

Financial Determinants of Profitability in State-Owned Banks: Evidence from Indonesia's Banking Sector

Gustaf Naufan Febrianto , Angga Dutahatmaja

Faculty of Economics and Business, Universitas Agustus Surabaya, Indonesia

Corresponding author Email: gfebrianto@untag-sby.ac.id

ABSTRACT

This study aims to analyze the effect of liquidity, capital adequacy, and cost efficiency on the profitability of State-Owned Banks (BUMN) in Indonesia during the period 2021–2025. The research employed a quantitative approach using secondary data obtained from the annual reports of four state-owned banks, namely Bank Rakyat Indonesia (BRI), Bank Mandiri, Bank Negara Indonesia (BNI), and Bank Tabungan Negara (BTN). The variables examined include Liquidity measured by Loan to Deposit Ratio (LDR), Capital Adequacy measured by Capital Adequacy Ratio (CAR), Cost Efficiency measured by Operational Expenses to Operational Income (BOPO), and Profitability measured by Return on Assets (ROA). Data were analyzed using multiple linear regression with SPSS 29. The results indicate that liquidity has no significant effect on profitability, while capital adequacy has a positive and significant effect on profitability. Cost efficiency shows a negative but insignificant relationship with profitability. Simultaneously, liquidity, capital adequacy, and cost efficiency significantly influence profitability. The model explains 70.5% of the variation in profitability. These findings highlight the importance of maintaining adequate capital structures to improve bank performance and profitability.

Keywords: *Liquidity, Capital Adequacy, Cost Efficiency, Profitability, State-Owned Banks*

1. INTRODUCTION

The banking industry plays a strategic role in supporting economic development through financial intermediation activities. State-Owned Banks (BUMN) are among the most influential financial institutions in Indonesia because they contribute significantly to national credit distribution, asset growth, and financial inclusion programs. During the post-pandemic recovery period of 2021–2025, Indonesian banks faced various challenges, including inflation pressures, global interest rate fluctuations, digital transformation, and increasing competition.

Profitability is an essential indicator of banking performance because it reflects the effectiveness of management in utilizing available resources to generate earnings. Several internal factors are believed to influence profitability, including liquidity, capital adequacy, and cost efficiency.

Liquidity reflects the bank's ability to meet short-term obligations and manage public funds effectively. Capital adequacy represents the bank's capability to absorb potential risks and support business expansion. Meanwhile, cost efficiency indicates management effectiveness in controlling operational expenses relative to revenues.

Previous studies have reported inconsistent findings regarding the influence of these factors on profitability. Therefore, this study investigates the effect of liquidity, capital adequacy, and cost efficiency on the profitability of Indonesian state-owned banks during the 2021–2025 period.

2. RESEARCH METHODS

This study uses a quantitative research design. Secondary data were collected from the annual reports of four Indonesian State-Owned Banks, namely Bank Rakyat Indonesia (BRI), Bank Mandiri, Bank Negara Indonesia (BNI), and Bank Tabungan Negara (BTN), covering the period from 2021 to 2025.

The population consists of all state-owned banks listed on the Indonesia Stock Exchange. The sample was selected using purposive sampling techniques, resulting in 20 observations (4 banks × 5 years).

The research variables are defined as follows:

Liquidity (X1) measured by Loan to Deposit Ratio (LDR).

Capital Adequacy (X2) measured by Capital Adequacy Ratio (CAR).

Cost Efficiency (X3) measured by Operational Expenses to Operational Income (BOPO).

Profitability (Y) measured by Return on Assets (ROA).

The multiple linear regression model is formulated as:

$$ROA = \alpha + \beta_1 LDR + \beta_2 CAR + \beta_3 BOPO + e$$

Data analysis includes descriptive statistics, classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation), and hypothesis testing using t-tests, F-tests, and coefficient of determination (R^2).

3. RESULTS AND DISCUSSION

3.1 Descriptive Statistics

The descriptive statistics show that liquidity (LDR) has an average value of 138.229%, indicating a relatively high credit distribution compared to deposits. Capital adequacy (CAR) averages 20.959%, which is considerably above the minimum regulatory requirement. Cost efficiency (BOPO) records an average of 71.59%, while profitability (ROA) averages 1.7765%.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev
Liquidity (LDR)	138.229	48.404
Capital Adequacy (CAR)	20.959	2.080
Cost Efficiency (BOPO)	71.590	7.006
Profitability (ROA)	1.776	0.803

3.2 Classical Assumption Tests

The Kolmogorov-Smirnov test produced a significance value of 0.200 (>0.05), indicating normally distributed residuals. Multicollinearity testing showed VIF values below 10 and tolerance values above 0.10. The Glejser test indicated no heteroscedasticity problems, while the Durbin-Watson value of 1.728 confirmed the absence of autocorrelation. Therefore, the regression model satisfies all classical assumptions.

3.3 Multiple Regression Analysis

The regression equation obtained is:

$$ROA = 1.627 - 0.004LDR + 0.175CAR - 0.041BOPO$$

The coefficient of liquidity is negative (-0.004), indicating an inverse relationship with profitability. Capital adequacy has a positive coefficient (0.175), while cost efficiency exhibits a negative coefficient (-0.041).

3.4 Partial Hypothesis Testing

Effect of Liquidity on Profitability

Liquidity (LDR) has a significance value of 0.167 (>0.05), indicating no significant effect on profitability. Although higher credit distribution may increase revenue opportunities, it may also expose banks to greater credit risk. Consequently, liquidity alone does not significantly determine profitability.

Effect of Capital Adequacy on Profitability

Capital adequacy (CAR) significantly affects profitability with a significance value of 0.008 (<0.05). A higher CAR enhances the bank's ability to absorb risks, expand operations, and improve public confidence. This finding confirms that capital strength is a major determinant of profitability.

Effect of Cost Efficiency on Profitability

Cost efficiency (BOPO) has a significance value of 0.051 (>0.05), indicating no significant effect on profitability. Although the relationship is negative, increased operational costs during the study period were largely associated with digital transformation investments and service improvements, which potentially generate long-term benefits.

3.5 Simultaneous Testing

The F-test result shows an F-value of 12.748 with a significance level below 0.001. This indicates that liquidity, capital adequacy, and cost efficiency simultaneously have a significant effect on profitability.

The coefficient of determination (R^2) is 0.705, suggesting that 70.5% of profitability variation can be explained by the three independent variables, while the remaining 29.5% is influenced by other factors.

The findings suggest that profitability in state-owned banks is not determined by a single financial indicator but rather by the interaction of liquidity management, capital strength, and operational efficiency.

4. CONCLUSION

This study examined the effect of liquidity, capital adequacy, and cost efficiency on the profitability of Indonesian state-owned banks during 2021–2025.

The findings reveal that liquidity does not significantly influence profitability, indicating that credit expansion alone is insufficient to improve earnings performance. Capital adequacy has a positive and significant effect on profitability, demonstrating the importance of strong capital structures in supporting banking operations and risk management. Cost efficiency exhibits a negative but insignificant effect on profitability.

Simultaneously, liquidity, capital adequacy, and cost efficiency significantly influence profitability. The model explains 70.5% of the variation in profitability, highlighting the importance of integrated financial management strategies in enhancing banking performance.

Future research is recommended to incorporate additional variables such as credit risk, asset quality, non-performing loans, and macroeconomic indicators to provide a broader understanding of banking profitability determinants.

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