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IMPACT OF PRIME LENDING RATE, CER, AND LDR ON NPM OF KBMI 3 BANKING INSTITUTIONS IN INDONESIA DURING COVID-19.

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Abstract

This study investigates the impact of the Prime Lending Rate, Cost Efficiency Ratio (CER), and Loan to Deposit Ratio (LDR) on the Net Profit Margin (NPM) of Indonesian KBMI 3 banks during the 2020–2022 period, a time characterized by heightened financial volatility due to the COVID-19 pandemic. The research employs panel data regression to assess how these macro-financial indicators influence bank profitability amid disrupted economic conditions. The empirical findings reveal that among the three variables, only the Cost Efficiency Ratio has a statistically significant effect on Net Profit Margin. In contrast, the Prime Lending Rate and Loan to Deposit Ratio do not exhibit meaningful influence. These findings highlight the pivotal role of operational efficiency in maintaining profitability to safeguard financial performance amid economic volatility. As such, banks are advised to focus on optimizing their cost structures and enhancing resource allocation efficiency to remain resilient and competitive in an uncertain macroeconomic environment.

Keywords: *prime lending rate, cost efficiency ratio, loan to deposit ratio, net profit margin, KBMI 3.*

INTRODUCTION

The banking sector plays a crucial role in Indonesia's economy, serving as the main engine for credit distribution and mobilization of public funds. Referring to Law No. 10 of 1998, a bank is defined as a business entity that collects funds from the public and redistributes them in the form of credit or other financial services.

Between 2020 and 2022, Indonesia faced significant economic challenges due to the impact of the COVID-19 pandemic. These pressures not only disrupted macroeconomic stability but also directly affected business activities and the financial performance of the banking sector. As institutions that play a central role in maintaining economic continuity, several banks experienced a decline in financial performance, as reflected in the decreasing Net Profit Margin (NPM) of banks such as Bank Mayapada, Bank Amar, and Bank Aladin Syariah.

Net Profit Margin, as a key indicator of profitability, reflects how efficiently a bank manages its revenues and expenses (Zahrul & Qi Mangku, 2022). Understanding the factors behind the decline in NPM is essential to gaining insight into financial dynamics and risk management strategies within the banking sector.

The decline in Net Profit Margin during this period may indicate a range of challenges faced by banks, including macroeconomic variables such as interest rates, which influence the determination of banks' prime lending rates and, consequently, affect NPM directly or indirectly (Syarifa Nasution et al., 2023). Operational and non-operational income and expenses also play significant roles in determining profitability, with operational costs considered a crucial factor affecting banking efficiency (Wulandari Bayu et al., 2021). Hence, Net Profit Margin is influenced not only by internal bank policies but also by broader economic conditions.

In addition to operational factors, financial ratios such as the Loan to Deposit Ratio (LDR) are believed to have a substantial correlation with net profit margins. LDR, alongside interest rates, is a key determinant in influencing profitability and deposit volume in Indonesia's conventional banking sector. Proper adjustment of LDR can support the optimization of a bank's Net Profit Margin (Riadi & Yonatan, 2023). Therefore, effective management of such financial ratios is crucial in navigating macroeconomic challenges. A comprehensive understanding of these variables will contribute significantly to formulating strategies aimed at improving the Net Profit Margin of Indonesian banks.

This study specifically focuses on the KBMI 3 group of banks, namely financial institutions with a core capital ranging between IDR 14 trillion and IDR 70 trillion. The KBMI (Commercial Bank Business Grouping) classification was introduced by the Financial Services Authority (Otoritas Jasa Keuangan/OJK) in 2021, replacing the previous BUKU classification system. Although this classification was only officially adopted in 2021, the study selects banks that were already categorized as KBMI 3 at the outset of its implementation. The selected sample comprises six banks: Maybank, Bank Permata, Bank DBS, HSBC, Bank BTN, and Bank Mega.

Banks within the KBMI 3 group generally possess strong financial capacity, are in the process of building operational efficiency and competitiveness, and tend to be more adaptive to policy changes and economic fluctuations. Moreover, the business models of KBMI 3 banks exhibit a high degree of variability in operational strategies. This is evident from the diverse approaches in risk management, interest rate setting, and liquidity management across banks within this group, reflecting each bank's efforts to pursue operational efficiency and market expansion.

Furthermore, KBMI 3 banks, which are currently in a transitional phase, are considered ideal for assessing changes in profitability, particularly in the context of adjustments in lending interest rates and capital efficiency. This transitional phase enables researchers to observe direct impacts on profitability effects that may not be as visible in smaller banks (KBMI 1 and 2) or in more established and stable institutions such as those in KBMI 4. Therefore, the diversity of characteristics and strategic dynamics within the KBMI 3 group makes this group a relevant and representative object of study in evaluating the relationship between prime lending rates, operational efficiency, and banking profitability in Indonesia (Otoritas Jasa Keuangan, 2023; Trisnawati & Alfayed, 2024).

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

The researcher has conducted a comprehensive review of previous studies related to the influence of macro financial variables on the Net Profit Margin (NPM) of banking institutions. In line with the findings of Riadi and Yonatan (2023), who emphasized the critical role of the Loan to Deposit Ratio (LDR) and the prime lending rate in shaping bank profitability, prior research by Syarifa Nasution, Syafii, and Naomi Sitompul (2023) also confirmed the significant impact of macroeconomic factors on the profitability of commercial banks in Indonesia. These findings highlight a strong correlation between LDR, interest rates, and NPM, underscoring the importance of strategic financial ratio management to support profitability enhancement.

Furthermore, Khalifaturofi'ah (2022) discussed cost efficiency within the banking sector, offering additional insights that the optimization of cost structures is a complementary factor in improving NPM. The investigation into cost efficiency thresholds reinforces the importance of holistic managerial strategies, given the interconnected nature of financial elements in determining final profit outcomes. Integrating the findings from these studies, it becomes clear that expertise in managing LDR, interest rates, and cost efficiency plays an essential role in strengthening banking sector profitability.

This research, therefore, aims to deepen the understanding of the interrelationship between these variables and their impact on Net Profit Margin. The study by Gregorius Ken and Linda Santioso (2022) on the determinants of banking profitability on the Indonesia Stock Exchange (IDX), as well as the analysis by Hidayanty and Julia (2023) regarding financial ratios, show that previous works often emphasize different contextual focuses some centering on internal parameters, while others explore external variables. These thematic differences form a crucial foundation for this research, which seeks to develop a more comprehensive understanding of the integration between financial ratios such as the Prime Lending Rate, Loan to Deposit Ratio, and Cost Efficiency Ratio, in relation to NPM during the 2020–2022 period.

This study intends to address existing knowledge gaps by providing a more focused and up-to-date analysis in line with the current economic landscape. By synthesizing and expanding on the available literature, the research aims to build a new, context specific argument to support the development of effective strategies for improving profitability within the banking sector.

The use of financial ratios such as the Prime Lending Rate, Loan to Deposit Ratio (LDR), and Cost Efficiency Ratio in this research serves as analytical instruments to identify their influence on the Net Profit Margin (NPM) of banking institutions during the 2020–2022 period. The prime lending rate is a significant variable as it directly affects borrowing costs and, consequently, the interest income earned by banks. Even minor fluctuations in interest rates can cause substantial shifts in profitability. The Loan to Deposit Ratio, on the other hand, measures how effectively a bank allocates collected deposits into loans, which in the long term determines liquidity and the bank's ability to generate income from productive assets. The link between LDR and NPM is thus crucial in assessing the extent to which loan disbursement aggressiveness can be optimized without jeopardizing financial stability.

In addition, the Cost Efficiency Ratio is a primary indicator of a bank's operational efficiency in managing non-productive expenses, ensuring that operational costs do not place undue pressure on profit margins. The combination of these variables offers deep insights into the financial dynamics operating within a competitive and constantly evolving banking environment. Therefore, it is important to holistically consider the interrelations among these factors when analyzing the potential for maximizing bank profitability.

In examining the extent to which the Prime Lending Rate, Cost Efficiency Ratio, and Loan to Deposit Ratio affect the Net Profit Margin (NPM) of Indonesian banks during 2020–2022, various potential relationships and implications can be explored. Firstly, the Prime Lending Rate is likely to have the most significant impact, as even small changes in interest rates can lead to dramatic shifts in loan costs and interest income, thereby directly influencing bank profitability. Secondly, the Loan to Deposit Ratio plays a vital role in ensuring the effective use of funds, as it indicates the level of optimization in allocating depositor funds into loans—a factor that is crucial not only for liquidity but also for the bank's ability to earn income from its productive assets. An optimal LDR can potentially enhance NPM if the bank is able to balance credit demand satisfaction without compromising financial stability.

Moreover, the Cost Efficiency Ratio is a critical determinant of a bank's operational efficiency in reducing unproductive costs; improved cost efficiency tends to raise NPM due to reduced operational burdens. Given the dynamic nature of the market and increasing competitive pressure, the synergy between these factors not only allows banks to maintain their competitive edge but also enhances their strategic flexibility in capitalizing on emerging profitability opportunities. Therefore, a thorough and in-depth analysis of the interaction between the Prime Lending Rate, Cost Efficiency Ratio, and Loan to Deposit Ratio is not only pivotal for optimizing NPM but also serves as a foundational basis for developing more adaptive and responsive operational strategies and banking policies in response to external environmental changes.

Prime Lending Rate

Interest rates can be defined as the cost paid for the use of investment funds (Boediono, 2014). The Prime Lending Rate (PLR), which serves as a reference for financial institutions across Indonesia, is determined by Bank Indonesia and is also known as the BI Rate. This benchmark plays a crucial role in setting both lending and deposit interest rates for customers. When Bank Indonesia raises the BI Rate, commercial banks are generally expected to adjust by increasing their interest rates, and vice versa.

A study by Nadhira and Syafii (2023) found that the Prime Lending Rate has a positive and significant effect on the profitability of commercial banks in Indonesia. This suggests that an increase in interest rates tends to attract more deposits, thereby improving bank profitability.

Cost Efficiency Ratio

Cost Efficiency Ratio (CER) is an indicator of operational efficiency that compares a bank's operating expenses to its operating income. Research on operational efficiency emphasizes the importance of effective cost management in enhancing company profitability. According to Subrini et al. (2020), operational efficiency is a critical factor in ensuring long-term sustainability, profitability, and productivity in the banking sector.

Subrini and Masyhuri (2020) found that the Cost Efficiency Ratio (CER) has a negative and significant impact on bank profitability, as measured by Return on Assets (ROA) and Return on Equity (ROE). Banks that are able to control their operating costs efficiently are more likely to improve their profitability and maintain financial stability.

Loan to Deposit Ratio

Loan to Deposit Ratio (LDR) measures the proportion of loans disbursed by a bank compared to the deposits it collects. Royhan and Lita (2022) note that credit distribution carries inherent risk due to the potential for losses from non-performing loans. Furthermore, O'Connell (2023) argues that a lower proportion of assets funded by deposits tends to enhance overall profitability.

Satria and Wibowo (2021) confirmed that a rise in LDR, within an optimal range, has a positive correlation with Net Profit Margin (NPM). However, if LDR exceeds risk tolerance thresholds, it may negatively affect financial performance.

Net Profit Margin

Net Profit Margin (NPM) is a financial ratio that reflects a bank's effectiveness in generating net income from its total operating revenues. Kasmir (2019) explains that NPM indicates how efficiently a bank manages its income and expenses, where a higher NPM reflects better profitability.Riyadi (2021) identifies multiple factors influencing NPM, including operational costs, interest income, and risk management practices. According to Harmono (2020), banking policies in managing productive assets—such as credit allocation and investment in financial instruments—also play a key role in determining NPM.

Moreover, Pratama and Wibowo (2022) emphasize that NPM is a vital measure for assessing banking financial performance, particularly in response to economic challenges like interest rate fluctuations and liquidity risks. Therefore, banks that improve operational efficiency and optimize asset management strategies are better positioned to maintain healthy NPM levels and strengthen their competitiveness.

Research Questions

Based on the background described above, the research questions formulated in this study are as follows:

1. How does the Prime Lending Rate affect the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period?

2. How does the Cost Efficiency Ratio affect the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period?
3. How does the Loan to Deposit Ratio affect the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period?
4. How do the Prime Lending Rate, Cost Efficiency Ratio, and Loan to Deposit Ratio simultaneously affect the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period?

Research Variables

- ➢ Independent Variables:
  - Prime Lending Rate
  - Cost Efficiency Ratio
  - Loan to Deposit Ratio

- ➢ Dependent Variable:
  - Net Profit Margin

Research Hypotheses

The hypotheses proposed in this study are as follows:

1. *H0: The Prime Lending Rate has no significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.*

   H1: The Prime Lending Rate has a significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.

2. *H0: The Cost Efficiency Ratio has no significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.*

   H1: The Cost Efficiency Ratio has a significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.

3. *H0: The Loan to Deposit Ratio has no significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.*

   H1: The Loan to Deposit Ratio has a significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.

4. *H0: The Prime Lending Rate, Cost Efficiency Ratio, and Loan to Deposit Ratio collectively have no significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.*

   H1: The Prime Lending Rate, Cost Efficiency Ratio, and Loan to Deposit Ratio collectively have a significant effect on the Net Profit Margin of KBMI 3 banking institutions in Indonesia during the COVID-19 pandemic period.

RESEARCH METHODS

This study employs a quantitative approach to examine the causal relationship between Prime Lending Rate, Cost Efficiency Ratio (CER), and Loan to Deposit Ratio (LDR) as independent variables, and Net Profit Margin (NPM) as the dependent variable. The ratio data were obtained from the annual reports of KBMI 3 banking institutions for the 2020–2022 period, as well as annual publications issued by the Indonesian Financial Services Authority (OJK). The research population includes conventional commercial banks in Indonesia, with a sample comprising KBMI 3-qualified banks: Bank Permata, Bank Tabungan Negara, Maybank, Bank DBS, Bank Mega, and Bank HSBC.

The analysis technique applied is panel data regression, as the dataset combines both cross sectional (entity) and time-series (2020–2022) dimensions. The independent variables, Prime Lending Rate, Cost Efficiency Ratio, and Loan to Debt Ratio, are quantitative in nature and are assumed to exert a simultaneous influence on the dependent variable, Net Profit Margin. Accordingly, the study aims to identify the simultaneous relationship between the independent and dependent variables through regression modeling, measuring the impact of each independent variable (based on regression coefficients) and the explanatory power of the overall model (via the R-squared value).

To support the analysis, this study utilizes EViews 12 Student Version, an econometric software used for performing panel data regression and statistical diagnostics. The use of EViews enhances the accuracy and efficiency of the estimation process. Moreover, panel data regression offers advantages in controlling for unobserved heterogeneity across entities, such as the unique characteristics of each bank that may affect NPM. The methodological steps include Estimation of the Panel Data Regression Model, Assumption Testing (Multicollinearity and Heteroskedasticity), and Hypothesis Testing (Basuki, 2021).

RESULTS AND DISCUSSION

Basic Lending Rate Has a Negative Correlation with Net Profit Margin

The regression analysis shows that the Basic Lending Rate is negatively correlated but does not have a significant impact on the Net Profit Margin (NPM) of KBMI 3 banks in Indonesia during the 2020–2022 period. This finding indicates that as the basic lending rate increases, banks tend to experience a decline in their NPM. However, the impact of the basic lending rate on banking profitability is not statistically strong enough to indicate a significant relationship.

These results can be interpreted in the context of the economic conditions during the COVID-19 pandemic, which caused a significant slowdown in economic activity. This slowdown reduced credit demand from both households and businesses. When the lending rate increases, borrowing costs also rise, discouraging the uptake of credit. At the same time, banks faced a higher risk of default as borrowers struggled to meet repayment obligations under economic pressure. Although the basic lending rate rose, the potential interest income was not maximized due to declining credit disbursement and increasing loan-loss provisions. This condition led to a reduced NPM despite higher lending rates.

The insignificant statistical relationship can also be attributed to the adaptability of KBMI 3 banks, which were actively involved in restructuring programs and benefited from supportive government and Financial Services Authority (OJK) policies. This finding contradicts the study by Nadhira & Syafii (2023), which found a positive and significant influence of the basic lending rate on the profitability of commercial banks in Indonesia. The discrepancy may be due to varying bank strategies in managing income structures, reducing reliance on interest-based income as the sole driver of profitability.

Cost Efficiency Ratio Has a Negative and Significant Effect on Net Profit Margin

The results indicate that the Cost Efficiency Ratio (CER) is negatively correlated with and significantly influences NPM. This reflects the critical role of operational efficiency in sustaining profitability during economic downturns like the COVID-19 pandemic. In such conditions, banks experienced reduced interest income and increased credit risk. Therefore, controlling operational costs became essential for maintaining financial performance.

A high CER indicates a higher proportion of operational expenses relative to operating income, signaling inefficiency and resulting in lower NPM. KBMI 3 banks that implemented cost-efficiency strategies, such as digital service adoption, reduction in physical branch operations, and workforce optimization were able to reduce their CER and improve profit margins. Thus, cost-saving measures directly contributed to profitability improvement, explaining the negative and significant relationship between CER and NPM.

This finding aligns with Subrini and Masyhuri's research, which found that operational efficiency negatively and significantly affects bank profitability. Similarly, Khalifaturofi'ah (2022) also emphasized the importance of cost structure optimization in improving Net Profit Margin.

Loan to Deposit Ratio Has a Negative Correlation with Net Profit Margin

The regression results reveal that the Loan-to-Deposit Ratio (LDR) is negatively correlated with NPM but has no significant effect during the pandemic period. This suggests that increasing credit disbursement did not always translate into improved profitability. During the pandemic, unstable economic conditions led to higher credit default risks, as many borrowers lost repayment capacity.

KBMI 3 banks with high LDR indicating a larger portion of funds allocated to loans relative to third-party funds faced greater credit risk when defaults increased. Hence, even with aggressive lending strategies, the rise in non-performing loans (NPLs) offset potential income gains and pressured profit margins.

Moreover, banks began diversifying their income sources during the pandemic by shifting to non-interest income such as digital banking services and fee-based revenues. This shift reduced the relative impact of LDR on profitability. Therefore, the negative but insignificant relationship confirms that, during the pandemic, factors like asset quality, operational efficiency, and revenue diversification played a more crucial role in influencing NPM than credit disbursement levels alone.

This result contrasts with Riadi & Yonatan (2023), who found a significant influence of LDR on NPM. However, it is consistent with Satria and Wibowo (2021), who stated that while an optimal increase in LDR may enhance NPM, excessive LDR levels could raise default risks and suppress bank profitability.

CONCLUSION

Based on the research findings, only the Cost Efficiency Ratio (CER) has a significant effect on bank profitability, while the Basic Lending Rate and Loan to Deposit Ratio (LDR) do not show meaningful impacts on financial performance. This indicates that operational cost efficiency is the primary factor influencing bank profitability in Indonesia, particularly during periods of external challenges such as the COVID-19 pandemic. Banks that can optimize operational expenses are more likely to improve profitability and remain resilient amid market uncertainties. The insignificant effect of the Basic Lending Rate suggests that banks have developed strategies to maintain stable income despite changes in interest rate policies, while the insignificant impact of LDR implies that credit expansion alone does not enhance profitability without effective risk management. The practical implication is that banks should prioritize cost efficiency and strengthen risk management strategies. However, this study is limited to KBMI 3 banks and the 2020–2022 period, and does not account for broader macroeconomic variables. Future research should explore cost structure differences between banks of various sizes, include additional economic indicators, and examine long-term effects beyond the pandemic, particularly the role of digital transformation in enhancing efficiency and profitability.

Figures and Tables

Table 1. Chow Test Result

Effects Test	Statistic	d.f.	Prob.
Cross-section F	19.213704	(5.9)	0.0001
Cross-section Chi-square	44.232986	5	0.0001

Source: Data Processed by researchers

Table 2. Hausman Test Result

Test Summary	Chis-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	2.331651	3	0.5065

Source: Data Processed by researchers

Table 3. Lagrange Multiplier Test Result

	Cross-section	Test Hypothesis Time	Both
Cross-section Random	12.87960 (0.0003)	1.592601 (0.2070)	14.47220 (0.0001)

Source: Data Processed by researchers

Table 4. Robust Standard Errors Test Result

Standard error and t-statistic probabilities adjusted for clustering

Variable	Coefficient	Std.Error	t-statistic	Prob.
C	118.9753	3.119380	38.14070	0.0007
X1	-0.292269	0.212526	-1.375216	0.3028
X2	-1.064121	0.065928	-16.14057	0.0038
X3	-0.134252	0.087010	-1.542950	0.2628

Source: Data Processed by researchers

Table 5. Multicollinearity Test Result

	X1	X2	X3
X1	1.000000	-0.516021	-0.392234
X2	-0.516021	1.000000	0.650997
X3	-0.392234	0.650997	1.000000

Source: Data Processed by researchers

Table 6. T Test Result

Variable	Coefficient	Std.Error	t-Statistic	Prob.
X1	118.9753	3.119380	38.14070	0.0007
X2	-0.292269	0.212526	-1.375216	0.3028
X3	-1.064121	0.065928	-16.14057	0.0038
	-0.134252	0.087010	-1.542950	0.2628

Source: Data Processed by researchers

Table 7. F Test Result

R-squared	0.942451	Mean dependent var	3.821378
Adjusted R-squared	0.930119	S.D. dependent var	5.955069
S.E. of regression	1.574222	Sum squared resid	34.69443
F-statistic	76.42373	Durbin-Watson stat	2.327019
Prob(F-statistic)	0.000000		

Source: Data Processed by researchers

Table 8. R^2 Test Result

R-squared	0.942451	Mean dependent var	3.821378
Adjusted R-squared	0.930119	S.D. dependent var	5.955069
S.E. of regression	1.574222	Sum squared resid	34.69443
F-statistic	76.42373	Durbin-Watson stat	2.327019
Prob(F-statistic)	0.000000		

Source: Data Processed by researchers

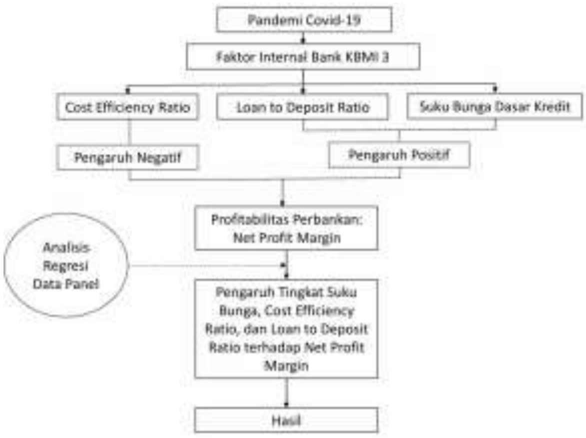

Figure 1. Conceptual Framework

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