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The Capital Adequacy, Asset Quality, Management Quality, Earning Quality, and Liquidity Analysis in Indonesia Banking Sectors

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ABSTRACT

Risks likely to arise and hinder profitability can be measured using the CAMEL analysis conducted in this study. CAMEL and profitability are fundamental aspects that are highlighted to determine the financial performance of bank sectors. It can be said that if the profitability value of a business is good, it reflects good financial performance. Increased profitability is the success of management in managing the risks detected. The specific purpose of this study is to measure each proxy that represents CAMEL analysis on the profitability value conveyed by the average return on equity (ROAA) variable in the banking sector so that bank management can manage risk well and generate high profits. This research was conducted using quantitative methods and secondary data in the form of databases, namely company financial report documents and company annual reports downloaded through the official website of the Indonesia Stock Exchange and processed using Eviews software. Conventional banks listed on the Indonesia Stock Exchange for the period 2020-2022, as many as 41 banks became the sample of this study. The results showed that CAR, NPL, BS, and LDR had a significant effect on banking profitability, while NIM had no significant effect on banking profitability.

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INTRODUCTION

A country's economy cannot be separated from the existence of financial institutions; the financial institutions in question are banks. Similar to other countries, Indonesia's economy is strongly influenced by the existence of financial institutions. Banks are financial intermediaries for those who have excess funds and those who need funds (lack of funds). Parties with excess funds are those who have funds in the bank and use them to invest in the bank. Meanwhile, those who need funds to finance business or household needs can utilize bank credit. Today's main drivers of the national economy are consumption, investment, and export and import activities. Consumption and investment activities contribute around 80% to the country's economic growth.

Banks have three main activities: first, collecting public funds through deposits (funding); second, channeling funds to the public in the form of loans (credit); and third, providing other services. Credit distribution is a banking activity that increases bank profits or profitability. Referring to Indonesian banking statistics released by the Financial Services Authority (OJK), the banking industry has earned a net profit of IDR 78.17 trillion as of July 2021, which means that it has grown by 9.68% compared to the 2020 period, which amounted to IDR 71.27 trillion. The growth in banking net profit was contributed by net interest income (NII), which grew 12.98% annually (year on year / yoy) to IDR 245.43 trillion (figure 1).

Profits that continue to increase illustrate that the bank is in good health and the bank's financial performance is in good condition. However, to obtain a high profit value, the bank must be prepared to face several risks that will hinder the increase in profitability. The risks accompanying efforts to increase bank profitability can be analyzed using CAMEL analysis (Capital Adequacy, Asset Quality, Management, Earning, and Liquidity). CAMEL is used as a

risk measurement tool to predict financial distress calculations that occur in the past, present, and future so that bank management can manage risk efficiently.

Figure 1. Graph of Bank Profit Development 2016-2021

Source. OJK, 2023

According to Munir et al. 2017, CAMEL analysis simultaneously and partially affects banking profitability. The study was conducted by comparing the performance of banks in Indonesia with banks in Malaysia; the ratio used to measure profitability in this study is Return On Investment (ROI). In contrast to Munir et al. 2017, not all proxies representing CAMEL analysis affect banking profitability; Capital Adequacy Ratio (CAR) does not affect Return On Asset (ROA), Non-Performing Loan (NPL) does not affect ROA, Net Interest Margin (NIM) does not affect ROA while Operating Expenses on Operating Income (BOPO) affects ROA, and Loan to Deposit Ratio (LDR) affects ROA. Research by Irfan et al. (2019) shows that CAR, LDR, and NIM simultaneously influence banking ROA. According to Syachreza & Gusliana (2020), CAR, Financing to Deposit Ratio (FDR), and bank size have no effect on ROA in Islamic commercial banks registered with the Financial Services Authority (OJK) for the 2012-2017 period. In line with previous research, according to Henry & Garcinia (2019), CAR, NIM, and LDR simultaneously influence banking ROA. A study conducted by Korri & Baskara (2019) resulted in the finding that CAR and LDR have an influence on ROA, and NPL and BOPO have a significant negative effect on ROA. This research continues the study conducted by Dewi (2022) with several differences. First, the dependent variable used in previous research was Return on Assets (ROA), whereas in this research, the author chose the dependent variable as Return on Average Assets (ROAA). Second, the independent variables used in Dewi's (2022) research consist of three variables, namely Capital Adequacy Ratio (CAR), Net Interest Margin (NIM), Non-Performing Loans (NPL), Operational Expenses on Operating Income (BOPO), Loans to Deposit Ratio (LDR), and Net Open Position (PDN). This research uses CAMEL analysis (Capital Adequacy, Asset Quality, Management, Equity, and Liquidity), each of which is proxied by several ratios, namely as follows: Capital Adequacy (Capital Adequacy Ratio), Asset quality (Non-Performing Loan), Management (Bank size), Earning (Net Interest Margin), and Liquidity (Loan to Deposit Ratio). Third, the year period chosen by previous researchers was 2017-2020, while this research chose 2020-2022. Further research is needed based on the existing research gap, which is expected to produce newer findings.

The formulation of this research problem is, first, whether the CAMEL ratio affects the banking industry's profitability level. Second, whether the proxies representing each aspect of CAMEL jointly affect the profitability value of a bank. The objectives of this study are divided into general objectives and specific objectives. The general objective of this study is to explain the impact of CAMEL analysis (Capital, Asset, Management, Income, Liquidity) on the

profitability of the listed banking sector in Indonesia. This research aims to explain the influence of CAMEL (Capital, Asset, Management, Earnings, Liquidity) analysis on the profitability of the banking industry listed on the Indonesia Stock Exchange. This research aims to measure each proxy representing CAMEL analysis of the profitability value proxied by the banking industry's Return on Average Asset (ROAA) variable so that bank management can manage risk well and obtain high profits.

Signaling Theory

Signals are messages from company management that tell investors what to expect in the future. This helps investors decide what to do with their money (Brigham & Ehrhardt, 2005). The signal in question is in the form of information regarding the efforts made by management to realize the owner's wishes. Information functions to provide information, notes, and descriptions of current, past, and future conditions for the continuity of the company and its effects on the company. Signaling theory is closely related to the availability of information; the information giver tries to convey relevant information so that it can be utilized by the recipient of the information, who will adjust his behavior according to his understanding of the signal (Spence, 1973). Signaling theory can explain the measurement of a company's performance; this theory explains how the company should try to provide signals to users of financial reports.

Financial Performance

The achievements of a company in a certain period that reflect the level of health and condition of the company are called the company's financial performance (Sutrisno, 2000). Every company is required to assess its financial performance as a reference to determine the extent of success the company has achieved. The company's financial performance assessment is carried out to determine the level of liquidity, solvency, profitability, and business activity (Munawir, 1990). One effort that can be made to assess a company's financial performance is to carry out financial report analysis. Based on the objectives of financial performance assessment, financial report analysis can be carried out using financial ratio analysis. The financial performance of a bank or company is said to be in good condition when the financial reports presented by the bank show high profit values. According to Munawir (2002), profitability is a company's ability to gain profits in a certain period. In line with Munawir (2002), according to Irawati (2009), the profits obtained by a company can be measured using the profit ratio (profitability ratio), which is used to determine the company's ability to generate profits in a certain period. Return on Average Assets (ROAA) is one of the profitability ratios often used to measure the financial performance of financial institutions. This research raises the issue of measuring the profitability value of financial institutions (conventional banks) using CAMEL analysis. To support this research, the author uses the results of previous studies and is supported by other sources.

Research conducted by Dewi (2022) aims to determine the results of capital, asset, management, profit, liquidity, and sensitivity to market risk ratios as proxied by Return on Assets (ROA) in national private commercial banks in 2017-2020. This research uses quantitative methods with secondary data obtained from bank annual reports. The sampling technique in this research was purposive sampling, where the researcher used twenty-three national private commercial banks with foreign exchange as the research sample. The research results show that only BOPO proxy income, which affects ROA because interest income is low while operational costs are higher. Meanwhile, capital does not affect ROA, which means the banking sector is not yet optimal in utilizing capital in services. Assets proxied by Net

Performing Loans (NPL) do not affect ROA. Furthermore, management has the same results as assets; it does not affect ROA due to adjustments due to the increase in interest rates in the previous year. Liquidity and sensitivity also do not affect Return on Assets (ROA). Mustafa's research results (2020) state that the CAR proxy has a positive and significant influence on bank profitability (ROA), the Operational Expenditure on Operating Income (BOPO) proxy has a negative and insignificant influence on ROA, and Non-Performing Loans (NPL) have a negative influence. and not significant on ROA, while the Net Interest Margin (NIM) proxy has a negative and insignificant effect on ROA. Research conducted by Mustafa (2020) used a sample of seven Islamic commercial banks in 2014-2018. This study was conducted to analyze the comparison of financial performance between conventional banks and Islamic commercial banks. Previous research conducted by Nguyen et al. (2020) produced findings that CAMEL analysis affected the performance of Vietnamese commercial banks as proxied by ROA, ROE, and NIM. This research took 31 Vietnamese commercial banks over six years, from 2013 to 2018, as research samples. This research aims to identify the influence of CAMEL analysis on the financial performance of commercial banks in Vietnam during that period. Research data was taken from secondary data in the form of annual financial reports of Vietnamese commercial banks for 2013-2018. One of the previous studies was carried out by taking a sample from the Bandung People's Credit Bank to analyze the influence of credit as proxied by the loan-to-deposit ratio (LDR) and Non-Performing Loans (NPL). Research sampling was conducted using non-probability sampling techniques and a purposive sampling method so that 24 bank samples were obtained for the 2014-2019 period. Saleh & Winarso's research (2021) produced findings that, after testing, showed that NPL and LDR affected banking profitability (ROA).

Capital adequacy, Asset quality, Management quality, Earning management (CAMEL)

The CAMEL approach (Capital adequacy, Asset quality, Management quality, earning quality) is considered one of the relevant tools used to measure banks' performance or financial health. CAMEL was first adopted by the Federal Financial Institution Examination Council on November 13, 1979, and continued by the National Credit Union Administration in October 1987. Munir et al. (2017) stated in their research that CAMEL analysis significantly affects bank profitability. This research was conducted using 114 bank samples from Indonesia and Malaysia. The sample selection technique in this research was purposive sampling. Research conducted by (Munir et al., 2017) used Return on Investment (ROI) as a ratio measuring bank profitability. This is different from the study conducted by Ebrahimi et al. (2017), the study states that capital adequacy (CA), management quality (MQ), and earnings quality (EQ) have a negative and significant effect on bank earnings management, while liquidity (LQ) positive and significant effect on bank earnings management. This research aims to analyze the influence of CAMEL on the profit management of banks listed on the Tehran Stock Exchange in 2010 - 2015. The research sample was taken using a purposive sampling technique of 14 banks listed on the Tehran Stock Exchange in 2010-2015. Furthermore, the study conducted by Syahputra & Saragih (2018) aimed to analyze the health level of PT Bank Artos Indonesia Tbk. for the 2014-2017 period using the CAMEL ratio. The author uses quantitative methods with secondary data sources; the secondary data in question is the 2012-2016 financial reports obtained from the Indonesian Stock Exchange website. PT Bank Artos Indonesia is in unhealthy condition. This happens because bank management has been unable to manage funds efficiently, which is indicated by very large costs incurred, and then there are problem loans at the bank. The author suggests that the management of PT Bank Artos Indonesia Tbk use

CAMEL analysis to measure risk periodically to improve the bank's financial performance (Syahputra & Saragih, 2018).

In Antoun et al. (2018) research, it was found that the quality of assets and income earned by banks was negatively influenced by size, and capital adequacy and liquidity were negatively influenced by size but positively influenced by bank concentration and economic growth. This study was carried out to analyze bank-specific, industry, and macroeconomic factors as determinants of the financial performance of banks in central and eastern Europe. Research data comes from the BankScope database, World Development Indicators, and Financial Structure and Development Dataset. Dahiyat (2020) concluded that only the proxies for management efficiency, earning quality, liquidity, and risk sensitivity had a significant effect on the financial performance of commercial banks. Still, the proxies for capital adequacy and asset quality did not significantly affect commercial banks' performance. Dahiyat (2020) researched by selecting a sample of commercial banks listed on the Amman Stock Exchange for the 2012-2018 period. The data chosen to support this research comes from the annual financial reports of commercial banks listed on the Amman Stock Exchange for the 2012-2018 period. As a result of Dahiyat (2020), researchers recommend using CAMEL analysis to measure the performance of commercial banks and other companies, such as insurance companies in Jordan. Magoma et al. (2022) study analyzes the financial performance of seven commercial banks listed on the Dar es Salaam Stock Exchange (DSE) for five years, from 2016 to 2020. The results of this study state that most commercial banks listed on the DSE during the period were influenced by management efficiency and capital adequacy. CAMEL analysis can measure bank financial performance (Magoma et al., 2022).

Capital Adequacy Ratio (CAR) and Return on Average Asset (ROAA)

Capital Adequacy Ratio (CAR) or capital adequacy ratio is a ratio that shows the bank's ability as a financial institution to provide funds that are used as reserves to anticipate the risk of banking losses. Like companies that make capital the main factor in their business activities, the availability of capital is also very important for banking companies. Referring to signaling theory, the capital adequacy ratio can send signals or signs to shareholders and customers regarding the company's financial condition. The high or low CAR value obtained by a bank can reflect whether the bank's financial condition is healthy. Bank Indonesia (the central bank of Indonesia) has determined that a bank can be healthy if the CAR value reaches 8% and above; 6.4% - 7.9% indicates that the bank received an unhealthy rating. A value below 6.4% indicates the bank's unhealthy financial condition. The higher the CAR value of a bank, the higher the profits obtained by the bank; this is due to the company's ability to cover the risk of losses that could arise. In other words, the smaller the bank's risk, the greater the profitability value obtained by the bank (Mudrajad Kuncoro, 2011). Al Zaidanin (2020) states that sufficient capital will avoid external funding, which ultimately reduces the cost of capital so that the profitability obtained increases. This theory is supported by research by Ebrahimi et al. (2017), who found that the CAR ratio is a capital adequacy ratio that positively affects banking profitability. In line with previous research, Magoma et al. (2022) state that the capital adequacy ratio (CAR) positively affects banking profitability. In contrast to the results of Dewi's research (2022), it was stated that CAR had no positive effect on banking profitability. Based on this description, the authors can develop the following hypothesis:

H_1: Capital Adequacy Ratio (CAR) significantly affects the profitability of conventional banks.

Net Performing Loan (NPL) and Return on Average Asset (ROAA)

One of the banking credit activities is providing funds to customers or borrowers to measure the bank's ability to bear the risk of problem loans, called the Net Performing Loan (NPL) ratio. When a bank obtains a low non-performing credit score, the bank's responsibility will be smaller, which means that a larger ratio indicates that the bank is bad at managing assets (Susanto & Njit, 2018). The NPL ratio is a ratio that displays the comparison between non-performing loans and total credit. According to Mustafa (2020), a high NPL ratio will increase the costs incurred by the bank, causing losses to the bank. The NPL ratio set by Bank Indonesia is 5%. Bank Indonesia requires banks to assess asset quality and determine credit quality into five categories: current, under special research, substandard, and doubtful or non-performing (Eng, 2013). Saleh & Winarso's (2021) research results state that NPL positively affects banking profitability. In contrast to previous research, Dewi (2022) stated that there is no relationship between NPL and banking profitability. This raises the hypothesis of the author, which is as follows:

H_2: Net Performing Loan (NPL) significantly affects the profitability of conventional banks.

Bank Size and Return on Average Asset (ROAA)

The relationship between bank size and banking profitability is related to the influence of the world economic scale, which tends to be dominated by large banks. In general, the larger the bank size, the greater the profits obtained. Bank size is measured as the logarithm of the asset value in US dollars (Adusei, 2015). In line with signaling theory, increasing banking profitability, which is influenced by bank size, is a positive signal for users of financial information to make decisions. The view that bank size influences the value of banking profitability is supported by the results of research by Ali & Puah (2018), which states that bank size positively influences the profitability of banks in Pakistan. However, Syachreza & Gusliana (2020) have a different opinion; their findings are that bank size does not affect bank profitability because Sharia commercial banks' total asset growth is still below standard. Based on this explanation, the authors develop the following hypothesis:

H_3: Bank Size significantly affects the profitability of conventional banks.

Net Interest Margin (NIM) and Return on Average Asset (ROAA)

Universally, Net Interest Margin (NIM) is the difference between interest income and interest costs. In other words, NIM can show bank profits originating from credit or lending activities (Ariyanto, 2011). Other factors influence the NIM value of a bank; if demand for credit is greater than deposits, then the NIM value increases because the bank pays less interest than the interest received by the bank, so it can be said that an increase in the NIM value affects the value of banking profitability (Puspitasari et al. al., 2021). The statement above shows the application of signal theory; increasing the NIM value can influence the profitability value, providing a positive signal or signs to parties who need this information (investors or customers). This theory is supported by research results from Wildan Farhat Pinasti (2018) and Hidayat (2022), which state that Net Interest Margin (NIM) has a positive and significant influence on banking profitability. This requires companies to maintain the NIM ratio positively, thus attracting investors. In contrast to previous research, Dewi (2022) stated in her research that NIM does not affect banking profitability. This research also explained that the high and low NIM values obtained by banks were caused by movements in bank interest rates

in the previous period. Based on the explanation above, the author raises the following hypothesis:

H_4: Net Interest Margin (NIM) has a significant effect on the profitability of conventional banks

Loan to Deposit Ratio (LDR) and Return on Average Asset (ROAA)

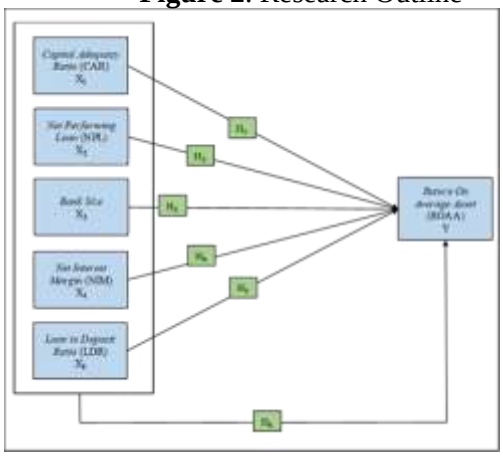
Referring to signaling theory, a positive signal or response can arise if the company can provide positive information to investors regarding its ability to fulfill its short-term obligations (Dewi, 2022). Loan Deposit Ratio (LDR) is used to measure the amount of credit provided by banks compared to the amount of capital used. The government has set the LDR amount at 110% (Kasmir, 2018). A bank's liquidity level can be measured using the Loan to Deposit Ratio (LDR). The higher the LDR value, the more illiquid a bank is, which means it has been unable to fulfill its short-term obligations. On the other hand, the lower the LDR value, the more liquid a bank is, but the more liquid a bank is, it indicates a lot of idle funds. Therefore, good bank management is conservative (Agustina & Wijaya, 2013). Supporting the statement above, research results from Hidayat (2022) and Ikmal (2018) state that LDR positively affects banking profitability. This happens because a high LDR value means more funds are channeled to third parties, thereby increasing bank income. Contrary to previous research, Dewi (2022) stated that LDR has no effect on banking profitability, so banks cannot use liquidity to assess bank health. Based on the existing exposure, the authors can determine the hypothesis as follows:
H_5: Loan Deposit Ratio (LDR) significantly affects the profitability of conventional banks.

CAR, NPL, Bank Size, NIM, LDR, and Return on Average Asset (ROAA)

According to previous research conducted by Munir et al. 2017, CAMEL analysis simultaneously affects banking profitability. The study was conducted by comparing the performance of banks in Indonesia with banks in Malaysia; the ratio used to measure profitability in this study is Return on Investment (ROI). Thus, researchers developed the following hypothesis:
H_6: CAR, NPL, Bank Size, NIM, and LDR simultaneously have a significant effect on the profitability of conventional banks.

The outline of the conceptual framework of this research can be described as follows:

Figure 2. Research Outline



Source: Researcher, 2023

RESEARCH METHODS

This research used quantitative methods to examine the influence between several independent variables and the dependent variable. Quantitative methods are carried out by analyzing descriptive statistics, the results of data classification processing, to explain the characteristics of the variables studied. Secondary data is used in the form of databases, namely company financial report documents and company annual reports downloaded through the official website of the Indonesia Stock Exchange (IDX). The type of data used is ratio data, namely the ratio of annual financial statements of conventional banks during 2020-222 listed on the IDX. The secondary data collected is processed using the Microsoft Excel application, and for hypothesis testing, the EViews version 12 software is used. Conventional banks listed on the Indonesia Stock Exchange (IDX) for the period 2020-2022, as many as 41 banks became the sample of this study. The number of samples in this study is based on criteria that researchers determined, namely conventional banks listed on the Indonesia Stock Exchange during 2020-2022 and still consistently publishing financial reports during this study period. The sampling method used in this research is non-probability sampling, with a purposive sampling technique, where the researcher sets specific criteria or characteristics that must be met by the research sample so that it is under the research objectives and is expected to answer research problems. The following criteria are taken into consideration for the withdrawal of this research sample, namely as follows:

Table 1. Research Sample

No.	Criteria	Quantity
1.	Banking sector companies listed on the Indonesian Stock Exchange (IDX)	46
2.	Syaria Banks (non conventional) bank 2020-2022	(4)
3.	Newly listed banks in 2020	(1)
	Number of companies sampled	41
	Observation data for 2020-2022	123

Source: Processed Data, 2023.

The dependent variable used in this study is the profitability ratio Return on Average Asset (ROAA). ROAA is a measurement tool commonly used by banking companies to measure performance. The best ratio to measure the value of bank profitability is ROAA because commercial banks with a high leverage ratio tend to report higher ROAA. To measure the value of ROAA, the following formula can be used:

ROAA = (Net Income/ Average Total Assets) ……..…… (1)

In addition to the dependent variable, this research is supported by variables that affect the dependent or independent variables. The independent variables in this study are summarized into CAMEL assessment aspects, each indicator of which is proxied by several financial ratios, namely CAR (X_1), NPL (X_2), Bank Size (X_3), NIM (X_4), and LDR (X_5). Indonesia's minimum CAR value standard is regulated in Bank Indonesia Regulation Number 10/15/PBI/2008, which states that the minimum CAR value banks in Indonesia must obtain is 8%. Based on Bank Indonesia Circular Letter Number 3/30 / DPNP dated December 14, 2001, CAR can be calculated using the following formula:

CAR = (Equity/ Aggregated risk-weighted assets for credit risk) ..... (2)

Commercial Bank Health states that the banking NPL ratio is 5%; the smaller the NPL percentage generated, the bank will get a stable profit. The NPL value of the bank can be calculated using the following formula:
NPL = (Value or number of loans/ Total portfolio) …….……...… (3)
Management is the third indicator in measuring bank performance or health, proxied by bank size. Total assets, total sales, total profit, tax burden, and others can assess the size of a company. Similar to banks, the size of a bank can be assessed by the total assets owned by the bank. Therefore, the formula that can be used to assess bank size is as follows:
Bank Size = LN (Total Assets) …… (4)

Earning indicators are proxied by Net Interest Margin in this study; if the NIM value obtained by a bank is high, the profitability value of a bank will also increase. This happens because the increase in net interest income, the difference between total interest expense and total interest income, increases profit before tax.
NIM = (Investment Income-Interest Expenses)/ Average Earning Assets …….. (5)

One of the ratios that can proxy liquidity indicators is the Loan Deposit Ratio (LDR) ratio; LDR is a ratio that describes the entire amount of credit provided to third-party funds. Bank Indonesia Circular Letter Number 13/24/DPBP/2011 states that the LDR value that reflects a bank in a healthy condition is 78%-100%. The formula that can be used to calculate the LDR ratio is as follows:
LDR = (Bank's total amount of loans/ total amount of deposits) ……..... (6)

RESULTS AND DISCUSSION

Descriptive statistics are one of the data analysis techniques often used by researchers. Descriptive statistics are data analysis techniques that use the distribution's minimum, maximum, average (mean), standard deviation, sum, range, kurtosis, and skewness. From the Eviews's output (table 2), the ROAA variable obtained an average value of -2.767477, a maximum value of 4.684861, and a minimum value of -7.202089. The CAR variable obtained an average value of -1.172286, a maximum value of 1.043381, and a minimum value of -2.195526. The NPL variable gets an average value of -4.486656, a maximum value of -0.314711, and a minimum value of -7.824046. The BS variable with 123 data has an average value of 2.997322, a maximum value of 3.48187, and a minimum value of 2.680664. The NIM variable obtained an average value of -3.252518, a maximum value of -0.239654, and a minimum value of - 6.119298. The LDR variable with 123 data obtained an average value of -0.23259, a maximum value of 1.266948, and a minimum value of -2.091514. Based on the test results, the regression model is obtained as follows:
$ROAA = 2.624833 + 0.06169X_1 – 0.221742\ X_2 – 2.42440\ X_3 – 0.356331\ X_4 + 0.890452\ X_5$ (7)

Table 2. Descriptive Statistics

Variable	N	Mean	Maks.	Min.
ROAA	123	-2.767477	4.684861	-7.202089
CAR	123	-1.172286	1.043381	-2.195526
NPL	123	-4.486656	-0.314711	-7.824046
BS	123	2.997322	3.48187	2.680664
NIM	123	-3.252518	-0.239654	-6.119298
LDR	123	-0.23259	1.266948	-2.091514

Source: Processed Data (2023).

Chow Model Test and Hausman Test To determine the best model for estimating panel data, we conducted a chow test. Based on the Chow test results (table 3), the probability value of cross-section F is 0.000, which means s <0.05, indicating that the appropriate model used to estimate panel data is the Fixed Effect Model (FEM). In addition to the Chow test, researchers conducted a Hausman test (table 3) which showed that the probability value <0.05, so the suitable model to estimate panel data is FEM.

Table 3. Model Test Output

Effects Test	Statistic	d.f	Prob.
Cross-section F	19.263198	-40.77	0.0000
Cross-section Chi-square	295.017759	40	0.0000

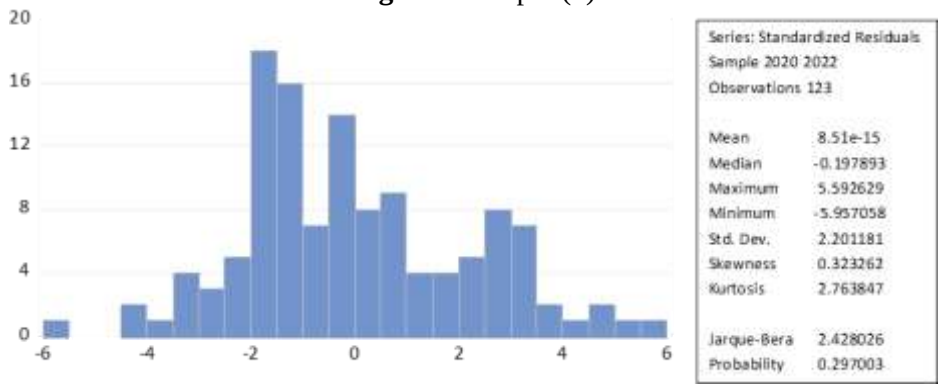
Test Summary	Chi-Sq Statistic	Chi-Sq.d.f	Prob.
Cross-section Random	16.390124	5	0.0058

Source: Processed Data (2023).

Classical Assumption Test

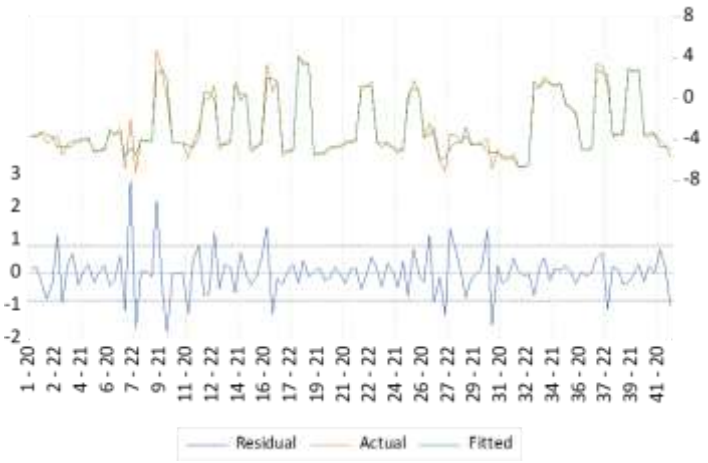
In the Eviews software, normality testing looks at the Jarque-Bera value, where the probability value> 0.05 indicates that the data is typically distributed. So, based on the graph output (figure 3), it can be concluded that the research data is typically distributed. As depicted in the graph output (figure 4), there is no regular pattern between the two, indicating no heteroscedasticity. Based on the results of the data processing output (table 4), it appears that the DW value is 1.326080, which indicates that there is no autocorrelation because the autocorrelation test can be known by determining the Durbin Watson (DW) value, where if the DW value is between -2 to +2, there is no autocorrelation. Based on the results of processing output, it can be concluded that there is no multicollinearity. If the correlation coefficient of each independent variable> 0.8, then multicollinearity occurs; otherwise, if <0.8, there is no multicollinearity.

Figure 3. Output (1)



Source: Processed Data (2023).

Figure 4. Output (2)



Source: Processed Data (2023).

Table 4. Output

Test Summary	Chi-Sq Statistic
R-squared	0.95135
Prob (F-statistic)	0.00000
Durbin-Watson stat	1.32608

Source: Processed Data (2023).

Hypothesis Test

Table 5. Hypothesis Test

Variable	Coefficient	T-statistic	Prob	Result
C	2.624833	0.708806	0.0506	
CAR	0.061694	0.175078	0.0015	Accepted
NPL	-0.221742	-1.83228	0.0198	Accepted
BS	-2.4244	-2.04568	0.0442	Accepted
NIM	-0.356331	-1.426252	0.1578	Rejected
LDR	0.890452	1.84532	0.0036	Accepted
Test Summary	Chi-Sq Statistics			
R-squared	0.95135			
Prob (F-statistic)	0.00000			
Durbin Watson stat	1.32608			

Source: Processed Data (2023).

Based on the test results above (table 5), it appears that the CAR, NPL, BS, and LDR variables obtained prob values <0.05, and then the variable has a significant effect on ROAA. The NIM variable obtains a prob value> 0.05, which indicates that the variable has no significant effect on the ROAA variable. Based on the test results above illustrate that the prob F-static value is 0.00000 <0.05, which indicates that the independent variables have a significant effect on the dependent variable. The coefficient of determination test is a test to determine how much influence all independent variables have on the dependent variable. Based on the test results above, the R-Square value is 0.951346, meaning that the variation of all independent variables can affect the dependent variable (ROAA) by 95.13%. In contrast, other variables outside the study influence the rest.

Discussions

Capital Adequacy Ratio (CAR) significantly affects the profitability of conventional banks.

Based on hypothesis testing, the CAR variable significantly affects conventional banking ROAA. This supports the statement by Mudrajad Kuncoro (2011) that the higher the CAR value of a bank, the higher the profit obtained by the bank; this is due to the company's ability to cover the risk of loss that can arise, in other words, the smaller the risk of a bank, the greater the profitability value obtained by the bank. Referring to signaling theory, the capital adequacy ratio can send signals to shareholders and customers regarding the company's current financial condition. The relationship between CAR and ROAA is complex and can be nuanced depending on the specific context. While there is some evidence to suggest that a higher CAR can have a positive impact on ROA, it's essential to consider several factors before drawing a definitive conclusion. Positive effects of higher CAR include a) increased bank stability. A higher CAR indicates a bank has more capital to absorb losses, which can boost investor confidence and potentially lead to lower borrowing costs. This can translate to higher profitability; b) reduced risk-taking. Banks with higher CAR may be less inclined to engage in risky activities, which can further reduce potential losses and improve ROAA, and c) the signaling effect. A good CAR can signal a bank's sound financial health, attracting more customers and deposits, potentially leading to higher ROAA. Therefore, it's essential to consider the specific context and other relevant factors before concluding whether a higher CAR will significantly affect ROAA. Some studies have found positive correlations, while others have no significant or negative effect. Here are some additional points to consider: a) the optimal level of CAR. There is no one-size-fits-all optimal level of CAR, as it can vary depending on a bank's risk profile, business model, and regulatory environment, and b) the impact of other factors. ROAA is influenced by factors beyond CAR, such as operating efficiency, asset quality, and interest rates. The high and low CAR values obtained by a bank can reflect whether or not the bank's financial condition is healthy; Bank Indonesia has determined that a bank can be said to be healthy if the CAR value obtained reaches 8% and above, for a value of 6.4% - 7.9% indicates that the bank has a less healthy predicate. A value below 6.4% indicates an unhealthy bank's financial condition. This theory is supported by research by Ebrahimi et al. (2017); the CAR ratio is one of the capital adequacy ratios that positively affect banking profitability.

Net Performing Loan (NPL) significantly affects the profitability of conventional banks.

In the t-test, the NPL variable obtained a probability value of 0.0198, indicating that NPL has a significant and negative impact on ROAA. This happens because the NPL ratio of the conventional banks in the sample does not exceed the limit set by Bank Indonesia, which is 5%. This refers to the statement by Mustafa (2020); according to Mustafa (2020), a high NPL ratio will increase the costs incurred by the bank, causing losses to the bank. So, it can be said that the greater the NPL value, the greater the risk of credit failure, which has the potential to reduce interest income and reduce profits. The high NPL value will lower the ROAA value due to the loss of bank opportunities to earn profits. Some reasons why NPL negatively impacts ROAA: a) reduced interest income. NPSs are loans where borrowers are not making their scheduled payments. This means the bank loses the interest income it would have earned on those loans. This directly reduces the bank's profitability, reflected in its ROAA; b) increased provisioning costs. When a loan is unlikely to be repaid, the bank must set aside money to cover the potential loss. This is called provisioning. Higher NPL leads to higher provisioning costs, further squeezing the bank's profitability and lowering ROAA; c) reputational damage. High NPLs can damage a bank's reputation, making it less attractive to investors and customers. This can lead to lower deposit levels and higher borrowing costs, negatively impacting ROAA, and

d) reduced efficiency. Managing NPLs is time-consuming and expensive. Banks must devote resources to collection efforts, legal proceedings, and loan restructuring, which takes away from their ability to focus on profitable activities. This can lead to lower overall efficiency and a decrease in ROAA. The adverse effects of NPLs on a bank's profitability outweigh any potential benefits.

Bank Size significantly affects the profitability of conventional banks.

Bank size is an independent variable tested in this study; after conducting a t-test, the result shows that the probability value of the variable is 0.0442, which indicates that BS has a significant effect on ROAA. The view that bank size affects the value of banking profitability is supported by the study by Ali & Puah (2018), which states that bank size positively affects the profitability of banks in Pakistan. In line with signaling theory, the increase in banking profitability influenced by bank size is a positive signal for users of financial information to make decisions. The relationship between bank size and ROAA is complex and nuanced, with no definitive, universally applicable answer. The potential effects of bank size on ROAA can be positive and negative, and various factors influence the nature and strength of this relationship. Positive effects of more prominent bank size factors: a) economies of scale. Larger banks can generate cost efficiencies through economies of scale. They can benefit from bulk purchasing, centralized operations, and more efficient technology investments, allowing them to operate at a lower cost per unit. This can potentially lead to higher profitability and ROAA; b) diversification. Larger banks can diversify their operations and income streams across different markets, products, and geographies. This diversification can help mitigate risk and stabilize earnings, potentially leading to more consistent and higher ROAA; c) resource access. Larger banks often have better access to financial resources, including deposits and capital, which can provide them with greater lending capacity and allow them to pursue profitable opportunities that may not be available to smaller banks. This can potentially boost ROAA; d) market power. Larger banks may have greater market power and pricing flexibility, allowing them to negotiate better terms with borrowers and depositors. This can lead to higher margins and improve ROAA; e) the banking environment, such as the competitive landscape, economic conditions, and regulatory framework; and f) the bank's business model. Banks with different business models (for example, retail banking versus investment banking) may experience different effects of size on ROAA and g) management quality. A bank's management team's competence and strategic vision are crucial in determining how effectively they can leverage or mitigate the challenges and opportunities associated with size, ultimately impacting ROAA.

Net Interest Margin (NIM) has a significant effect on the profitability of conventional banks.

Furthermore, the NIM variable is the fourth independent variable tested in this study. Universally, Net Interest Margin (NIM) is the difference between interest income and interest expense. in other words, NIM can show the bank's profit from credit or lending activities. After hypothesis testing, the NIM variable is known to have no significant effect on ROAA; this happens because the NIM obtained by banks is caused by the movement of bank interest rates in the previous period. Some factors that could be reasons why NIM has no significant impact on ROAA are a) NIM volatility. While a consistently high NIM is desirable, excessive volatility can lead to instability and difficulty predicting future earnings, potentially impacting ROAA negatively or without significant impact; b) different NIM levels in different contexts. Banks operating in different markets or with different business models may have naturally lower or higher NIMs, and c) other factors contribute to ROAA. NIM is not the only factor influencing ROAA. Operating expenses, asset quality, non-interest income, and risk management practices

also play significant roles. A high NIM alone may not guarantee a high ROA if other factors are not managed effectively.

Loan Deposit Ratio (LDR) significantly affects the profitability of conventional banks.

The fifth independent variable tested in this study is LDR. The results show that the LDR variable significantly affects ROAA. This happens because the high value of LDR means that the higher the value of funds channeled to third parties, the higher the bank income. Loan Deposit Ratio (LDR) measures the amount of credit a bank provides compared to the amount of capital used; the government has set the amount of LDR at 110%. A bank's liquidity level can be measured using the Loan Deposit Ratio (LDR); the higher the LDR value, the more illiquid a bank is, which means it cannot fulfill its short-term obligations. Conversely, the lower the LDR value, the more liquid a bank is, but the more liquid a bank indicates that there are many idle funds. Some factors could be why LDR significantly impacts ROAA: a) increased income. Banks that lend out a significant portion of their deposits generate more interest income on those loans. This can directly contribute to their profitability and potentially boost ROAA; b) signaling effect. A well-managed high LDR can be seen as a signal of a bank's confidence in its creditworthiness and its ability to manage risk. This can attract more deposits and customers, further increasing profitability and ROAA; c) efficient utilization of resources. A higher LDR indicates that the bank effectively puts its deposits to work by generating returns through loans. Efficient resource utilization and potentially higher ROAA; d) asset quality. The quality of the loans issued under a higher LDR is crucial. Loans to creditworthy borrowers with lower risk of default are less likely to impact ROAA compared to loans to high-risk borrowers negatively; e) economic environtment. Higher LDRs might be more sustainable during periods of economic growth due to lower default risks. Conversely, lower LDRs might be preferred in recessions to mitigate risk and protect ROAA; and f) the bank's business model. Different bank models have different optimal LDR ranges based on risk profiles and income generation strategies.

CAR, NPL, Bank Size, NIM, and LDR simultaneously have a significant effect on the profitability of conventional banks.

This study uses CAMEL analysis with five financial metrics representing each aspect. Therefore, a simultaneous test is conducted to determine whether the independent variables representing CAMEL aspects simultaneously significantly affect ROAA. Based on the results of the F-Test or Simultaneous Test, it is known that the CAMEL analysis sent simultaneously by the five financial indicators has a significant effect on ROAA. All those independent variables do indeed have a significant and simultaneous effect on the ROAA of a bank. Their combined influence on ROAA is complex and multifaceted, with positive and negative interactions possible. Here's a summary of the individual effects and their potential interactions: a) CAR. Higher CAR implies better risk absorption capacity, potentially leading to lower provisioning costs and higher profitability (positive effect); b) NPL. High NPLs can amplify the adverse effects of low CAR and vice versa. Higher NPL translates to lower interest income and increased provisioning costs, directly impacting ROAA negatively; c) bank size. Bureaucracy and inefficiencies in large banks can erode profitability and reduce ROA (negative effect); d) NIM. High NIM can mitigate adverse effects of other factors like high NPLs or low CAR; e) LDR. Higher LDR indicates efficient utilization of deposits, generating more loan income and potentially boosting ROAA. Interactions between those independent variables create a complex web of influences on ROAA; for example, a high CAR can mitigate the

negative impact of high NPLs on ROAA; a high NIM can compensate for the reduced profitability from a low LDR, or bank size can amplify both positive and negative effects of other variables depending on its management effectiveness. Therefore, analyzing the impact of these variables on ROAA requires a holistic approach considering their individual and combined effects within the specific context of the bank and its operating environment. Statistical models and empirical analysis are often used to quantify these relationships and assess the relative importance of each independent in influencing ROAA.

CONCLUSIONS AND SUGGESTION

This study was conducted to explain the effect of CAMEL analysis on the profitability of the conventional banking industry listed on the Indonesia Stock Exchange in 2020-2022. Not only that, this research is expected to be used to see what financial aspects banks need to pay attention to in increasing profitability. After testing, it can be concluded that CAMEL analysis is helpful for potential banking investors or other stakeholders because, with this analysis, the risks that banks may face in increasing profits will be seen. So that bank management can anticipate these risks. Suggestions for potential investors who will invest in conventional banking sector companies include considering financial ratios that significantly affect the company's profitability. For further researchers, it is recommended to conduct further research on other financial ratios and increase the research period to be used so that it is expected to obtain even better results.

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