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THE EFFECT OF CAPITAL ADEQUACY AND OPERATIONAL EFFICIENCY ON COMMUNITY WELFARE THROUGH PROFITABILITY (ROA) AS AN INTERVENING VARIABLE AT PT BANK NTT

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ABSTRACT

This study investigates the influence of capital adequacy and operational efficiency on community welfare through profitability (Return on Assets/ROA) as a mediating variable in PT Bank NTT during the period of 2019–2023. Using a quantitative, associative-causal research approach, the study employs secondary quarterly data from the bank's financial reports and the Human Development Index (HDI) published by the national statistics agency. Variables include Capital Adequacy Ratio (CAR), Operating Expenses to Operating Income Ratio (BOPO), ROA, and HDI. The results indicate that CAR does not have a significant effect on ROA, whereas BOPO has a significant negative impact on ROA. Furthermore, ROA has a significant positive effect on HDI, implying its strategic role in improving community welfare. The findings highlight the importance of operational efficiency and profitability in enhancing the bank's contribution to regional development.

Keywords: Capital Adequacy Ratio, Operational Efficiency, ROA, Profitability, Human Development Index.

INTRODUCTION

In the modern economy, banks play a critical role not only as financial intermediaries but also as catalysts for regional development. PT Bank NTT, a regional development bank in East Nusa Tenggara, Indonesia, serves as a vital agent in driving economic progress by channeling funds to productive sectors. The effectiveness of this role depends on the bank's financial health, particularly capital adequacy and operational efficiency.

Capital Adequacy Ratio (CAR) is a critical measure of a bank's financial strength, reflecting its ability to absorb potential losses. Operational efficiency, measured by the Operating Expenses to Operating Income Ratio (BOPO), evaluates the bank's capability to manage costs effectively. Both factors are essential in determining profitability, which in turn can influence the broader community's welfare through the bank's lending capacity and support for economic activities.

This study explores the relationships between CAR, BOPO, ROA, and Human Development Index (HDI) as a proxy for community welfare. It aims to provide empirical evidence on how financial performance impacts the community and offers strategic insights for enhancing the developmental role of regional banks.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Capital Adequacy Ratio (CAR) reflects a bank’s ability to absorb losses and remain solvent. Previous studies (e.g., Ketut & Agung, 2019; Sudana & Marlina, 2019) find that CAR has a positive impact on profitability (ROA), though some researchers like Siti Fatimah (2023) reported insignificant effects. Operational Efficiency (BOPO) is inversely related to profitability. A higher BOPO indicates higher costs, which can erode earnings. Numerous studies (e.g., Nana, 2022; Ketut & Agung, 2019) support a negative and significant relationship between BOPO and ROA.

Profitability (ROA) is a key financial indicator that reflects the bank’s ability to generate returns from its assets. High ROA allows banks to support local development through expanded lending and social programs. Community Welfare (HDI) is a multidimensional indicator encompassing health, education, and income. Banking performance, particularly ROA, may indirectly influence HDI by supporting growth-enabling activities.

Capital Adequacy Ratio (CAR) is an indicator used to assess a bank's fulfillment of its capital requirements. CAR measures the extent to which the bank’s risk-weighted assets—such as loans, investments, and obligations to other banks—can be financed by the bank’s own capital. In addition, other funding sources such as public deposits and external borrowings may also support the bank’s asset financing.

$$\text{CAR} = \frac{\text{Modal Bank}}{\text{Aktiva Tertimbang Menurut Risiko (ATMR)}} \text{ X } 100\%$$

Operating Expenses to Operating Income Ratio (BOPO) is an indicator that reflects a bank's operational capability and efficiency. BOPO is used to measure the level of efficiency and the bank’s ability to carry out its operational activities effectively.

$$\text{BOPO} = \frac{\text{Beban Operasional}}{\text{Pendapatan Operasional}} \text{ X } 100\%$$

Hypotheses:
H1: CAR has a significant effect on ROA.
H2: BOPO has a significant effect on ROA.
H3: ROA has a significant effect on HDI.
H4: CAR and BOPO simultaneously affect ROA.
H5: CAR and BOPO indirectly affect HDI through ROA.

RESEARCH METHODS

Research Design: This study uses quantitative associative-causal design. Data: Secondary quarterly data from 2019 to 2023 was collected. Financial indicators (CAR, BOPO, ROA) were obtained from PT Bank NTT’s financial reports, while HDI data was sourced from Indonesia’s Central Statistics Agency (BPS).

Variables:
- Independent: CAR, BOPO
- Mediating: ROA
- Dependent: HDI

Measurement:
- CAR = Capital / Risk-Weighted Assets
- BOPO = Operating Expenses / Operating Income
- ROA = Net Income / Total Assets
- HDI = Composite index of education, health, and living standards

Analysis Method: Multiple linear regression and path analysis were employed. Sobel test was used to assess the significance of the mediating role of ROA.

RESULTS AND DISCUSSION

1. Descriptive Analysis
   ROA at PT Bank NTT has shown a downward trend from 2.98% in 2017 to 0.65% in 2023, indicating weakening profitability. CAR remained stable within regulatory standards, while BOPO was consistently high, implying operational inefficiencies.

2. Regression Analysis
   - CAR → ROA: Not significant ($p > 0.05$)
   - BOPO → ROA: Significant negative effect ($p < 0.05$)
   - ROA → HDI: Significant positive effect ($p < 0.05$)
   - CAR & BOPO → ROA: Significant simultaneously (F-test $p < 0.05$)
   - Sobel Test: ROA significantly mediates the effect of BOPO on HDI, but not for CAR.

3. Interpretation
   High operating costs are the main barrier to improved profitability at PT Bank NTT. While CAR indicates strong capital buffers, it does not directly drive profitability. ROA plays a critical role in mediating the influence of financial variables on community development outcomes. This highlights the necessity of strengthening operational management to enhance financial returns, which in turn supports broader development objectives.

CONCLUSION

This study reveals that operational efficiency significantly influences the profitability of PT Bank NTT, which in turn affects community welfare as measured by HDI. Capital adequacy, while essential for financial stability, does not directly affect profitability in the short term. The findings underscore the importance of cost control and strategic asset management to enhance the bank's contribution to regional development.

Implications:
- Management must prioritize efficiency improvements to optimize financial performance.
- Policymakers should support regional banks with capacity-building initiatives.
- Future research should consider broader macroeconomic variables and extend to other regional banks for comparison.

BIBLIOGRAPHY

Berger, A. N., & Bouwman, C. H. (2013). How does capital affect bank performance during financial crises? Journal of Financial Economics, 109(1), 146–176. https://doi.org/10.1016/j.jfineco.2013.02.008

Ketut, I. A., & Agung, A. A. (2019). The effect of capital adequacy, risk, and efficiency on profitability. Jurnal Keuangan dan Perbankan, 23(2), 45–55.

Maha Yoga, I. G. A. (2024). Determinants of Welfare Based on Human Development Index (HDI) in Bali Province. Jurnal Ekonomi dan Pembangunan Daerah, 12(1), 33–42.

Nana, R. (2022). Operational Efficiency and Its Impact on Profitability: A Study on Islamic Banks. Jurnal Ekonomi Syariah, 14(2), 67–75.

Nurkhalifa, A. et al. (2023). Capital Adequacy and Operational Efficiency: Effects on Bank Financial Performance. Jurnal Akuntansi dan Keuangan Indonesia, 18(1), 56–70.

Siti Fatimah, N. (2023). The Effect of CAR, BOPO, and FDR on Profitability in Sharia Banks. Jurnal Ilmiah Ekonomi Islam, 15(3), 109–120.

Sudana, I. M., & Marlina, L. (2019). Banking Performance and Social Impact: The Role of Financial Indicators. Jurnal Manajemen dan Bisnis, 9(1), 21–30.