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Analysis of Asset Quality and Capital Adequacy on Bank Profitability

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Abstract. This study aims to analyze the effect of asset quality and capital adequacy on the profitability of Mandiri Bank for the period 2017-2023. The analysis was carried out using multiple linear regression methods. Asset quality is measured by Non-Performing Loan (NPL) and capital adequacy by Capital Adequacy Ratio (CAR), while profitability is measured using Return on Assets (ROA). The results of the analysis show that NPL has a negative and insignificant effect on ROA, with t-test results showing a coefficient of -0.145 and a significance value of 0.409. In contrast, CAR has a positive and significant effect on ROA with a coefficient of 0.515 and a significance of 0.006. Simultaneously, the F-test shows that both variables, NPL and CAR, together have a significant effect on profitability, with an F count of 4.556 and a significance of 0.021. The urgency of this study lies in the importance of maintaining asset quality and capital adequacy in increasing profitability. Poor asset quality can reduce profitability, while good capital adequacy can increase bank resilience and profitability. This study provides practical implications for banking management in optimizing asset and capital management to achieve higher profitability, and can be the basis for internal bank policies to minimize risk and maximize financial performance.

Keywords: Asset Quality; Capital Adequacy; Profitability

INTRODUCTION

The banking sector has an important role as a financial intermediation institution that supports the stability and economic growth of a country. Bank Mandiri, as one of the largest government banks in Indonesia, has a big role in maintaining financial sector stability. Bank Mandiri's success in carrying out its functions effectively and efficiently is reflected in its profitability, which is the main indicator of the bank's health and performance (Sain & Kashiramka, 2023). High profitability shows the ability of bank management to manage assets to generate profits, as well as its ability to face competition and manage risks. Bank profitability is influenced by asset quality and capital adequacy. Asset quality, which can be measured through the Non-Performing Loan (NPL) ratio, reflects the bank's credit health condition, namely the debtor's ability to fulfill its credit obligations. A high NPL ratio indicates high credit risk, which has a negative impact on bank profitability (Umar & Sun, 2018). In addition, capital adequacy as measured through the Capital Adequacy Ratio (CAR) has an influence on the bank's ability to absorb losses and provide confidence to investors and customers (Livoreka & Grajçevci-Livoreka, 2023).

Bank profitability is an important indicator in assessing the financial performance ofa financial institution. In this case, the two main factors that influence profitability are assetquality and capital adequacy. Asset quality reflects a bank's ability to manage credit risk andavoid losses from uncollectible loans (Tahu et al., 2023). On the other hand, capital adequacy shows how well the bank can absorb losses that may occur, as well as maintain the trust of depositors and investors (Tadesse Bogale, 2020).

Based on a survey of existing literature, various previous studies have shown a relationship between asset quality, capital adequacy and bank profitability. For example, research by (Alqahtani et al., 2022; Ghosh, 2024) shows that good asset quality contributes positively to bank profitability. Companies with higher capital adequacy will record positive overall returns during economic shocks and may not collapse because they have adequate capital to absorb losses arising from economic shocks (Li & Qiu, 2022; Okafor et al., 2010; Schuermann, 2020). Most of these studies havelimitations in terms of methodology and data coverage, resulting in inconsistent results. Therefore, this study attempts to overcome these limitations by using broader data and more comprehensive analysis methods.

The banking sector in Indonesia has experienced various significant changes in recent years, including stricter regulations regarding capital adequacy and risk management. The Financial Services Authority (OJK) has implemented various policies to improve asset quality and bank capital adequacy, such as implementing Basel III standards (Anisa & Sutrisno, 2020). Despite these efforts, there are still challenges in achieving optimal profitability. This research will explore how asset quality and capital adequacy can interact with each other and influence bank profitability in Indonesia.

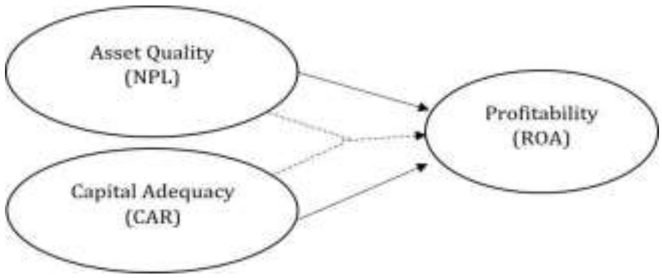
Through this analysis, the author hopes to provide deeper insight into the factors that influence bank profitability, as well as offer recommendations for bank managers in improving their financial performance. By understanding the relationship between asset quality, capital adequacy and profitability, banks can formulate more effective strategies to face challenges in an increasingly competitive market. It is hoped that this research can also contribute to existing literature by providing stronger empirical evidence regarding the influence of these two variables on bank profitability in Indonesia. This research aims to analyze the influence of asset quality and capital adequacy on bank profitability. With this approach, the research is expected to contribute to the financial management literature, especially in understanding the relationship between asset quality, capital adequacy and profitability.

METHOD

This research uses a quantitative approach with a descriptive design which aims to analyzethe influence of asset quality and capital adequacy on Bank Mandiri's profitability. A quantitative approach was chosen to enable objective and systematic analysis of numerical data to evaluate the validity and reliability of research results (Sugiyono, 2019). The data used in this research is secondary data obtained from Bank Mandiri's quarterly financial reports for the 2017–2023 period. Data selection was carried out using a purposive samplingmethod to ensure the relevance of the data to the research objectives. Data sources come from official publications, such as annual reports accessed via the Bank Mandiri and Financial Services Authority (OJK) websites.

The variables in this research consist of asset quality as measured by the Non-Performing Loan (NPL) ratio, capital adequacy as measured by the Capital Adequacy Ratio (CAR), and profitability as measured by Return on Assets (ROA). Asset quality reflects credit risk conditions in banking, which are measured as the percentage of non-performing loans to total credit disbursed. Meanwhile, the Capital Adequacy Ratio (CAR) is used to measure a bank's ability to absorb potential losses and fulfill its financial obligations, which is calculated as a ratio of capital to risk-weighted assets. Profitability, which is the dependent variable in this research, is measured by Return on Assets (ROA) to show the bank's efficiency in generating profits from the total assets it owns.

Figure 1 Conceptual framework



To test the relationship between the independent variables (NPL and CAR) and the dependent variable (ROA), this research uses a multiple linear regression test. Before carrying out the regression analysis, classical assumption tests were also carried out which included tests for normality, multicollinearity, heteroscedasticity and autocorrelation to ensure that the data met the requirements for linear regression analysis (Ghozali, 2018). With this approach, it is hoped that the research results can provide a valid and reliable understanding of the influence of asset quality and capital adequacy on Bank Mandiri's profitability.

RESULTS AND DISCUSSION

Multiple Linear Regression Analysis Test Results

This analysis aims to test whether there is an influence between Asset Quality and Capital Adequacy on Profitability. The following are the results of multiple linear regression analysis.

Tabel 1

Multiple Linear Regression Analysis Test Results Coefficients[a]

		UnstandardizedCoefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-645.693	280.878		-2.299	.030
	Kualitas Aset (NPL)	-16.538	19.707	-.145	-.839	.409
	Kecukupan Modal (CAR)	.411	.138	.515	2.985	.006

a. Dependent Variable: Profitabilitas (ROA)

Source: Secondary Data after SPSS processing, 2024.

This equation shows the relationship between the independent variables, namely Asset Quality (NPL) and Capital Adequacy (CAR) on Profitability (ROA) as the dependent variable. The constant value of −645.693 means that if NPL and CAR are zero, then ROA will be negative at 645.693.

The regression coefficient for NPL is −16,538, which indicates that every 1% increase in NPL, assuming a fixed CAR, will cause a decrease in ROA of 16,538 units. However, this relationship is not statistically significant because the significance value for NPL is greater than 0.05, so the contribution of NPL to ROA in this model cannot be considered convincing. Furthermore, the regression coefficient for CAR is 0.411, which indicates that every 1% increase in CAR, assuming constant NPL, will increase ROA by 0.411 units. This relationship is statistically significant because the significance value for CAR is less than 0.05, which means CAR has a significant positive influence on ROA. In other words, the higher the CAR, the higher the bank's profitability (ROA).

Overall, this equation reflects that CAR has a positive and significant contribution to ROA, while NPL has a negative but insignificant contribution to ROA.

Test Results

The results of the T Test analysis show that Asset Quality as measured by Non-Performing Loans (NPL) has a negative influence on Bank Mandiri's Profitability (ROA). Even though in the T test results table the significance value of NPL is more than 0.05, so it is not significant in this model, economic theory and previous research support that in general, high NPL tends to have a negative effect on ROA. A high NPL reflects poor asset quality because it shows the large number of problem loans the bank has. This condition requires banks to set aside larger reserves for impairment losses (CKPN), thereby reducing bank revenues and profits. Apart from that, a high NPL level also indicates a bank's inability to manage credit risk properly, which can reduce profitability. This finding is in line with the research results of (Kadioglu et al., 2017; Salike & Ao, 2018; Swamy, 2017) which also found a significant negative relationship between asset quality and bank profitability. However, these results are different from the findings of (Thornton & Di Tommaso, 2021) who found a positive relationship between NPL and profitability. These differences in results may be due to differences in sample characteristics and study periods, where different economic or regulatory factors in the study periods and regions may influence the results.

Furthermore, the results of the T Test analysis show that Capital Adequacy as measured by the Capital Adequacy Ratio (CAR) has a significant positive influence on Bank Mandiri's Profitability (ROA). This is in accordance with the research hypothesis which states that CAR has a positive effect on ROA. A high CAR indicates that the bank has sufficient capital to absorb potential losses and support business expansion. Strong capital allows banks to take greater risks in lending, which has the potential to increase interest income. Apart from that, a high CAR level also increases customer and investor confidence in the bank, which in turn can encourage business growth and bank profitability. This finding is consistent with the research results of (Apau & Sibindi, 2023; Meliza et al., 2024; Tudose et al., 2022) which found that CAR has a significant influence on ROA in banking. However, these results are different from the findings of (Safira & Fatoni, 2023; Tangngisalu et al., 2020) who found a negative effect of CAR on profitability. These differences are most likely caused by sample characteristics and economic conditions in different research periods.

Overall, the findings in this study are largely in line with previous theory and research, especially in terms of the positive influence of CAR on profitability. The differences that emerge with some previous studies highlight the importance of context in the interpretation of results, where differences in sample characteristics, periods, and economic conditions can produce varying results.

Table 2

F Test ResultsANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regressio n	61447.155	2	30723.577	4.556	.021[b]
	Residual	168579.274	25	6743.171		
	Total	230026.429	27			

a. Dependent Variable: Profitabilitas (ROA)
b. Predictors: (Constant), Kecukupan Modal (CAR), Kualitas
Aset (NPL)Sumber:

The results of the analysis show that asset quality (NPL) and capital adequacy (CAR) simultaneously have a significant effect on Bank Mandiri's profitability. This is in accordancewith the research hypothesis which states that NPL and CAR together influence ROA. This finding confirms the importance of effective credit risk management (reflected by low NPL) and good capital management (reflected by adequate CAR) in increasing bank profitability. Bank Mandiri needs to maintain a balance between credit growth to increase income and credit risk control to minimize losses. Apart from that, banks also need to ensure sufficient capital to support business expansion and absorb potential losses. These results are consistent with research by (Ben Abdallah & Bahloul, 2024; Tangngisalu et al., 2020; Tulung et al., 2024) which found the simultaneous influence of CAMEL factors on bank profitability. However, it should be noted that this research uses more variables than this research. Overall, the results of this research emphasize the importance of asset quality management and capital adequacy in increasing Bank Mandiri's profitability. The practical implication is that banks need to continue to improve the quality of credit risk management, strengthen capital, and optimize capital allocation to achieve optimal and sustainable profitability.

Table 3

Coefficient of Determination Test ResultsModel Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	.517[a]	.267	.209	82.11681	1.290

a. Predictors: (Constant), Kecukupan Modal (CAR), Kualitas Aset (NPL)
b. Dependent Variable: Profitabilitas (ROA)

Based on the results of testing the coefficient of determination displayed in the Model Summary Table, several important findings were obtained regarding the influence of the independent variable on the dependent variable in this study. The R value of 0.517 indicates a moderate relationship between Capital Adequacy (CAR) and Asset Quality (NPL) on Profitability (ROA). Furthermore, the R Square (R^2) value of 0.267 indicates that around 26.7% of the variability in ROA can be explained by these two independent variables. This means that this regression model is able to describe 26.7% of changes in Profitability (ROA), while the remainder, namely 73.3%, is explained by other factors not included in this model. Overall, although this model shows that Capital Adequacy (CAR) and Asset Quality (NPL) have an influence on Profitability (ROA), this influence only accounts for a small partof the total variation in ROA. This indicates that there are still other variables outside this model that play a significant role in determining bank profitability. This interpretation opensup opportunities for further research that could identify additional variables that have the potential to improve the accuracy of profitability predictions.

CONCLUSION

Based on the results of the analysis and discussion that has been carried out, it can be concluded that asset quality as measured by Non-Performing Loans (NPL) shows a negativebut not significant influence on Bank Mandiri's profitability (ROA), with a coefficient of -16.538 and a significance value of 0.409. Even though the effect is not statistically significant, the direction of this negative relationship is in accordance with theory and previous research which indicates that an increase in NPLs tends to reduce bank profitability. Capital adequacyas measured by the Capital Adequacy Ratio (CAR) has a positive and significant influence onprofitability (ROA) with a coefficient of 0.411 and a significance value of 0.006. These findings confirm that good capital management contributes positively to increasing bank profitability. Simultaneously, NPL and CAR have a significant effect on ROA with a calculatedF value of 4.556 and a significance of 0.021. This research model is able to explain 26.7% of the variation in bank profitability, while 73.3% is explained by other factors outside the model.

This research makes an important contribution to Indonesian banking literature by comprehensively analyzing the relationship between asset quality and capital adequacy on government bank profitability during the 2017-2023 period, which covers the period beforeand after the COVID-19 pandemic. The findings of this research provide the latest empiricalevidence regarding the importance of NPL and CAR management in Indonesian banking, especially in government banks which have a systemic role in national financial stability.

The practical implication of this research is that banks need to continue to improve the quality of credit risk management, strengthen capital, and optimize capital allocation to achieve optimal and sustainable levels of profitability. Bank Mandiri management can use the results of this research as a basis for making strategic decisions related to asset and capital management. This research has limitations in variable coverage and research period. For future research, it is recommended to include additional relevant variables, such as liquidity, efficiency and macroeconomic factors, as well as extending the research period in order to provide a more comprehensive picture of the dynamics of the influence of asset quality and capital adequacy on bank profitability.

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