated by Third-Party Funds (TPF) on Return on Assets (ROA). The results of this study indicate that Third-Party Funds (TPF) positively and significantly moderate the effect of Net Profit Margin (NPM) on Return on Assets (ROA). This means that the effectiveness of NPM in increasing ROA becomes stronger when banks have a higher level of TPF. TPF is a major source of funding for banks, and a greater availability of funds allows banks to more freely allocate resources to productive assets that generate income. Therefore, banks with good NPM and supported by a strong TPF base will be able to optimize their asset performance.

This finding is supported by financial intermediation theory, which states that a bank's ability to gather funds from the public (TPF) and channel them back in the form of credit or investments is a key function that contributes to profitability (Saunders & Cornett, 2018). Research by Sari and Rahman (2020) also implies that well-managed TPF can strengthen the positive impact of profitability on asset performance. The availability of sufficient TPF provides financial flexibility for banks to take advantage of profitable investment opportunities, which ultimately increases ROA.

However, the effectiveness of TPF as a moderator also depends on other factors such as asset management quality and credit risk. Prasetyo and Wibowo (2019) highlighted that high TPF does not automatically guarantee high ROA if the bank is unable to manage credit risk or invest funds efficiently. Nevertheless, in the context of NPM's impact, adequate TPF provides a stronger foundation for banks to translate operational profitability into higher asset returns.

The Effect of Cost to Income Ratio (CIR) Moderated by Third-Party Funds (TPF) on Return on Assets (ROA). The results of this study also show that Third-Party Funds (TPF) positively and significantly moderate the effect of Cost to Income Ratio (CIR) on Return on Assets (ROA). This implies that operational efficiency (low CIR) has a greater impact on ROA when banks have a higher level of TPF. Banks with strong TPF have greater financial flexibility to manage costs and optimize revenue. When banks are able to maintain a low CIR, the availability of adequate TPF allows them to allocate more funds to productive assets, which ultimately improves ROA.

Research by Setiawan and Indriani (2022) supports this finding, showing that stable and large TPF can help banks absorb fluctuations in operational costs and increase efficiency in generating income. Therefore, banks that are efficient in their operations and have a strong TPF base will be able to achieve better asset performance. Conversely, a high CIR could be more detrimental to banks with limited TPF due to the lack of financial flexibility to offset such inefficiencies.

However, the moderation of TPF on the CIR effect is also influenced by other factors such as the bank's cost structure and revenue strategies. Research by Hidayat and Sari (2020) indicates that a high CIR can still negatively impact ROA, even with high TPF, if not accompanied by significant revenue growth. Nevertheless, overall, the results of this study show that adequate TPF can strengthen the positive impact of operational efficiency (low CIR) on banking asset performance.

CONCLUSION

This study aims to analyze the effect of Net Profit Margin (NPM) and Cost to Income Ratio (CIR) on Return on Assets (ROA) in banks listed on the Indonesia Stock Exchange (IDX) during the period 2018-2021, as well as the moderating role of Third Party Funds (TPF). The results indicate that NPM has a positive and significant effect on ROA, suggesting that good operational profitability contributes to higher asset performance. In contrast, Cost to Income Ratio (CIR) has a negative and significant effect on ROA, highlighting the importance of efficiency in managing operational costs relative to income. Furthermore, TPF is found to positively and significantly moderate both relationships. This means that the positive effect of NPM on ROA becomes stronger when banks have higher levels of TPF, and the negative impact of Cost to Income Ratio (CIR) on ROA can be reduced or even offset by adequate TPF availability. These findings answer the research question regarding the direct effect of NPM and Cost to Income Ratio (CIR) on ROA, as well as the role of TPF as a moderator in these relationships.

The novelty of this research lies in the finding that TPF not only serves as a source of funding but also as a factor that strengthens the impact of profitability and operational efficiency on asset performance in the Indonesian banking sector. While previous studies generally examined the direct effects of NPM and Cost to Income Ratio (CIR) on ROA separately (Sari & Rahman, 2020; Sufian & Habibullah, 2016), or the role of TPF as an independent variable (Zeitun & Tian, 2016), this study specifically highlights how TPF moderates the relationship between profitability, efficiency, and asset performance. These findings provide a new perspective that liquidity management through effective gathering of TPF can enhance the bank's ability to transform operational profitability into higher asset returns and reduce losses due to operational inefficiencies. The practical implication of this study is that bank management needs to focus not only on improving profitability and cost efficiency but also on optimal management of TPF to maximize the company's asset performance.

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