

THE INFLUENCE OF COMMERCIAL BANK PERFORMANCE ON MSME CREDIT DISTRIBUTION IN INDONESIA: A TIME-SERIES ANALYSIS 2014–2023

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Abstract

Amid efforts to promote inclusive economic growth, the strategic role of commercial banks in supporting Micro, Small, and Medium Enterprises (MSMEs) is increasingly vital. Although MSMEs contribute significantly to Indonesia's GDP, their access to bank financing remains limited. From 2014 to 2023, MSME credit distribution showed an upward trend, yet several barriers persist—many of which are tied to internal banking performance. This study analyzes the influence of Return on Assets (ROA), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), and Capital Adequacy Ratio (CAR) on MSME loan distribution in Indonesia. Using time series data from the Financial Services Authority (OJK) and applying multiple linear regression, the findings reveal that NIM negatively affects MSME lending, while CAR contributes positively. ROA and LDR show no statistically significant impact. Together, the four indicators have the potential to influence MSME credit distribution, underscoring the critical role of internal bank performance in financial intermediation. The results suggest that banks should manage interest efficiency without restricting access to credit. Regulators are encouraged to promote more inclusive policies that empower banks with strong capital buffers to support MSME financing.

Keywords: MSME credit, ROA, LDR, NIM, CAR

INTRODUCTION

Commercial banks play a strategic role in supporting the Micro, Small, and Medium Enterprises (MSMEs) sector in Indonesia, which contributes around 60% to the national Gross Domestic Product (GDP) (Adityaswara, 2021). However, the proportion of bank credit disbursed to MSMEs remains relatively low, accounting for only about 20% of total bank credit or approximately 8% of GDP. This gap indicates that despite their significant economic contribution, MSMEs still face financing access constraints. Several internal bank performance indicators—namely Return On Assets (ROA), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), and Capital Adequacy Ratio (CAR)—are suspected to influence the banks' capacity to lend to this sector. Therefore, it is essential to examine how these internal factors impact credit distribution to MSMEs.

This study aims to analyze the effect of commercial banks' performance on the distribution of credit to MSMEs in Indonesia. Specifically, the objectives are to determine the influence of ROA, LDR, NIM, and CAR on MSME lending during the 2014–2023 period. This research contributes to the monetary economics literature by providing empirical evidence on how internal banking performance affects credit intermediation to MSMEs. It also serves as a reference for future studies examining the nexus between banking performance and real-sector financing. Practically, the findings offer valuable insights for banks to identify key performance indicators that enhance MSME credit distribution. For regulators such as the Financial Services Authority (OJK) and Bank Indonesia, the results may inform more inclusive banking policies. MSME actors can also gain a better understanding of the criteria considered by banks when extending credit.

This study offers a unique contribution by simultaneously analyzing four key performance indicators—ROA, LDR, NIM, and CAR—over a ten-year time series (2014–2023), a scope that has not been widely explored in prior studies. Additionally, the finding that NIM has a significant negative effect on MSME lending contradicts conventional efficiency theory, presenting an interesting avenue for further research. The results show that ROA and LDR have no significant effect on MSME credit distribution. NIM has a significantly negative effect, while CAR has a significantly positive effect. Simultaneously, all four variables influence MSME lending, indicating that internal banking performance plays a crucial role in effective credit intermediation.

Based on the findings, commercial banks are advised to recalibrate their intermediation strategies so that rising NIM levels do not inhibit MSME credit disbursement—this may involve optimizing funding costs or adjusting interest rate policies. Regulators are encouraged to support greater credit allocation to MSMEs, particularly by incentivizing banks with high CAR levels. The government should also strengthen the MSME ecosystem to improve creditworthiness through access to information, financial literacy, and comprehensive credit guarantee schemes. This research focuses on commercial banks in Indonesia during the period from 2014 to 2023. The study utilizes secondary data sourced from the Financial Services Authority (OJK) and employs a quantitative approach using multiple linear regression analysis to examine the influence of ROA, LDR, NIM, and CAR on MSME credit distribution.

While prior studies explored bank performance in relation to general lending, few have focused exclusively on MSME credit using long-term national data in Indonesia. This study fills that gap by examining how internal bank performance metrics affect MSME loan distribution over a ten-year period (2014–2023). It provides empirical evidence from a developing country context, offering insights relevant to both practitioners and policymakers seeking to enhance financial inclusion.

This research contributes to the monetary economics literature by analyzing the interplay between internal banking health and MSME financing. It also offers practical implications for commercial banks, regulators, and MSME stakeholders, particularly in formulating strategies that align profitability with inclusive credit allocation.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

The intermediation theory suggests that banks serve as financial intermediaries between surplus and deficit economic units. Several theories support the relationship between bank performance and lending behavior, especially in the context of MSME financing:

1. Intermediation Theory (Tahir et al., 2015): This theory posits that banks function as financial intermediaries, mobilizing savings from surplus units and channeling them into productive investments, including MSME loans.
2. Prudent Banking Theory (Mishkin, 2019): Emphasizes the importance of risk management and regulatory ratios such as the Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LDR) in maintaining financial system stability while supporting lending activities.
3. Signaling Theory: Suggests that internal performance indicators like Return on Assets (ROA) act as signals of a bank's efficiency and soundness, influencing external perceptions and lending decisions.
4. Efficiency Theory: Proposes that operationally efficient banks, often reflected through a higher Net Interest Margin (NIM), have more capacity to lend. However, higher NIMs may also indicate elevated borrowing costs, which can deter MSME financing.

This increased profitability should theoretically enhance banks' ability to expand credit. Several empirical studies have examined the relationship between bank performance and credit distribution:

1. (Sudimoro Family, 2023) found that CAR, NIM, and LDR significantly and positively affect bank lending, while NPLs had a negative impact.
2. (Pulungan & Muslih, 2020) discovered a significant negative effect of NIM on lending, indicating that higher NIM does not always correlate with greater credit expansion.
3. (Veronica Amalia, 2022) reported that LDR and CAR had a positive effect on MSME lending, while NPLs had a significant negative effect.
4. (Oktaviani & Pangestuti, 2012) confirmed that CAR positively influences bank credit distribution, supporting the view that adequate capital boosts a bank's lending ability.

These studies highlight inconsistent results, particularly regarding the effects of ROA and NIM, which suggests the need for further investigation. Based on the theoretical and empirical literature discussed, the following hypotheses are proposed:

1. **H1:** Return on Assets (ROA) has a significant effect on MSME credit distribution.
2. **H2:** Loan to Deposit Ratio (LDR) has a significant effect on MSME credit distribution.
3. **H3:** Net Interest Margin (NIM) has a significant effect on MSME credit distribution.
4. **H4:** Capital Adequacy Ratio (CAR) has a significant effect on MSME credit distribution.

These hypotheses aim to test whether the internal performance indicators of commercial banks influence the level of credit disbursed to MSMEs in Indonesia during the 2014–2023 period.

RESEARCH METHODS .

This study employs a **quantitative approach** with a **causal-comparative research design** to examine how internal banking performance affects the distribution of credit to Micro, Small, and Medium Enterprises (MSMEs). The focus is on four key indicators: Return on Assets (ROA), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), and Capital Adequacy Ratio (CAR).

The research uses **time-series data** from the **Banking Statistics Reports** published by the **Financial Services Authority (OJK)** covering the period **2014 to 2023**. The sample consists of commercial banks in Indonesia that consistently report complete annual financial data during this period.

Time-series analysis is considered appropriate for this study because it enables the observation of dynamic patterns, trends, and long-term relationships between variables over time. It is especially relevant for capturing structural shifts in banking performance and MSME credit behavior across economic cycles and policy changes.

The population includes all commercial banks in Indonesia. The sample was selected using purposive sampling with the following criteria:

1. Commercial banks registered with the OJK during 2014–2023.
2. Banks that provide credit to MSMEs.
3. Banks that publish complete annual financial statements containing all research variables.

Dependent Variable:

- **MSME Credit Distribution:** The total amount of credit disbursed to MSMEs by commercial banks, measured in billion rupiahs.

Independent Variables:

1. **Return On Assets (ROA):** Measures the bank's ability to generate profit from its total assets.
Formula: $ROA = \text{Net Income} / \text{Total Assets} \times 100\%$
2. **Loan to Deposit Ratio (LDR):** Indicates the proportion of total loans to total third-party funds.
Formula: $LDR = \text{Total Loans} / \text{Total Third-Party Funds} \times 100\%$
3. **Net Interest Margin (NIM):** Measures the bank's efficiency in generating net interest income from its earning assets.
Formula: $NIM = \text{Net Interest Income} / \text{Earning Assets} \times 100\%$

4. **Capital Adequacy Ratio (CAR):** Reflects the bank's capital strength in supporting its risk-weighted assets
Formula: $CAR = Capital / Risk-Weighted Assets \times 100\%$

The analysis is conducted using **multiple linear regression** to evaluate the effect of independent variables on MSME credit distribution. Data processing and analysis were carried out using **Microsoft Excel** for initial tabulation and **IBM SPSS Statistics version 26** for regression and diagnostic testing.

The study employs multiple linear regression analysis to test the influence of the independent variables on the dependent variable. The regression equation is as follows:

$$MSME_Credit = \beta_0 + \beta_1ROA + \beta_2LDR + \beta_3NIM + \beta_4CAR + \epsilon$$

Where:

- β_0 = Constant
- β_1 – β_4 = Regression coefficients
- ϵ = Error term

To ensure the validity of the regression model, the following classical assumption tests are conducted:

- **Normality Test** (Verifies whether the residuals are normally distributed, which is essential for valid hypothesis testing.)
- **Multicollinearity Test** (Ensures there is no high correlation between independent variables, which could distort the interpretation of coefficients.)
- **Heteroscedasticity Test** (Checks whether the variance of the residuals is constant across all levels of the independent variables. Violation of this assumption can lead to inefficient estimates.)
- **Autocorrelation Test** (Examines whether residuals are independent across time. In time-series data, autocorrelation may lead to underestimated standard errors and inflated t-statistics.)

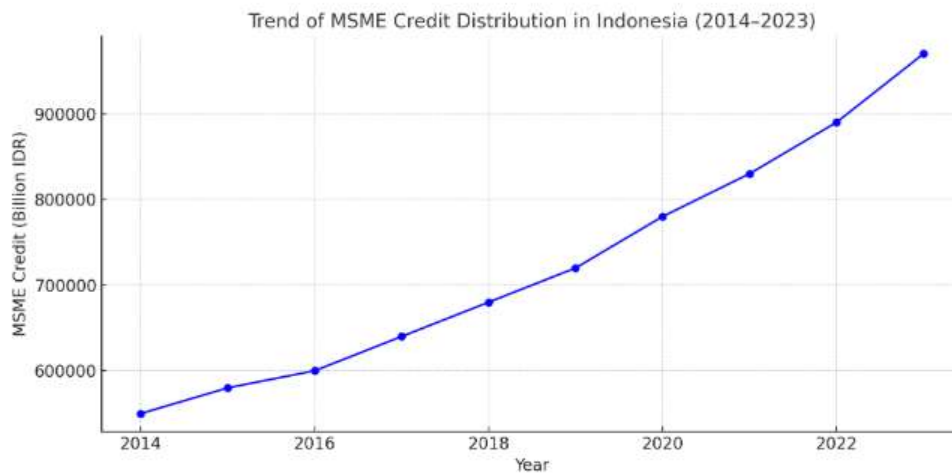
The hypotheses are tested using:

- **t-test:** To examine the partial effect of each independent variable on the dependent variable.
- **F-test:** To test the simultaneous significance of all independent variables.
- **Coefficient of Determination (R^2):** To assess the proportion of variance in MSME credit distribution explained by the independent variables.

RESULTS AND DISCUSSION

The results of the multiple linear regression analysis indicate the relationship between the internal performance of commercial banks—measured by ROA, LDR, NIM, and CAR—and the distribution of credit to MSMEs in Indonesia from 2014 to 2023.

Trend of MSME Credit Distribution in Indonesia (2014–2023)



The regression output is summarized as follows:

Variable	Coefficient	t-Statistic	Significance
ROA	Negative	Not significant	> 0.05
LDR	Positive	Not significant	> 0.05
NIM	Negative	Significant	< 0.05
CAR	Positive	Significant	< 0.05

The **F-test** shows that all independent variables together significantly affect MSME credit distribution.

The **R² value** indicates that a substantial portion of the variation in MSME credit is explained by the model.

The analysis reveals that ROA has a negative but statistically insignificant effect on MSME credit distribution. This suggests that higher profitability, as measured by ROA, does not necessarily translate into increased lending to MSMEs. One possible explanation is that banks may allocate profits toward less risky or more profitable investment opportunities rather than MSME lending, which is often perceived as high-risk.

LDR shows a positive but insignificant impact on MSME credit distribution. This implies that the ability of banks to channel third-party funds into loans does not automatically lead to increased MSME lending. It may reflect the cautious lending behavior of banks, particularly when LDR values approach the upper regulatory limits, resulting in conservative credit expansion strategies.

Unexpectedly, NIM has a **significant negative** influence on MSME credit distribution. This finding contradicts the conventional assumption that higher NIM reflects greater lending efficiency. A plausible interpretation is that banks with high NIMs may achieve profitability by raising interest margins, which could discourage MSME borrowers due to higher borrowing costs. Additionally, such banks may prioritize high-yield corporate lending over MSMEs, which are often less profitable and riskier.

CAR has a **positive and significant** effect on MSME credit distribution. This confirms that banks with stronger capital positions are more capable of absorbing risks and more willing to expand credit, particularly to sectors such as MSMEs. Adequate capital buffers also enhance bank credibility and regulatory compliance, enabling more aggressive lending strategies in underserved segments.

The empirical findings demonstrate that:

- ROA and LDR do not significantly affect MSME credit distribution.

- NIM negatively and significantly affects MSME credit distribution.
- CAR positively and significantly affects MSME credit distribution.
- All variables jointly have a significant effect on MSME credit distribution.

These results highlight that while capital strength (CAR) supports MSME credit growth, profitability (NIM) may paradoxically hinder it due to risk-averse or profit-maximizing behavior that excludes MSMEs. This underscores the need for more inclusive credit policies that balance financial performance with social and developmental goals.

CONCLUSION

This study aimed to analyze the effect of internal bank performance—measured by Return on Assets (ROA), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), and Capital Adequacy Ratio (CAR)—on the distribution of credit to Micro, Small, and Medium Enterprises (MSMEs) by commercial banks in Indonesia over the 2014–2023 period.

The findings reveal that:

- **ROA** and **LDR** have no significant effect on MSME credit distribution, suggesting that profitability and liquidity alone do not determine a bank's willingness to lend to MSMEs.
- **NIM** has a **significant negative effect**, indicating that higher interest margins may discourage lending to MSMEs, possibly due to increased borrowing costs or preference for more profitable lending segments. An increase in non-performing loans may lead to a decline in the Net Interest Margin (NIM), potentially resulting in a negative NIM (Nguyen, 2023)
- **CAR** has a **significant positive effect**, confirming that banks with stronger capital buffers are more likely to expand credit to MSMEs. Consistent with findings from a study in Kenya on the determinants of MSME lending by commercial banks, the results affirm that the Capital Adequacy Ratio (CAR) significantly influences the distribution of credit to MSMEs (Haritone & Mirie, 2016)

These results imply that while strong capital adequacy supports credit expansion to MSMEs, an excessive focus on profitability—reflected in a high NIM—may unintentionally limit MSME financing. Therefore, banks and regulators need to balance financial performance with inclusive financing strategies to ensure that MSMEs, which play a vital role in the national economy, have better access to credit.

Given these findings, commercial banks are encouraged to recalibrate their intermediation strategies by improving interest rate structures that do not disproportionately burden MSME borrowers. Enhancing lending frameworks to align profitability with inclusive financing objectives can help prevent excessive reliance on high-margin segments and better serve underbanked sectors.

Regulators such as OJK and Bank Indonesia may consider policies that incentivize MSME lending, particularly for banks with high capital adequacy. Strengthening the MSME ecosystem—through credit guarantees, financial education, and access to credit information—may also improve bankability and reduce perceived lending risk.

Policymakers should continue fostering a balanced environment in which financial stability and inclusive growth go hand in hand, ensuring that MSMEs, as key drivers of economic resilience, are not left behind in national credit strategies.

In conclusion, enhancing MSME access to financing requires not only sound internal bank performance but also a strategic alignment of bank policies with national economic goals. This includes fostering a supportive ecosystem, improving creditworthiness among MSMEs, and encouraging banks to adopt risk-mitigation frameworks that do not penalize small business lending.

Equation

The multiple linear regression model used in this study is formulated as follows:

$$1. \quad Y = \beta_0 + \beta_1ROA + \beta_2LDR + \beta_3NIM + \beta_4CAR + \varepsilon \quad (1)$$

Figures and Tables

Descriptive Statistics of Research Variables

Table 1. Descriptive Statistics of Research Variables

Variable	Minimum	Maximum	Mean	Standard Deviation
ROA (%)	0,42	3,25	1,85	0,74
LDR (%)	65,10	94,50	78,30	8,15
NIM (%)	3,10	7,65	5,20	1,05
CAR (%)	12,00	24,85	18,45	3,68
MSME Credit (Billion IDR)	550.000	1.200.000	875.000	178.000

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