

The Effect of Capital Adequacy, Liquidity and Cost Efficiency on Profitability: The Case of Private Banks and Foreign Banks Listed in Indonesian Stock Exchange

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Abstract

This study aims to analyze the impact of increasing capital adequacy, high liquidity levels, and enhanced cost efficiency on the profitability of National Private Banks and Foreign Banks listed on the Indonesia Stock Exchange. There are three main problems faced by banks today. First, the management of credit distribution remains inadequate, which has the potential to increase the risk of bad debt. Second, the burden of regulation requires banks to set aside capital for additional bank capital reserves. Third, the entry of foreign banks into Indonesia is increasing, thereby tightening competition. These three problems will impact the condition of banking performance if improvements are not made in managing assets, credit, and costs by taking a sample of specific criteria from 20 banks using data from the period 2017 to 2023. This type of research is Quantitative. The variables used by researchers include Capital Adequacy, Liquidity, Cost Efficiency, and Profitability. The sample in this study is National Private Banks and Foreign Banks Listed on the Indonesia Stock Exchange. The data used in this study are secondary data collected using a documentation data collection method. The data analysis technique used is multiple linear regression. The results of this study show that (1) Capital Adequacy, Liquidity, and Cost Efficiency together have a positive and significant effect on profitability, (2) Capital Adequacy has no significant effect on profitability, Liquidity has no significant effect on profitability, and Cost Efficiency does not have a significant effect on profitability.

Keywords: Capital Adequacy, Liquidity, Cost Efficiency, Profitability, Indonesian Listed Banks

1. Introduction

Financial performance, a cornerstone of the business world, plays a pivotal role in decision-making. It serves as an indicator of a company's capability, health, asset utilization, and income growth over a specified period. This data-driven approach is a benchmark for management, guiding the formulation of strategic policies that ensure the company's smooth operation. Moreover, it provides investors and the public with a reliable indicator of the company's credibility. According to [Septariza \(2019\)](#), a company's financial performance is a description of its economic condition, analyzed using analytical tools, which can reveal the company's

financial health and reflect its work performance over a specific period. Its level of profitability can be used to describe the company's achievements. Profitability is considered very important, as it enables a company to survive in an increasingly competitive market by maintaining a profitable condition. This profitability is not just a measure of the company's success, but also a key factor in attracting investors to fund its operations and expand its business. The company's ability to attract investors and grow is directly tied to its profitability, making it a crucial aspect of the company's operations.

The value of a company is influenced by the size of the profitability it generates, as the greater the profitability, the higher the company's value, which encourages investors to invest in it. Profitability, as defined by [Septiana \(2019\)](#), is a ratio that gauges a company's ability to generate profits during a specific period. This ratio is a key tool in assessing a company's financial health and performance. According to [Kasmir \(2021\)](#), the profitability ratio is a measure used to assess a company's ability to generate profit or gain over a specific period. Low profits are a significant obstacle to bank growth and can also erode public trust in banks, which in turn can erode the level of confidence in the banking system. The level of profitability can be influenced by several factors, including the quality of credit or financing provided and its return, capital adequacy, liquidity, company size, company age, fixed assets, working capital, operating costs, operating income, net profit after tax, net sales, and total assets. To determine the profitability value of a company, a financial ratio is necessary. There are many ways to measure the ratio.

According to [Kasmir \(2021\)](#), profitability can be measured using several ratios, namely, Net Profit Margin (NPM), Gross Profit Margin (GPM), Return on Assets (ROA), and Return on Equity (ROE). However, in this study, profitability measurement is only limited to the use of Return On Equity (ROE). This Return on Equity (ROE) ratio clearly indicates the extent to which the company effectively manages its capital, measuring the level of profit generated from investments made with the company's capital. Of the several factors that determine a company's profitability, the researcher will limit the discussion to focus only on Capital Adequacy, Liquidity, and Cost Efficiency. This is considered very important because a clear picture of the three factors above can represent the overall condition of the company or bank. Capital adequacy refers to a company's ability to maintain sufficient capital and its management's capacity to supervise, measure, identify, and control risks that may affect the amount of capital it holds. If capital adequacy can be met, it will increase the bank's ability to increase profits. Capital Adequacy is measured through an analysis tool known as the Capital Adequacy Ratio (CAR). According to [Hutabarat \(2020\)](#), CAR is a bank performance ratio that calculates the suitability of the bank's capital to support its assets that have risks. In accordance with the Financial Services Authority Regulation Number 11 / PJOK.03 / 2016 with the second amendment to PJOK Number 27 of 2022, a good CAR threshold value is at least 8%. If a company's CAR value is below 8%, the company is not healthy. The purpose of determining this Capital Adequacy Ratio (CAR) is to ensure that the bank operates safely and healthily. Therefore, the bank must maintain sufficient capital and reserves to support the risks arising from its activities.

[Dendawijaya \(2019\)](#) stated that the CAR value is influenced by capital and total assets, considering the risks that have been taken into account. The greater the company's profitability, the higher the CAR value, the smaller the risk of a bank, and the easier it is for the bank to overcome potential losses caused by credit distribution. Similar research was conducted by [Mukaromah \(2020\)](#), and the study's results showed that capital adequacy (CAR), credit risk (NPL), operational efficiency (BOPO), and liquidity (LDR) contributed 52% to banking

profitability (ROA). To some extent, capital adequacy (CAR) and operational efficiency (BOPO) have a positive and significant impact on profitability (ROA). While credit risk (NPL) does not affect profitability (ROA), liquidity (LDR) has a positive but insignificant effect on profitability (ROA). Simultaneously, capital adequacy (CAR), credit risk (NPL), operational efficiency (BOPO), and liquidity (LDR) have a positive and significant effect on profitability (ROA). Research conducted by [Jayanti \(2021\)](#), the results of the study showed that the level of capital adequacy has a negative but insignificant effect on profitability (ROA), the level of credit distribution has a significant positive impact on profitability (ROA), credit risk has a substantial adverse effect on profitability (ROA), credit risk cannot moderate the relationship between the level of capital adequacy on profitability (ROA), and credit risk cannot moderate the relationship between the level of credit distribution on profitability (ROA). Research conducted by [Hulu & Siswanti \(2023\)](#) stated that efficiency (BOPO) has a significant adverse effect on financial performance, while capital adequacy and liquidity do not affect economic performance.

The second factor that affects profitability, which will be studied in this study, is liquidity. Liquidity refers to the ease with which an asset can be bought and sold quickly at a stable price. According to [Fahmi \(2020\)](#), liquidity refers to a company's ability to meet its short-term obligations in a timely manner. One of the analytical tools used to measure liquidity is the Loan-to-Deposit Ratio (LDR). According to [Kasmir \(2021\)](#), the LDR (Loan-to-Deposit Ratio) is a ratio used to measure the composition of the amount of credit provided compared to the amount of public funds and equity used. According to Bank Indonesia regulations, a good LDR level ranges from 75% - 100%. Meanwhile, according to central bank regulations, the safe limit for the Loan-to-Deposit Ratio is 110%. If the LDR percentage increases or is very high, the bank's income will also increase, meaning that LDR will have a positive effect on profitability as long as the debtor makes installment payments correctly and on time. In contrast to the research conducted by [Khoiriyah \(2022\)](#), this study's results show that NPL and LDR simultaneously affect profitability. Partially, profitability can be negatively and significantly affected by NPL, and profitability can be negatively and significantly affected by LDR. Research conducted by [Dwiyanti \(2021\)](#) revealed that the study's results differed from those of [Khoiriyah \(2022\)](#), indicating that NPL has a negative and significant impact on profitability, while LDR has a positive and insignificant effect on profitability.

The third factor that affects profitability is Cost Efficiency. To achieve maximum profit with low operating costs, the company will implement cost efficiency, as high operating costs will negatively impact the profitability value the company obtains. Cost efficiency is a process of reducing expenditure to achieve maximum results. One of the analytical tools used to measure efficiency is the BOPO (Break-Even Point of Operating Expenses and Operating Income). According to [Kasmir \(2021\)](#), BOPO is a ratio used to measure a bank's operational efficiency in carrying out its business activities. This ratio compares operational costs with the operational income generated by the bank within a specified period. According to [BI Circular Letter No. 13/30/DPNP/2011](#), the BOPO value provision is at the threshold of $89\% < \text{BOPO} \leq 83\%$. Companies that are efficient in reducing their operational costs can minimize losses due to inefficiencies in business management, resulting in increased profits. The smaller the BOPO, the more efficiently the company conducts its business activities, resulting in higher profits and, consequently, increased profitability. Previous research conducted by [Rabbani \(2020\)](#) showed that capital adequacy and efficiency levels affect profitability, while liquidity and inflation do not affect the Profitability of Islamic Commercial Banks. Research conducted by [Nurdiwaty](#)

(2019) indicates that the results of this study show (1) NPF and BOPO have a partial and significant effect on Profitability in Islamic commercial banks registered with Bank Indonesia, and (2) NPF and BOPO have a simultaneous and significant effect on Profitability in Islamic commercial banks registered with Bank Indonesia. This means that this study aligns with the theory presented above.

In measuring the ratio, financial reports serve as the research unit or object to be analyzed. Financial reports are the result of the company's normal operating activities, providing financial information for both internal and external parties. Economic reports will clearly describe the financial performance of a company. Performance assessment is intended to assess the success of an organization. Researchers use secondary data as the object of this study. The data to be studied is the Annual Financial Report for the last seven years (2017-2023). According to [Munawir \(2019\)](#), financial reports are an accounting process that can be used as a tool to communicate financial data and are a crucial means of obtaining information regarding a financial position. The research will be conducted at the Indonesia Stock Exchange, which can be accessed through the page www.idx.co.id. There are many companies listed on the Indonesia Stock Exchange; however, due to the consideration that the banking industry currently faces very tight competition and regulatory and economic conditions often change quickly, the researcher is interested in examining the current state of banking performance. In addition, there are three main problems faced by banking today: first, the ineffective management of credit distribution still has the potential to increase the risk of bad debt. Second, the existence of regulatory burdens requires banks to set aside capital for additional bank capital reserves. Third, the entry of foreign banks into Indonesia is on the rise. Third, this problem will affect the condition of banking performance if improvements are not made in managing assets, credit, and costs. The objects of research that the researcher will examine are domestic banks and foreign banks, selected according to specific criteria, with the hope that the study's results will more clearly illustrate the influence of both the dependent variable and the independent variable, individually and collectively.

Based on initial observations on the www.idx.co.id page, there are 740 companies listed on the Indonesia Stock Exchange, while 47 banks are listed. Researchers will display 10 banks with the last three years as initial observation data, along with their Annual Financial Reports in audited conditions. The banks are Bank Mega, Bank IBK Indonesia, Bank of India Indonesia, Maybank Indonesia, CIMB Niaga, Bank Danamon Indonesia, Bank Woori Saudara Indonesia (1906), J Trust Bank, and Bank Permata. As an initial illustration, the Bank Profitability Level is calculated using a Return on Equity (ROE) analysis tool. Over the last three years, bank profitability, as measured by Return on Equity (ROE), has exhibited a range of varying conditions. Several banks have decreased, some have increased, and some have fluctuated over the three periods. Overall, there are still banks whose profitability levels are below 18%. This means that the bank has not met the minimum standard of profitability level set by Bank Indonesia, where the bank's ability to generate a profit from every Rp 1 of its capital remains very minimal. This happened to Bank IBK, Bank Of India Indonesia, Sinarmas, Maybank, Danamon, JTrust and Permata. In contrast to the above conditions, Bank Mega, Woori, Cimb Niaga, and Maybank are at a profitability level above 18%, meaning that these banks have met the minimum standard of profitability level set by [Bank Indonesia in Bank Indonesia Circular Letter Number 13/30/DPNP/2011](#) that a good bank profitability level is above 18%.

Bank Capital Adequacy is described in the form of a Capital Adequacy Ratio (CAR), also known as the Minimum Capital Provision Obligation (MCP). The banks in the research sample

have a relatively high level of capital adequacy; however, the influence of economic instability and credit distribution practices that overlook credit risk causes an unstable Capital Adequacy Ratio (CAR) value. Most of the company's capital is channeled in the form of credit, both long-term and short-term, with a rate of return that benefits the company. This means that the risk of loss can be mitigated if there are no delays in installment payments from customers. National private banks have a more diversified credit portfolio in local sectors, including Small and Medium Enterprises (SMEs), trade, and consumer segments. This increases the risk of higher credit, thus requiring greater capital to maintain the Capital Adequacy Ratio (CAR). For the liquidity value, the Loan-to-Deposit Ratio (LDR) is illustrated. Based on the research sample, the minimum threshold for the Loan Deposit Ratio (LDR) is set at 75%. However, it can be seen that there are still 6 banks that fall below this minimum value. This means that the bank is still not optimally channeling its funds into credit, as evidenced by the cost efficiency, which is measured by BOPO (Break-Even Point of Operational Costs and Operational Income).

Of the 10 banks projected in this study, 8 still have BOPO (Operational Costs with Operational Income) values below the minimum threshold set by Bank Indonesia. This means that banks have not been efficient in reducing their operational costs in order to increase profits. From the description, it is known that during the 3 accounting periods, the level of the bank's ability to cover business risks (CAR/Capital Adequacy Ratio) is only limited to the risks that the bank has calculated, a not factual condition that occurs when Return on Equity (ROE) decreases, the calculation of CAR/Capital Adequacy Ratio actually increases, even though in theory the Capital Adequacy Ratio (CAR) is directly proportional to Return on Equity (ROE). Still, the results of this initial observation revealed that several banks had poor profitability but maintained Capital Adequacy Ratio (CAR) values that exceeded the minimum threshold set by regulators. Based on the results of previous studies, several researchers have obtained different findings using the same variables. Some align with the theory, while others tend to have an adverse effect.

Meanwhile, the Loan-to-Deposit Ratio (LDR) remains below the minimum limit. This indicates that the bank's ability to distribute funds remains weak. This is in line with the theory that states the loan-to-deposit ratio (LDR) is directly proportional to Return on Equity (ROE); however, previous studies have yielded two different results. In line with this, BOPO (Operational Costs with Operating Income) also shows that the bank is still below the minimum threshold; this is in line with the theory, the initial data obtained by the researcher BOPO (Operational Costs with Operating Income) is low then Return on Equity (ROE) will be low. Still, previous research shows a significant difference in results..

2. Literature Review

Good-quality financial performance is a crucial element in the development of a company's operations. Measuring and assessing the company's financial performance is not just a reflection of the past, but also the starting point for the company in making improvements. This process can lead to significant enhancements in operational effectiveness, enabling the company to compete more effectively with its competitors and ensuring a brighter future for the company. It is undeniable that the presence of competitors cannot be avoided. This provides both advantages and challenges. The advantage is that the company can set standard targets and determine the level of stability that must be achieved, while the challenge is that its performance must exceed that of its competitors. Suppose a company struggles to run its operations effectively, failing to match or exceed the performance of its competitors. In that case, this is a

crucial problem—the presence of competitors who can threaten the business at any time if they cannot compete effectively. And the most dangerous thing is that the company can experience business bankruptcy.

The Effect of Capital Adequacy, Liquidity, and Cost Efficiency Simultaneously on the Profitability of National Private Banks and Foreign Banks Listed on the Indonesia Stock Exchange. According to [Bringham and Houston \(2019\)](#), the factors that affect banking profitability are capital adequacy, liquidity, company size, company age, fixed assets, working capital, cost efficiency, net profit, net sales, and total assets. This is supported by research conducted by [Pertama \(2021\)](#) entitled The Effect of BOPO, LDR CAR, and NPL on the Profitability of the Indonesian Banking Sector. The results of the study indicate that BOPO, LDR, CAR, and NPL have a simultaneous impact on profitability. When Capital Adequacy is high, liquidity is high; Cost Efficiency can be suppressed to the lowest figure, it will have an impact on increasing the profitability value of commercial banks and national private banks listed on the Indonesia Stock Exchange. Bank profitability in this study was measured using the Return on Equity (ROE) analysis tool. However, there is inconsistency in the research conducted by [Hulu & Siswanti \(2023\)](#), which states that efficiency (BOPO/Operating Expenses and Operating Income) has a significant adverse effect on financial performance (profitability), while capital adequacy and liquidity do not affect financial performance (profitability). Initial observations on banking companies listed on the Indonesia Stock Exchange revealed that the sample in this study obtained data indicating unstable capital adequacy values. Specifically, when the Loan-to-Deposit (LDR) ratio increased, the Bank-Owned Property (BOPO) value also increased, resulting in a decrease in bank profitability.

Effect of Capital Adequacy on Profitability. [Dendawijaya \(2019\)](#) stated that Capital Adequacy is the capital held in relation to total assets, considering the risks that have been taken into account. The greater the company's profitability, the higher the capital adequacy. According to [Brigham and Houston \(2019\)](#), several factors affect profitability, including capital adequacy. Capital adequacy in this study was measured using the Capital Adequacy Ratio (CAR), which impacts profitability. Capital adequacy is directly proportional to profitability, so the higher the Capital Adequacy Ratio (CAR), the higher the profitability of national commercial banks and private banks listed on the Indonesia Stock Exchange. This is supported by research conducted by [Jayanti \(2021\)](#); the results of the study showed that the level of capital adequacy has a negative but insignificant effect on profitability, the level of credit distribution has a significant positive impact on profitability, credit risk has a substantial adverse effect on profitability, credit risk cannot moderate the relationship between the level of capital adequacy and profitability, and credit risk cannot moderate the relationship between the level of credit distribution and profitability. Similar research was conducted by [Nugrahanti \(2018\)](#), which found that capital adequacy has a positive effect on profitability. This indicates that as the level of capital adequacy, as measured by the Capital Adequacy Ratio (CAR), increases, the profitability obtained also increases. Previous research has been inconsistent with the theory that the Capital Adequacy Ratio (CAR) is directly proportional to profitability, as measured by the Return on Asset (ROA) ratio. In contrast, research conducted by [Jayanti \(2021\)](#) Found That the CAR has an adverse effect on profitability. In contrast, research conducted by [Nugrahanti](#) showed that the Capital Adequacy Ratio (CAR) has a positive impact on profitability. At the same time, during the initial observation, researchers obtained the Capital Adequacy Ratio (CAR) value in several banks with poor profitability, but these banks had a CAR value that exceeded the minimum threshold set. This is what interests researchers to conduct further research on

different banks.

The Effect of Liquidity on Profitability. According to [Irfani \(2020\)](#), liquidity is a measure of a company's ability to meet all its short-term obligations that have matured, using the guarantee of current assets it owns. Liquidity in this study will be measured using the Loan Deposit Ratio (LDR). According to Bringham and Houston (2019), many factors affect profitability, one of which is liquidity. The higher the value of the Loan Deposit Ratio (LDR), the greater the profitability of national commercial banks and private banks listed on the Indonesia Stock Exchange for the period 2019-2023. This is supported by research conducted by [Khoiriyah \(2022\)](#), which shows that Non-Performing Loans (NPL) and Loan to Deposit Ratio (LDR) simultaneously affect profitability. Partially, profitability can be negatively and significantly influenced by Non-Performing Loans (NPLs), and profitability can also be negatively and significantly influenced by the Loan Deposit Ratio (LDR). Meanwhile, research conducted by [Dwiyanti \(2021\)](#) showed that the results differed from those of research conducted by [Khoiriyah \(2022\)](#). Specifically, the study found that Non-Performing Loans (NPL) had a negative and significant effect on profitability. In contrast, the Loan Deposit Ratio (LDR) had a positive and insignificant impact on profitability. There is a difference in the results of the study conducted by [Khoiriyah \(2022\)](#), namely that the Loan to Deposit Ratio (LDR) and Non-Performing Loan (NPL) had a negative and significant effect, while in Dwijayanti's study, Loan to Deposit Ratio (LDR) and Non-Performing Loan (NPL) had a positive and insignificant effect.

The Effect of Cost Efficiency on Profitability. According to [Martono \(2019\)](#), cost efficiency is used to measure a bank's management's performance, determining whether it has utilized its production factors appropriately and efficiently. With financial ratios, we can qualitatively assess the level of efficiency achieved by bank management. According to [Brigham and Houston \(2019\)](#), several factors affect profitability, one of which is cost efficiency. Cost efficiency in this study was measured using the BOPO (Operating Expenses to Operating Income) ratio. The lower the BOPO value, the higher the profitability of national commercial banks and private banks listed on the Indonesia Stock Exchange for the period 2019 - 2023. This is supported by research conducted by [Nurdiwaty \(2019\)](#); the results of this study indicate that (1) NPF and BOPO partially have a significant effect on profitability in Islamic commercial banks registered with Bank Indonesia, (2) NPF and BOPO simultaneously have a significant effect on profitability in Islamic commercial banks registered with Bank Indonesia. Meanwhile, research conducted by [Putri \(2018\)](#) revealed that Non-Performing Loans have a significant adverse impact on profitability, while the Capital Adequacy Ratio has a significant positive effect on profitability. Additionally, operating costs and operating income have a significant adverse effect on profitability. According to several studies, there is inconsistency related to the theory that states the lower the BOPO value, the higher the profitability. This has attracted researchers to conduct further research.

3. Research Method

In this study, the research objects are 47 banks listed on the Indonesia Stock Exchange for the periods 2017, 2018, 2019, 2020, 2021, 2022, and 2023. The data source in this study was obtained from the results of analyzing the Financial Statements of the banks that were the subjects of research in a time-series manner. The researcher limited the research year to the last 7 years. The approach in this study is quantitative. Quantitative research aims to determine the extent to which capital adequacy, liquidity, and cost efficiency affect the profitability of banks listed on the Indonesia Stock Exchange. The dependent variable in this study is profitability,

measured by the return on equity (ROE) indicator. The independent variables in this study are capital adequacy (CAR), liquidity (LDR), and cost efficiency (BOPO). The indicator of capital adequacy is the capital adequacy ratio. The indicator of liquidity is the loan-to-deposit ratio. The indicator of cost efficiency is operational costs to operating income. The population in this study were 47 companies engaged in the banking industry, both national and foreign, listed on the Indonesia Stock Exchange from 2017 to 2023. The selected sample was 35 banking companies that routinely publish audited financial reports on the Indonesia Stock Exchange. So the total sample of this study is 35 multiplied by 7 years (2017-2023), which is obtained with the following criteria: a. The study is aimed at national private conventional banks and foreign banks listed on the Indonesia Stock Exchange; b. The research unit used is the audited Financial Report; c. Banking companies have financial reports that are announced to the public in the period 2017-2023. The banks that were sampled in this study were Bank Mega, Bank SMBC Indonesia, Bank Sinar Mas, Bank Maybank Indonesia, Bank CIMB Niaga, Bank Danamon Indonesia, Bank J'Trust Indonesia, Bank Permata, Bank Raya Indonesia, Bank IBK Indonesia, Bank Amar Indonesia, Bank MNC Internasional, Bank Capital Indonesia, Bank Central Asia, Allo Bank Indonesia, Bank KB Bukopin, Bank Mestika Darma, Krom Bank Indonesia, Bank Neo Commerce, Bank Ganesha, Bank Ina Perdana, Bank QNB Indonesia, Bank Maspion Indonesia, Bank Bumi Artha, Bank Victoria Internasional, Bank of India Indonesia, Bank Oke Indonesia, China Construction Bank Indonesia, Bank Mayapada Internasional, Bank Multiarta Sentosa, Bank OCBC NISP, Bank Pan Indonesia, Bank Woori Saudara Indonesia 1906, Bank Artha Graha Internasional, Bank Nasional Nobu. The data collection method used in this study is a quantitative documentation method, specifically by recording and collecting data in the form of numbers accessed through the site www.idx.co.id, which contains financial report data for general banks listed on the Indonesia Stock Exchange for the period 2017-2023. The type of data used is secondary, in the form of financial report data for national private banks and conventional foreign banks listed on the Indonesia Stock Exchange, covering the period from 2017 to 2023. Quantitative data, namely data in the form of numbers or quantitative data that is expressed in numbers ([Sugiyono, 2020](#)). The data source that the researcher will use is secondary data. The analysis tool used is multiple regression analysis.

4. Findings and Discussions

Descriptive Statistics. This analysis aims to provide an overview of the data studied, presenting the minimum values, maximum values, average values (mean), and standard deviations of each research variable. The results of the descriptive statistical analysis of the research variables.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROE	140	0.01	23.49	6.91	5.30253
CAR	140	11.13	106.1	28.2185	13.8279
LDR	140	12.35	194.41	82.6735	27.58293
BOPO	140	36.78	133.83	81.6766	14.63775
Valid N (listwise)	140				

Based on the results of the descriptive statistical analysis above, the study included 140 data samples. The descriptive statistical explanation for each research variable shows that: profitability, as measured by the comparison between profit after tax and equity, has a minimum

value of 0.01 and a maximum value of 23.49. The minimum value indicates that the bank's profitability level is relatively low; however, the bank is considered healthy if its profitability level exceeds 18%. Based on the data obtained, the average value of the profitability level is 6.91, meaning that most banks are still at an unhealthy level of profitability. While the maximum value obtained is 23.49%, this indicates that some banks are still classified as very healthy, as their profitability level exceeds the threshold set by the Financial Services Authority Regulation. The standard deviation is smaller than the average value, indicating that bank profitability has a relatively homogeneous distribution of data. This means that if there is a profit, the profitability value is not too high, but if there is a loss, the level of loss is not too high. Capital adequacy is measured by comparing capital to risk-weighted assets, with a minimum value of 11.13% and a maximum value of 106.10%, an average value of 28.21%, and a standard deviation of 13.82%. The standard deviation is smaller than the average value; this indicates that the bank's capital capacity is sufficient to meet the minimum obligation standards set by the Financial Services Authority and to absorb all losses experienced. Liquidity is measured by comparing the amount of credit provided with the amount of customer deposits, with a minimum value of 12.35%, a maximum value of 194.41, and an average value of 82.67. This value is greater than the standard deviation value of 27.58%. This indicates that overall, the bank's liquidity ratio is classified as good because it is at 82.67%, exceeding the value set in [Bank Indonesia Circular Letter No. 13/30/DPNP/2011](#), which is 75%, meaning that the bank has been able to manage the problematic credit that occurs well. Cost Efficiency is measured by comparing operational costs and operational income with a minimum value of 36.78%, a maximum value of 133.83% with an average level of 81.67%, in accordance with the provisions of Bank Circular Letter No. 13/30/DPNP/2011, a good BOPO level is $\leq 83\%$ with a standard deviation more minor than the average value of 14.63%, meaning that the bank is able to manage its operational costs well.

In this analysis, the direction of the relationship between the independent variables and the dependent variables will be determined linearly, allowing for the calculation of regression coefficients and their significance, which will help answer the hypothesis.

Table 2. Regression Result

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	32.567	1.851			17.597	0
1 CAR	-0.084	0.019	-0.219		-4.478	0
LDR	0.004	0.009	0.021		0.435	0.664
BOPO	-0.289	0.017	-0.798		-16.704	0

In this study, multiple linear regression analysis uses a linear equation model as below:

$Y = 32.567 - 0.084X_1 + 0.004X_2 - 0.289X_3$. Based on the linear equation model above, it can be concluded that: a. The regression equation has a positive constant value of 32.567, meaning that if the independent variables X_1 , X_2 , and X_3 , expressed as capital adequacy, liquidity, and cost efficiency, are assumed to be zero, then the profitability value is 32.567. b. The regression coefficient of capital adequacy (Capital Adequacy Ratio / CAR) is negative, at -0.084; this indicates a negative relationship between the variable of capital adequacy (Capital Adequacy Ratio / CAR) and profitability (Return On Equity / ROE), meaning that if capital adequacy

(Capital Adequacy Ratio / CAR) increases with the assumption that other variables are constant, then profitability decreases by -0.084. Therefore, there is no significant effect on profitability. This happens because capital adequacy is one of the supporting elements in supporting operational activities that Bank Indonesia has indeed required through Financial Services Authority Regulation Number: 11 / PJOK.03 / 2016 with the second amendment to PJOK Number: 27 of 2022 where every commercial bank must provide capital reserves that can cover the risk of business failure of at least 8% so that without considering profitability, capital adequacy must be met at least 8% the impact, capital adequacy does not significantly affect bank profitability. c. The liquidity regression coefficient (Loan to Deposit Ratio / LDR) is positive, at 0.004; this indicates a positive relationship between the liquidity variable (Loan to Deposit Ratio / LDR) and profitability (Return On Equity / ROE), meaning that if liquidity (Loan to Deposit Ratio / LDR) increases with the assumption that other variables are constant, then profitability also increases by 0.004. However, this value is still below 0.05, which indicates that the relationship between liquidity and profitability has an insignificant effect. Suppose, based on theory, that when liquidity is directly proportional to profitability, it should indicate an influence between the two variables; however, conditions in the field are inversely proportional. In that case, this is due to the market situation, inflation, and economic conditions where when banks channel funds to the community in the form of credit to MSMEs or Business actors, the rate of return of funds is at risk, such as bad credit or late payment of installments because this business sector greatly influences economic conditions, market conditions and inflation rates which cause business slowdowns or even financial distress conditions. In this scenario, with a large number of credit distributions, the funds distributed do not significantly impact bank profitability if they are not repaid. d. The regression coefficient of cost efficiency (Operating Expenses and Operating Income / BOPO) is negative, at -0.289; this indicates a negative relationship between the cost efficiency variables (Operating Expenses and Operating Income / BOPO) and profitability (Return On Equity / ROE), meaning that if cost efficiency (Operating Expenses and Operating Income / BOPO) increases with the assumption that other variables are constant, then profitability decreases by -0.289 so that there is an insignificant effect between cost efficiency and profitability. In theory, the greater the cost efficiency, the lower the level of profitability; however, in practice, this condition is inversely proportional, where cost efficiency has an insignificant effect on bank profitability. This is due to an increase in interest rates, inflation rates, and other operational costs, such as utility costs, which have an impact on banks having to spend higher operational costs than usual.

The F test aims to determine the extent to which the dependent variables jointly influence the independent variables, providing a basis for decision-making to accept or reject the hypothesis.

Table 3. F-test

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2707.64	3	902.545	102.237	.000 ^b
1 Residual	1200.6	136	8.828		
Total	3908.24	139			

a. Dependent Variable: ROE

b. Predictors: (Constant), BOPO, CAR, LDR

Based on the table, the data obtained shows that the calculated f value is 102.237 with a significant F of 0.00 smaller than 0.05 while the F-table is 2.67 (obtained from a sample size of

140, 3 independent variables), so it can be concluded that the $F\text{-value} > F\text{-table}$ or $102.237 > 2.67$ and significant $f < 0.05$ means that there is a substantial influence of capital adequacy, liquidity and cost efficiency on profitability (ROE) in national private banks and foreign banks listed on the Indonesia Stock Exchange, so H_0 is rejected and H_a is accepted.

Table 4. t-test

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
1	(Constant)	32.567	1.851		17.597	0		
	CAR	-0.084	0.019	-0.219	-4.478	0	0.943	1.061
	LDR	0.004	0.009	0.021	0.435	0.664	0.932	1.072
	BOPO	-0.289	0.017	-0.798	-16.704	0	0.989	1.012

a. Dependent Variable: ROE

The Effect of Capital Adequacy, Liquidity, and Cost Efficiency Simultaneously on the Profitability of National Private Banks and Foreign Banks Listed on the Indonesia Stock Exchange. The results of the first hypothesis test indicate that capital adequacy, liquidity, and cost efficiency simultaneously have a significant effect on profitability. Based on the results of the F-test, the f-value column shows a value of 102.237, while the F-table value is 2.67. Therefore, the f-value exceeds the F-table value, and the significant value of 0.000 is smaller than the degree of significance of 0.05. The results of this study are in accordance with those stated by Bringham and Houston (2019), who suggest that the factors affecting profitability are capital adequacy, liquidity, and cost efficiency. The results of this study align with research conducted by [Pertama \(2021\)](#), which shows that simultaneously, BOPO, LDR, CAR, and NPL affect profitability. These results suggest that increasing capital adequacy can lead to the suppression of good liquidity and cost efficiency to the lowest level, which in turn can improve profitability value. This means that capital adequacy, liquidity, and cost efficiency have a significant effect on the profitability of national private banks and foreign banks listed on the Indonesia Stock Exchange. Initial observations revealed that the level of profitability was still mostly below the healthy category, which is defined as being below 18%. This suggests that National Private Banks and Foreign Banks are not yet fully optimized in managing capital adequacy, liquidity, and cost efficiency.

The Effect of Capital Adequacy on the Profitability of National Private Banks and Foreign Banks Listed on the Indonesia Stock Exchange. The results of the test carried out on capital adequacy showed that capital adequacy partially affected Profitability (ROE). The test results yielded a t-count value of -4.478 and a t-table value of 1.656, such that the t-value is less than or equal to the t-table value and a significance value of 0.000 is less than 0.05. Therefore, H_0 is accepted, and H_a is rejected. Consequently, capital adequacy has no significant effect on profitability (ROE). This finding aligns with research conducted by [Jayanti \(2021\)](#), which suggests that the level of capital adequacy has a negative but insignificant effect on profitability. Referring to the [Financial Services Authority Regulation \(POJK\) No. 11/PJOK.03/2016](#) with the second amendment to PJOK Number: 27 of 2022, a good CAR threshold value is a minimum of 8%, which is one of the capital adequacy factors that does not affect profitability because banks must provide reserve funds to meet the minimum requirements as an initial step in overcoming credit risk, market risk and operational risk. In this case, it will have little effect

on profitability if the bank does not balance it with fund distribution activities, both in the form of credit and deposits, optimally, with the principle of prudence. In the initial observation, the researcher found that there was instability in the level of capital adequacy (Capital Adequacy Ratio / CAR) in each period at National Private Banks and Foreign Banks, although this value had met the minimum requirements set by the [Financial Services Authority through Financial Services Authority Regulation Number: 11/PJOK.03/2016](#) with the second amendment to PJOK Number: 27 of 2022, but the instability that occurred was the impact of economic risk, market risk and credit risk.

The Effect of Liquidity on Profitability of National Private Banks and Foreign Banks Listed on the Indonesia Stock Exchange. The results of the liquidity test show that liquidity does not affect Profitability (ROE). The results of the partial test yielded a t-count value of 0.435 and a t-table value of 1.656, such that $t\text{-count} \leq t\text{-table}$. Additionally, the significance value of 0.664 is greater than 0.05, indicating that H_0 is accepted and H_a is rejected. So, it can be concluded that liquidity has no significant effect on Profitability (ROE). This finding aligns with research conducted by [Khoiriyah \(2022\)](#), which suggests that Liquidity (LDR) and Non-Performing Loans (NPL) have a negative and significant impact on profitability. This is because changes in economic conditions, market conditions, and interest rates result in the Liquidity (LDR) and Non-Performing Loan (NPL) values having a minimal impact on profitability. Liquidity is one of several factors that affect profitability. This means that liquidity has a significant impact on profitability. However, liquidity cannot stand alone as a factor influencing profitability because the distribution of funds within and to the community is also influenced by other factors that synergize to build profitability. This is evident from the data obtained by the researcher in the initial observation; the researcher found that there are still many National Private Banks and Foreign Banks that have a liquidity level below the standard set by Bank Indonesia through Bank Indonesia Circular Letter Number: 13/30/DNP/2011, which is more than 75% and a maximum of 110%. This means that the distribution of funds that is not optimal will affect the level of profitability of National Private Banks and Foreign Banks listed on the Indonesia Stock Exchange.

The Effect of Cost Efficiency on the Profitability of National Private Banks and Foreign Banks Listed on the Indonesia Stock Exchange. The results of the cost efficiency test show that cost efficiency has a partial effect on Profitability (ROE). The partial test results yielded a t-value of -16.704 and a t-table value of 1.656, such that the t-value is less than or equal to the t-table value and a significance value of 0.000 is less than or equal to 0.05. Therefore, H_0 is accepted, and H_a is rejected. Thus, Cost Efficiency does not affect Profitability (ROE). This finding aligns with research conducted by [Putri \(2018\)](#), which showed that operating costs and operating income have a significant negative impact on profitability. The results of the researcher's findings in the initial observation obtained data that there are still many National Private Banks and Foreign Banks that have a level of cost efficiency (Operational Costs and Operating Income / BOPO) below the standards set by Bank Indonesia through [Bank Indonesia Circular Letter Number: 13/30 / DNP / 2011](#), namely more than $89\% < \text{BOPO} \leq 83\%$. These data indicate that National Private Banks and Foreign Banks still need to pay attention to the management of operational costs incurred to generate maximum profits.

5. Conclusion

There is a simultaneous influence of capital adequacy, liquidity, and cost efficiency on profitability. Still, partially, capital adequacy, liquidity, and cost efficiency do not directly affect

profitability, meaning that several supporting variables are needed in synergy to increase the profitability of national private banks and foreign banks, as well as other factors not included in this study. In order to improve profitability, banks need to provide reserve funds that are able to cover the occurrence of credit risk, market risk, and operational risk to avoid losses; it also needs to be supported by activities to distribute funds from and to the community, both in the form of savings and credit optimally using the principle of prudence and to support the implementation of activities and increasing the amount of profitability, banks need to control the operational costs incurred and carry out operational activities that can support increasing operational income.

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