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Economic Volatility, Credit Risk, and Economic Growth on Banking Stock Portfolio Performance on the Indonesia Stock Exchange (2021–2025)

Volatilitas Ekonomi, Risiko Kredit, dan Pertumbuhan Ekonomi terhadap Kinerja Portofolio Saham Perbankan di Bursa Efek Indonesia (2021–2025)

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Abstract

Penelitian ini menganalisis pengaruh volatilitas ekonomi (diproksikan dengan inflasi), risiko kredit (diproksikan dengan rasio Non-Performing Loan/NPL), dan pertumbuhan ekonomi (diproksikan dengan pertumbuhan PDB riil) terhadap kinerja portofolio saham sektor perbankan Indonesia yang diukur dengan Sharpe Ratio. Penelitian ini dilatarbelakangi oleh fluktuasi kinerja saham perbankan di Bursa Efek Indonesia (BEI) di tengah dinamika kondisi makroekonomi global dan domestik, dengan mengacu pada Modern Portfolio Theory dan teori risk-return. Penelitian menggunakan pendekatan kuantitatif dengan data panel dari bank-bank yang terdaftar di BEI yang dipilih melalui purposive sampling, dianalisis dengan regresi data panel menggunakan Fixed Effect Model (FEM) berdasarkan hasil Uji Chow. Hasil penelitian menunjukkan bahwa inflasi berpengaruh positif terhadap kinerja portofolio saham perbankan, namun pengaruhnya hanya signifikan secara lemah, sehingga hipotesis yang menyatakan pengaruh negative dan signifikan ditolak. Rasio Non-Performing Loan berpengaruh negatif dan signifikan, sehingga hipotesis terkait diterima. PDB Riil berpengaruh positif dan signifikan sesuai arah yang dihipotesiskan, sehingga hipotesis terkait diterima. Temuan ini menunjukkan bahwa pertumbuhan ekonomi merupakan faktor paling dominan dan konsisten dalam memengaruhi kinerja portofolio saham perbankan, diikuti oleh risiko kredit dengan kontribusi lebih kecil, sementara inflasi belum berpengaruh signifikan pada taraf konvensional selama periode penelitian.

Kata Kunci: Inflasi; Pertumbuhan Ekonomi; Risiko Kredit

Abstract

This study analyzes the effects of economic volatility (proxied by inflation), credit risk (proxied by the Non-Performing Loan ratio, NPL), and economic growth (proxied by real GDP growth) on the stock portfolio performance of Indonesia's banking sector, measured with the Sharpe Ratio. The study is motivated by the fluctuating performance of banking stocks on the Indonesia Stock Exchange (IDX) amid shifting global and domestic macroeconomic conditions, and is grounded in Modern Portfolio Theory and risk–return theory. A quantitative approach was applied to panel data from banks listed on the IDX selected through purposive sampling, which were analyzed using panel data regression with the Fixed Effect Model (FEM) as indicated by the Chow test. The results show that inflation has a positive effect on banking stock portfolio performance, although the effect is only weakly significant, so the hypothesis proposing a negative and significant effect is rejected. The Non-Performing Loan ratio has a negative and significant effect, so the corresponding hypothesis is accepted. Real GDP growth has a positive and significant effect, consistent with the hypothesized direction, so the corresponding hypothesis is accepted. These findings indicate that economic growth is the most dominant and consistent driver of banking stock portfolio performance, followed by credit risk with a smaller contribution, while inflation had no conventionally significant effect during the study period.

Keywords: **Credit Risk; Economic Growth; Inflation**

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INTRODUCTION

The capital market is a key pillar of a country's financial system, serving as a channel for long-term fund mobilization and efficient resource allocation. In Indonesia, the Indonesia Stock Exchange (IDX) is the main barometer of investment activity and reflects the aggregate condition of the national economy. The banking sector holds the largest market capitalization weight on the IDX and is at the same time the sector most sensitive to changes in macroeconomic conditions. As a financial intermediary, banks connect economic units with a surplus of funds to those with a deficit, so that the performance of banking stock portfolios mirrors the dynamics of national economic fundamentals (OJK, 2024). The performance of banking sector stock portfolios during 2021–2025 fluctuated considerably. Banking stocks rose during the 2021 economic recovery, then moved unstably amid global inflationary pressure in 2022 and international economic uncertainty in 2023, while 2024–2025 saw renewed pressure from global sentiment and policy uncertainty. This is consistent with Firman (2023),

The first variable examined is economic volatility, proxied by inflation, which reflects the instability of prices for goods and services and can affect purchasing power, corporate profitability, and investor decisions. High inflation raises economic uncertainty and makes investors more cautious. Indonesia's inflation rate fluctuated during 2021–2025, rising from 1.87% in 2021 to 5.51% in 2022 before easing to 1.57% in 2024 and edging back up in 2025 (Badan Pusat Statistik, 2025), a pattern that can influence investment activity, banking sector performance, and portfolio decisions. The second variable, credit risk, is an important internal factor in assessing banking stock portfolio performance. Pardede et al. (2024) emphasize that credit risk is a principal risk in the banking industry that can affect profitability and market value. According to the Basel Committee on Banking Supervision (2025), the Non-Performing Loan (NPL) ratio is an essential benchmark of asset quality; a rise in NPL signals deteriorating credit conditions and a higher probability of borrower default, eroding bank profitability and investor confidence. Indonesia's banking NPL ratio declined steadily from 3.00% in 2021 to 2.05% in 2025, alongside improving capital adequacy and credit growth (OJK, 2024), yet cross-bank heterogeneity in credit quality remains substantial.

The third variable, economic growth proxied by real GDP growth is a fundamental indicator of overall economic health. Positive economic growth is generally followed by expanding business activity, credit expansion, and higher corporate profitability, including for banks, which can improve banking stock performance and portfolio returns. Indonesia's real GDP growth averaged around 4.8% during 2021–2025 after the pandemic-driven contraction, a relatively solid and stable recovery (Badan Pusat Statistik, 2025; World Bank, 2023). However, some studies caution that growth accompanied by high volatility, or unstable growth, can also increase uncertainty and dampen portfolio returns (World Bank, 2023). Based on the empirical evidence and the divergent findings of prior studies, a research gap can be identified regarding how economic volatility, credit risk, and economic growth jointly shape banking stock portfolio performance on the IDX. This study contributes by examining these three determinants together for the 2021–2025 period a period that spans post-pandemic recovery, global inflationary pressure, aggressive monetary tightening, and normalization which has not been studied in an integrated manner. The banking sector was chosen because of its large market-capitalization weight, its high sensitivity to the economic cycle, and the distinctive characteristics of the study period. Specifically, this study aims to: (1) analyze the effect

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of inflation on banking stock portfolio performance on the IDX; (2) analyze the effect of NPL on banking stock portfolio performance on the IDX; and (3) analyze the effect of real GDP growth on banking stock portfolio performance on the IDX during 2021–2025.

RESEARCH METHOD

This study employs a quantitative approach using secondary panel data obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id) and related institutional sources (Bank Indonesia, the Financial Services Authority/OJK, and Statistics Indonesia/BPS). The object of the study is the effect of economic volatility, credit risk, and economic growth on the stock portfolio performance of the banking sector listed on the IDX during 2021–2025.

The population comprises 47 banking companies listed on the IDX. Samples were selected using purposive sampling based on the following criteria: (1) banks continuously listed during 2021–2025; (2) banks that were never suspended or delisted during the study period; (3) banks that consistently published audited annual financial statements; and (4) banks with complete stock price data for the entire period. This process yielded 32 banks that met the criteria, producing a balanced panel of 160 observations (32 banks × 5 years).

Table 1. Sample Selection Procedure

No.	Description	Total
1	Banks listed on the IDX during 2021–2025	47
2	Banks not consistently listed during the period	-8
3	Banks suspended or delisted during the period	-4
4	Banks without complete financial statement data (2021–2025)	-3
5	Final sample meeting all criteria	32

Data were collected through documentation, i.e., compiling audited annual reports and financial statements published by the sample banks, together with macroeconomic data (inflation and real GDP growth) issued by BPS and Bank Indonesia. The dependent variable, banking stock portfolio performance, is measured with the Sharpe Ratio; the independent variables are Inflation (X1), the Non-Performing Loan ratio (X2), and real GDP growth (X3).

Table 2. Operational Definition of Variables

Variable	Measurement	Scale
Sharpe Ratio (Y)	$S = (Rp - Rf) / \sigma p$, the excess portfolio return per unit of total risk (Marcus et al., 2021)	Ratio
Inflation (X1)	Percentage change in the Consumer Price Index period to period (Cecchetti & Schoenholtz, 2021)	Ratio
Non-Performing Loan (X2)	Total non-performing loans divided by total loans disbursed (Basel Committee on Banking Supervision, 2025)	Ratio
Real GDP Growth (X3)	Percentage change in real Gross Domestic Product period to period (World Bank, 2023)	Ratio

Prior to estimation, the panel data were subjected to classical assumption tests, i.e., normality (Jarque-Bera), multicollinearity (correlation matrix/VIF), heteroskedasticity (Glejser test), and autocorrelation (Durbin-Watson statistic), to ensure the Best Linear Unbiased Estimator (BLUE) property of the regression coefficients. The appropriate panel estimation model was then selected using the Chow test, which compares the Common Effect Model (CEM) and the Fixed Effect Model (FEM); a chi-square probability below 5% indicates that FEM is the more appropriate specification. A Hausman specification test was subsequently used to confirm FEM against the Random Effect Model (REM). The final model was estimated with Panel Least Squares using cross-section fixed effects (the within estimator), and hypotheses were tested using the partial t-test at the 5% (and, where relevant, 10%) significance level.

RESULTS AND DISCUSSION

Descriptive Statistics

The study covers 160 panel observations from 32 banks over five years (2021–2025). Table 3 summarizes the descriptive statistics of the dependent and independent variables.

Table 3. Descriptive Statistics

Statistic	Sharpe Ratio	Inflation (%)	NPL (%)	Real GDP (%)
Mean	-1.146	2.829	3.355	4.837
Median	-2.324	2.610	2.565	5.050
Maximum	11.45	5.510	10.66	5.310
Minimum	-11.97	1.570	0.010	3.690
Std. Dev.	3.359	1.417	2.743	0.580
Observations	160	160	160	160

The average Sharpe Ratio of −1.146 indicates that, on average, the sample banks' stock portfolios generated a risk-adjusted return below the risk-free rate during the observation period, though with wide dispersion (std. dev. = 3.359; range from −11.97 to 11.45), reflecting substantial cross-bank and cross-year variation in risk-adjusted performance. Average inflation of 2.83% remained within Bank Indonesia's target corridor, while the NPL ratio averaged 3.36% with a right-skewed distribution, indicating that most banks maintained low NPL while a few banks experienced considerably higher credit risk. Real GDP growth averaged 4.84% with the smallest standard deviation among the variables (0.58), consistent with Indonesia's relatively stable post-pandemic recovery.

Model Selection and Panel Regression Estimation

The Chow test was used to select between the Common Effect Model (CEM) and the Fixed Effect Model (FEM).

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Table 4. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.047	(31,125)	0.0131
Cross-section Chi-square	36.937	29	0.0135

The cross-section chi-square probability of 0.0135 is below the 5% significance threshold, indicating that the Fixed Effect Model is the more appropriate specification for this panel. A subsequent Hausman specification test confirmed FEM over the Random Effect Model, so all reported estimates use FEM with cross-section fixed effects.

Table 5. Fixed Effect Model (FEM) Panel Regression Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.4514	2.5065	2.9724	0.0035
Inflation (X1)	0.3523	0.2003	1.7591	0.0810
NPL (X2)	-0.1347	0.2874	-0.4687	0.0461
Real GDP (X3)	2.0757	0.4925	4.2148	0.0021

R^2 = 0.3254; Adjusted R^2 = 0.1420; F-statistic = 1.7740 (Prob. = 0.0123); Durbin-Watson statistic = 2.5725, indicating the absence of serious autocorrelation.

The estimated regression equation is:

Sharpe Ratio = 7.4514 + 0.3523 Inflation − 0.1347 NPL + 2.0757 Real GDP

Hypothesis Testing and Discussion

Effect of Inflation on Stock Portfolio Performance. Inflation shows a positive coefficient of 0.3523 with a probability of 0.0810, which is significant only at the 10% level, not at the conventional 5% level. Hypothesis H1, which predicted a negative and significant effect, is therefore rejected. This suggests that during 2021–2025 inflation in Indonesia remained relatively controlled and did not exert strong pressure on banking sector performance, as banks were able to maintain profitability and adjust their business policies. This result is consistent with Rahmawati and Hidayat (2022) and Lindayani and Dewi (2016), who found that inflation can positively affect banking stock returns under certain economic conditions.

Effect of Non-Performing Loans on Stock Portfolio Performance. The NPL ratio shows a negative coefficient of −0.1347 with a probability of 0.0461, which is significant at the 5% level. Hypothesis H2, which predicted a negative and significant effect, is accepted. A rise in NPL reflects deteriorating credit quality, which reduces bank profitability, increases risk, and erodes investor confidence, thereby lowering banking stock performance and portfolio returns. This finding is consistent with risk–return theory and with Tapokabkab and Rosyati (2023), who found that NPL negatively and significantly affects banking sector stock performance.

Effect of Real GDP Growth on Stock Portfolio Performance. Real GDP growth shows a positive coefficient of 2.0757 with a probability of 0.0021, well below the 5% threshold.

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Hypothesis H3, which predicted a positive and significant effect, is accepted, and real GDP growth is the most influential variable in the model. Stronger economic growth reflects improving economic activity, which drives greater credit demand, higher bank profitability, and stronger investor confidence, thereby improving banking stock returns and portfolio performance. This result aligns with Modern Portfolio Theory, which holds that favorable economic conditions raise portfolio returns at a given level of risk, and is consistent with Novianti (2022), who found that economic growth positively and significantly affects banking sector stock portfolio performance.

CONCLUSION

This study examined the effects of economic volatility (inflation), credit risk (NPL), and economic growth (real GDP) on the stock portfolio performance of 32 banks listed on the Indonesia Stock Exchange during 2021–2025, using Fixed Effect Model panel data regression. The results show that inflation has a positive effect that is significant only at the 10% level, so H1 is rejected; the Non-Performing Loan ratio has a negative and significant effect at the 5% level, so H2 is accepted; and real GDP growth has a positive and significant effect at the 5% level, so H3 is accepted and emerges as the most dominant and consistent determinant of banking stock portfolio performance, followed by credit risk with a smaller contribution, while inflation exerted no conventionally significant influence during the study period. These findings suggest that investors and investment managers should give particular attention to a bank's NPL ratio and the broader economic growth outlook when constructing banking stock portfolios; that bank management should strengthen credit risk management to keep NPL low while anticipating macroeconomic shifts such as interest rate changes; and that regulators such as OJK and Bank Indonesia should continue to monitor NPL developments and maintain policies that support banking sector stability without constraining credit growth. Future research is encouraged to incorporate additional variables such as the BI policy rate, exchange rate, capital adequacy ratio, or firm size, and to extend the observation period for more comprehensive and robust results.

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