

Bank Performance and Stock Returns: An Analysis of Conventional and Islamic Banks in Indonesia

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ABSTRACT

Purpose This research focuses on financial ratios and the differences between conventional and Islamic banks to understand their impact on stock returns. The purpose of this research is to identify the key factors causing affecting the stock price for banks listed on the Indonesia Stock Exchange (IDX) from 2018 to 2023. **Methodology** This study uses a quantitative approach, analyzing data from 37 banks' annual reports (222 firm-year observations). The Generalized Method of Moments (GMM) using STATA 17 was applied to ensure accurate results. **Findings** Findings show that NPL and ROE negatively impact stock returns, while CAR and LDR have no influence. On the other hand, Islamic banks' liquidity management, measured by ROE and LDR showed a more positive effect on stock returns compared to conventional banks. **Suggestion** Future studies should consider including broader factors like economic conditions. This study's limitation lies in its focus on financial ratios without factoring in macroeconomic factors.

Keywords: NPL; CAR; ROE; LDR; Bank Type.

ABSTRAK

Tujuan Penelitian ini berfokus pada rasio keuangan dan perbedaan antara bank konvensional dan bank Islam untuk memahami dampaknya terhadap pengembalian saham. Tujuan dari penelitian ini adalah untuk mengidentifikasi faktor-faktor utama yang menyebabkan mempengaruhi harga saham untuk bank yang terdaftar di Bursa Efek Indonesia (BEI) dari tahun 2018 hingga 2023. **Metodologi** Metodologi Penelitian ini menggunakan pendekatan kuantitatif, menganalisis data dari 37 laporan tahunan bank (222 observasi perusahaan-tahun). Generalized Method of Moments (GMM) menggunakan STATA 17 diterapkan untuk memastikan hasil yang akurat. **Temuan** Temuan menunjukkan bahwa NPL dan ROE berdampak negatif terhadap pengembalian saham, sedangkan CAR dan LDR tidak memiliki pengaruh. Di sisi lain, manajemen likuiditas bank Islam, yang diukur dengan ROE dan LDR menunjukkan efek yang lebih positif terhadap pengembalian saham dibandingkan dengan bank konvensional. **Saran** Penelitian selanjutnya harus mempertimbangkan untuk memasukkan faktor yang lebih luas seperti kondisi ekonomi. Keterbatasan penelitian ini terletak pada fokusnya pada rasio keuangan tanpa memperhitungkan faktor-faktor ekonomi makro.

Kata kunci: NPL; CAR; ROE; LDR; Tipe Bank

INTRODUCTION

The banking sector is one of the financial institutions that strongly supports the national economy, especially in the development of the business world and corporations. The performance of the Indonesian banking sector is very important and significant in the Indonesia Stock Exchange (IDX). It influences the overall market sentiment and

economic stability as it occupies the third largest position after mining and trading, contributing 37% of total trading on the IDX. It makes the banking sector the main reference for investors in choosing investments (Daud & Sihombing, 2022). In the context of the capital market, the performance of the banking sector is an important indicator for investors when compiling their investment portfolio. However, recent economic difficulties, such as the COVID-19 pandemic and regulatory changes like OJK Regulation No. 12/POJK.03/2020, which raises the minimum capital requirement for banks, have created new pressures, especially on smaller banks. These banks may struggle to meet capital standards, leading to potential mergers, reduced profitability, or even closures, which could reduce investor confidence and impact stock returns.

Moreover, Indonesian banks are facing growing financial difficulties, with non-performing loans (NPLs) rising from 2.4% in 2019 to 3.2% in 2021 and profitability declining as the average return on assets (ROA) dropped from 2.5% to 1.8% (OJK, 2021). These problems have caused a decline in stock returns, emphasizing the need for a thorough investigation into the underlying causes (Hidayah & Swastika, 2022). Since financial performance is often considered an important factor, this research aims to find out the effect of different financial ratios such as NPL, CAR, ROE, and LDR on the stock prices of banking companies listed on the IDX from 2018-2023 to help the banking sector to maintain a stable or increasing stock return. This research also distinguishes those effects between conventional and Islamic banks. The urgency of this study is emphasized by the significant impact of the banking sector on the IDX and the economy at large. With financial stocks accounting for 37% of total trades on the IDX, fluctuations in the sector can have profound implications on market sentiment and economic stability.

Three types of financial measurements are used to assess banking performance: credit risk, profitability, and liquidity. Credit risk is indicated by the Capital Adequacy Ratio (CAR) and Non-Performing Loan (NPL), which indicate how well a bank can handle potential loan defaults. Profitability, which Return on Equity (ROE) indicates, reflects profitability in relation to shareholders' equity (Mayanti, 2022). Liquidity is indicated by the Loan Deposit Ratio (LDR), indicating a bank's ability to meet its short-term obligations. By examining financial statements and calculating various financial ratios, the level of health and success of the bank's overall operations can be seen (Soelistyoningrum et al., 2023). Financial ratio analysis provides management with insight into the bank's performance and assists stakeholders in properly evaluating the bank's efficiency and stability (Ariesta et al., 2019). Together, these analyses not only assist investors in making decisions about stock purchases but also provide a comprehensive understanding of the financial health and stability of the company, which, in the end, can impact stock return.

The selection of NPL, CAR, ROE, and LDR as independent variables for this study is justified by their critical roles in evaluating banking performance, especially in the context of Indonesia's economic landscape (Sochib (2023); Khatijah et al., (2020); Mayanti (2022)). However, despite the extensive research conducted, there are inconsistencies among the studies. For instance, (Hutahuruk, 2022) found that ROE has a significant positive relationship with stock return; however, (Hadu et al., 2023) argued that ROE does not have a positive impact on stock return. Regarding the Capital Adequacy Ratio (CAR), most findings suggest a significant positive relationship with stock returns, as higher CAR levels reflect a bank's ability to absorb potential losses and

offer stability to investors (Bordeleau & Graham, 2010). Similarly, Juliana et al. (2019) indicated that LDR positively affects stock returns, but Khatijah et al. (2020) found no significant impact of LDR. For NPL, research consistently points to its significant negative effect on stock returns (Juliana et al., 2019), making it crucial to evaluate credit risk.

The different conclusions of these studies highlight research gaps and indicate the need for further research into the impact of different financial ratios on stock prices, particularly in the banking sector in Indonesia. The variations in findings are mainly due to the studies conducted in different regions. For example, a study by Atukalp (2020) examines the relationship between stock return and financial performance in Turkish banks. Aside from that, another study by Beccalli et al. (2006) examines the relationship between banking efficiency and stock return in European banks. It emphasizes the need to focus specifically on Indonesia's banking landscape, including a comparison of conventional and Islamic banks, an area that has not been thoroughly examined in previous research.

Conventional banks and Islamic banks, in general, have several similarities and differences; the fundamental thing that distinguishes these two types of banks is the return or profit sharing, whereas, in conventional banks, it is given in the form of interest, while in Islamic banks, it is given in the form of profit sharing. Unlike conventional banks, investors cannot assess the performance of Islamic banks using only the interest earned indicator. Based on previous research, it was found that Islamic banking is more resilient to crises compared to conventional banking (Alqahtani et al. (2017); Khediri et al. (2014); Ashraf et al. (2022); Dharani et al. (2024).

This research adds to the existing literature by providing a deeper understanding of how financial ratios affect stock prices in both conventional and Islamic banks. This research aims to identify differences in these effects of financial ratios on stock return between the two banking systems. Moreover, these findings can help investors make decisions by identifying factors that affect stock returns in the banking sector to help investors optimize portfolios and manage risks. In addition, these insights can inform regulatory policies to improve the stability and performance of conventional and Islamic banks, as well as the banking industry as a whole.

HYPOTHESIS DEVELOPMENT

Signaling Theory

Signaling theory provides a signal to the phenomena in financial management. In 1973, Spence was the first to introduce the signaling theory. The theory was initially developed for job markets, but it has since been applied to various fields, including the financial field. Signals are actions or attributes one party (the more informed party) uses to communicate information to the other. The key benefit of signaling is that it enables the less informed party to make better decisions despite the information gap (Spence, 1973).

Inside the stock market, signals are signs that a company gives to investors, whether positive or negative. Some signs can be understood directly by the recipient, while others require further analysis to understand their true meaning (Fauziah, 2017).

For instance, a company announcing a significant increase in earnings or a dividend payout serves as a positive signal, suggesting financial health and potentially leading to an increase in stock prices. Conversely, a company reporting a significant decline in revenue or a high level of debt may send a negative signal, indicating possible financial instability and resulting in decreased stock prices. This signal is one of the reference guidelines for investors in making investment decisions, whether to buy, not to buy, or to sell their stocks.

In this study, signaling theory is especially relevant to investment decisions in the stock market. Investors can use signals from a company's financial report, namely profitability ratios, earnings reports, and other key indicators, to help them decide whether to buy, hold, or sell stocks. These financial statements contain essential data about the company's performance and overall health, which makes them important tools for investors when determining the true value of their investments. Therefore, effective signaling through financial reports can shape investor behavior and influence stock prices and returns (Ohlson, 1995).

Relationship between Variables

The following hypotheses are closely related to Spence's theory of signaling, which suggests that financial ratios act as signals that shape investor decisions that can ultimately impact stock returns. By analyzing the relationships between all variables mentioned, this research may give a deeper understanding of how bank performance metrics affect stock returns. Based on the explanation, the relationships between variables are as follows:

Non-Performing Loan (NPL) and Stock Return

The NPL ratio represents the percentage of loans that have fallen into default or are at an elevated risk of default, typically defined as loans that are overdue for a specific period (Ozili, 2019). According to signaling theory, a higher NPL ratio sends a negative signal to the market regarding the bank's asset quality. Investors may interpret this as increased financial risk, reducing their confidence in the bank's ability to generate returns. Consequently, a higher NPL ratio discourages investment, leading to lower stock returns. For instance, a previous study by Karim et al. (2010) examined the impact of Non-Performing Loans (NPL) on banks in Malaysia and Singapore, finding that high NPL ratios can reduce a bank's performance. Cost efficiency is one of the study's most important variables; a lower cost efficiency will result in more non-performing loans (NPLs) and, consequently, a lower bank performance, which in this case can also have an impact on stock returns. Another study by Santoso (2021) found that Non-Performing Loans (NPLs) have a negative impact on bank profitability. Based on this explanation, it can be hypothesized as follows:

H1: Non-Performing Loan (NPL) Ratio significantly affect Stock Return of banks listed on the IDX.

Capital Adequacy Ratio (CAR) and Stock Return

The Capital Adequacy Ratio (CAR) is a regulatory measure that assesses a bank's capital strength and its ability to withstand potential losses while remaining solvent. It compares a bank's capital base to its risk-weighted assets and liabilities, indicating the bank's capacity to absorb losses and continue operations during periods of financial stress (Basher et al., 2017). According to signaling theory, CAR acts as a signal to

investors about the bank's financial stability. A higher CAR suggests a stronger capital position, signaling to investors that the bank is better equipped to handle financial difficulties and is, therefore, a safer investment. On the other hand, a lower CAR may indicate potential vulnerabilities, which in turn discourages investment, leading to lower stock returns. Previous studies focusing on Islamic banks, such as those by Ahmed et al. (2022), show that the effects of financial ratios such as CAR may differ due to the unique structure of Islamic banking, which operates on profit-and-loss-sharing principles. Furthermore, another study by Avrita and Pangestuti (2016) emphasized the importance of the Capital Adequacy Ratio (CAR) in determining bank performance and discovered that CAR has a significant impact on bank performance. Based on this explanation, it can be hypothesized as follows:

H2: Capital Adequacy Ratio (CAR) significantly affect Stock Return of banks listed on the IDX.

Return on Equity (ROE) and Stock Return

Return on Equity (ROE) is a ratio used to measure the ability of equity to generate profits for all shareholders, both common and preferred shares. The higher the ROE value, the more it will attract investors to invest their capital in the company because the company has good performance, and its stock price will be higher (Rahmadewi & Abundanti, 2018). This aligns with signaling theory, which suggests that a high ROE sends a positive signal to the market about the company's financial health. Investors may interpret this signal as a sign of good management and growth potential, making the company more attractive for investment, which in return can increase stock return. The role of Return on Equity (ROE) in signaling a bank's profitability has been well-documented, with studies like those by Rahmadewi and Abundanti (2018) suggesting that higher ROE correlates with increased investor confidence and stock returns. Based on this explanation, it can be hypothesized as follows:

H3: Return on Equity (ROE) significantly affect Stock Return of banks listed on the IDX.

Loan to Deposit Ratio (LDR) and Stock Return

Bank liquidity is indicated by the Loan-to-Deposit Ratio (LDR). While a higher LDR can indicate efficient use of deposits and potential for higher profitability, an excessively high ratio may expose the bank to liquidity risks. Therefore, a good LDR ratio is when the ratio is not too high or too low (Lestari et al., 2024). Bank Indonesia determines the safe limit of a bank's LDR is around 78%-92% (Bank Indonesia Regulation Number 17/11/PBI/2015). From a signaling theory perspective, a well-balanced LDR signals the effective use of deposits and profitability potential, making the bank appear stable and attractive to investors. On the other hand, an excessively high or low LDR can signal potential liquidity risks or inefficiencies, which may signal caution to investors and result in reduced stock returns. This can be seen in previous studies that indicate that investors see an optimal LDR positively, while extreme ratios may signal risk (Lestari et al., 2024).

Furthermore, the Loan-to-Deposit Ratio (LDR) is recognized as a liquidity metric that can influence bank performance. Maintaining smooth payment of funds to third parties through good credit distribution can help banks improve their profitability (Avrita & Pangestuti, 2016). Based on this explanation, it can be hypothesized as follows:

H4: Loan to Deposit Ratio (LDR) beyond the optimal threshold significantly affect Stock Return of banks listed on the IDX.

Financial Ratios and Stock Return between Conventional with Islamic banks.

The effect of Non-Performing Loans (NPL), Capital Adequacy Ratio (CAR), Return on Equity (ROE), and Loan-to-Deposit Ratio (LDR) on stock returns often varies between Islamic and conventional banks due to fundamental differences in their financial structures. For conventional banks, higher NPL ratios signal poor asset quality, negatively impacting investor sentiment and reducing stock returns (Khan et al., 2020). On the other hand, Islamic banks rely on profit-and-loss sharing principles, which may lower credit risk since their financing agreements require sharing risks and rewards (Ahmed et al., 2022). As a result, a high NPL ratio may not convey as strong a negative signal in Islamic banks, potentially resulting in a less pronounced effect on stock returns.

Similarly, a higher CAR generally signals financial strength in both banking systems. However, the conservative risk management approach in Islamic banks may signal lower growth potential compared to conventional banks, which often engage in higher-risk, higher-reward activities. In conventional banks, ROE serves as a signal of profitability and efficiency, driving stock prices upwards. However, the shared profits model in Islamic banks often means that high ROE does not directly translate into sharply rising stock returns (Ahmed et al., 2022).

These ratios act as important signals in both systems, but investors may interpret them differently due to operational and risk-sharing differences, leading to distinct effects on stock returns. Based on this explanation, it can be hypothesized as follows:

H5a: There is a difference between Islamic banks and conventional banks in the effect of NPL on stock returns.

H5b: There is a difference between Islamic banks and conventional banks in the effect of CAR on stock returns.

H5c: There is a difference between Islamic banks and conventional banks in the effect of ROE on stock returns.

H5d: There is a difference between Islamic banks and conventional banks in the effect of LDR on stock returns.

METHODOLOGY

Sample and Data Collection

This study employs a quantitative research approach, utilizing secondary data from the annual reports of both conventional and Islamic banks listed on the Indonesia Stock Exchange (IDX). The research data used is in the form of panel data with information in the form of ratio values such as NPL, CAR, ROE, and LDR. The data was sourced from the official IDX website (www.idx.co.id) as well as the companies' individual websites. The research sample includes all banks listed on the IDX from 2018 to 2023. A purposive sampling technique was used to select the sample, focusing on specific criteria:

1. The company must be listed on the IDX as a bank during the period of 2018 to 2023.

2. The company must have consistently published complete data from annual reports for each year from 2018 to 2023.

Applying these criteria, out of the 47 banks listed on the IDX, only 37 met the requirements by consistently publishing complete data in annual reports over the six years. It resulted in 222 firm-year observation data points being used in the analysis. These financial ratios, such as NPL, CAR, ROE, and LDR, provide critical insights into a bank's risk profile, capital management, and profitability, all of which can impact stock return. The choice of bank type as an interacting variable allows for an exploration of how differences in operational principles can affect the relationship between financial ratios and stock return.

Measurement

The definitions and measurements of the operational variables used in the analysis are provided in Table 1.

Table 1 Operational Definition

Variable Name	Variable Description	Measurement
Stock Return (SR)	The percentage of profit or loss generated from an investment in the stock over a specific period.	$SR: \frac{(Ending\ price - Initial\ price)}{Initial\ Price} \times 100$ (Lubis & Alfiyah, 2021)
Non-Performing Loan (NPL)	Loans that are overdue for a specific period.	$NPL: \frac{Non\ performing\ loan}{Total\ loan} \times 100$ (Sadi'yah et al., 2021)
Capital Adequacy Ratio (CAR)	A key regulatory metric that assesses a bank's capital in relation to its risk-weighted assets, indicating its ability to absorb potential losses.	$CAR: \frac{Capital}{Capital\ to\ Risk\ Assets\ Ratio} \times 100$ (Cahyani et al., 2022)
Return on Assets (ROE)	The measure of profitability in percentage that calculates how much profit a bank generates with the money shareholders have invested.	$ROE: \frac{Net\ profit}{Total\ equities} \times 100$ (Rostami et al., 2016)
Loan to Deposit Ratio (LDR)	The ratio that measures a bank's liquidity indicating how well it is using its deposit base to fund loans.	$LDR: \frac{Total\ loans}{Total\ deposits} \times 100$ (Sadi'yah et al., 2021)
Bank Type (TYPE)	Bank type is classified into two categories: Islamic banks and conventional banks	Bank type = 1 if Islamic bank otherwise '0' (Asif & Asim, 2023).
Size (SIZE)	The natural logarithm of its assets.	The bank size reflects the company's size, and the total assets can be measured by calculating the logarithm of total assets (Yuliarti & Diyani, 2018).
Age (AGE)	The length of time since the bank was established.	The number of years of incorporation of the company (Ilaboya & Ohiokha, 2016).

Source: Processed data, 2024

Data analysis

The relationship between stock returns (SR) and key financial ratios is analyzed using two regression models. First, all variables without an interacting variable should be

included, and second, bank type should be incorporated as an interacting variable. It allows for a comparison of the characteristics between the two models:

$$SR_t = \alpha + \beta_{11}SR_{t-1} + \beta_{12}NPL_t + \beta_{13}ROE_t + \beta_{14}CAR_t + \beta_{15}LDR_t + \beta_{16}SIZE_t + \beta_{17}AGE_t + \varepsilon \quad (1)$$

$$SR_t = \alpha + \beta_{21}SR_{t-1} + \beta_{22}NPL_t + \beta_{23}ROE + \beta_{24}CAR + \beta_{25}LDR + \beta_{26}SIZE + \beta_{27}AGE + \beta_{28}TYPE + \beta_{29}NPL \times TYPE + \beta_{210}ROE \times TYPE + \beta_{211}CAR \times TYPE + \beta_{212}LDR \times TYPE + \varepsilon \quad (2)$$

In order to address possible endogeneity and produce robust results, this study employs the Generalized Method of Moments (GMM). In particular, the system "Arellano–Bover/Blundell–Bond linear dynamic panel-data estimation" is used, which works well with dynamic panel data (Arellano, 2003). Robust standard errors are used in the analysis to control for heteroskedasticity in this study. Furthermore, some diagnostic tests are run, including Arellano-Bond tests to identify autocorrelation and Sargan's test to verify the instrument's validity. All analyses use the statistical program Stata 17 to ensure robust results by accounting for potential biases commonly found in panel data models.

RESULTS

Table 2 presents the descriptive statistics for all variables used in this study. The average stock return of 0.6% indicates moderate growth, but the range from -4% to 10% reveals volatility, indicating a fluctuation in the sector. The average % Non-Performing Loan (NPL) of 1.52% suggests manageable loan defaults. However, the wide range highlights disparities in credit risk management among banks, with some potentially exposed to higher risks of bad loans. In contrast, a Capital Adequacy Ratio (CAR) of 26.76% implies a robust capital base, allowing most banks to absorb financial shocks despite differing levels of capital management indicated by a standard deviation of 10.29%.

Table 2 Descriptive Statistics

	N	Mean	Min.	Max.	Std. Deviation
SR	222	0.0067	-0.04	0.10	0.0353
NPL (%)	222	1.5165	0.18	4.45	1.2214
CAR (%)	222	26.7676	15.16	51.60	10.2940
ROE (%)	222	5.4268	-26.77	20.93	10.9175
LDR (%)	222	86.0425	51.96	135.46	19.4368
AGE (%)	222	17.1441	5.00	33.00	8.6284
SIZE (%)	222	17.9448	15.73	21.00	1.5868
TYPE (%)	222	0.0811	0.00	1.00	0.2736

Source: Processed data, 2024

The Loan-to-Deposit Ratio (LDR) averages 86.04%, indicating an efficient use of funds for lending, although the maximum of 135.46% raises concerns about potential liquidity risks. The average bank age is 17.14 years, with a notable range from 5 to 33 years. The bank size (SIZE) averages 17.94 (natural logarithm of total assets), suggesting a moderate bank size variation. Finally, the average value of bank type (TYPE) is 0.08, suggesting that approximately 8% of the banks in the sample are Islamic, with a standard deviation of 0.27.

Classical Assumption Test

According to Gujarati and Porter (2009), researchers can often set aside concerns about normality when working with large samples. It is particularly relevant for panel data, which combines both cross-sectional and time-series observations, making the normality test not essential and, therefore, not conducted in this study. In line with this, Ghozali and Ratmono (2018) highlighted that the key classical assumption tests to focus on for panel data analysis are multicollinearity and heteroscedasticity. Multicollinearity was examined to determine if there was any correlation among the independent variables in the regression model. The Variance Inflation Factor (VIF) was used as an indicator, with a VIF value below 10 and a tolerance value above 0.10, suggesting no multicollinearity issues. Aside from that, heteroscedasticity was tested to identify any inconsistencies in the variance of the residuals across observations. A significance value greater than 0.05 indicated the absence of heteroscedasticity.

Furthermore, the autocorrelation test was assessed using the Wooldridge test, which is suitable for panel data. This test checks for serial correlation in the panel data residuals. A significance value above 0.05 suggests no serial correlation in this study.

Hypothesis testing

This section reports the results of analyzing the effects of NPL, CAR, ROE, LDR, and bank type (as a moderating variable) on stock returns. This study uses Panel data regression to allow for better analysis by considering differences between individual banks (such as size or structure) over time. This method helps prevent bias that might occur if important variables affecting the results are left out, ensuring more accurate and reliable findings (Gujarati & Porter, (2009); Studenmund & Johnson, (2017)). The Generalized Method of Moments (GMM) was utilized to test the hypotheses, ensuring robust and efficient estimates for the panel data model.

The regression results, as shown in Table 3, reveal several interesting insights regarding the relationship between financial ratios and stock returns. The base model, which does not include bank type as an interacting variable, and the moderated model, which includes interaction terms for bank type, provide a comparison of how these financial variables affect stock returns on banks listed in the IDX.

The result shows that NPL affects stock return negatively for both models at a 5% significance level. Hence, we accept H1. On the other hand, CAR does not have a significant effect on stock returns in either model, which leads us to reject H2. This lack of impact may be due to the regulatory environment in Indonesia, where most banks already maintain high CAR levels to meet standards, making it less relevant as a differentiating factor for investors. Aside from that, ROE has a significant effect on stock returns at the 1% level in both models. Therefore, due to the significance, we accept H3 in this study. Higher profitability could sometimes signal higher risk, which affects investor sentiment. LDR does not show a significant effect on stock returns in either model, suggesting that liquidity management alone is not a strong indicator of stock performance. As a result, H4 is not accepted.

Table 3 Stock Return (SR) Regression

	Model 1	Model 2
Constant	-0.2532 (-1.0100)	-0.2635 (-1.2700)
SR_{t-1}	0.0171 (0.2000)	0.0178 (0.2100)
NPL_t	-0.0109** (-2.1700)	-0.0108** (-2.1500)
CAR_t	0.0004 (0.4200)	0.0002 (0.3100)
ROE_t	-0.0017*** (-2.1500)	-0.0022*** (-2.7200)
LDR_t	0.0002 (0.4500)	0.0001 (0.3400)
AGE_t	-0.0073* (-1.7400)	-0.0068* (-1.7300)
SIZE_t	0.0216 (1.3200)	0.0222* (1.6700)
TYPE_t		-0.3535 (-1.3700)
NPL_t × TYPE_t		0.0101 (0.6000)
CAR_t × TYPE_t		-0.0020 (-1.5000)
ROE_t × TYPE_t		0.0018* (1.7800)
LDR_t × TYPE_t		0.0044** (2.1200)
N Obs.	222	222
Wald chi	26.07	166.25
Prob>chi	0.0005	0.0000

Notes: Dependent variable is Stock Return (SR). See Table 1 for description of variables. ***, **, and * indicate significance at the 1%, 5% and 10% levels respectively.

Source: Processed data, 2024

For the interacting variable, the interaction between NPL and TYPE is not significant, indicating that the negative effect of NPL on stock returns does not differ significantly between Islamic and conventional banks. It leads to the rejection of H5a. The CAR × TYPE interaction is also insignificant, suggesting that CAR's influence on stock returns is similar across both bank types. Therefore, H5b is rejected. The interaction between ROE and TYPE shows significance at the 10% level, suggesting that the impact of profitability on stock returns differs between bank types. Therefore, H5c is accepted. Aside from that, the LDR × TYPE interaction is significant at the 5% level, indicating

that liquidity management has a more substantial impact on stock returns for Islamic banks than conventional ones. This finding leads us to accept H5d.

DISCUSSION

First, the analysis confirms that NPL has a significant effect on stock returns in both models, with a coefficient of -0.0109 in the base model and -0.0108 in the moderated model. From a signaling theory perspective, high NPL ratios signal poor credit management, leading investors to view the bank as a loan and triggering concerns about future profitability and growth (Karim et al., 2010). This negative signal diminishes investor confidence, leading to lower stock demand and, consequently, a decline in stock prices. In Indonesia, where investor sentiment is closely tied to financial performance metrics, high NPLs often reduce confidence in the bank's ability to generate returns, resulting in lower stock returns (Zunara et al., 2022). This finding accepts H1 by clearly showing that investors respond significantly to increases in NPL.

Interestingly, CAR does not exhibit a significant effect on stock returns in both the non-moderated and moderated models, providing no support for H2. Therefore, in this study, we reject H2. It suggests that the role of CAR as a signal for investors varies across contexts and regulatory environments (Jokipii & Milne, 2010). In Indonesia, due to local government regulations, CAR may not serve as a strong signal for investors. Regulations from the Financial Services Authority (OJK) impose capital requirements that exceed global standards, making CAR less distinctive in this study. Therefore, investors may focus more on profitability and asset quality indicators that better reflect a bank's operational efficiency and growth potential.

Moreover, ROE has a significant negative effect on stock returns, with the coefficient becoming more negative when bank type is included in the model. This negative relationship might indicate that, in some cases, higher profitability could reflect increased risk or other underlying factors that negatively impact stock performance. Previous studies have shown mixed results regarding ROE's impact on stock performance, with some suggesting that high ROE can indicate increased risk, depending on the business cycle (Demirgüç-Kunt & Huizinga, 2010). Therefore, H3 is accepted due to the significance of the ROE variable.

Aside from that, the LDR presents an insignificant effect on stock returns in both models. It suggests that liquidity management, as measured by the LDR, does not significantly determine stock returns during the study period. It is consistent with Avrita & Pangestuti's (2016) finding that LDR has no significant impact on bank performance and thus no significant impact on stock return. Therefore, H4, which hypothesized a significant relationship between LDR and stock return, is not accepted. It suggests that LDR alone may not always send strong signals to investors, as liquidity risks can be mitigated by other factors like asset quality and risk management practices (Lestari et al., 2024).

Including bank type (TYPE) as an interacting variable provides additional insights into the interaction between financial ratios and stock returns. H5a and H5b were rejected in this study. The impact of NPL and CAR on stock returns does not significantly vary between the two types of banks. They may not differ because both are regulated by the same financial authority in Indonesia (OJK). For instance, investors

view rising NPLs in both types of banks as a sign of financial instability, leading to similar impacts on stock returns (Zain & Ghazali, 2018). Islamic banks' profit-sharing mechanisms expose them to comparable risks despite different principles.

In contrast, $ROE \times TYPE$ and $LDR \times TYPE$ are positive and significant, suggesting that the impact of profitability and liquidity management on stock returns is more pronounced for Islamic banks than conventional banks. Therefore, H5c and H5d are accepted. It implies that investors may view Islamic banks' profitability and liquidity management practices more favorably, reinforcing their perception of financial stability (Ahmed et al., 2022). Investors might perceive Islamic banks as following more conservative and ethical practices, leading to better long-term stability even when profitability fluctuates. It aligns with the unique risk-sharing mechanisms employed by Islamic banks, which may give them an advantage in maintaining financial stability during periods of liquidity stress (Beck et al., 2013).

CONCLUSION

This research explores the impact of various financial ratios and bank types on stock returns among banks listed on the IDX. This study's findings reveal that the Non-Performing Loan (NPL) ratio significantly influences stock returns, suggesting that higher default rates signal increased risk to investors. Conversely, the Capital Adequacy Ratio (CAR) result demonstrates an insignificant but positive influence on stock returns. It suggests that, although investors may view a stronger capital position favorably, it does not necessarily translate into significant changes in stock returns. Moreover, the Return on Equity (ROE) also significantly impacts stock returns as it is an indicator of a bank's profitability and effectiveness in generating profits from the equity held by shareholders. Depending on the underlying factors driving the returns, high ROE values may draw interest from investors because of perceived strong financial performance. However, they may also cause worries about possible overvaluation.

Additionally, the Loan-to-Deposit Ratio (LDR) presents a significant effect on stock returns when it is moderated by bank type (TYPE). These financial ratios serve as critical signals in Islamic and conventional banking systems. However, due to differences in operations and risk-sharing mechanisms, investors tend to interpret these signals in different ways, leading to varying impacts on stock returns. (Ahmed et al., 2022).

Research implications

The implications of these findings are significant. This research offers new insights into the application of signaling theory. It deepens the understanding of how financial ratios like NPL, CAR, ROE, and LDR affect stock returns differently in Islamic and conventional banks. The findings show that financial ratios always signal strong performance in Islamic and conventional banks. The significant relationship between ROE and stock return in Islamic banks suggests the need for finance theories to consider how banking frameworks impact profitability and risk differently. The study highlights the need for investors to approach signals from financial ratios differently, particularly in Islamic banks, where profitability and risk might behave more conservatively. For instance, both types of banks should focus on reducing non-performing loans to strengthen investor confidence and increase stock return. Lowering

NPLs reflects better asset quality and effective credit management, making the banks more appealing in the eyes of investors.

Furthermore, regulators like the OJK should also play a key role in ensuring stability across both banking systems while promoting transparency and clear communication to build trust in the banking sector. For instance, a clear example of the OJK (Otoritas Jasa Keuangan) actively promoting stability in both Islamic and conventional banks is its implementation of risk-based regulations to enhance resilience in the banking sector. In 2016, OJK introduced the “Multiple License Policy,” which requires banks to meet specific risk management criteria to operate in various business segments. This policy reinforces stability and ensures that banks are more resilient during economic fluctuations. Additionally, the OJK conducts regular stress tests and publishes public financial stability reports, which promote transparency and foster public trust by openly communicating the condition of the banking sector’s health and potential risks.

Limitations of Research and Suggestions

This study has several limitations that need to be acknowledged. First, it focuses exclusively on financial ratios (NPL, CAR, ROE, and LDR) without considering macroeconomic factors such as inflation, interest rates, political instability, or financial literacy, all crucial elements that can affect stock returns. For instance, future studies can analyze factors that affect the financial literacy of the younger generation as it is essential since they are the future generation that will significantly affect our economy in the long run, and equipping them with financial knowledge will be beneficial for their well-being, future financial behavior, future business, and economy of the country (Yusup & Hongdiyanto, 2023). Additionally, the research covers a relatively short period from 2018 to 2023, which may limit the ability to capture long-term trends or understand the behavior of financial ratios during market cycles, particularly during economic crises or recovery.

Another limitation is the scope of the sample, which includes only 37 banks listed on the IDX, leaving out smaller or newer banks. Since balanced panel data requires consistent data across all periods for each bank, newly listed banks on the IDX cannot be included, as they lack the complete historical data needed for the analysis. Future research should incorporate macroeconomic indicators as they provide a deeper understanding of external influences on the banking sector. Expanding the timeframe is also suggested to include periods of financial instability or crisis, which would offer more robust conclusions. Furthermore, future studies should consider a broader set of banks, including smaller and newer institutions, allowing for a more comprehensive view of varying risk and return profiles.

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