“Analyzing the effect of bank performance on stock price returns: empirical evidence from European high-income countries”

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ANALYZING THE EFFECT OF BANK PERFORMANCE ON STOCK PRICE RETURNS: EMPIRICAL EVIDENCE FROM EUROPEAN HIGH-INCOME COUNTRIES

Abstract

Banking performance has developed rapidly accompanied by technological advances that can simplify banking services and transactions by adopting a priority scale aimed at identifying dynamically moving stock price returns and exploring banking quality and capacity as a manifestation of well-organized bank performance. This research aims to determine the effect of bank performance on stock price returns in European high-income countries. The analysis of the panel data method using the Common Effect Model (CEM) approach is considered capable of answering the objectives of this research. Research data were obtained from the World Bank and International Monetary Fund for 10 European countries (Denmark, Finland, France, Italy, Norway, Poland, Spain, Sweden, Switzerland and the UK) from 2002 to 2021. The research results prove that return on assets significantly affects stock price returns, while bank deposits to GDP, bank branches per 100,000 adults, and bank Z-score do not significantly affect stock returns. The control variables: exchange rate and interest rates do not significantly affect stock prices. The results of this research provide empirical evidence that bank performance through return on assets tends to have a positive impact on share price returns, which indicates that investors pay attention to this indicator. These findings underline the importance of bank management, and macroeconomic conditions and monetary policy must be considered in a broader context to provide long-term benefits for shareholders through overall market trust mechanisms so that high stock price returns can be achieved.

Keywords stock price return, bank performance, exchange rates, interest rates, panel data

JEL Classification G10, G21, E43

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INTRODUCTION

Bank performance is a crucial indicator in assessing the health and efficiency of a country's financial sector. In an increasingly competitive and dynamic economic environment, analysis of bank performance is important to understand how financial institutions can adapt to market changes, meet regulations, and contribute to economic growth. In the era of globalization and economic integration, bank performance not only reflects the financial condition of an institution, but also reflects overall economic stability (Melas & Michail, 2024). Optimal bank performance is the key to ensuring liquidity, efficiency, and public trust in the financial system. In the modern economic world, banking plays a key role in driving economic growth and financial stability. Bank performance not only reflects the financial health of a bank, but also provides a broader picture of a country's economic conditions. Healthy and efficient banking can encourage the development of other sectors by providing stable credit, effective risk management, and innovative financial services (Ma et al., 2024).

In recent years, the role of bank performance has attracted the interest of many consumers in using bank services in the form of savings, transfers, current accounts, money orders and others (Satrianto & Ikhsan, 2023; Ikhsan & Satrianto, 2023). This increase in interest is in line with bank innovation in the form of online services, such as mobile banking, which makes things easier and expands the scope of services, which reduces distance and time constraints. For this reason, continuous transformation with continuously improved transparency shows that bank performance will run optimally (Akinmade et al., 2020; Hamdi et al., 2017).

The governance approach plays a key role in protecting savings, shareholders, legal system and reputation, which will help banks implement ideas and achieve banking efficiency and stability. This performance will affect internally and externally based on trust and referring to business ethics in strategic decision-making (Hamdi et al., 2017; Limakrisna & Yoserizal, 2016; Sadeghi et al., 2022). On this basis, improving bank performance is considered to start from bank deposits, which have the potential to become investors' choice by prioritizing low interest rates and decline in the exchange rate. This will indicate an increase in input prices, liquidity conditions and reduce negative speculation from the market. Profitability prospects refer to return on assets as a form of efficiency and effectiveness achieved with maximum profits compared to minimum capital. This condition can provide an overview of bank profitability to evaluate and determine performance, and achieve efficiency (Akinmade et al., 2020; Long et al., 2024).

1. LITERATURE REVIEW

Bank deposits influence density and asset prices, which indicates that optimistic expectations of bank performance in the long term will be positively related to stock price returns. This shows that deposits can serve as a buffer against stock price fluctuations in unstable economic situations (Ahmed, 2020; Fonou-Dombeu et al., 2022). In their research, positive correlation was found between bank deposits and stock price returns. Market players fully adhere to the principles of efficiency of banking institutions in obtaining profits and clear information asymmetry for debtors to respond to the results of available loans (Long et al., 2024). Transparency will support increased incentives and equity in relation to company stock prices in the hope of achieving positive sentiment from market players (Ye et al., 2022).

Banks contribute to the creation of liquidity and how this affects bank stock prices and financial stability. According to the study, banks that were successful in controlling deposits and raising liquidity during the financial crisis tended to be more stable, which had a favorable effect on stock price returns. High deposit levels provide banks more ability to fund loans, which boosts stock prices and inspires investor confidence (Hashmi et al., 2022; Nti et al., 2021).

Stock prices are positively impacted by banks that have high deposit rates because they are often more stable and low-risk. Healthy competition raises the standard of services and builds confidence, ultimately improving the bank's financial standing and raising its stock market value (Ding et al., 2020; Li et al., 2024). This study investigates the relationship between stock price returns and bank funding practices, such as utilization of deposits. The study findings indicate that banks that rely mostly on deposits for funding face less risk and see more consistent stock price returns than banks that rely on capital market funding sources (Budiharto, 2021; Hong et al., 2021).

It was concluded that bank branches per 100,000 adults are a form of banking concern in expanding access to facilitate services to the community to increase the number of customers spread widely. This inauguration causes the bank structure and work environment to better guarantee bank governance with indications that shareholders are increasingly encouraging increased investment in the short and long term (Akinmade et al., 2020). The research believes that bank branches will affect savings and investment levels for banks as a source of bank activities in carrying out their function as financial intermediaries. The role of bank performance will determine the level of return on company stock prices, which aims to obtain profits so that services can improve (Hamdi et al., 2017).

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This study investigates how banks and other financial intermediaries contribute to stock markets and liquidity. According to this study, banks that are successful in controlling liquidity and growing their branch network typically offer better and more consistent stock price returns (Ahmed, 2020; Suhadak et al., 2019). Investors value bankability to respond more nimbly to fluctuations in the market since they provide liquidity. Broad coverage makes bank branches able to control the risk of liquidity problems and keep their stock prices rising. Investors are drawn to this liquidity stability, which also boosts the market's trust in banks (Hatamerad et al., 2024; O'Donnell et al., 2024).

The research results show that return on assets can encourage bank performance in achieving efficiency and profits, which leads to achieving banking targets in managing the company properly. Banking efficiency provides a positive correlation for stock price returns as a form of increased credibility and positive sentiment for market players to guarantee future capital injections (Iqbal & Nosheen, 2023; Limakrisna & Yoserizal, 2016). An increase in stock price returns was found for banks in the short term, especially in bank performance reports. This indicates that market players respond positively to bank practices in reducing the risk of losses by expanding the range of responsive policies. Bank performance improves, thereby increasing the strength of the banking structure (Sadeghi et al., 2022).

Stock price returns are typically seen by banks with high returns on assets. It was discovered that a key factor in explaining changes in market stock returns is the company's profitability. Businesses that exhibit strong asset performance are more likely to draw interest from investors, which raises stock demand and price. Low variability in return on assets is a sign of efficient operations and competent risk management, which boosts stock prices and inspires investor confidence (Shen & Shafiq, 2020; Smith & O'Hare, 2022). Growth and stock price returns can be influenced by profitability as determined by return on assets. According to this study, businesses that exhibit strong profitability and high return on assets also typically have better stock returns. Companies with high return on assets tend to demonstrate sustainable profitability, which is rewarded by the market through increased stock prices (Hong et al., 2021; Zhang et al., 2017).

Bank Z-score on stock price returns was analyzed. Bank efforts to avoid the risk of bankruptcy are the basis for this risk to be avoided. The increasing trend of financial globalization is a challenge in itself for banks to maintain stability in the form of various threats and obstacles to bank management. Market players will respond positively to the results of this performance so that the level of investor confidence will be higher in the credibility of bank performance (Pham et al., 2024). Their research results show that the bank Z-score does not positively affect stock price returns. Bank Z-score reflects good risk management and lower exposure to market volatility, which investors reward through more positive stock returns (Djebali & Zaghdoudi, 2020; Enad & Gerinda, 2022). Bank Z-score does not yet reflect the overall condition of financial stability, which makes market players assess bank performance more professionally. Stability as measured by the Z-score increases investor confidence in a bank financial health, which positively affects stock prices. The investors value ffective risk management and financial stability through more positive stock price returns (Akther et al., 2023).

This study employs the Z-score to analyze how bank governance and regulation influence risk-taking and bank stability. According to the study, banks with higher Z-scores, which indicate lower bankruptcy risk, often have more consistent and favorable stock price returns. This is because a high Z-score implies both increased investor confidence in the bank's financial health and effective risk management. Bank Z-score financial health metrics reduce risk and ambiguity for investors, increasing confidence and improving stock price returns (Islam et al., 2016; Li & Guo, 2021; Pelster et al., 2018).

An excessive exchange rate suggests that currency exchange rate is greater than it should be or is appreciating, whereas reduction in the exchange rate shows that the currency is lower than it should be or is depreciating. Stock prices often rise as the exchange rate gains strength. Better economic forecasts are typically reflected in a stronger exchange rate, which boosts investor confidence and results in higher stock price returns (Ito, 2020; Lam et al., 2020; Tang & Yao, 2018). It was examined how stock market reacted to changes in monetary

policy. These findings are less significant for developing nations than for industrialized nations. The fact that developing nations' economies and stock markets generally differ from those of developed nations. More specifically, it has been demonstrated that tight monetary policy appears to slow stock price returns (Caporale et al., 2019). The returns on stock prices and exchange rates were examined. The study's findings indicate that there are two distinct eras in the relationship between exchange rates and stock price returns. First, it usually exerts a significant influence at times of crisis. Second, the effect is minimal during the steady phase. Companies with high overseas revenue typically get higher stock price returns when the exchange rate decreases because they may convert foreign money at a higher profit margin (Alam et al., 2021; Ozgur et al., 2021). The relationship between stock price returns and currency rates was investigated. Exchange rates and stock prices have a reciprocal link over both short and long term. That company stock price returns are more variable when they are exposed to high exchange rates (Akther et al., 2023). The relationship between stock markets and exchange rates was described. In a nation where a long-term relationship is found between exchange rate and stock market, and where the exchange rate and stock price returns cointegrate over time, exchange rate fluctuations may affect a company's cash flow and, eventually, the market value of its shares. Exchange rate fluctuations can have a big impact on stock returns, particularly for businesses that conduct many business international operations (Cheng et al., 2021).

In the economy, interest rates are simply cost that are stated as a percentage each year and are determined by the quantity of money borrowed. A nation's savings and investments will eventually be impacted by the disparity in capital costs. Rising interest rates and borrowing costs have the potential to decrease investment and consumption, which in turn can drop stock prices and predicted corporate earnings (Jin et al., 2019; O'Donnell et al., 2024). Let us look into the relationship between interest rates and returns on stock prices. These findings support the portfolio balance method, which contends that capital mobility caused by interest rates negatively affects stock price returns. The results demonstrate that economic fundamentals are the basis upon which the monetary authorities of a country set interest rates (Delgado et al., 2018). The results demonstrate how interest rates impact equity, which in turn affects stock price returns. Additionally, the debtor's capacity to assess the worth of securities to investors will affect the lending rate. Interest rates typically have a negative effect on stock prices by decreasing the current value of a company's future cash flows (Ma et al., 2024). The interest rate policy generally tends to affect stock market capitalization and risk taking in considering the effects of market forces that guarantee stock price returns. When the Federal Reserve raises interest rates, stock prices often decline because of concerns about slower economic growth and rising capital costs. On the other hand, declining interest rates typically boost stock prices by promoting investment and economic activity (Chkir et al., 2020).

This study has carried out a detailed review of research of bank performance on stock price returns, and then addressed control variables such as exchange rates and interest rates as reasons to strengthen the research results of monetary policy, which is directly related to banking operations. It is hoped that this research will be a learning process and the importance of formulating policies to manage banking effectively in the long term and strive to achieve competitive advantage for banking in high-income European countries. The hypotheses in research can be described as follows:

H1: Bank deposits (BDG) have a positive effect on stock price returns (SPR).

H2: Bank branches per 100,000 adults (BBA) have a positive effect on stock price returns (SPR).

H3: Return on assets (ROA) has a positive effect on stock price returns (SPR).

H4: Bank Z-score (BZS) have a positive effect on stock price returns (SPR).

H5: Exchange rate (EXR) have a positive effect on stock price returns (SPR).

H6: Interest rate (IR) have a positive effect on stock price returns (SPR).

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2. METHODOLOGY

This section explains the research stages that are carried out to prove the hypotheses that have been established. Stage 1 generalizes bank performance variables and control variables in analyzing stock price returns.

Table 1. Bank performance variables

Independent variable	Bank deposit to GDP
	Bank branches per 100,000 adults
	Return on assets
	Bank Z-score
Control variable	Exchange rate
	Interest rate
Dependent variable	Stock price return

The data in the study were obtained from Word Development Indicator (WDI), World Bank, and International Monetary Fund. This study uses panel data consisting of 10 European high-income countries (Denmark, Finland, France, Italy, Norway, Poland, Spain, Sweden, Switzerland, and the United Kingdom) from 2002 to 2021.

Stage 2 is the identification and formulation of quantitative statistical equations for panel data methods aimed at equation 1:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \varepsilon_{it}, \quad (1)$$

where X is the independent variable, Y is the dependent variable, β is the variable coefficient, t is the time period (t = 1, 2, ... N), ε is the error term, i also denotes a country (i = 1, 2, ... N). Equation 2 displays the panel data regression equation model for this investigation, which is based on equation 1:

$$\begin{aligned} SPR_{it} &= \beta_0 + \beta_1 BDG_{1it} + \beta_2 BBA_{2it} \\ &+ \beta_3 ROA_{3it} + \beta_4 BZS_{4it} \\ &+ \beta_5 EXR_{5it} + \beta_6 IR_{6it} + \varepsilon_{it}, \end{aligned} \quad (2)$$

where SPR = Stock price returns; BDG_1 = Bank deposit to GDP; BBA_2 = Bank branches per 100,000 adults; ROA_3 = Return on assets; BZS_4 = Bank Z-score; EXP_5 = Exchange rate; IR_6 = Interest rate; t = Year unit (2002-2021); I = Denmark, Finland, France, Italy, Norway, Poland, Spain, Sweden, Switzerland, and the United Kingdom; β_0 = Constant; $\beta_1 \ldots \beta_6$ = Variable coefficient *SPR, BDG, BBA, ROA, BZS, EXR, IR;* ε_{it} = Error term.

When estimating the parameters of a panel data model, the Common Effects Model (CEM) combines cross-section and time series data into a single unit without taking into account variations in time and entities. In this case, the Ordinary Least Squares (OLS) method is a commonly utilized approach. In other words, the data behavior among individuals is the same throughout different time periods, but the Common Effect Model disregards variations in individual dimensions and durations. According to the Fixed Effects Model (FEM), the slope between individuals is constant but the intercept varies for each individual. The method captures variations in intercept between people by using dummy variables. According to the Random Effects Model (REM), every organization has a unique intercept, which may be thought of as a random or stochastic variable. If the people selected for the samples are typical of the population and were chosen at random, this approach can be very helpful. The possibility of error correlation along the cross section and time series is also considered by this method. There are three stages to determining the best method. Three tests are used:

- Chow test (*H0* = Common Effect Model (CEM) and *H1* = Fixed Effect Model (FEM);
- Hausman test (*H0* = Random Effect Model (REM) and *H1* = Fixed Effect Model (FEM));
- Lagrange multiplier test (*H0* = Common Effect Model (CEM) and *H1* = Random Effect Model (REM)).

3. RESULT

By using the panel data analysis method, this study successfully identified important factors that analyze stock price return in 10 European high-income countries. In the early stages, determining the best model selection in panel data analysis is very important because the selected model will determine how the data are interpreted, as well as how accurate and valid the analysis results are. In the context of panel data, selecting the right model allows us to capture important characteristics related to differences between units. Selecting the best model in panel data analysis is very important to ensure valid, accurate, and relevant results. The right model helps us understand the relationship

between variables correctly, control unobserved heterogeneity, and provide unbiased parameter estimates. Wrong model selection can produce biased results, wrong conclusions, and inappropriate policy recommendations.

This section explains the research results in detail and provides a more concrete discussion to provide a broader analysis.

The results present the selection of approaches in the panel data method.

The Chow test was used to determine whether the panel data regression technique utilizing the Fixed Effect Model outperforms the panel data regression model without dummy variables or the Common Effect Model (see Table 2). This is evident from the probability value of the Chi-squared of 0.000, which is less than 0.05. Based on this, the Common Effect Model (CEM) is the preferred method over the Fixed Effect Model (FEM).

Table 2. Chow test

Effect test	Statistic	d. f.	Probability
Cross-section F	0.425862	(9.184)	0.9201
Cross-section Chi-squared	4.123248	9	0.9031

The Hausman test emphasizes that the Random Effect Model and Fixed Effect Model are the most suited models for panel data regression. If the Hausman statistical value is greater than the critical value of Chi-squared, the null hypothesis is rejected, indicating that the Fixed Effect Model is the best fit for panel data regressions.

Then, if the Hausman statistical value is less than the critical value of Chi-squared, the null hypothesis is accepted, indicating that the Random Effect Model is the best fit for panel data regression. This is demonstrated by the Chi-squared's probability value of 0.584, which is more than 0.05. Based on this, the Random Effect Model (REM) is the preferred strategy over the Fixed Effect Model (FEM). These results are presented in Table 3.

Table 3. Hausman test

Test summary	Chi-sq statistic	Chi-sq d.f.	Probability
Cross-section random	0.691179	6	0.9947

Lagrange multiplier test results for the Chi-squared distribution with degrees of freedom (d.f.) equal to the number of independent variables. The Common Effect Model is proposed as the best model for panel data regression, whereas the Random Effect Model is proposed as an alternative. If the estimated value exceeds the critical Chi-squared value, the null hypothesis is rejected, implying that the Random Effect Model is the best fit for panel data regression.

Then, if the estimated value is less than the critical value of Chi-squared, the null hypothesis is accepted, indicating that the Common Effect Model is the best fit for panel data regression. This is evident from the probability value of the Chi-squared of 0.506, which is less than 0.05. Based on this, the Common Effect Model (CEM) is the preferred strategy over the Random Effect Model (REM). These results are presented in Table 4.

Table 4. Lagrange multiplier test

Null hypotheses: no effects Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives	Test hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	1.932379	399.3743	401.3067
	(0.1645)	(0.0000)	(0.000)
Honda	–1.390100	19.98435	13.14812
	(0.9178)	(0.000)	(0.000)
King-Wu	–1.390100	19.98435	10.18496
	(0.9178)	(0.000)	(0.000)
Standardized Honda	–0.688713	20.96607	11.72705
	(0.7545)	(0.000)	(0.000)
Standardized King Wu	–0.688713	20.96607	8.959438
	(0.7545)	(0.000)	(0.000)
Gourieroux et al. Pseudo maximum likelihood method	–	–	399.3743
			(0.0000)

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Table 5. Panel data estimation result

Variable	Coefficient	Std. error	t-statistics	Probability
Stock price returns	20.26781	16.38733	1.236797	0.2177
Bank deposit to GDP	–0.021171	0.046840	–0.451993	0.6518
Bank branches per 100,000 adults	–0.004934	0.012083	–0.408372	0.6835
Return on assets	8.449050	2.008378	4.206902	0.0000
Bank Z-score	0.030433	0.223740	0.136020	0.8919
Exchange rate	–0.001580	0.001674	–0.943986	0.3464
Interest rate	–1.408027	0.784942	–1.793797	0.0747

In this study, the dependent variables used were macroeconomic variable with indicators such as stock price return and independent variable with bank deposit to GDP, bank branches per 100,000 adults, return on assets, and bank Z-score, whereas variable control is exchange rate and interest rate. After testing the selection of the best model, the following is the result of the panel data estimation equation using the Common Effects Model approach:

Based on Table 5, the results of the panel data regression equation are as follows:

$$\begin{aligned} SPR_{it} &= 20.26781 - 0.021171 BDG_{it} \\ &-0.004934 BBA_{it} + 8.449050 ROA_{it} \\ &+0.030433 BZS_{it} - 0.001580 EXR_{it} \\ &-1.408027 IR_{it} + \varepsilon_{it}. \end{aligned} \quad (3)$$

If one looks at the results of equation 3, bank deposit to GDP shows a negative coefficient of –0.021171 on stock price returns. This means that a 1% increase in bank deposit to GDP can decrease stock price returns by –0.021171. It can be noted that the stock price returns cannot be separated from bank performance as a form of positive response to the optimization and effectiveness of bank deposits in efforts to increase bank deposits.

Bank branches per 100,000 adults shows a negative coefficient of –0.004934 on stock price returns. This means that a 1% increase in bank branches per 100,000 adults can decrease stock price returns by –0.004934. When bank branches cannot maximize targets in service and productive credit distribution, banking conditions tend to experience stagnation order to achieve significant development, which can reduce investor confidence.

Return on assets shows a positive coefficient of 8.449050 on stock price returns. This means that a 1% increase in return on assets can increase stock price returns by 8.449050. The banking indicator return on assets will support in encouraging healthy and efficient performance, which must be achieved consistently and continue to receive special attention from investors as a form of reward for the financing that has been carried out while providing a positive response to the stock market.

Bank Z-score shows a positive coefficient of 0.030433 on stock price returns. This means that a 1% increase in bank Z-score can increase stock price returns by 0.030433. In the scope of bank performance, bank Z-core specifically provides guidance regarding the bank's accurate health as a concrete basis for playing a role in the bank performance targets. If this condition continues to be maintained, it is not impossible that the response from market players will have an impact on the profitability of stock price returns.

The exchange rate shows a negative coefficient of –0.001580 on stock price returns. This means that a 1% increase in the exchange rate can decrease the stock price return by –0.001580. The exchange rate is very vulnerable to global economic turmoil, which will have a significant impact on the stock market. Stock market conditions will experience concerns if exchange rate fluctuations are not controlled by monetary policy so that stock price returns for investors will be hampered.

Interest rates show a negative coefficient of –1.408027 on stock price returns. This means that a 1% increase in interest rates can decrease stock price returns by –1.408027. When the interest rate policy is implemented, the trend towards bank performance will be hampered by adjustments to the reference interest rate for savings and loans. This condition allows disruption of fluctuations in the stock market because market players will take the initiative to invest if interest rates are low.

4. DISCUSSION

Hypotheses testing that has been carried out proves that bank deposit to GDP has no significant effect on stock price returns of European high-income countries. Regular bank deposits will serve customer requests with a low risk of loss. Deposit products aimed at investment must have clear certainty to customers regarding the profits they will obtain so that they do not reduce customer confidence, which results in low bank performance. This analysis was obtained from banking conditions in the countries studied, which experienced a slowdown in savings levels, which were not absorbed by banks because many people turned to the stock market. These results are supported by Ogbaisi et al. (2022) and Yilanci et al. (2021). Bank deposits were recognized as having an impact on stock price returns. The research findings reveal that bank deposits have no positive effect on stock price returns because excessive interest can be a barrier for consumers or capital owners interested in products. High interest rates divert the focus of capital owners from investing in the money market so that stock prices experience a decline as well. However, Galloppo and Paimanova (2017) obtain different results. Banks with large deposit amounts usually have good liquidity, which can help banks in distributing credit and generating interest income. This increase in income can increase bank profits, which in turn can increase the return on the bank's share price. Besides, banks with large deposits also have sufficient reserves to face potential financial risks, so they are considered more stable and attractive to investors.

The number of bank branches per 100,000 adults has no significant effect on stock price returns in European high-income countries. The bank performance system starts from bank branch as a form of service or network in area. Digitalization carried out by banks can expand the scope of services, but this is not very effective in pressuring bank branch to improve performance as a proportional service. These results are supported by research of Alexiou et al. (2018) and Ho and NjindanIyke (2017), which analyzed bank branches per 100,000 adults has no significant impact on stock price returns. As an extension of the head office, operational reach must be mobile and responsive to customer needs. A strategy is required to ensure that performance at bank branch is well assessed by customers order to meet targets such as customer volume, credit distribution, deposits, and government social assistance. If this performance is not anticipated, it will have a negative impact on the banking image and reduce trust as an independent institution in the financial sector so that stock prices can provide profits for market players. Besides, research by Hatamerad et al. (2024) shows that on the contrary, the number of bank offices or bank branch networks can influence the return of the bank's share price. An extensive branch network shows that the bank can reach more customers and increase its customer base. This increase in income and customer loyalty will have a positive impact on the bank's financial performance and could reflect an increase in share prices. However, it should be noted that expansion that is too aggressive without considering operational efficiency can increase operational costs and be detrimental to the bank in the long term.

Return on assets has a significant effect on stock price returns of European high-income countries. Banking effectiveness is goal of performance results and good governance in controlling financial products by considering the profits that must be achieved and measuring the extent of bank profitability. When compared with previous research, Andriansyah (2017), Emenogu et al. (2020), and Jiang et al. (2018) found that return on assets has a significant effect on stock price returns, because the ability of return on assets to support stock price movements is very precise so that some working assets can be utilized optimally to obtain high stock price returns. Besides, income derived from capital obtained from debt cannot cover the large capital costs incurred by the bank but will be borne by shareholders. Return on assets as an indicator of asset use efficiency is considered a critical factor in determining the intrinsic value of shares, which is crucial for investors when making investment choices. Return on asset is frequently accompanied by favorable estimate revisions from analysts, which helps to boost stock price returns. Hidayat and Idrus (2023) stated that although return on asset is an important indicator of banking performance, share price returns are often more influenced by external factors. For example, global economic conditions, or government policies can

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have a greater impact on investment decisions and stock prices. Therefore, although return on asset shows the efficiency of asset use, its effect on share price returns can be influenced by other factors.

Bank Z-score has a positive effect on stock price return of European high-income countries. Bank performance is required to have competitiveness and clear prospects in improving performance and important aspects for banking development order to avoid bank. This result was obtained because the bank z-score in the countries studied is not a reference in managing banks, whereas in developing countries this indicator is the basic foundation for knowing performance and targets to be achieved. Batrancea et al. (2021), Le et al. (2019) and Myovella et al. (2020) emphasize that banks must have strong financial health and avoid risks that impact customers and shareholders. The desire to prepare, consider, improve, and choose the best option will provide predictable profits to shareholders. Banks with Z-score have a lower bankruptcy risk and a higher stock price return. Investors respect the stability indicated by high Z-score, which increases interest in stockholders. Huang et al. (2020) states on the contrary that for investors, high Z-score provides a sense of security because it shows that the bank has a strong financial structure and can face the economic crisis. Bank that has high Z-score indicates that the bank is in a healthy financial condition and has a low risk of bankruptcy and has more trust from investors, which can increase demand for the bank's shares and ultimately increase share price returns.

The exchange rate has no major impact on stock price returns in European high-income countries. Exchange rate variations can have an impact on stock price returns, but this study shows that the exchange rate must remain within a particular range order to ensure currency value stability and direct foreign capital flows to a more dynamic stock market. When these results are compared with Hashmi et al. (2022) changes in exchange rates do not substantially affect business stock returns, particularly for companies with little overseas market exposure. Exchange rate variations can affect a company's cash flows and stock price returns; hence exchange rates must be factored into stock valuation models. Exchange rate fluctuations have a substantial impact on the stock price returns of companies active in international trade. Different results are addressed by research from Ijaz et al. (2020) concluding that exchange rates are a relevant risk factor that investors consider in setting share prices. Stock market conditions are very dependent on exchange rate movements. Trading goods or services is strategic in exploiting loopholes so that the exchange rate is not only a currency benchmark, but also ensures that stock market movements are more dynamic in responding to global market turmoil. Stock price returns cannot be separated from investors' decisions to mobilize their money in the short and long term, which are influenced by the real exchange rate. They concluded that the stock market in these countries is more influenced by internal factors such as domestic monetary policy and political stability. This is due to the ability of large companies to hedge against exchange rate risk.

The results of the hypothesis test show that interest rates do not have a large enough influence on stock price returns in European high-income countries. Monetary policy in limiting interest rates has become a driver for the stock market to attain a positive market sector, as seen by more dynamic mobility of capital flows, ensuring an increase in stock price returns. These results can be studied from the perspective of Juhro et al. (2021) the objectives of monetary policy to control interest rates to adjust market conditions in a more organized manner to ensure financial market stability. In terms of stock price returns, interest rates can boost investor confidence when the market reaction to the reference interest rate is viewed as a driving element for global capital movements in response to central bank policy adjustments. Interest rates have a detrimental impact on stock price returns. Differences in research results were obtained Park et al. (2018) and Raji et al. (2017) lower interest rates, on the other hand, increase stock prices by encouraging economic growth and investment. Stock prices often decline as interest rates rise, owing to higher borrowing costs and lower expected earnings. A decrease in interest rates, on the other hand, tends to enhance stock prices by lowering the cost of capital and encouraging investment and consumption. When interest rates rise, stock prices often fall due to expectations of slower economic growth and a greater cost of capital. Changes in interest rates are often

reflected in stock prices before the change occurs, where expectations of interest rate changes have been taken into account by investors. This suggests that certain sectors may be more susceptible to interest rate changes than others. Especially in developed markets, where expectations of interest rate changes have been taken into account by investors.

After an objective discussion, the results of this research will provide a basis for a more detailed analysis. In fact, there are no research variables that have a significant effect on stock price returns, such as variables from bank deposits, bank branches, bank Z-score, exchange rates and interest rates whose probability values are above 0.05. The reference to this variable does not necessarily provide an analysis that broadly includes indicators of banks having poor performance, but more broadly than that, how these results will have a good influence on policy makers. At this stage, policy makers play a role and are responsible for achieving maximum bank performance accompanied by evaluation so that the efficiency and effectiveness of the bank runs in accordance with its function. Then, the return on assets variable obtained a significant level of probability. This indicates that return on assets can be a reference in supporting banking performance as a form of service which plays an active role in providing funds and absorbing funds from economic actors in overall economic development efforts.

CONCLUSION

This study identifies the impact of bank performance on stock price returns in high-income European countries. All research stages have been carried out by relying on relevant literature, data interpretation, and comprehensive discussion. The research results obtained will become the basis and way of critical thinking for policy makers, especially improving banking performance. Banking performance is very important for the long-term sustainability of bank operations as a service provider to customers as a form of bank responsibility in carrying out its functions. Monetary policy which is analyzed using exchange rates and interest rates is important for market players in monitoring national economic fluctuations effectively and will have an impact on stock market movements as an effort to respond to macroeconomic conditions. The hope of this research in a broader scope is to make it literature that is considered capable of reflecting banking performance conditions with a relevant approach to face more competitive challenges in the competitive effort to create conditions for dynamically moving stock price returns and provide profits for shareholders.

The significant effects of return on asset and bank Z-Score on stock price returns indicate that factors related to profitability and financial stability are very important in influencing investment decisions and stock price return. The insignificant effects of bank deposits, bank branches, exchange rates, and interest rates on stock price returns indicate that these variables, although important in the context of macroeconomics and the banking sector, do not always have a direct or significant impact on stock price return. Other factors, such as investor sentiment, fiscal and monetary policies, or company performance, are more likely to directly affect stock returns. Banks need to prioritize policies to improve operational efficiency to optimize the use of assets. Policies such as reducing operational costs, optimizing loans, and implementing digital technology to improve efficiency.

The role of banking is currently very dominant in responding to market challenges, so that good understanding and management of banks will certainly encourage efficiency and effectiveness. Besides, an assessment of bank performance, which aims to collect funds in the form of current accounts, deposits and savings, and then distribute them back to parties who need funds, will have a good impact if bank branches provide services effectively and can provide services that have significant impact. The development of the world with technology in the era of globalization will provide fast and accurate mobilization with an online service approach, which is expected to be maximized well and carefully in seeing opportunities. This bank performance will certainly encourage trust as a result of efforts to improve the

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quality and capabilities of the bank, which will ultimately affect stock prices for banking companies so that high share price returns is the ultimate target of this achievement.

The above policy recommendations emphasize the importance of strengthening bank fundamental performance and financial stability, while maintaining macroeconomic policies that support stock market stability. Although external variables such as bank deposits, bank branches, exchange rates, and interest rates may not have a significant impact on stock returns, the government and regulators should continue to focus on strengthening bank internal policies and increasing profitability and financial stability to encourage sustainable capital market growth.

AUTHOR CONTRIBUTIONS

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