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# Measuring the Sensitivity of the Composite Stock Price Index to Macroeconomic Shocks in Indonesia: Short- and Long-Term Analysis with the ARDL Model

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**Abstract**
*This study aims to examine the sensitivity of Indonesia's Composite Stock Price Index (CSPI) to macroeconomic shocks using the Autoregressive Distributed Lag (ARDL) model. By incorporating key macroeconomic variables such as inflation, interest rates, exchange rates, and industrial production, this research analyzes how short-term fluctuations and long-term equilibrium relationships influence stock market dynamics. The ARDL approach is employed due to its flexibility in estimating relationships among variables with mixed orders of integration. The empirical results reveal that macroeconomic shocks exert significant yet varying impacts on the CSPI in both the short and long run. In the short term, exchange rate volatility and interest rate adjustments show the strongest immediate influence on stock price movements. Conversely, in the long-term horizon, inflation and industrial production emerge as dominant determinants, indicating deeper structural linkages between macroeconomic fundamentals and market performance. The findings underscore the importance of stable macroeconomic conditions in sustaining stock market resilience. Furthermore, the study highlights the CSPI's asymmetric responsiveness to positive and negative macroeconomic shocks, suggesting that investor sentiment and market expectations play a crucial role in shaping stock price reactions. These insights are essential for policymakers in designing macroeconomic policies that foster market stability, as well as for investors in formulating strategies that anticipate market responses to changing economic conditions. Overall, the analysis contributes to a more comprehensive understanding of the dynamic interactions between Indonesia's stock market and its macroeconomic environment. By demonstrating the usefulness of the ARDL framework, the study provides valuable empirical evidence for academics, policymakers, and market participants seeking to assess and manage risks associated with macroeconomic fluctuations.*



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## 1. INTRODUCTION

Capital markets are a vital instrument in the modern economy, where companies raise funds for operations and expansion, and the public invests in stocks. Stock indices, such as the Jakarta Composite Index (JCI), are often used as proxies for investor confidence in economic stability and future growth prospects.

In addition to internal company factors such as profits, capital structure, and dividend policy, external macroeconomic factors such as inflation, interest rates, exchange rates, and economic growth significantly influence stock movements. This is evident in numerous international and local studies.

According to the multifactor conditional equity premium model stated (Cheng et al., 2024), in addition to market variables such as conditional market variance and scaled market prices, inflation is also an important factor that influences excess returns on stocks. In their model, the use of several factors at once (multifactor) addresses the bias that arises when using only one variable (omitted variable bias). Furthermore, the relationship between scaled *market prices and* market variance can change in its relationship—positive or negative—depending on market conditions. Therefore, in the Indonesian context, it is very relevant for this study to include macroeconomic variables as systematic exposure factors, and not just as simple control variables. Cheng et al. also revealed that a multifactor model that considers conditional market variance and scaled *market price* together with macro variables (inflation) provides a strong theoretical basis for the use of macro variables as systematic factors — one variable alone is not enough to explain stock returns.

An international study (Hashmi & Chang, 2023) found that in the E7 Emerging Markets, variables such as FDI, trade balance, and industrial production index (IPI) have a significant long-term impact on stock indices; while the short-term effects of inflation, interest rates, and exchange rates appear to vary depending on market conditions (bullish, bearish, or normal). Furthermore, (Gümüş & Baba, 2024) in a panel analysis of 19 emerging economies (data from 2004-2022) reported that inflation, exchange rates, and interest rates generally have a long-term negative relationship with stock prices; while variables such as gold prices show a different effect (Gümüş & Baba, 2024). Another study on the Fragile-Five, which included Indonesia, also showed that inflation had a positive and significant impact on stock indices, but the pattern of policy interest rates was generally negative (Öztop, 2025). (Goyal et al., 2024) showed that many macro variables previously considered significant predictors were not always consistent in performance. *This* underlies the need for caution in selecting macro variables as systematic factors and the importance of a robust modeling approach against overfitting and predictor stability.

A local Indonesian study on the JCI volatility for the 2018-2023 period found that economic growth (GDP growth) and inflation jointly influence stock market volatility (Aldiansyah et al., 2025). Other local research indicates that variables such as inflation, exchange rates, and benchmark interest rates also play a significant role in the JCI in the long term, although their short-term effects are sometimes inconsistent (Said, 2023).

Changes in Bank Indonesia's benchmark interest rate, for example, can shift investor preferences toward instruments that offer higher returns when interest rates rise; a weakening rupiah can also impact import-dependent companies, while a stronger rupiah can strengthen the export sector. International studies confirm that such effects are common: inflation and policy interest rates have a negative long-term impact on stock indices in emerging markets (Hashmi & Chang, 2023).

With this empirical background, this study aims to comprehensively analyze the influence of macroeconomic variables—including inflation, benchmark interest rates, exchange rates, economic growth, and money supply—on stock movements on the Indonesia Stock Exchange (IHSG) for the most recent period (e.g., post-pandemic to the most recent year). Methods such as VECM, ARDL/ECM, and impulse response analysis will be used to capture short-term and long-term relationships and responses to macroeconomic shocks.

Practically, the results of this study are expected to provide input for investors in developing investment strategies that consider the stock market's sensitivity to macroeconomic factors. For governments and central banks, they are expected to form the basis for proactive monetary and fiscal policies to maintain capital market stability. From an academic perspective, this research enriches the literature with the latest international and local references, as well as an analysis of the differentiation between short-term and long-term effects.

## 2. THEORETICAL FRAMEWORK AND HYPOTHESIS

### Inflation

Inflation is a general increase in the price level of goods and services, resulting in a decrease in people's purchasing power. Inflation negatively impacts stock market performance because it raises production costs and reduces corporate profit margins, leading to a decline in stock prices. Fisher (1930) stated that rising inflation, whether current or anticipated, can increase expected nominal dividend payments, but in real terms, investors' purchasing power decreases. Inflation also reduces the real rate of return on investment assets. The type of inflation also affects this relationship; inflation triggered by excess demand (*demand-pull inflation*) and inflation due to increased production costs (*cost-push inflation*) have different dynamics. Furthermore, research shows an asymmetric effect of inflation on stock prices, where increases and decreases in inflation do not have the same effect on the stock market (Sia et al., 2025).

### Interest rate

Interest rates have a significant and often asymmetric impact on stock prices. Rising interest rates generally increase borrowing costs for companies, reduce capital investment, and reduce consumer purchasing power. This negatively impacts corporate profits and stock prices. However, the effects of interest rates can also vary depending on economic conditions and market optimism. Monetary policies that use interest rates as a primary instrument, such as the BI 7-Day (Reverse) Repo Rate in Indonesia, aim to control inflation and influence market perceptions of risk and stock valuations through monetary policy transmission. Studies also emphasize the importance of understanding the asymmetric effects of interest rates on the stock market for more effective policy formulation (Sia et al., 2025).

### Exchange Rate

The exchange rate is the price of one currency against another, reflecting domestic economic stability within a global context. Exchange rate depreciation can positively impact stock prices, particularly for exporting companies that benefit from lower exchange rates. However, exchange rate volatility can also increase market risk and investor uncertainty. Therefore, exchange rate stability is crucial for maintaining healthy stock market performance. Research in Indonesia shows that a weakening of the rupiah against the US dollar can improve stock market performance by increasing export competitiveness (Sia et al., 2025).

### Economic Growth (GDP)

GDP reflects a country's total production of goods and services and is used as a key indicator of a country's economic health. Positive and stable GDP growth indicates increased prosperity and productivity and encourages investor optimism in the stock market. An increase in GDP per capita also indicates improved opportunities and quality of life, which can increase demand for stocks through increased purchasing power and public investment. The relationship between GDP and stock prices tends to be symmetrical and positive, with

strong economic growth typically followed by rising stock prices (Sia et al., 2025; Hidayat & Rikumahu, 2025).

**Relationship between Variables**

High inflation generally hurts stock prices. Rising inflation causes production costs to rise, thereby squeezing corporate profit margins, which in turn lowers stock prices. Furthermore, high inflation reduces investors' real purchasing power, thus reducing demand for stocks. However, these effects are not always symmetrical; upward and downward inflation can have different impacts on stock prices. Demand-pull inflation can boost stock prices by increasing demand, while cost-push inflation can depress stock prices (Sia et al., 2025).

Rising interest rates increase the cost of capital for companies, thereby reducing business expansion and profits, which tends to lower stock prices. From an investor perspective, higher interest rates make fixed-income instruments more attractive than stocks, reducing demand for stocks and lowering stock prices. Conversely, lower interest rates typically stimulate stock prices by lowering borrowing costs and encouraging investment. However, this relationship can be asymmetric, meaning that the effect of rising interest rates may be stronger than the effect of falling interest rates on stock prices (Sia et al., 2025).

The fluctuation of the rupiah exchange rate against the US dollar affects stock prices, especially for companies active in international trade. Exchange rate depreciation increases the revenue of exporting companies in rupiah, potentially boosting their stock prices. However, high exchange rate fluctuations also increase market uncertainty and foreign exchange risk, which can depress overall stock prices. Exchange rate stability is a crucial factor in maintaining investor confidence in the stock market (Sia et al., 2025; Luwihono et al., 2021).

Strong economic growth indicates increased production and national income, leading to increased corporate earnings and consumer purchasing power. This boosts investor optimism and increases demand for stocks, leading to a tendency for stock prices to rise in line with GDP growth. This relationship is generally symmetrical and positive, with a decline in GDP depressing stock prices, while an increase in GDP boosts stock prices (Sia et al., 2025); (Akbariaza, 2024).

Based on theory, previous research results, and the relationship between variables, the following research hypothesis can be formulated:

a. Inflation has a negative impact on stock movements on the IDX.
b. Interest rates have a negative impact on stock movements on the IDX.
c. The exchange rate has a negative impact on stock movements on the BEI.
d. Economic growth has a positive impact on stock movements on the IDX.

## 3. RESEARCH METHODS

This research is quantitative with a descriptive and inferential approach. Its main objective is to analyze the short-term and long-term relationships between macroeconomic variables (inflation, interest rates, exchange rates, and economic growth) and stock movements on the Indonesia Stock Exchange (IDX) using a model. *Autoregressive Distributed Lag* (ARDL).

This study uses secondary data in the form of time series data (*time series*) with the period 2015–2024. The data sources are as follows: Composite Stock Price Index (IHSG) data obtained from the Indonesia Stock Exchange (BEI), inflation data, BI Rate interest

rates, and the rupiah exchange rate against the US dollar obtained from the official publication of Bank Indonesia (BI), economic growth data (GDP) obtained from the Central Statistics Agency (BPS).

The research variables consist of the Dependent Variable: Composite Stock Price Index (IHSG), as the main indicator of stock market movements in Indonesia, and Independent Variables: Inflation (INF), Benchmark Interest Rate (SB), Rupiah Exchange Rate against the US Dollar (KURS), and Economic Growth or Gross Domestic Product (GDP).

This research uses the ARDL (Autoregressive Distributed Lag) method, so the model is developed into:

$$\Delta IHSG_t = \beta_0 + \sum_{i=1}^{p} \beta_1^i \Delta IHSG_{t-i} + \sum_{j=0}^{q_1} \beta_2^j \Delta INF_{t-j} + \sum_{k=0}^{q_2} \beta_3^k \Delta SB_{t-k} + \sum_{l=0}^{q_3} \beta_4^l \Delta KURS_{t-l}$$

$$+ \sum_{m=0}^{q_4} \beta_5^m \Delta PDB_{t-m} + \lambda_1 IHSG_{t-1} + \lambda_2 INF_{t-1} + \lambda_3 SB_{t-1} + \lambda_4 KURS_{t-1} + \lambda_5 PDB_{t-1} + \varepsilon_t$$

This model allows the analysis of short-term relationships (through the Δ or Δ components) and short-run *dynamics*. and long-term relationships (through variables with lags without differencing). The ARDL method was chosen because it has several advantages: it can be used even if the research data consists of variables with different levels of stationarity (I(0) and I(1)), it can analyze short-term and long-term relationships simultaneously (Sia et al., 2025). This approach is also used to assess asymmetric effects, for example, that increases in interest rates and inflation have different impacts on the stock market than decreases in both (Sadraoui et al., 2025). This model is also suitable for time series data with a limited number of observations (such as monthly or quarterly data for the 2015–2024 period), and provides efficient estimates and does not require large samples.

Data analysis was performed using EViews software, which is capable of automatically estimating ARDL and calculating long-term and short-term models.

## 4. BIBLIOGRAPHY

Akbariaza, W. (2024). Impact of Macroeconomic Indicators on The Indonesia Stock Exchange (IDX) Composite Index Performance. *International Journal of Current Science Research and Review*, *07*(08), 6701–6708. https://doi.org/10.47191/ijcsrr/v7-i8-83

Aldiansyah, Riassy Christa, U., & Syamsudin, A. (2025). *Macroeconomic determinants of stock price volatility: Evidence from the Indonesia Stock Exchange*. *14*(1), 16–27.

Cheng, H., Guo, H., & Shi, Y. (2024). Multifactor conditional equity premium model: Evidence from China's stock market. *Journal of Banking and Finance*, *161*(May 2021), 107117. https://doi.org/10.1016/j.jbankfin.2024.107117

Goyal, A., Welch, I., & Zafirov, A. (2024). A Comprehensive 2022 Look at the Empirical Performance of Equity Premium Prediction. *Review of Financial Studies*, *37*(11), 3490–3557. https://doi.org/10.1093/rfs/hhae044

Gümüş, N., & Baba, M. M. (2024). Unveiling the Dynamics: Exploring the Relationship between Emerging Stock Market Prices and Macroeconomic Factors through ARDL Analysis. *International Econometric Review*, *16*(1), 24–49. https://doi.org/10.33818/ier.1465359

Hashmi, S. M., & Chang, B. H. (2023). Asymmetric effect of macroeconomic variables on the emerging stock indices: A quantile ARDL approach. *International Journal of*

*Finance and Economics*, *28*(1), 1006–1024. https://doi.org/10.1002/ijfe.2461

Hidayat, F. M., & Rikumahu, B. (2025). Analyzing the Impact of Financial and Macroeconomic Factors on Stock Returns and Firm Value in The Indonesia's Consumer Cyclicals Sector. *International Journal of Finance & Banking Studies (2147-4486)*, *14*(1), 30–45. https://doi.org/10.20525/ijfbs.v14i1.3687

Luwihono, A., Suherman, B., Sembiring, D., Rasyid, S., Kalbuana, N., Saputro, R., Prasetyo, B., Taryana, Suprihartini, Y., Asih, P., Mahfud, Z., & Rusdiyanto. (2021). Macroeconomic effect on stock price: Evidence from Indonesia. *Accounting*, *7*(5), 1189–1202. https://doi.org/10.5267/j.ac.2021.2.019

Öztop, A. O. (2025). How Do Central Bank Policy Rates and Inflation Affect Stocks in Fragile-Five Economies? Evidence from Panel PMG-ARDL Approach. *Sosyoekonomi*, *33*(64), 287–297. https://doi.org/10.17233/sosyoekonomi.2025.02.12

Sadraoui, T., Neffati, M., & Achour, W. (2025). Unraveling the Asymmetric Dynamics of Oil Price Shocks and Market Volatility on Stock Returns: Evidence From Nardl Panel Approach. *ECONOMICS - Innovative and Economics Research Journal*, *13*(3), 125–145. https://doi.org/10.2478/eoik-2025-0059

Said, N. K. N. (2023). Analysis of the Influence of Macroeconomic and Global Factors on the Composite Stock Price Index on the Indonesia Stock Exchange. *Bulletin of Islamic Economics*, *2*(2), 77–93. https://doi.org/10.14421/bie.2023.022-04

Sia, P. C., Puah, C. H., Leong, C. M., Yii, K. J., & Tang, M. M. J. (2025). Does inflation or interest rate matter to Indonesian stock prices? An asymmetric approach. *Journal of Economics and Development*, *27*(1), 72–86. https://doi.org/10.1108/JED-07-2024-0239