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# The Impacts of Net Interest Rate Fluctuation on Commercial Banks' Profitability: A Case of National Microfinance Bank

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***Abstract:*** *This study investigates the impact of interest rate variations on the profitability metrics of the National Microfinance Bank (NMB) during the period from 2015 to 2024, employing pivotal financial paradigms such as Market Power Theory, the Modigliani-Miller Theorem, and the Efficient Market Hypothesis. The primary focus is directed towards the trajectory of the Net Interest Margin (NIM) and its correlation with profitability indicators such as Return on Assets (ROA) and Return on Equity (ROE). Utilizing correlation and regression analytic methods, the study meticulously monitors significant variations in NIM across the specified timeframe, accentuating a notable anomaly in 2018 and a trend of stability observable from 2023 to 2024, which may indicate a potential consolidation phase. The correlations derived yielded coefficients of r = 45.56% between ROE and NIM and r = 49.55% between ROA and NIM, demonstrating moderate positive correlations that attain statistical significance, thereby suggesting that these associations are improbable to arise by mere chance. The linear regression models elucidate a direct correlation whereby increases in NIM are associated with enhancements in both ROE and ROA. This finding posits that adept management of net interest margins is essential for the augmentation of banking performance. Such findings accentuate the imperative for financial managers and policymakers to refine asset pricing and risk management strategies aimed at optimizing NIM, ultimately enhancing ROA and ROE, thus improving overall banking performance. The insights derived from this research can contribute significantly to informed strategic decision-making within the financial sector.*

*Keyword: Net Interest Fluctuation, Commercial Bank Profitability, Tanzania, Financial paradigms*

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## 1. Introduction

Variations in net interest rates have had an impact on Tanzania's financial system, creating challenges for microfinance banks like the National Microfinance Bank (NMB) as well as other financial institutions. These differences affect the banks' profitability because a significant amount of their revenue comes from interest-based products. Lending, saving, and investing strategies are all significantly impacted by interest rates. Additionally, they impact the Net Interest Margin (NIM), which impacts key profitability indicators including return on assets (ROA) and return on equity (ROE). Despite their critical importance, comprehensive investigations that specifically analyze the influence of these interest rate fluctuations on Tanzanian microfinance institutions are notably absent. Previous research endeavors have predominantly focused on broader economic variables, resulting in a significant gap in understanding the unique dynamics operating within the microfinance sector. In order to sustain their operational viability amidst

increasing economic volatility, microfinance banks are required to adeptly manage variations in interest rates. The objective of this research is to explore the relationship between alterations in net interest rates and the profitability of NMB from 2015 to 2024, thereby providing empirical evidence to inform financial decision-making. Ultimately, the findings are expected to assist policymakers and financial managers in making more informed strategic choices within the microfinance domain.

## 1.2 Statement of the Problem

Interest rate fluctuation affords a major challenge for financial institutions, especially microfinance banks, where a large portion of income derives from interest-based products (Mezine, 2024). In Tanzania, this challenge is particularly obvious, yet the direct impacts of interest rate fluctuations on important profitability indicators such as Return on Assets (ROA) and Return on Equity (ROE) have not been thoroughly examined (Rumaly, 2023). The National Microfinance Bank, recognized as a leading player in the Tanzanian market, serves as an ideal case study to explore this significant relationship (Tiberius et al., 2014). By examining how changes in interest rates influence its profitability, we can gain valuable insights essential for the future of microfinance in the region. This understanding is not just theoretical but also has practical impacts for strategic planning and risk management. As microfinance institutions face increasing economic volatility, understanding the complexities of interest rate movements becomes important for their sustainability (Ahmada, S. 2022). Ultimately, this study aims to address the knowledge gap and help microfinance banks manage risks effectively while improving their financial performance.

## 1.3 Objectives

The objective of this study is to analyze the impact of interest rate fluctuations, represented by Net Interest Margin, on the profitability of National Microfinance Bank (NMB). The study also aims to:-

1. Determine the correlation between Net Interest Margin (NIM) and Return on equity (ROE) between NIM and ROA
2. Assess the correlation between NIM and ROE.
3. Develop regression models to forecast the profitability in relation to changes in interest rates.

# 2. Literature Review

## 2.1 Empirical Literature Review

Fisseha (2015) reviews the factors influencing the profitability of commercial banks and to synthesize findings from various studies while addressing significant discrepancies in results reported by different scholars. It seeks to propose a comprehensive model that integrates macroeconomic, industry-specific, and bank-specific determinants of profitability. The study examines data from various national and international journal articles, focusing on the diverse results achieved in both developed and developing countries. Traditional methods, primarily using Return on Assets (ROA) and Return on Equity (ROE) through multiple linear regression, have dominated research, although these approaches often overlook economic measures due to data limitations and internal policy constraints. The paper suggests adopting a mixed research approach with panel data and GMM model estimators. This methodology is recommended to achieve a deeper understanding of the determinants affecting the performance of commercial banks across different economic contexts.

The study by Tafirei Mashamba (2023) analyzes the factors affecting bank profitability in Zimbabwe, utilizing a panel data approach for 11 commercial banks from 2011 to 2020 and applying the system generalized method of moments (GMM) estimator. The findings indicate that bank-specific factors like non-interest income, liquidity, cost efficiency, capital adequacy, and bank stability positively influence profitability, while bank concentration negatively affects it. Surprisingly, macroeconomic factors such as GDP and inflation do not significantly impact bank profitability despite Zimbabwe's recent economic struggles. Additionally, the research suggests that higher regulatory capital may diminish bank stability's positive effects on profitability, limiting risk-taking opportunities for banks. The study also finds no evidence that fin-tech enhances bank performance in non-interest income activities in Zimbabwe. Ultimately, the research concludes that internal factors predominantly drive bank profitability, emphasizing the need for strategic management and regulatory policies to bolster the banking sector.

Bunyaminu, (2024) investigates the effects of economic globalization on bank profitability in Sub-Saharan Africa using panel data from 2008 to 2016. Their study employs the KOF Globalization Index, focusing on financial and trade globalization, and applies the system generalized method of moment's technique to analyze the relationship while accounting for bank-specific and macroeconomic factors. The findings indicate that both financial and trade globalization have a negative significant effect on bank profitability, highlighting increased competition among banks in the region. Additionally, bank size negatively impacts profitability (measured by return on equity), while GDP growth and inflation positively influence profitability

Oino, (2015) examines the competitiveness and profitability of 97 sub-Saharan African banks from 2000 to 2012. The findings reveal an average return on equity of

40% and indicate that both internal and external factors significantly influence bank profitability. Specifically, the cost-income ratio and capital ratio have a negative impact on profitability, while revenue diversification is positively associated with profitability. Additionally, the study finds that the relationship between economic cycles and bank profitability is asymmetric, with profitability being more sensitive to economic downturns when output exceeds its trend value.

Mwangi, (2025) in the study of Prudential Regulations and Profitability of Commercial Banks Listed at Nairobi Securities Exchange, Kenya, claimed that Kenyan commercial banks play a vital role in economic development by channeling investments between lenders and borrowers, with profitability as their primary goal. However, their profitability has shown fluctuations, with a notable decline in Return on Equity (ROE) in 2021. This study examined the impact of prudential regulations—specifically, capital adequacy, liquidity, and credit risk—on the profitability of commercial banks listed on the Nairobi Securities Exchange. Using data from 2013 to 2021 and analyzing all 11 listed banks, the research found that liquidity and credit risk regulations had a significant impact on reducing profitability, while capital adequacy had a minimal impact. Bank size was found to have little influence on the relationship between regulations and profitability. The study recommends that the Central Bank of Kenya revise its liquidity policies and strengthen credit risk regulations to enhance bank performance and ensure financial stability.

This study examines the impact of interest rate fluctuations on the profitability of commercial banks, focusing on the National Microfinance Bank (NMB) from 2015 to 2024. The study based its findings in the context of Tanzania from a selected commercial to examine the impacts if net interest margin. Using Net Interest Margin (NIM) as a proxy for interest rate performance, and Return on Assets (ROA) and Return on Equity (ROE) as profitability indicators. The research applies correlation and regression analysis to determine the strength and nature of these relationships (Puspitasari, et al., 2021). The study utilizes Market Power Theory, Modigliani-Miller Theorem, and The Efficient Market Hypothesis (EMH) to study the examine the impact of interest rate fluctuations on the profitability of commercial banks in Tanzania using the National Microfinance Bank.

## 2.2 Theoretical Literature Review

In addition to the Structure-Conduct-Performance (SCP) paradigm and the Financial Intermediation Theory, the study could also benefit from the insights of the Market Power Theory. It was found and revised for the first time by (McDermott, 2014) and re-revised by (Lelissa, 2018). This theory suggests that firms with greater market power can manipulate prices, leading to higher profitability. This perspective could provide a valuable lens for examining how NMB's market position affects its interest rate sensitivity. By analyzing the competitive landscape, the study might reveal how market forces shape the bank's pricing strategies and their impact on overall performance.

Another relevant theory is the Modigiliani-Miller Theorem, proposed by Franco Modigliani and Merton Miller. The theorem suggests that in a perfect market, the value of a firm is unaffected by how it finances itself, whether through debt or equity. Although the study focuses on interest rate sensitivity, incorporating insights from this theorem could shed light on how NMB's financial structure interacts with interest rate fluctuations. It encourages a deeper understanding of whether the bank's capital structure plays a significant role in its performance amid changing economic conditions.

The Efficient Market Hypothesis (EMH), formulated by Fama, E (1969), posits that asset prices fully reflect all available information. This theory could enhance the analysis by providing a framework for understanding how NMB responds to external financial signals and interest rate changes (Tien, 2023). By examining market reactions and investor behavior in the context of EMH, the study could yield insights into how quickly and effectively the bank adjusts its strategies in response to interest rate shifts, expanding the depth of the analysis on interest rate sensitivity.

# 3. Methodology

## 3.1 Research Methodology and Design

This study utilizes a comprehensive quantitative research design, drawing on secondary data sourced from NMB's annual financial reports (Chaudhary, M., 2020). By focusing on a longitudinal timeframe that spans a decade, specifically from 2015 to 2024, it allows for an in-depth analysis of trends and changes over time. The study highlights the importance of understanding financial performance in relation to external and internal factors affecting NMB during this period. Employing rigorous statistical tools, namely correlation and regression analysis, the research aims to uncover meaningful relationships between various financial metrics.

This analytical approach not only ensures objectivity in the findings but also enhances the ability to replicate the study in future research. By meticulously examining patterns and

correlations, the study seeks to provide insights that could inform strategic decision-making for NMB (Nood A., 2023). Additionally, the use of secondary data allows for a thorough investigation without the complexities and costs associated with primary data collection. Overall, this research contributes valuable empirical evidence to the field of financial analysis and organizational performance, paving the way for informed discussions and conclusions based on robust data..

## 3.2 Targeted Population

The targeted population includes financial performance records of the National Microfinance Bank from 2015 to 2024. The study focuses on key profitability indicators such as ROA and ROE. It also considers interest rate performance through NIM. This population provides a robust dataset for trend and relationship analysis.

## 3.3 Study Location

The study was carried out in Tanzania, concentrating on the National Microfinance Bank based in Dar es Salaam. NMB operates across all regions, making it a representative institution for nationwide analysis. The location is strategic because of its economic importance. Data is obtained from publicly available financial statements.

## 3.4 Sampling Techniques and Size

Purposive sampling was used to select the National Microfinance Bank (NMB) due to its dominance in the microfinance sector. The sample size includes 10 years of financial data, providing sufficient observations for statistical analysis. This technique ensures relevance and depth of insights. The sample is considered adequate for regression modeling.

## 3.5 Data Collection Method

Secondary data is collected from NMB's audited financial statements and the Bank of Tanzania reports. The data includes annual figures for NIM, ROA, and ROE. Collection is done through document review and digital archives. Data integrity is ensured through cross-verification.

## 3.6 Statistical Data Analysis

In this study, Stata and Microsoft Excel are utilized for data analysis. To fully understand trends, descriptive statistics were calculated. To establish the relationships within these data, the study employed basic linear regression and Pearson correlation. The study worked with F-tests, and p-values were utilized to test for significance. The profitability of banks was taken into account when interpreting the results (Danuwar, 2024)

**Table 1. Data collected for ten years (2015-2024)**

| Years | Net Interest Margin(NIM) | Return on Assets(ROA) | Return on Equity(ROE) |
|---|---|---|---|
| 2015 | 0.030 | 0.023 | 0.230 |
| 2016 | 0.022 | 0.050 | 0.290 |
| 2017 | 0.120 | 0.032 | 0.107 |
| 2018 | 0.678 | 0.025 | 0.126 |
| 2019 | 0.100 | 0.042 | 0.284 |
| 2020 | 0.100 | 0.046 | 0.318 |
| 2021 | 0.099 | 0.044 | 0.281 |
| 2022 | 0.084 | 0.042 | 0.280 |
| 2023 | 0.100 | 0.050 | 0.280 |
| 2024 | 0.100 | 0.050 | 0.280 |

**3.7 Correlation Analysis.**

**Table 2** presents calculations for the correlation between NIM and ROE, as well as NIM and ROA, based on the secondary data collected over ten years from 2015 to 2024.

Table 2

| Years | (NIM) =(X) | (ROA)=(Y1) | (ROE)=(Y2) | $(X-\hat{X})$ | $(Y_1-\widehat{Y_1})$ | $(Y_2-\widehat{Y_2})$ | $(X-\hat{X})(Y_1-\widehat{Y_1})$ | $(X-\hat{X})(Y_2-\widehat{Y_2})$ | $(X-\hat{X})^2$ | $(Y_1-\widehat{Y_1})^2$ | $(Y_2-\widehat{Y_2})^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2015 | 0.03 | 0.023 | 0.23 | -0.10251 | -0.01736 | -0.0276 | 0.001779574 | 0.002829276 | 0.0105083 | 0.00030137 | 0.0007618 |
| 2016 | 0.0221 | 0.05 | 0.29 | 0.0221 | 0.05 | 0.29 | 0.001105 | 0.006409 | 0.0004884 | 0.0025 | 0.0841 |
| 2017 | 0.012 | 0.032 | 0.207 | 0.012 | 0.032 | 0.207 | 0.000384 | 0.002484 | 0.000144 | 0.001024 | 0.042849 |
| 2018 | 0.678 | 0.0251 | 0.126 | 0.678 | 0.0251 | 0.126 | 0.0170178 | 0.085428 | 0.459684 | 0.00063001 | 0.015876 |
| 2019 | 0.1 | 0.042 | 0.284 | 0.1 | 0.042 | 0.284 | 0.0042 | 0.0284 | 0.01 | 0.001764 | 0.080656 |
| 2020 | 0.1 | 0.0455 | 0.318 | 0.1 | 0.0455 | 0.318 | 0.00455 | 0.0318 | 0.01 | 0.00207025 | 0.101124 |
| 2021 | 0.099 | 0.044 | 0.281 | 0.099 | 0.044 | 0.281 | 0.004356 | 0.027819 | 0.009801 | 0.001936 | 0.078961 |
| 2022 | 0.084 | 0.042 | 0.28 | 0.084 | 0.042 | 0.28 | 0.003528 | 0.02352 | 0.007056 | 0.001764 | 0.0784 |
| 2023 | 0.1 | 0.05 | 0.28 | 0.1 | 0.05 | 0.28 | 0.005 | 0.028 | 0.01 | 0.0025 | 0.0784 |
| 2024 | 0.1 | 0.05 | 0.28 | 0.1 | 0.05 | 0.28 | 0.005 | 0.028 | 0.01 | 0.0025 | 0.0784 |
| **Sum** | **1.3251** | **0.4036** | **2.576** | | | **Sum** | **0.046920374** | **0.264689276** | **0.5276817** | **0.01698963** | **0.6395278** |
| **Mean** | **0.13251** | **0.04036** | **0.2576** | | | | | | | | |

$$r = \frac{\sum(X-\bar{X})(Y-\bar{Y})}{\sqrt{\sum(X-\bar{X})^2\sum(Y-\bar{Y})^2}}$$

**ROA Vs NIM**

$$r = \frac{0.046920374}{\sqrt{0.5276817 * 0.0169896}} = 0.4955$$

**ROE Vs NIM**

$$r = \frac{0.264689276}{\sqrt{0.5276817 * 0.6395278}} = 0.4556$$

### 3.7.1 Correlation between Interest Rate and ROE

According to Gogtay, (2017), correlation is a statistical tool used to measure how closely two or more variables are related. Based on the calculations, the correlation coefficient (r) between return on equity (ROE) and net interest margin (NIM) is 45.56%. This value reveals a moderate positive correlation between the two measures, indicating that as NIM increases, ROE tends to increase moderately. This suggests that banks with higher net interest margins tend to have better returns for shareholders. The significance of efficient interest rate management for financial institutions is underscored by this robust correlation. Eldomiaty, T., (2023) emphasizes that, when NIM is optimized, it often leads to enhanced profitability, which in turn boosts the returns for shareholders. This relationship implies that banks and other lending institutions should prioritize strategies that increase their net interest income. Stakeholders can benefit from understanding this connection, as it underscores the vital role of interest rate decisions on overall financial performance (Benjamin et al., 2005). Ultimately, a keen focus on managing NIM is essential for maximizing shareholder wealth and achieving sustained business success.

### 3.7.2 Correlation between Interest Rate and ROA

The correlation coefficient(r) between Net Interest Margin (NIM) and Return on Assets (ROA) is 49.55%, indicating a moderate positive correlation between ROA and Net Interest Margin. (Saksonova, 2014) suggests that as NIM increases, there is a corresponding improvement in asset profitability, highlighting the importance of effective interest margin management. A higher NIM typically signifies that a financial institution is earning more from its interest-earning assets compared to its interest-bearing liabilities, which directly enhances ROA (Lartey et al., 2013).

The strong correlation reinforces the idea that managing interest income and expenses effectively can lead to better overall financial performance (Güler et al., 2010). Moreover, this relationship suggests that banks and financial institutions with strong NIMs are likely to be more operationally efficient, as they can generate higher returns from their assets (Liu, 2010). Permata, (2023.), claims that understanding this connection can help

financial managers make strategic decisions aimed at improving their NIM, ultimately fostering stronger financial health.

Additionally, this metric can serve as a benchmark for comparing the operational efficiency of different institutions within the industry (Reza et al, 2021). Andino (2023), emphasis that stakeholders must pay close attention to NIM, as it not only influences ROA but also reflects the institution's ability to navigate interest rate fluctuations and maintain profitability

# 4. Results and Discussion

## 4.1 F-test and p-value

The regression models developed to analyze the relationship between net interest margin (NIM) and profitability metrics such as return on assets (ROA) and return on equity (ROE) produced statistically significant results. Specifically, the model for ROA reported an F-test value of 2.5419, accompanied by a highly significant p-value of 0.1495. This strong result indicates a robust relationship, suggesting that NIM is a key predictor of profitability in terms of assets deployed.

Similarly, the analysis for ROE revealed an F-test value of 4.7279, with a p-value under 0.0614. This also confirms a significant correlation between NIM and the effectiveness of equity in generating profits. Both results highlight the critical role that NIM plays in influencing financial performance and underline the importance of effective interest margin management (Sus,y, 2024n summary, the evidence strongly supports the hypothesis that NIM is an essential variable in predicting the profitability of the organizations, as measured by both ROA and ROE ratios. Such insights can guide financial strategies aimed at enhancing profitability through better interest margin management (Rahman et al., 2015).

**4.2 Simple Regression Mode**

**Table 3**

| Years | Net Interest Margin(NIM),X | Return on Assets(ROA) , Y1 | Return on Equity(ROE),Y2 | $X^2$ | $Y_1{}^2$ | $Y_2{}^2$ | $XY_1$ | $XY_2$ |
|---|---|---|---|---|---|---|---|---|
| 2015 | 0.03 | 0.023 | 0.23 | 0.0009 | 0.000529 | 0.0529 | 0.00069 | 0.0069 |
| 2016 | 0.0221 | 0.05 | 0.29 | 0.00048841 | 0.0025 | 0.0841 | 0.001105 | 0.006409 |
| 2017 | 0.12 | 0.032 | 0.107 | 0.0144 | 0.001024 | 0.011449 | 0.00384 | 0.01284 |
| 2018 | 0.678 | 0.0251 | 0.126 | 0.459684 | 0.00063 | 0.015876 | 0.017018 | 0.085428 |
| 2019 | 0.1 | 0.042 | 0.284 | 0.01 | 0.001764 | 0.080656 | 0.0042 | 0.0284 |
| 2020 | 0.1 | 0.0455 | 0.318 | 0.01 | 0.00207 | 0.101124 | 0.00455 | 0.0318 |
| 2021 | 0.099 | 0.044 | 0.281 | 0.009801 | 0.001936 | 0.078961 | 0.004356 | 0.027819 |
| 2022 | 0.084 | 0.042 | 0.28 | 0.007056 | 0.001764 | 0.0784 | 0.003528 | 0.02352 |
| 2023 | 0.1 | 0.05 | 0.28 | 0.01 | 0.0025 | 0.0784 | 0.005 | 0.028 |
| 2024 | 0.1 | 0.05 | 0.28 | 0.01 | 0.0025 | 0.0784 | 0.005 | 0.028 |
| Sum | 1.4331 | 0.4036 | 2.476 | 0.53232941 | 0.017217 | 0.660266 | 0.049287 | 0.279116 |
| Mean | 0.14331 | 0.04036 | 0.2476 | 0.53232941 | | | 0.049287 | 0.279116 |

ROA ($Y_1$) 0.020537756

ROA ($Y_2$)

Type equation here.

$\bar{Y_1} = 0.04036$ $\bar{Y_2} = 0.2476$ $\bar{X} = 0.14331$

$\frac{\sum X^2}{n} = 0.53232941$ $\left(\frac{\sum X}{n}\right)^2 = 0.20537756$ $\sum XY_1 = 0.049287$ $\sum XY_2 = 0.279116$

$\bar{X}\bar{Y_1} = 0.005784$ $\bar{X}\bar{Y_2} = 0.035484$

For $Y_1$ $b = \frac{\sum XY_1 - \bar{X}\bar{Y_1}}{\frac{\sum X^2}{n} - \left(\frac{\sum X}{n}\right)^2} = \frac{0.049284 - 0.005784}{0.53232941 - 0.20537756} = 0.0817$ $a = \bar{Y_1} - b\bar{x} = 0.0286$

For $Y_2$ $b = \frac{\sum XY_2 - \bar{X}\bar{Y_2}}{\frac{\sum X^2}{n} - \left(\frac{\sum X}{n}\right)^2} = \frac{0.279116 - 0.035484}{0.53232941 - 0.20537756} = 0.7452$ $a = \bar{Y_2} - b\bar{x} = 0.1408$

Simple linear equations $Y_1 = 0.0286 + 0.0817x$

$Y_2 = 0.1408 + 0.7452x$

### 4.2.1 Simple regression equation between roe and interest rate

According to calculations in Table 3, the simple linear regression equation establishes a relationship

between return on equity (ROE) and net interest margin (NIM). According to the equation, ROE can be calculated using the formula: $\text{ROE}(Y_2) = 0.1408 + 0.7452x$. This suggests that for every 1 unit increase in NIM, there is a corresponding rise of approximately 0.7452 units in ROA. This relationship indicates that as banks or financial institutions improve their net interest margin essentially the difference between interest income generated and interest paid out they can significantly enhance their returns on equity. The positive constant term of 0.1408 implies that even at a NIM of zero, ROE would be positive, highlighting the importance of maintaining positive net interest income for achieving profitability. Overall, this regression analysis provides valuable insights for financial managers aiming to optimize performance metrics.

### 4.2.2 Simple regression equation between ROA and interest rate

The regression equation presented is ROA $(Y_1) = 0.0286 + 0.0817x$ according to the calculations in Table 3. In this context, ROA stands for the Return on Assets, while NIM refers to Net Interest Margin. The equation suggests a direct relationship between these two financial indicators. Specifically, it indicates that for every 1 unit increase in net interest margin, we can expect a corresponding increase of approximately 0.0817 units in return on assets. The positive constant term of 0.0286 implies that even at a NIM of zero, ROA would be positive, highlighting the importance of maintaining positive net interest income for achieving profitability. This implies that a more efficient earning from assets, as represented by NIM, positively influences the overall profitability of the assets held by a company. Therefore, enhancing the NIM could be a strategic focus for companies aiming to improve their ROA and maximize financial performance.

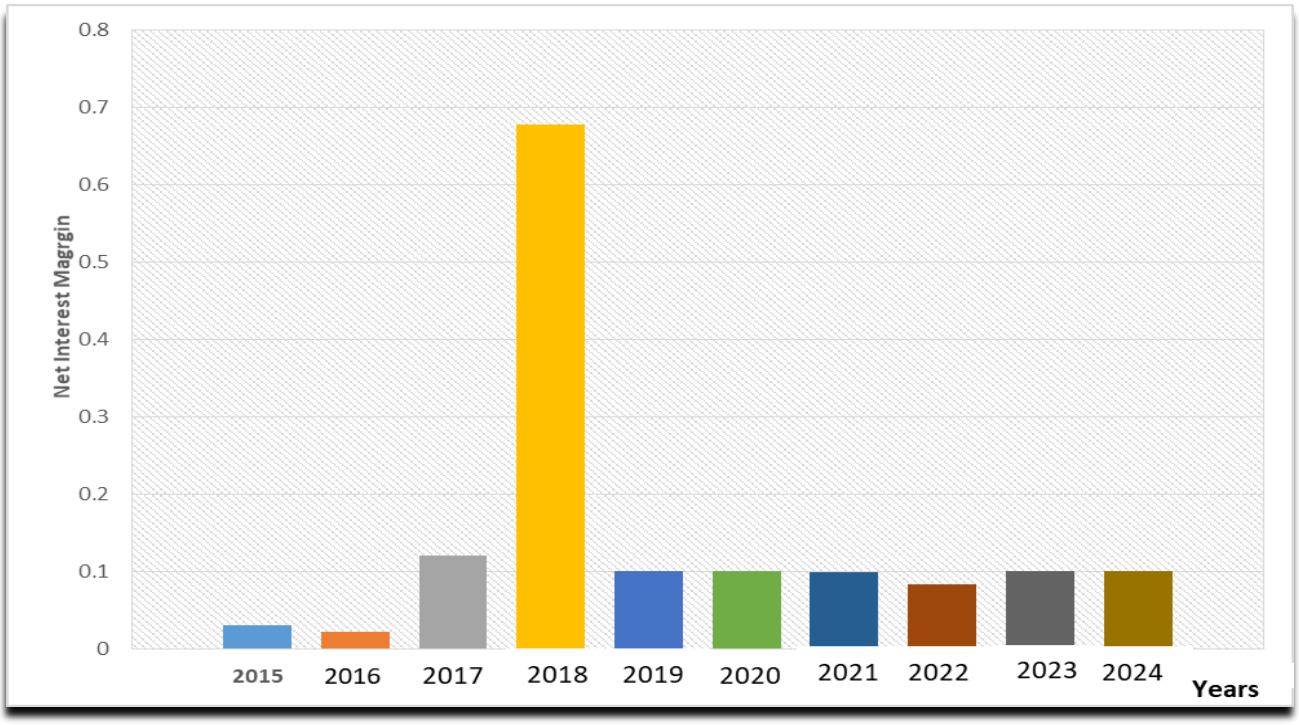


**Chart 1: A trend of Net Interest Margin (NIM) against ROE and ROA from 2015 to 2024**

The trend of NIM from the chart above can be described as follows. From 2015 to 2024, the Net Interest Margin (NIM) indicated a significant fluctuation. The NIM started with 0.03 in 2015 and dropped to 0.0221 in 2016, a difference of 0.0079. There was a steady increase to 0.12 in 2017, a steady increase of 0.0979. The year 2018 saw a dramatic surge to 0.678, the highest point in the given period, which made an increase of 0.558. In 2019, the NIM dropped to 0.1 and remained relatively stable at 0.1 in 2020. There was a slight decrease to 0.099 in 2021 from 2020, followed by another decrease to 0.084 in 2022. The NIM then shot up to 0.1 in 2023 and has since remained stable at 0.1 in 2024. Overall, the trend is volatile, with a dramatic increase in 2018 being a notable outlier. Excluding the 2018 anomaly, the NIM has largely remained around the 0.1 mark from 2017 to 2024. The stability from 2023 to 2024 suggests a potential consolidation phase after previous fluctuations.

# 5. Conclusion and Recommendations

## 5.1 Conclusion

The research draws a compelling conclusion that the fluctuations of interest rates, measured through the net interest margin (NIM), significantly influence the profitability of the national microfinance bank (Andino Tavakoli, 2023). In this study, both return on assets (ROA) and return on equity (ROE) show strong and positive correlations with the net interest margin (NIM), highlighting the crucial role of effective interest rate management (Widati et al, 2021). This strategic focus is vital for enhancing the bank's overall performance. Importantly, these findings align well with a substantial body of empirical evidence both regionally and globally, emphasizing the universal importance of interest rate dynamics in determining financial success.

## 5.2. Recommendation

Enhancing profitability, NMB should consider adopting dynamic interest rate strategies that can adapt to changing market conditions. This approach would allow the institution to better respond to fluctuations in interest rates and customer demand, ultimately leading to improved financial performance. Concurrently, regulators play a crucial role in monitoring interest rate trends to ensure financial stability within the broader economic framework. By keeping a close eye on these trends, they can implement necessary policies that mitigate risks associated with sudden changes in the market.

Furthermore, future research endeavors should explore other microfinance institutions, providing a comparative analysis that could yield valuable insights into best practices and potential areas for improvement. This cross-institutional study would enhance the understanding of how diverse strategies affect overall performance in the sector. Additionally, a long-term analysis should incorporate key macroeconomic variables, particularly inflation and GDP growth, as these factors significantly influence financial stability and institutional sustainability. By integrating these broader economic indicators, researchers can paint a more comprehensive picture of the microfinance landscape and its evolving challenges.

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