The Eastasouth Journal of Social Science and Humanities
Vol. 2, No. 03, June 2025, pp. 313 – 323
ISSN: 3026-5592, DOI: 10.58812/esssh.v2i03

The Influence of CAMEL Ratio on Bank Stock Price Changes Post COVID-19

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Article Info

Article history:

Received Jun, 2025
Revised Jun, 2025
Accepted Jun, 2025

Keywords:

Bank;
CAMEL Ratio;
Stock price

ABSTRACT

The purpose of this study is to empirically test the effect of CAMEL on changes in stock prices after COVID-19 in banking companies listed on the Indonesia Stock Exchange. This study is descriptive explanatory with a quantitative approach. Analysis with data processing using the EViews program. The results of the study indicate that CAR has no significant effect on changes in stock prices, RORA has a significant effect and has a negative relationship direction on changes in stock prices, NPM has no significant effect on changes in stock prices, ROA has a significant effect and has a positive relationship direction on changes in stock prices, and LDR has no significant effect on changes in stock prices.

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1. INTRODUCTION

The capital market is crucial to a nation's economy, serving primarily two functions: supporting economic activities and providing financial services [1], [2]. Shares are the most widely traded financial instruments in the capital market, especially the Indonesia Stock Exchange (IDX), which are proof of ownership or participation of individuals or institutions in a company [3].

Rising stock prices and upward trends generally indicate strong company performance. In investment activities, the main goal is to maximize profits (capital gain) from invested funds. Therefore, companies must maintain conditions that support sustainable growth in the value of their shares.

Two types of factors affect the sustainability of stock prices: (a) internal factors related to the performance and financial stability of the company itself, including aspects such as net income, information asymmetry, sales growth, separation of ownership and management, and operational efficiency; (b) external factors—often referred to as macroeconomic factors—include elements such as inflation and interest rates, regulatory intervention by financial authorities, economic growth, exchange rate fluctuations, and investor behavior, including panic reactions and market manipulation. These elements contribute to the risks associated with the capital market [4].

Among all the sectors of the traded stock economy, banking is one of the most dominant. According to statistics retrieved from the official IDX website on October 20, 2024, the banking sector holds the highest market capitalization on the Composite Stock Price Index (IHSG), accounting for 36.4%. This figure far surpasses Raw Materials (14.4%) in

second place and Energy (11.8%) in the next position. Moreover, the banking industry wields significant influence, since four financial institutions are among the top 10 businesses by market capitalization on the IHSG, collectively accounting for 50.81% of the entire market value of the IHSG.

Over the past five years, the banking stock price index has exhibited a favorable trend. When COVID-19 hit the world in 2019-2020, banking stock prices had fallen significantly. Even so, the price managed to recover in 2021 and even continued to advance in the following years. This can be interpreted as the performance of banking companies which is still very good in generating profits.

However, to provide a clearer picture of stock price movements, a more commonly known instrument is the CAMEL Ratio [5]. This ratio consists of five aspects: Capital, Asset Quality, Management, Income, and Liquidity.

Experts argue that there are several reasons why the CAMEL Ratio is suitable for analyzing the performance and achievements of banking companies. [6], [7], [8]: (a) comprehensive - examines five core areas; (b) internationally accepted standards - recognized and implemented by regulators globally; (c) plays a critical role in risk identification - helps banks detect and address credit, liquidity and other operational risks; (d) profitability assessment - enables stakeholders to determine how efficiently a bank converts its assets into revenue; (e) can be transformed as an evaluation of management performance by analyzing how effectively bank leaders handle assets, liabilities and strategic decisions; and (f) can predict a company's financial health by offering insight into the bank's future stability.

In relation to the last reason above, the capacity ratio can be considered from the perspective of Signal Theory [9]. This theory states that corporate executives who have superior knowledge about their company are motivated to share this information with potential investors to help increase the company's stock price. By doing so, the company can present a positive image of its performance and differentiate itself from less stable or underperforming companies by clearly communicating its actual conditions to the market. Thus, it can be a signal for investors in carrying out their investment activities.

Academics and experts have conducted several studies on how financial ratios (in this case CAMEL) can indicate the financial performance of issuers. This ratio has demonstrated its capacity to significantly illustrate its impact (both favorable and unfavorable) on stock values, both collectively and separately [10]. Commonly utilized criteria to assess the impact of corporate performance on stock prices include the Capital Adequacy Ratio (CAR), Return on Risk Assets (RORA), Net Profit Margin (NPM), Return on Assets (ROA), and Loan to Deposit Ratio (LDR) [11].

Previous studies have shown a relationship between financial ratios and stock prices but have not taken into account the impact of the pandemic. In the post-pandemic age, comprehending the financial performance of corporations, particularly banks, is essential for investors to evaluate the pandemic's effect on stock prices and the length of recovery. This study seeks to elucidate the impact of the CAMEL Ratio—represented by the examination of CAR, RORA, NPM, ROA, and LDR—on fluctuations in bank stock prices following the COVID-19 pandemic. This study can offer several insights: (a) providing an overview of how the ratios affect the stock prices of various banks; and (b) illustrating the extent to which the relationship can fulfil the capacity of Signalling Theory for investors.

2. LITERATURE REVIEW

2.1 Signalling Theory

Signalling Theory itself is a form of interpretation obtained from various things related to the ecosystem and conditions of the labor market at that time. Before finally reaching into the context of a much more comprehensive economic study, this definition was first created to specifically discuss research topics related to the labor market [12].

Meanwhile, for the context that focuses on the financial performance of a banking institution, this theory refers to the interpretation of the distribution of valuable information as a reliable signal regarding a socially valuable "personal" quality (which in the context of this research refers to stock prices) of the distributor (banking) in a non-market economy [13].

2.2 *Stock Price*

Shares or bonds are proof of ownership or participation of an individual or institution in a particular company, which is generally marked by the existence of securities as a form of participation in the ownership of the individual or institution [12]. Shares usually appear in the form of physical or digital documents that represent the investor's rights to a portion of the assets or future profits of the organization that issued them, along with provisions that govern how the investor can exercise those rights [13].

Stock prices are primarily influenced by supply and demand dynamics—appreciating when demand surpasses supply and depreciating when supply surpasses demand. Various factors influence supply and demand [14]: (a) Rational variables – related to things that can be measured using economic principles such as interest rates, company performance, inflation and growth rates, etc.; whereas (b) Irrational variables – things that cannot be measured using economic principles such as rumors in the market, information from colleagues, etc.

2.3 *CAMEL Ratio*

According to experts, this ratio is considered a form of fundamental analysis because it examines a company's financial data, such as profitability, growth potential, dividend history, intrinsic value of the stock, etc [15].

CAR is a metric utilized to assess a bank's capital adequacy. CAR is the ratio between the capital owned by the bank and the available capital requirements after taking into account the risk margin (risk growth) of risk-weighted assets (RWA) [16], [17].

RORA considers the quality of its productive assets, including the relationship between operating income, investment amount, and total loans. It is commonly utilized to assess a bank's capacity to maximize its assets and the earnings generated [18].

NPM is a metric that assesses a bank's capacity to generate net profit from its core operational activities, reflecting the corporate management of the institution. Net profit parameters in this context include the amount of retained earnings and profits that are ready to be distributed by the bank to investors (dividends) [18].

ROA is a widely used metric to assess how effectively a company utilizes its assets to generate profits (earnings). ROA can be used to determine whether a bank is increasing its profitability by evaluating its net income [19].

The LDR is a ratio utilized to evaluate a company's liquidity capacity. This ratio also includes how quickly the bank can provide current assets for various payment purposes and provide loans to customers [17].

2.4 *Previous Research*

Several studies have examined how the CAMEL Ratio can affect stock prices. CAMEL has various functions to see the performance of Islamic banks – which can also be a signal for banking stock prices [5]. The CAMEL ratio has been utilized to evaluate the financial stability of banks in Tanzania. There, it has successfully shown how most of them are affected by factors such as earning capacity and liquidity position: indicating that this ratio can describe the internal aspects of banks as determinants of the increase/decrease in banking stock prices.[20]. In addition, a study was conducted in Nepal on the mixed correlation between the CAMEL framework and ROA. It showed that both are driven by several internal

factors, such as income and asset quality, as well as capital adequacy [21].

The CAMEL ratio is generally used according to its capacity: for the presentation of signaling theory. All studies show a significant influence between the ratio and the signaling of banking financial attributes. Therefore, this study will examine the correlation of the CAMEL ratio to changes in stock prices in the post-pandemic era.

3. RESEARCH METHODOLOGY

This study will elucidate the significance of the CAMEL Ratio's influence on bank stock prices post-COVID-19. This research method integrates descriptive components—detailed mapping of observed financial phenomena—and explanatory elements, testing causal relationships between key variables through statistical inference [22].

This analysis utilizes secondary data obtained from financial reports released during the 2022-2023 period (post-pandemic) by the IDX and the Indonesian Capital Market Directory (ICMD).

The validity of statistical conclusions is ensured by applying regression-based testing procedures and established formulas. Multiple regression analysis and hypothesis testing techniques are used to provide empirical evidence to support the study's conclusions. From there, five hypotheses are formulated:

a. H1 = CAR has a simultaneous positive impact on stock price fluctuations post-COVID-19 in 15 banking firms listed on the IDX;
b. H2 = RORA has a simultaneous positive impact on stock price fluctuations post-COVID-19 in 15 banking firms listed on the IDX;
c. H3 = NPM has a simultaneous positive impact on stock price fluctuations post-COVID-19 in 15 banking firms listed on the IDX;
d. H4 = ROA has a simultaneous positive impact on stock price fluctuations post-COVID-19 in 15 banking firms listed on the IDX;
e. H5 = LDR has a simultaneous positive impact on stock price fluctuations post-COVID-19 in 15 banking firms listed on the IDX;
f. H6 = CAR, RORA, NPM, ROA and LDR simultaneously influence changes in shares after COVID-19 in banking companies listed on the IDX.

3.1 Research Variables

This study investigates five financial indicators within the CAMEL framework as independent variables:

a. (X 1) CAR = (Capital ÷ Risk-weighted assets) x 100%
b. (X 2) RORA = (Total income ÷ (Loans + Investment)) x 100%
c. (X 3) NPM = (Net income ÷ Total income) x 100%
d. (X 4) ROA = (Net Income ÷ Total Assets) x 100%
e. (X 5) LDR = (Loans ÷ Total Savings) x 100%

The dependent variable (Y) represents the variation in individual bank stock prices on the Indonesia Stock Exchange (IDX) following the COVID-19 pandemic. This variable is assessed utilizing historical closing prices in Rupiah (IDR) from 2022 to 2023. The formula used to calculate stock price changes is:

$$Formula\ \Delta HS = Pt - Pt\text{-}1$$

a. ΔHS: Change in stock price
b. P t: Closing price at time t
c. P t-1: Closing price at time t-1

3.2 Population and Sampling

This study's population consisted of 47 banks listed on the Indonesia Stock Exchange (IDX) from 2022 to 2023. Using the purposive sampling method, 40 representative banks were selected that met the following criteria: (a) Enrolled as participants of the Indonesia Stock Exchange throughout the 2022-2023 timeframe; (b) Have published financial reports that can be accessed through the official IDX website; (c) The released financial reports include data necessary for data collection (CAR, RORA, NPM, ROA, LDR, and Stock Price Changes) or

that can be utilized to produce data (net profit, gross profit, and risk-weighted assets); and (d) The sample in this study is banks that have a positive ROA value.

The selected banks represent conventional and Islamic financial institutions with varying levels of capitalization.

3.3 Data Collection

This research employs secondary financial data from the Indonesia Stock Exchange (IDX) for the years 2022 to 2023. The data collection techniques used are: (a) Documentation – Retrieval of structured financial data from the IDX website; and (b) Literature Review – Analysis of books, journals, research reports, and digital sources related to the CAMEL ratio and its effect on banking stock price behavior.

3.4 Data Analysis Techniques

Panel data regression analysis is employed to examine the impact of multiple independent factors on a singular dependent variable [23]. The methodologies employed in panel data regression analysis include the common effect model (CEM), fixed effect model (FEM), and random effect model (REM), utilizing the Chow Test and the Hausman test. The regression equation used is:

$PHS = \alpha + \beta\ 1\ CAR + \beta\ 2\ RORA + \beta\ 3\ NPM + \beta\ 4\ ROA + \beta\ 5\ LDR + \gamma$

d. PHS: Stock price changes
e. α: Constant
f. β 1 -β 5: Regression coefficientγ: Error item

This study employs two calculating methods to test the hypothesis: (a) Partial t-test – which determines the individual significance of each independent variable; and (b) Simultaneous F-test – which examines the collective impact of all independent factors on the dependent variable.

To facilitate the analysis process, the use of EViews statistical software was applied [24]: (a) Data condensation and formatting; (b) Importing data into software; (c) Performing analysis; and (d) presenting and interpreting statistical results.

4. RESULTS AND DISCUSSION

This research examines 40 financial institutions listed on the Indonesia Stock Exchange (IDX) for the period of 2022–2023. Financial data from these banks are summarized, compiled in Microsoft Excel, and further analyzed using EViews 13. The output is the basis for interpretation and discussion of the statistics produced. Details of all banking institutions can be seen in Table (1) below:

Table 1. Bank Financial Report Data

No.	Stock Code	Year	X1	X2	X3	X4	X5	Y
			CAR	RORA	NPM	ROA	LDR	Stock Price (Closing)
1	BBCA	2022	0.2580	0.0496	0.4771	0.0320	0.6520	8,550
		2023	0.2940	0.0589	0.4939	0.0360	0.7020	9,400
2	BNGA	2022	0.2219	0.0260	0.2702	0.0216	0.8563	965
		2023	0.2940	0.0327	0.3487	0.0259	0.8930	1,695
3	BDMN	2022	0.2630	0.0212	0.1920	0.0170	0.9100	2,730
		2023	0.2940	0.0220	0.1887	0.0170	0.9660	2,780
4	BMRI	2022	0.1965	0.0456	0.3600	0.0330	0.7761	4.963
		2023	0.2940	0.0581	0.4334	0.0403	0.8675	6,050
5	MAYA	2022	0.1113	0.0002	0.0033	0.0004	0.7965	520
		2023	0.1078	0.0002	0.0025	0.0004	0.8859	454
6	BNI	2022	0.2665	0.0142	0.1774	0.0125	0.8692	228
		2023	0.2774	0.0169	0.1959	0.0141	0.8425	242
7	MEGA	2022	0.2541	0.0501	0.3496	0.0400	0.6804	5.275
		2023	0.2617	0.0425	0.2805	0.0347	0.7403	5.100

No.	Stock Code	Year	X1	X2	X3	X4	X5	Y
			CAR	RORA	NPM	ROA	LDR	Stock Price (Closing)
8	CHAPTER	2022	0.2362	0.0048	0.0406	0.0104	0.7696	119
		2023	0.3100	0.0070	0.0539	0.0071	0.7568	65
9	BNI	2022	0.1930	0.0269	0.2310	0.0250	0.8580	9.225
		2023	0.2190	0.0323	0.2376	0.0260	0.8420	5.375
10	NISP	2022	0.2153	0.0209	0.3442	0.0186	0.7722	745
		2023	0.2369	0.0259	0.3508	0.0214	0.8380	1.180
11	PNBN	2022	0.3007	0.0206	0.2056	0.0191	0.9167	1,540
		2023	0.3240	0.0198	0.1741	0.0157	0.9751	1.210
12	BNLI	2022	0.3419	0.0146	0.1377	0.0157	0.6890	1,015
		2023	0.3873	0.0204	0.1430	0.0157	0.7480	920
13	BBRI	2022	0.2554	0.0461	0.2665	0.0379	0.7917	4,940
		2023	0.2727	0.0556	0.2661	0.0410	0.8473	5.725
14	BBTN	2022	0.2016	0.0218	0.1115	0.0102	0.9265	1,350
		2023	0.2017	0.0225	0.1155	0.0107	0.9536	1,250
15	AGRO	2022	0.4374	0.0016	0.0111	0.0105	0.7913	402
		2023	0.4387	0.0033	0.0273	0.0085	0.8421	310
16	AGRS	2022	0.3855	0.0128	0.2537	0.0061	0.7378	90
		2023	0.4133	0.0195	0.3761	0.0092	0.9955	83
17	ARTO	2022	0.8275	0.0018	0.0111	0.0014	1,1376	3,720
		2023	0.6177	0.0064	0.0411	0.0049	1,0777	2,900
18	READ	2022	0.5377	0.0051	0.0514	0.0018	0.2053	131
		2023	0.3557	0.0105	0.1213	0.0064	0.5635	130
19	BBHI	2022	0.7953	0.0335	0.1775	0.0355	1.6319	1,765
		2023	0.8335	0.0537	0.1917	0.0476	1,5077	1,290
20	BBMD	2022	0.4424	0.0500	0.4050	0.0397	0.8084	1,950
		2023	0.4993	0.0420	0.3382	0.0326	0.8658	2.033
21	BCIC	2022	0.1486	0.0039	0.1380	0.0017	0.7110	174
		2023	0.1404	0.0012	0.0347	0.0006	0.7461	120
22	BGTG	2022	1,0641	0.0158	0.1062	0.0060	0.5180	87
		2023	0.9467	0.0312	0.1754	0.0155	0.7236	77
23	CONSTRUCTION	2022	0.3112	0.0113	0.1339	0.0109	0.6306	3,990
		2023	0.2610	0.0193	0.1199	0.0117	0.6560	4,090
24	BJBR	2022	0.1919	0.0188	0.1311	0.0175	0.8503	1,345
		2023	0.2012	0.0193	0.1272	0.0133	0.8754	1.150
25	BJTM	2022	0.2474	0.0354	0.2242	0.0187	0.5650	710
		2023	0.2571	0.0327	0.1998	0.0195	0.7003	625
26	BMAS	2022	0.3155	0.0114	0.1197	0.0106	0.8044	1,090
		2023	0.5012	0.0051	0.0563	0.0046	1,2008	580
27	BNBA	2022	0.5927	0.0074	0.0738	0.0059	0.7734	925
		2023	0.7287	0.0104	0.0834	0.0071	0.8345	745
28	BSIM	2022	0.2949	0.0087	0.0875	0.0054	0.4107	845
		2023	0.2534	0.0024	0.0272	0.0015	0.4094	890
29	BSWD	2022	1,2742	0.0064	0.0778	0.0014	1,0820	1,750
		2023	0.9254	0.0136	0.1375	0.0096	1,0559	1.245
30	BTPN	2022	0.2570	0.0264	0.2283	0.0240	1,2670	2,650
		2023	0.2770	0.0208	0.1426	0.0170	1,4270	2,620
31	BVIC	2022	0.2197	0.0128	0.1327	0.0147	0.8169	107
		2023	0.1995	0.0053	0.0554	0.0048	0.8306	99
32	DNAR	2022	0.4767	0.0018	0.0283	0.0022	1,4606	170
		2023	0.4922	0.0039	0.0475	0.0035	1,3673	121
33	INPC	2022	0.2331	0.0035	0.0381	0.0025	0.5033	71
		2023	0.2496	0.0093	0.0988	0.0060	0.5888	73

No.	Stock Code	Year	X1	X2	X3	X4	X5	Y
			CAR	RORA	NPM	ROA	LDR	Stock Price (Closing)
34	MCOR	2022	0.3273	0.0074	0.1028	0.0069	0.9298	80
		2023	0.3745	0.0146	0.1428	0.0122	0.9686	78
35	NOBU	2022	0.1854	0.0106	0.0894	0.0052	0.6128	555
		2023	0.2348	0.0102	0.0944	0.0079	0.8068	740
36	PNBS	2022	0.2271	0.0016	0.2658	0.0179	0.9732	63
		2023	0.2050	0.0016	0.2184	0.0162	0.9184	54
37	SDRA	2022	0.2366	0.0243	0.2909	0.0233	1,3916	570
		2023	0.2388	0.0201	0.1878	0.0172	1,4106	565
38	BRIS	2022	0.2029	0.0261	0.2171	0.0198	0.7937	1,290
		2023	0.2104	0.0315	0.2563	0.0235	0.8173	1,740
39	BTPS	2022	0.5366	0.1176	0.3312	0.1143	0.9568	2,790
		2023	0.5160	0.0668	0.1881	0.0634	0.9378	1,690
40	BBSI	2022	2,8388	0.0693	0.4592	0.0226	3,5500	3.160
		2023	1,5806	0.0661	0.3034	0.0364	5,2791	3,660

Source: Processed data (2025)

4.1 Data Collection

The method employed is the Fixed Effects Model (FEM) based on panel data regression analysis. The Chow Test findings indicate Chi-Square statistics below the Chi-Square table, whereas the Hausman test reveals Cross Section Random with Chi-Square values less than 0.05. The outcomes of the FEM model regression analysis in this study are as follows:

$$Y = 6.3755 + 0.2526*X1 - 26.0441*X2 + 0.9326*X3 + 33.4763*X4 + 0.0024*X5$$

The elucidation of the statistical outcomes from multiple linear regression analysis is as follows:

a. The constant (α) of 6.3755 indicates that if the CAR, RORA, NPM, ROA, and LDR variables are held constant or set to zero, the estimated change in stock price is 6.3755;
b. The CAR coefficient (β 1 CAR) of 0.2526 signifies that a 1 unit increase in CAR (with other variables constant) will result in a 0.2526 unit increase in stock price changes;
c. The RORA coefficient (β 2 RORA) of -26.0441 implies that a 1 unit increase in RORA (with other variables constant) will lead to a 26.0441 unit decrease in stock price changes;
d. The NPM coefficient (β 3 NPM) of -0.9326 indicates that a 1 unit increase in NPM (with other variables constant) will cause a 0.9326 unit increase in stock price changes;
e. The ROA coefficient (β 4 ROA) of 33.4763 denotes that a 1 unit increase in ROA (with other variables constant) will result in a 33.4763 unit increase in stock price changes;
f. Coefficient LDR (β 5LDR) of 0.0024 means that every increaseLDR of 1 unit (assuming other variables remain constant) will cause an increase in the stock price change of 0.0024 units;

The regression model study indicates that the CAR, NPM, ROA, and LDR variables positively influence stock price fluctuations, however the RORA variable exerts a negative influence.

4.2 T-Test

The effect of each independent variable on the dependent variable is assessed using the t-test. The outcomes of the partial regression coefficient test utilizing the EViews 13 software are presented in Table (2). The t-test interpretation is as follows:

a. The CAR variable (X_1) exhibits a positive coefficient of 0.2526, with a probability of 0.4827, which exceeds 0.05. This indicates that partially, CAR does not significantly influence stock price fluctuations and has a negative correlation. Consequently, H1 is dismissed;
b. The RORA variable (X2) has a negative coefficient value (-26.0441), with a probability of 0.0434, which is less than 0.05. This indicates that RORA has a substantial impact on fluctuations in stock prices and demonstrates a positive correlation. Consequently, H2 is accepted;
c. The NPM variable (X3) exhibits a positive coefficient value of 0.9326, with a probability of 0.3564, which exceeds 0.05. This indicates that NPM has a limited impact on fluctuations in stock prices and has a positive correlation. Consequently, H3 is dismissed;
d. The ROA variable (X4) has a positive coefficient of 33.4763, with a probability of 0.0178, which is less than 0.05. This indicates that partly ROA significantly influences fluctuations in stock prices, despite exhibiting a positive correlation. Consequently, H4 is approved;
e. The LDR variable (X5) has a positive coefficient value of 0.0024, with a probability of 0.9919, which exceeds 0.05. This indicates that partly LDR does not significantly influence fluctuations in stock prices, although exhibiting a positive correlation. Consequently, H5 is dismissed;

Table 2. T-test results

R-squared	0.993164
Adjusted R-squared	0.984569
SE of regression	0.181954
Sum squared residual	1.158759
Log likelihood	55.87199
F-statistic	115.5609
Prob(F-statistic)	**0.000000**

Source: Processed data (2025)

4.3 F Test

The F test reveals a significance value of 0.0000 (<0.05), indicating that the five independent variables (CAR, RORA, NPM, ROA, and LDR) collectively exert a statistically significant impact on fluctuations in the stock prices of banking firms.

4.4 Test (R2)

The R2 test indicates an Adjusted R-squared of 0.9845, signifying that the independent factors in this study account for 98% of the variance in the dependent variable, while the remaining 2% is attributed to extraneous variables not included in the analysis.

4.5 Discussion

Based on the analysis, only H2 (RORA) and H4 (ROA) of all the proposed hypotheses are accepted. All variables concurrently exert a substantial influence on stock prices.

Although CAR is theoretically related to a bank's financial strength and risk-absorbing capacity, this study found that its impact on stock price changes was statistically insignificant. This is in line with research suggesting that investors may place more importance on indicators directly related to profitability than capital reserves. A high CAR may even signal reduced investment flexibility,

potentially lowering returns [25], [26], [27], [28], [29], [30].

RORA has a negative and significant relationship with stock price changes. This shows that RORA can reflect the effective utilization of risky assets, market volatility and external shocks such as the COVID-19 pandemic can mask their potential influence on investor decisions [31], [32].

The positive but insignificant impact of NPM suggests that the efficiency of earnings per unit of revenue may not reflect the overall performance of the company in volatile market conditions. Factors such as reduced demand during COVID-19 may weaken the relationship between NPM and stock valuation [33], [34].

ROA shows a positive and statistically significant relationship with stock price changes. This suggests that while ROA remains an indicator of asset productivity, it may not independently drive investor sentiment in crisis conditions. This finding is in line with signaling theory, which suggests that ROA may still carry implicit signals for investors despite its weak empirical correlation [33].

The influence of LDR is also positive but not significant. Its role as an indicator of liquidity and credit distribution may be influenced by macroeconomic factors and investor reluctance to take risks during a crisis. The COVID-19 epidemic has precipitated a banking financial crisis. This is evident from the reduction in banking profitability and liquidity resulting from inadequate asset quality and credit management [41]. A greater LDR may suggest efficient loan distribution; however, it does not necessarily correlate with stock price appreciation [25].

The F test results indicate that the combination of CAR, RORA, NPM, ROA, and LDR significantly influences stock prices. This indicates that these financial indicators can collectively elucidate the variations in stock prices of banking firms listed on the IDX during the study period. The independent factors in this study account for 98% of the variance in the dependent variable, whereas the remaining 2% is attributed to other variables not considered in this analysis. This means that in the midst of post-pandemic uncertainty, the CAMEL ratio can be used as a signaling tool for investors that a company is in good condition.

Although there has been some recovery post-pandemic[35], [39], the analysis shows that, during the 2022–2023 period, investor behavior and banking stock performance have not returned to pre-pandemic normal.

5. CONCLUSION

Overall, the study concludes that the CAMEL Ratio is a reliable investment indicator especially in stable economic conditions, in line with signaling theory by helping investors predict market behavior. Nonetheless, this efficacy diminishes during crises, like as the COVID-19 epidemic. The findings suggest that during the 2022–2023 period, internal financial factors—including those measured by the CAMEL components as a whole—are a key consideration for investors when evaluating the value of bank stocks.

The research findings indicate that the independent variables (CAR, NPM, and LDR) do not significantly influence investors' decisions to invest in a company; instead, the RORA and ROA variables exert a substantial impact on stock prices. The five variables collectively significantly influence stock prices during the post-pandemic period (2022–2023). From here, the researcher concludes that the CAMEL ratio as a whole can be used as a signaling tool during times of crisis characterized by high uncertainty. This is because the national and even global economic conditions are unstable amid the Covid-19 pandemic. To anticipate the risks due to fluctuating stock price changes, an analysis is needed that can be used as a basis for making investment decisions.[40].

Furthermore, investor confidence during a crisis depends on more than just financial indicators; it also requires clear and tangible signals of resilience and stability beyond the company's fundamentals. Therefore, the implications of this study support the use of the CAMEL Ratio to analyze stock prices in non-crisis and post-crisis times with strong economic conditions.

The limitations of the study include the research period which is limited to a fairly minimal range of coverage and only uses 1 business sector. Further research is suggested to expand its reach by expanding the observation period and expanding to other business sectors.

ACKNOWLEDGEMENTS

The authors declare that no specific funding, support, or donations from individuals or organizations were received in the preparation of this research. All work presented is entirely the responsibility of the authors."

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