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Analysis Of Risk-Based Bank Rating As A Predictor Of Stock Return Moderated Trading Volume

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ABSTRACT

Purpose – This study aims to analyze the effect of Risk-Based Bank Rating (RBBR) proxied by Loan to Deposit Ratio (LDR), Good Corporate Governance (GCG), Return on Asset (ROA), and Capital Adequacy Ratio (CAR) on stock return, with trading volume as a moderating variable

Methodology/approach – The sample consists of 13 national private banks listed on the Indonesia Stock Exchange for the 2020-2024 period (65 observations). Panel data regression with the Common Effects Model (CEM) and Moderated Regression Analysis (MRA) were employed

Findings – Results show that partially, LDR and GCG had a negative and significant effect on stock return, ROA had a positive and significant effect as the most dominant factor, while CAR had no significant effect. MRA results revealed that trading volume only significantly moderated the effect of ROA on stock return with weak strength, but did not moderate LDR, GCG, or CAR. These findings indicate that although the CEM explains fundamental relationships ($R^2 = 78.42\%$), trading activity does not substantially alter market risk perceptions of bank liquidity, governance, or capital adequacy.

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INTRODUCTION

The health of the banking sector is the foundation of the stability of the national financial system. According to Acharya and Ryan (2016), the banking sector plays a key role as a buffer in maintaining the circulation of funds and minimizing systemic risks. In Indonesia, the Financial Services Authority (OJK) has established the Risk Based Bank Rating (RBBR) method as an approach to risk-based bank health assessment which includes risk profile, good corporate governance (GCG), earnings, and capital (OJK, 2011).

The 2020–2024 period is a very dynamic phase for the Indonesian capital market. The COVID-19 pandemic that hit in early 2020 caused the Composite Stock Price Index (JCI) to fall by more than 38%, with the banking sector stock index experiencing a correction of more than 25% (Lestari, 2021). In 2021, stock returns jumped dramatically (1.639 on average) due to the euphoria of post-pandemic market recovery, but returned negative in 2022 (-0.195) and 2023 (-0.057), before showing a gradual recovery in 2024 (0.120). This volatility indicates that stock returns are highly sensitive to fundamental conditions and market sentiment at the same time.

Although RBBR is intended as a signal of the bank's health to the market, the relationship between a bank's fundamental performance and the movement of stock returns does not always take place in a linear fashion. There are several research gaps that drive this research: (1) the majority of previous studies have examined the direct influence of RBBR without considering the role of trading volume as a moderator; (2) moderation variables such as trading volume are almost never used in the context of RBBR; and (3) most of the research used data before 2020, so it has not captured the post-pandemic dynamics that structurally changed investor behavior.

Based on this background, this study aims to: (1) examine the partial influence of LDR, GCG, ROA, and CAR on stock returns; and (2) test whether trading volume is able to moderate the relationship with national private banks on the IDX for the 2020–2024 period.

LITERATURE REVIEW

Risk Based Bank Rating (RBBR)

RBBR is a risk-based bank health assessment method regulated in OJK Regulation No. 4/POJK.03/2016. This method replaces CAMELS and includes four main aspects: Risk Profile, Good Corporate Governance (GCG), Earnings (profitability), and Capital (capital). Each aspect is comprehensively assessed to produce a Composite Rating (PK) that reflects the overall health condition of the bank.

Stock Returns and Their Determining Factors

Stock returns reflect investors' reactions to new information entering the market (Tandelilin, 2010). Within the framework of Signaling Theory (Bhattacharya, 1979), the disclosure of information on the financial performance of banks serves as a signal for investors in assessing the company's prospects. LDRs that increase beyond the OJK's safe limit are captured by the market as a liquidity risk signal. On the contrary, the increase in ROA is a positive signal for the bank's ability to generate profits.

Trading Volume as Moderation

Asymmetric information theory (Beaver, 1968) suggests that trading volume reflects the intensity of the market's reaction to fundamental information. Blume et al. (1994) explain that trading volume is a strong indicator of how much fundamental information is absorbed by the market. Within the framework of the Efficient Market Hypothesis (Fama, 1991), high trading volumes facilitate faster transmission of profitability information into stock prices.

Research Hypothesis

Based on the theoretical and empirical review above, this study proposes eight hypotheses:

H1: LDR has a negative and significant effect on stock returns.

H2: GCG has a negative and significant effect on stock returns.

H3: ROA has a positive and significant effect on stock returns.

H4: CAR has no significant effect on stock returns.

H5-H8: Trading volume moderates the relationship of LDR, GCG, ROA, and CAR to stock returns.

METHODOLOGY

This study uses a quantitative method with a causal design. Secondary data is sourced from annual financial statements, GCG reports, and capital market data obtained from the Indonesia Stock Exchange (IDX) and OJK for the 2020-2024 period. The population includes all banks listed on the IDX (47 banks). After the purposive sampling stage, 13 banks with incomplete financial statements (5 banks), incomplete market data (6 banks), very low stock liquidity (3 banks), and banks that conducted stock splits (2 banks) were eliminated as a final sample with 65 panel observations.

Table 1. List of Research Samples

No	Issue Code	Bank Name
1	PNBN	PT Bank Pan Indonesia Tbk (Bank Panin)
2	MAYA	PT Bank Mayapada International Tbk
3	BABP	PT Bank MNC Internasional Tbk
4	ROOF RACK	PT Bank Capital Indonesia Tbk
5	BUILD	PT Bank Ina Perdana Tbk
6	BSIM	PT Bank Sinarmas Tbk
7	BGTG	PT Bank Ganesha Tbk
8	NOBU	PT Bank Nationalnobu Tbk
9	BNBA	PT Bank Bumi Arta Tbk
10	BBMD	PT Bank Mestika Dharma Tbk
11	BVIC	PT Bank Victoria International Tbk
12	INPC	PT Bank Artha Graha Internasional Tbk
13	BMAS	PT Bank Maspion Indonesia Tbk

Source: Indonesia Stock Exchange

Research Variables

The dependent variable is the Stock Return which is calculated as $(Pt - Pt-1)/Pt-1$. Independent variables include: (1) LDR = Total Third Party Credit/Fund $\times 100\%$; (2) GCG = composite score of governance assessment (1-5, low score = better); (3) ROA = Net Profit/Total Assets $\times 100\%$; and (4) CAR = Capital/ATMR $\times 100\%$. The moderation variable is the average daily stock trading volume per year.

Analytical Techniques

The analysis was carried out in two stages. First, regression of panel data to test the H1–H4 hypothesis. The selection of the best model is carried out through the Chow Test, Hausman Test, and Lagrange Multiplier Test (LM-test) using EViews 12. Second, Moderated Regression Analysis (MRA) with interaction test to test H5-H8 with the model:

$$\text{Return Saham} = \alpha + \beta_1\text{LDR} + \beta_2\text{GCG} + \beta_3\text{ROA} + \beta_4\text{CAR} + \beta_5(\text{X}\times\text{VOL}) + \varepsilon$$

RESULT AND DISCUSSION

Descriptive Statistics

Of the 65 observations, the stock return variable (RSHM) showed a positive average of 30.28% but the median was in the negative zone (-3.5%), indicating a very skewed distribution to the right (skewness 3.750). The average LDR is 70.06% which is classified as conservative, while the average GCG is 2.107 ('Good' predicate). The average ROA is 0.81% (below BI's standard for healthy banks: $>1.5\%$), while the average CAR is 33.67%, well above the minimum requirement of 8%.

Panel Data Regression Model Selection

The Chow test yields a probability of $F = 0.2311 > 0.05$, so the Common Effect Model (CEM) is better than the Fixed Effect Model. The Hausman test yields a probability of Chi-Square = $0.5765 > 0.05$, indicating the preference of the Random Effect Model. However, the LM-test Breusch-Pagan test yielded a probability of >0.05 , so CEM was chosen as the final model for the data panel regression estimation.

Common Effect Model Regression Results

Table 2. Common Effect Model (CEM) Estimation Results

Variabel	Coeficin	t-Statistics	Probability
C (Constant)	16.7507	4.8849	0.0000***
LDR	-2.8357	-4.2981	0.0019***
GCG	-5.0632	-4.4246	0.0000***
LENGTH	37.1567	7.2308	0.0000***
CAR	3.5962	0.0953	0.9244 (ns)
R-squared	0.7842		
Adj. R-squared	0.7631		

F-statistic	32.4972	0.0000***
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Note: *** significant at $\alpha=1\%$; ** significant at $\alpha=5\%$; ns = insignificant

Source: EVIEWS 12 Data Processing Results

The CEM model yields an R-squared of 0.7842, meaning that the variation in stock returns can be explained by LDR, GCG, ROA, and CAR by 78.42%, while the remaining 21.58% is explained by other variables outside the model. The F-test yielded an F-statistic of 32.497 with a probability of 0.0000, showing that all independent variables simultaneously had a significant effect on stock returns.

MRA (Trade Volume Moderation) Test Results

Tabel 3. Hasil Moderated Regression Analysis (MRA)

Interaction Variables	Coeficin	t-Statistics	Prob.	Remarks
LDR × Volume	1.71E-05	1.026	0.3089	Not Moderation
GCG × Volume	-9.37E-06	-1.257	0.2138	Not Moderation
ROA × Volume	0.000231	2.442	0.0183**	Moderate (Weak)
CAR × Volume	1.20E-05	0.781	0.4382	Not Moderation

Source: EVIEWS 12 Data Processing Results

Discussion

Effect of LDR on Stock Return (H1 Received)

LDR has a negative and significant effect on stock returns ($t = -4.298$, $p = 0.0019$). An increase in the LDR ratio tends to lower stock returns because it is captured by the market as a liquidity risk signal. From the perspective of Signaling Theory, the increase in LDR beyond the optimal limit is 'bad news' for investors. These findings are consistent with Putra and Sari (2021) and Wulandari and Setiawan (2022), who found that aggressive credit expansion was responded to negatively as it indicated the potential for future NPL increases.

The Effect of GCG on Stock Return (H2 Received)

GCG has a negative and significant effect on stock returns ($t = -4.425$, $p = 0.0000$). Given that the GCG scale is inverse (low score = better governance), the negative coefficient substantively means that improved governance encourages an increase in stock returns. Within the framework of Agency Theory, good governance mitigates conflicts of interest between owners and managers thereby increasing investor confidence. These findings are supported by Sari and Rachman (2023) and Wardani and Putra (2020).

Effect of ROA on Stock Return (H3 Received)

ROA has a positive and significant effect on stock returns with the highest t-statistical value ($t = 7.231$, $p = 0.0000$), confirming that profitability is the most dominant determinant in driving stock returns. Investors use ROA as the main indicator of a bank's capacity to distribute dividends. The trend of increasing ROA post-2020 which coincided with the recovery of stock returns in 2021 indicates a rapid market response to improved profitability. These findings are in line with Hanantijo et al. (2019), Nurwulandari et al. (2022), and Putri (2024).

The Effect of CAR on Stock Return (H4 Received)

CAR had no significant effect on stock returns ($t = 0.095$, $p = 0.9244$). The average sample bank CAR of 33.67% is far above the regulatory minimum, causing CAR to no longer be a differentiating factor for investors. The condition of excess capital can actually be seen as idle capital that is not optimal. These findings are consistent with Saputra and Dharmadiaksa (2016) and Faujiah (2023), who found that in banks with very adequate capital, CAR is not relevant as a determinant of stock value.

Trading Volume Moderation on ROA (H7 Accepted)

Trading volume significantly moderated the influence of ROA on stock returns ($t = 2.442$, $p = 0.0183$), but the strength of moderation was weak (interaction coefficient 0.000231 vs direct coefficient of ROA 37.157). Within the framework of EMH, high trading volumes facilitate the faster transmission of profitability information into the stock price, thus serving as an accelerator. This finding was confirmed by Hidayat and Permadi (2020) and Gunawan and Rahardjo (2024). However, fundamental dominance (ROA) still far outweighs the role of trade volume moderation.

Trading Volume Moderation on LDR, GCG, and CAR (H5, H6, H8 Rejected)

Trading volume was unable to moderate the influence of LDR ($p = 0.3089$), GCG ($p = 0.2138$), and CAR ($p = 0.4382$) on stock returns. These findings show that investors view liquidity risk (LDR) and governance quality (GCG) as fundamental aspects that stand alone independent of transaction activity on the exchange. This is supported by Hidayat and Permadi (2020) who state that trade volume moderation is selective and only applies to market-sensitive variables such as profitability, not structural variables such as GCG or CAR.

CONCLUSION

This study provides several important empirical findings regarding the relationship between RBBR and stock returns in 13 national private banks on the IDX for the 2020-2024 period:

LDR has a negative and significant effect on stock returns, indicating that increased liquidity risk is negatively responded to by the market.

GCG has a negative and significant effect, which means that improving the quality of governance (lowering score) encourages an increase in stock returns.

ROA is the most dominant factor with a positive and significant influence, confirming that profitability is the main determinant of bank stock returns.

CAR does not have a significant effect because the condition of excess capital makes capital no longer a differentiating factor.

Trading volume is only able to moderate the influence of ROA on stock returns (with weak strength), while it is not able to moderate the influence of LDR, GCG, and CAR.

Practical implications: bank management should prioritize increasing ROA and strengthening GCG as the main strategy to increase stock value. Investors are advised to pay more attention to profitability (ROA) and liquidity (LDR) indicators in investment decision-making, rather than just observing daily trading volumes. For further research, it is recommended to add macroeconomic variables such as BI Rate and inflation to increase the predictive power of the model.

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