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# An Empirical Analysis of the Effect of Net Interest Margin (NIM), Operating Expenses and Operating Income (BOPO), Non-Performing Loans (NPL), and Loan to Deposit Ratio (LDR) on Return on Equity (ROE) at PT Bank Mandiri Tbk

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**Abstract**

*The purpose of this research is to analyse PT Gunawan Dianjaya Steel Tbk's Net Profit Margin (NPM) from 2015 to 2024 and find out how the Cash Flow Ratio (CR) and Debt-to-Equity Ratio (DER) affected it. With a sample size of 10 observations selected via purposive selection, this associative research utilises secondary data sourced from the Indonesia Stock Exchange in the form of the company's yearly financial statements. The study's results show that classical assumption tests, multiple linear regression analysis, the coefficient of determination, t-tests, and F-tests were used to analyse the data in SPSS version 25. Specifically, the study found that the Debt-to-Equity Ratio (DER) and the Current Ratio (CR) did not significantly impact NPM, and that neither variable had a significant impact on NPM on its own. Therefore, it can be concluded that DER and CR cannot explain movements in the company's profitability as measured by NPM.*

**Keywords: Debt to Equity Ratio, Current Ratio , Net Profit Margin.**

## INTRODUCTION

Banks play a vital role in a country's economic life, necessitating healthy bank performance and effective and efficient operations. Bank stability can be achieved by increasing business efficiency and improving the bank's financial condition or capital, utilizing assets and equity optimally and efficiently. Profitability ratios are used to evaluate



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a company's ability to generate profits within a specific time period. Banking institutions are often referred to as financial institutions with "special" characteristics, as seen from both a micro and macro perspective (Kesuma et al., 2025).

PT Bank Mandiri (Persero) Tbk is one of the largest commercial banks in Indonesia, specializing in financial and banking services. The bank was established in 1998 as a result of the merger of four state-owned banks: Bank Bumi Daya, Bank Dagang Negara, Bank Ekspor Impor Indonesia, and Bank Pembangunan Indonesia. The establishment of Bank Mandiri was part of the national banking restructuring program following the economic crisis that hit Indonesia in the late 1990s. As a state-owned enterprise (BUMN), PT Bank Mandiri (Persero) Tbk plays a strategic role in supporting financial system stability and national economic growth through its intermediation function, namely collecting and distributing funds to the public.

As a public company listed on the Indonesia Stock Exchange, Bank Mandiri is required to maintain healthy and sustainable financial performance. The company's financial performance can be measured through financial ratio analysis, which reflects the company's condition and performance over a specific period. One of the main indicators used to assess financial performance is Return on Equity (ROE).

Return on Equity (ROE) is a ratio used to measure a company's ability to generate net profit using its equity. Besides Return on Equity (ROE), several other ratios influence a bank's financial performance. According to Kasmir (2019), Net Interest Margin (NIM) is a ratio used to measure a bank's ability to generate net interest income from its earning assets.

Furthermore, the Operating Costs to Operating Income (BOPO) ratio is used to measure a bank's operational efficiency. The lower the BOPO value, the more efficient the bank is in carrying out its operational activities. Furthermore, the Non-Performing Loan (NPL) ratio, as defined by Saputra & Permon (2021), indicates the level of non-performing loans faced by a bank. A high NPL reflects the poor quality of credit assets, which can negatively impact bank profitability. The Loan to Deposit Ratio (LDR) illustrates a bank's ability to manage its capital for disbursement. Bank profitability is determined by the amount of credit distributed, reflected in the Loan to Deposit Ratio (LDR). This means that if credit is not distributed properly, the bank will incur losses and be unable to repay depositors' funds. Consequently, a higher Loan to Deposit Ratio (LDR) is accompanied by an increase in Return on Equity (ROE).

Based on the above description, it can be concluded that ratios such as NIM, BOPO, NPL, and LDR play a significant role in influencing a bank's profitability, as


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reflected in ROE. However, previous research has shown a research gap regarding the influence of each of these ratios on ROE. Therefore, empirical research is needed to analyze the influence of NIM, BOPO, NPL, and LDR on ROE, particularly at PT Bank Mandiri (Persero) Tbk, to obtain a clearer picture of the factors that influence bank financial performance.

**Table 1. Financial Report of PT. Bank Mandiri Tbk. 2020-2024 Period (Data presented in Millions of Rupiah)**

| Tahun | Net Pofit (Rp) | Interest Income (Rp) | Operating costs (Rp) | Total Credit (Rp) | Third-party Funds (Rp) |
|---|---|---|---|---|---|
| 2020 | 622.015.167 | 3.440.612 | 1.244.169 | 25.662.416 | 242.555.907 |
| 2021 | 453.557.618 | 4.317.112 | 1.019.837 | 31.351.083 | 215.446.397 |
| 2022 | 38.164.041 | 82.402.327 | 34.780.428 | 932.639.051 | 1.193.164 |
| 2023 | 60.957.959 | 129.638.641 | 53.867.491 | 1.623.216 | 252.661.959 |
| 2024 | 61.146.765 | 113.747.621 | 58.610.446 | 1.359.832 | 225.501.470 |

Data Source: Secondary Data processed in 2026

Table 1 shows that the company's financial condition fluctuated across several financial indicators used in the study during the 2020–2024 period. The company's net profit exhibited a fluctuating pattern. In 2020, net profit was recorded at IDR 622.02 trillion, then decreased to IDR 453.56 trillion in 2021. A significant decline occurred in 2022, reaching IDR 38.16 trillion. Net profit subsequently increased to IDR 60.96 trillion in 2023 and again to IDR 61.15 trillion in 2024. This indicates that the company experienced a decline in profit-generating capacity in 2022, but has begun to show improvement in the past two years.

The company's interest income trended upward during the study period. In 2020, interest income was Rp3.44 trillion, then increased to Rp4.32 trillion in 2021. A significant increase occurred in 2022, reaching Rp82.40 trillion, and then again to Rp129.64 trillion in 2023. However, interest income declined to Rp113.75 trillion in 2024. This indicates that the company's ability to generate income from operational activities has improved significantly, although it declined slightly at the end of the study period.

The company's operating costs also showed an upward trend during the study period. In 2020, operating costs were recorded at IDR 1.24 trillion, then decreased to IDR


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1.02 trillion in 2021. Furthermore, operating costs increased significantly to IDR 34.78 trillion in 2022, rising to IDR 53.87 trillion in 2023, and again to IDR 58.61 trillion in 2024. This increase in operating costs indicates that the company is incurring increasing costs to support its operational activities.

The company's total credit disbursement showed a significant increase during the study period. In 2020, total credit was IDR 25.66 trillion, then increased to IDR 31.35 trillion in 2021. In 2022, total credit experienced a significant increase to IDR 932.64 trillion. Furthermore, total credit increased to IDR 1,623.22 trillion in 2023 and reached IDR 1,359.83 trillion in 2024. Overall, this condition indicates that the company is increasingly active in disbursing credit to the public, although in 2024 there was a slight decrease compared to the previous year.

Third-party funds (TPF) fluctuated throughout the study period. In 2020, TPF was recorded at IDR 242.56 trillion, then decreased to IDR 215.45 trillion in 2021. A sharp decline occurred in 2022, reaching IDR 1.19 trillion. In 2023, TPF increased to IDR 252.66 trillion, but declined again to IDR 225.50 trillion in 2024. This fluctuation indicates that the company's ability to raise funds from the public has undergone significant changes during the study period.

Based on the above problems, the researcher is interested in conducting research with the title: "EMPIRICAL ANALYSIS OF THE EFFECT OF NET INTEREST MARGIN (NIM), OPERATING COSTS AND OPERATING INCOME (BOPO), NON-PERFOMING LOAN (NPL) AND LOAN TO DEPOSIT RATIO (LDR) ON RETURN ON EQUITY (ROE) AT PT BANK MANDIRI TBK".

## PROBLEM IDENTIFICATION

Based on the background description above, it can be concluded that the problem identification in this research is:

1. The company's net profit fluctuated during the 2020–2024 period. Net profit decreased from IDR 622.02 trillion in 2020 to IDR 38.16 trillion in 2022, then increased again to IDR 61.15 trillion in 2024. This condition indicates a change in the company's profitability level, as reflected in its Return on Equity (ROE).
2. The company's interest income fluctuated during the study period. Interest income increased from IDR 3.44 trillion in 2020 to IDR 129.64 trillion in 2023, but decreased to IDR 113.75 trillion in 2024. This change in interest income indicates a change in the company's ability to generate interest income, which is reflected in the Net Interest Margin (NIM) and is suspected to affect Return on Equity (ROE).


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3. The company's operating costs tended to increase during the study period, from IDR 1.24 trillion in 2020 to IDR 58.61 trillion in 2024. This increase in operating costs could impact the company's efficiency, as reflected in the Operating Expenses to Operating Income (BOPO) ratio, and potentially impact Return on Equity (ROE).
4. The company's total credit disbursement experienced a significant increase during the study period. This increase in credit distribution indicates the company's growing intermediation activity. However, this increase in credit also has the potential to increase the risk of non-performing loans, as reflected in the Non-Performing Loan (NPL) ratio. Therefore, its impact on Return on Equity (ROE) needs to be examined.
5. Third-party funds (TPF) fluctuated during the study period. Changes in the amount of TPF can affect a company's liquidity level, as reflected in the Loan-to-Deposit Ratio (LDR). Therefore, research is needed to determine the effect of LDR on Return on Equity (ROE).

## PROBLEM FORMULATION

Based on the description above, the formulation of the problem raised in this research is:

1. Is there an influence of Net Interest Margin (NIM) on Return on Equity (ROE) at PT Bank Mandiri (Persero) Tbk?
2. Is there an influence of Operating Costs on Operating Income (BOPO) on Return on Equity (ROE) at PT Bank Mandiri (Persero) Tbk?
3. Is there an influence of Non-Performing Loans (NPL) on Return on Equity (ROE) at PT Bank Mandiri (Persero) Tbk?
4. Is there an influence of the Loan to Deposit Ratio (LDR) on Return on Equity (ROE) at PT Bank Mandiri Tbk?
5. s there any influence of Net Interest Margin (NIM), Operating Costs and Operating Income (BOPO), Non-Performing Loan (NPL) and Loan to Deposit Ratio (LDR) on Return on Equity (ROE)?

## RESEARCH OBJECTIVES

Based on the problem formulation above, the objectives of this research are as follows:

1. To determine and analyze the influence of Net Interest Margin (NIM) on Return on


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Equity (ROE) at PT Bank Mandiri Tbk.

2. To determine and analyze the influence of Operating Costs on Operating Income (BOPO) on Return on Equity (ROE) at PT Bank Mandiri Tbk.
3. To determine and analyze the influence of Non-Performing Loans (NPL) on Return on Equity (ROE) at PT Bank Mandiri Tbk
4. To determine and analyze the influence of the Loan to Deposit Ratio (LDR) on Return on Equity (ROE) at PT Bank Mandiri Tbk.
5. To determine and analyze the influence of Net Interest Margin (NIM), Operating Costs and Operating Income (BOPO), Non-Performing Loan (NPL) and Loan to Deposit Ratio (LDR) on Return on Equity (ROE)

## LITERATURE REVIEW

Theoretical Study

1. Financial Management

Financial management encompasses all company activities related to obtaining funds at low cost and efficiently using and allocating those funds (Sudaryo & Sofiati, 2029). Another perspective defines financial management as a combination of science and art that discusses, examines, and analyzes how a financial manager utilizes all company resources to raise funds, manage funds, and distribute them with the goal of generating profit or prosperity for shareholders (Endyta Resky, 2023).

2. Return on Equity (ROE)

Return on Equity (ROE) is a financial ratio used to measure a company's ability to generate net profit from its equity. According to Jufrizen & Fatin (2020), Return on Equity (ROE) is a ratio that measures the level of profit generated based on shareholder investment, calculated by comparing net profit to total equity. This ratio is calculated by dividing net profit by capital.

$$\text{ROE} = \frac{Laba\ Bersih}{Total\ Ekuitas}\ x100$$

Sumber : Kasmir (2019)



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3. Net Interest Margin (NIM)

Net Interest Margin (NIM) is a ratio used to measure a bank's ability to generate net interest income from its earning assets. A higher NIM indicates a more effective bank in managing its earning assets, thereby increasing interest income and profitability (Hasbi, 2024).

$$\text{NIM} = \frac{Pendapatan\ Bunga\ Bersih}{Aktiva\ Produktif}\ x100\%$$

4. Operating Costs to Operating Income (BOPO)

According to Pertiwi (2025), the Operating Expenses and Operating Income Ratio (BOPO) reflects the potential operational risks faced by banks, which are caused by uncertainties related to bank activities, including the risk of losses due to declining profits, cost structures, and the possibility of failure of new services and products. The lower the BOPO ratio, the better the performance of the bank's management, because it is more efficient in using existing resources in the company (Setyowati, 2019).

$$\text{BOPO} = \frac{Biaya\ Operasional}{Pendapatan\ Operasional}\ x100\%$$

5. Non-Performing Loan (NPL)

According to Hariyani (2010) in the journal (Grilseda & Riyadi, 2021), the Non-Performing Loan (NPL), also known as the non-performing loan ratio, is a ratio that indicates a bank's management's ability to manage problem loans granted to customers. Meanwhile, according to Riyadi (2021), the NPL ratio is a comparison of total problem loans with the bank's total loans. The NPL ratio demonstrates a bank's expertise in managing problem loan levels. Bank Indonesia sets a maximum limit for the non-performing loan ratio at 5%. A higher NPL value will result in poor credit quality, thus increasing the number of problem loans. Conversely, when the NPL level is low, the risk borne by the bank also decreases.



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$$\text{NPL} = \frac{Kredit\ Bermasalah}{Total\ Kredit}\ x100\%$$

6. Loan to Deposit Ratio (LDR)

The Loan to Deposit Ratio (LDR) is a ratio used to measure a bank's ability to disburse third-party funds in the form of credit. The LDR indicates the bank's liquidity level. This ratio illustrates the extent to which collected funds are used for credit distribution. According to (Dendawijaya, 2009), the Loan to Deposit Ratio (LDR) is a ratio used to measure the comparison between total loans disbursed and total third-party funds collected by the bank. This ratio is an important indicator in assessing a bank's ability to manage its liquidity. The Loan to Deposit Ratio (LDR) calculates the amount of loans distributed compared to the amount of public deposits and equity used. Therefore, it can be said that this ratio reflects the bank's performance in repaying its obligations to its customers. As stated by (Kasmir, 2019).

$$\text{LDR} = \frac{Total\ Kredit}{Dana\ Pihak\ Ketiga}\ x100\%$$

Sumber : Kasmir (2019)

7. The Effect of Net Interest Margin (NIM) Return on Equity (ROE)

Net Interest Margin (NIM) is a ratio that indicates a bank's management's ability to manage its earning assets to generate net interest income. Net interest income is generated from loans, while banks have interest obligations to depositors. Good credit quality can increase net interest income, which can impact bank profitability. According to (Dendawijaya, 2009) in Lestari (2020), the higher the Net Interest Margin (NIM), the more effective the bank is in managing and allocating its earning assets, particularly loans, thus generating optimal interest income. Research by Monica (2019) and Yulianah (2021) indicates that Net Interest Margin (NIM) has a significant positive effect on Return on Equity (ROE).

H1: Net Interest Margin (NIM) affects Return on Equity (ROE).



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8. The Effect of Operating Costs and Operating Income (BOPO) on Return on Equity (ROE)

The Operating Expense to Operating Income (BOPO) ratio is often referred to as the efficiency ratio. This ratio indicates whether a bank has utilized all its production factors appropriately and effectively. A higher BOPO ratio indicates that existing resources are not effectively managing bank operations, resulting in reduced profits. Conversely, a low BOPO ratio indicates that the financial institution is effective in carrying out its business activities, resulting in high profits. As stated by Monica (2019), in her research, the lower the BOPO ratio, the higher the profit level. Monica's (2019) research found that BOPO significantly influences Return on Equity (ROE).

H2: BOPO influences Return on Equity (ROE).

9. The Effect of Non-Performing Loans (NPL) on Return on Equity (ROE)

Non-Performing Loan (NPL) is a ratio used to measure the level of non-performing loans held by a bank (Kasmir, 2019). A higher NPL value indicates a greater level of non-performing loans held by the bank, which can reduce the company's revenue and profits. High non-performing loans will cause the bank to bear a greater risk of loss and impact its Return on Equity (ROE). According to (Asmara, 2018), non-performing loans are loans that experience difficulty in repayment due to deliberate factors or external factors beyond the debtor's control, potentially resulting in losses for the bank.

H3: Non-Performing Loan (NPL) affects Return on Equity (ROE).

10. Effect of Loan to Deposit Ratio (LDR) on Return on Equity (ROE)

The Loan to Deposit Ratio (LDR) is a ratio used to measure a bank's ability to meet its short-term obligations through third-party funds disbursed in the form of credit. A higher Loan to Deposit Ratio (LDR) indicates that the bank's collected funds are increasingly disbursed in the form of credit, thereby increasing interest income and corporate profits. This increase in profits will impact Return on Equity (ROE). However, if the LDR is too high, it can increase the bank's liquidity risk (Kasmir, 2019).

H4: The Loan to Deposit Ratio (LDR) affects Return on Equity (ROE).

11. The Effect of Net Interest Margin (NIM), Operating Costs and Operating Income (BOPO), Non-Performing Loans (NPL) and Loan to Deposit Ratio on Return on Equity (ROE)

Net Interest Margin (NIM) is a ratio used to measure a bank's ability to generate net interest income from its productive assets. This ratio shows the bank's level of effectiveness in managing productive assets to generate profits (Kasmir, 2019).



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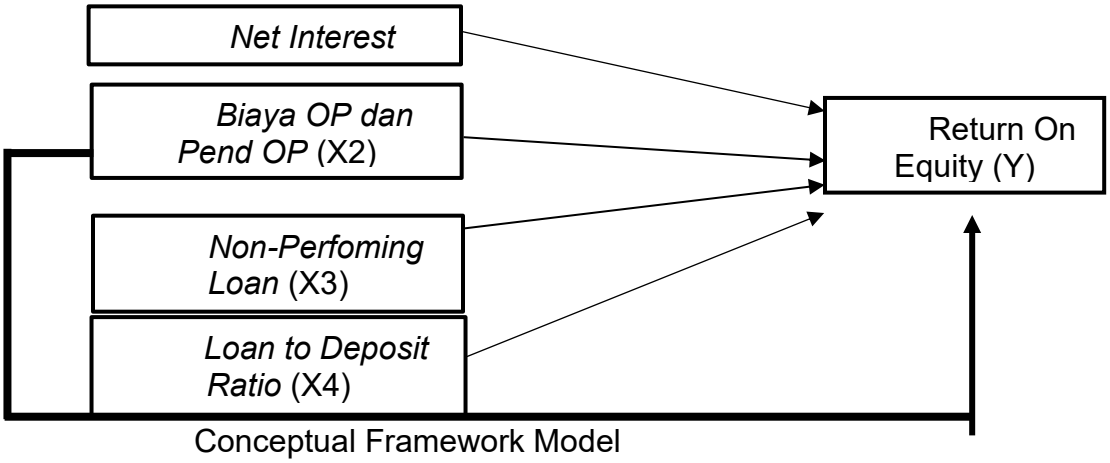
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According to Saputra & Permoni (2021), Non-Performing Loans (NPL) are the ratio between the number of loans experiencing payment problems and the total loans disbursed by the bank. The Loan-to-Deposit Ratio (LDR) is a ratio used to measure a bank's ability to meet its short-term obligations through collected third-party funds. This ratio also illustrates the bank's ability to distribute credit to the public (Kasmir, 2019).

Return on Equity (ROE) is a profitability ratio used to measure a company's ability to generate net income based on its equity. The higher the ROE, the better the company's ability to generate profits for shareholders.

H5: Net Interest Margin (NIM), Operating Expenses and Operating Income (BOPO), Non-Performing Loans (NPL), and the Loan to Deposit Ratio (LDR) affect Return on Equity (ROE).

## CONCEPTUAL FRAMEWORK




Conceptual Framework Model

Information :

The effect of the independent variable on the dependent variable partially

The effect of the independent variable on the dependent variable simultaneously

The conceptual framework in this study describes the relationship between the independent variables, namely Net Interest Margin (NIM), Operating Costs to Operating Income (BOPO), Non-Performing Loans (NPL), and Loan to Deposit Ratio (LDR), with the dependent variable, Return on Equity (ROE). This conceptual framework is based on theory and previous research findings that indicate that profitability ratios, operational efficiency, credit quality, and liquidity can influence a company's rate of return on capital.



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Net Interest Margin (NIM) is used to measure a bank's ability to generate net interest income from its earning assets. A high Net Interest Margin (NIM) indicates a bank's improved ability to manage its earning assets, thereby generating more optimal interest income. This can increase the company's profits, potentially boosting its Return on Equity (ROE).

The Operating Cost to Operating Income (BOPO) ratio is used to measure a bank's operational efficiency. A lower BOPO value indicates a more efficient bank in managing operating costs relative to the operating income generated. A high level of efficiency will increase company profits and ultimately increase Return on Equity (ROE).

Non-Performing Loans (NPLs) are used to measure a bank's level of non-performing loans. A higher NPL indicates a greater credit risk faced by the company due to the increasing number of non-performing loans. This can reduce the company's revenue and profits, potentially lowering its Return on Equity (ROE).

The Loan-to-Deposit Ratio (LDR) is used to measure a bank's ability to disburse funds collected from the public in the form of credit. A higher LDR indicates a more optimal credit distribution by the bank. Effective credit distribution can increase interest income and company profits, potentially increasing Return on Equity (ROE). However, an excessively high LDR can also increase a company's liquidity risk.

## RESEARCH METHODOLOGY

### Type Of Research

This research is a quantitative study with an associative approach. According to (Sugiyono, 2019) quantitative research is a research method used to examine a specific population or sample using data in the form of numbers and statistical analysis to test hypotheses. This study aims to determine the influence and relationship between Net Interest Margin (NIM), Operating Costs to Operating Income (BOPO), Non-Performing Loans (NPL) and Loan to Deposit Ratio (LDR) as independent variables on Return on Equity (ROE) as the dependent variable, both partially and simultaneously at PT Bank Mandiri Tbk.

This study uses a quantitative method with an associative approach. The aim is to determine and analyze the effect of Net Interest Margin (NIM), Operating Expenses to Operating Income (BOPO), Non-Performing Loans (NPL), and the Loan to Deposit Ratio (LDR) on Return on Equity (ROE) at PT Bank Mandiri (Persero) Tbk. The data used in this study are secondary data obtained from the annual financial statements and annual reports of PT Bank Mandiri published on the company's official website and the Indonesia


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Stock Exchange (IDX). The study population consists of all annual financial statements of PT Bank Mandiri for the period 2003–2024, while the sample is the financial statements for the period 2015–2024, selected using purposive sampling based on specific criteria appropriate to the research needs. Data collection techniques include documentation and literature review to obtain information relevant to the variables studied.

In analyzing the data, this study uses multiple linear regression to determine the influence of the independent variables on the dependent variable. Prior to the regression test, the data were first tested through classical assumption tests, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests to ensure the regression model met the required statistical requirements. Furthermore, a coefficient of determination ($R^2$) test was conducted to measure the ability of the independent variables to explain the dependent variable, a partial test (t-test) to determine the effect of each variable individually, and a simultaneous test (F-test) to determine the effect of all independent variables collectively on ROE. The results of this analysis are expected to provide a clearer picture of the factors influencing the profitability of PT Bank Mandiri (Persero) Tbk during the research period.

**1) The Effect of Net Interest Margin (NIM) on Return on Equity (ROE)**

The results of the partial hypothesis test (t-test) indicate that the significance value for Net Interest Margin (NIM) is 0.546, which is greater than the alpha value (α = 0.05) (0.546 > 0.05), and the calculated t-value is -0.613, which is smaller than the t-table value of 2.228 (-0.613 < 2.228). Therefore, it can be concluded that Net Interest Margin (NIM) does not significantly influence Return on Equity (ROE) (H1 is rejected). This means that although NIM reflects a bank's ability to generate net interest income from its earning assets, in this study, NIM was unable to significantly influence ROE. This indicates that the level of profitability, as measured by ROE, is influenced not only by net interest income but also by other factors such as operational efficiency, asset quality, credit risk management, and the company's capital management policies.

**2) The Effect of Operating Costs and Operating Income (BOPO) on Return on Equity (ROE)**

The results of the partial hypothesis test (t-test) indicate that the significance value for Operating Costs to Operating Income (BOPO) is 0.196, which is greater than the alpha value (α = 0.05) (0.196 > 0.05), and the calculated t-value is 1.330, which is smaller than the t-table value of 2.060 (1.330 < 2.060). Therefore, it can be concluded that BOPO has no effect on Return on Equity (ROE) (H2 is rejected). This indicates that


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the bank's operational efficiency, as measured by the BOPO ratio, has not significantly influenced the company's profitability, as proxied by ROE. In other words, changes in operating costs relative to operating income have not significantly affected the company's ability to generate profits from its equity.

**3) The Effect of the Loan to Deposit Ratio (LDR) on Return on Equity (ROE)**

The results of the partial hypothesis test (t-test) indicate that the significance value for the Loan to Deposit Ratio (LDR) is 0.655, which is greater than the alpha value (α = 0.05) (0.655 > 0.05), and the calculated t-value is -0.452, which is smaller than the t-table value of 2.060 (-0.452 < 2.060). Therefore, it can be concluded that the Loan to Deposit Ratio (LDR) has no effect on Return on Equity (ROE) (H4 is rejected). This means that the level of credit disbursement to third-party funds collected by banks has not significantly influenced the company's return on equity.

## CONCLUSION

The recommendations in this study are as follows:

1. Net Interest Margin (NIM) does not significantly influence Return on Equity (ROE). This is evidenced by a significance value of 0.546 > 0.05 and a calculated t-value of -0.613, which falls within the t-table value of ±2.060. Therefore, the first hypothesis (H1) is rejected.
2. Operating Expenses to Operating Income (BOPO) does not significantly influence Return on Equity (ROE). This is evidenced by a significance value of 0.196 > 0.05 and a calculated t-value of 1.330 < 2.060. Therefore, the second hypothesis (H2) is rejected.
3. Non-Performing Loans (NPLs) have a significant negative effect on Return on Equity (ROE). This is evidenced by a significance value of 0.019 < 0.05 and a calculated t-value of -2.499, which exceeds the t-table limit of -2.060. Thus, the third hypothesis (H3) is accepted.
4. The Loan to Deposit Ratio (LDR) does not significantly affect Return on Equity (ROE). This is evidenced by a significance value of 0.655 > 0.05 and a calculated t-value of -0.452 < 2.060. Therefore, the fourth hypothesis (H4) is rejected.
5. The Net Interest Margin (NIM), Operating Expenses to Operating Income (BOPO), Non-Performing Loans (NPL), and the Loan to Deposit Ratio (LDR) simultaneously do not significantly affect Return on Equity (ROE). This is evidenced by a


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calculated F-value of 1.884 < F-table of 2.76 and a significance value of 0.145 > 0.05. Thus, the fifth hypothesis (H5) is rej.

## SUGGESTIONS

The recommendations in this study are as follows:

1. **For PT Bank Mandiri Tbk**

PT Bank Mandiri Tbk is advised to continue improving the company's financial performance through more effective management of productive assets, increased operational efficiency, and optimal credit risk management. Although in this study, the variables Net Interest Margin (NIM), Operating Costs to Operating Income (BOPO), Non-Performing Loans (NPL), and Loan to Deposit Ratio (LDR) were not proven to have a significant effect on Return on Equity (ROE), the company still needs to maintain the stability of these four ratios as they are important indicators in assessing the health and performance of the banking sector. Furthermore, the company needs to increase profitability and company value through sustainable business strategies and strengthening investor confidence.

2. **For Investors**

Investors are advised to not only consider the NIM, BOPO, NPL, and LDR ratios when assessing the performance of PT Bank Mandiri Tbk, but also consider other factors that can influence Return on Equity (ROE). Furthermore, investors need to consider the company's fundamental condition, business growth prospects, management quality, and external factors such as economic conditions, interest rates, inflation, and government policies to ensure more informed and optimal investment decisions.

3. **For Further Research**

Further researchers are advised to add other variables that could potentially influence Return on Equity (ROE), such as the Capital Adequacy Ratio (CAR), Return on Assets (ROA), Third Party Funds (TPF), Net Profit Margin (NPM), and other financial variables. Furthermore, future research is expected to extend the research period, use a larger sample size, or compare several banks within the banking sector to obtain more accurate, representative results, and have a broader level of generalizability.


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