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Long-Run and Short-Run Dynamics of Financial Market Share Prices in Indonesia: An ARDL Investigation of Global and Domestic Macroeconomic Determinants

Ahmad Ilham Abtasuni*, Murtisari Dewi, Azzahra Marsya Ardelia, and Deswita Herlina

Department of Development Economics, Faculty of Economics and Business, Universitas Sultan Ageng Tirtayasa, Serang, Indonesia

*Corresponding Email: 5553230068@untirta.ac.id

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Abstract

Financial markets in emerging economies are increasingly exposed to global monetary and commodity-market shocks. However, empirical evidence on the effects of the Federal Funds Rate (FFR), oil prices, exchange rates, and domestic interest rates on Indonesia's financial market remains inconclusive, with previous studies reporting conflicting findings. This study investigates the effects of the FFR, Brent crude oil prices, the Real Effective Exchange Rate (REER), and the Domestic Policy Rate on Indonesia's Financial Market Share Price (FMSP) during 2010Q1-2025Q4. Unlike conventional stock market indices, FMSP is derived from OECD share price data compiled using a standardized methodology, facilitating international comparison. Using the Autoregressive Distributed Lag (ARDL) approach, the study examines long-run and short-run dynamics. The results confirm long-run cointegration. In the long run, the FFR and Brent crude oil prices positively and significantly affect FMSP, whereas REER appreciation and increases in the Domestic Policy Rate exert negative effects. In the short run, among the macroeconomic variables, only lagged REER remains statistically significant. The error-correction coefficient (-0.5613) indicates that 56.13 percent of short-run disequilibrium is corrected within one quarter. These findings provide updated evidence on macroeconomic shock transmission and demonstrate the usefulness of FMSP as an internationally comparable indicator.

Keywords: Financial Market Share Price, Federal Funds Rate, Brent Crude Oil Price, Real Effective Exchange Rate, Domestic Policy Rate, Autoregressive Distributed Lag

JEL Classification: G15, E44, E52

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Introduction

Indonesia's financial market holds a strategic role within the financial system of Southeast Asia as the region's largest economy. The rapid development of the capital market is reflected in the market capitalization of the Indonesia Stock Exchange (IDX), which has surpassed IDR 10,000 trillion by the mid 2010Q3-2025Q4. In this study, the development of Indonesia's financial market is proxied by Financial Market Share Price (FMSP) published by the OECD through the Federal Reserve Economic Data (FRED) database. Compared to more commonly used indicators, such as the JCI (Jakarta Composite Index) and stock returns, the FMSP offers greater methodological consistency and cross-country comparability, making it relevant for macro-financial analysis. Nevertheless, the use of this indicator in the Indonesian context remains relatively limited.

Global financial integration has caused domestic financial markets to become increasingly influenced by international economic developments. As a country with an open economy and a relatively

flexible exchange rate regime, Indonesia is vulnerable to changes in global economic conditions through the channels of capital flows, risk premiums, and investor sentiment. The experience of the 1997-1998 Asian financial crisis and the 2008 global financial crisis demonstrates that the performance of Indonesia's financial market is shaped not only by domestic factors, but also by external ones.

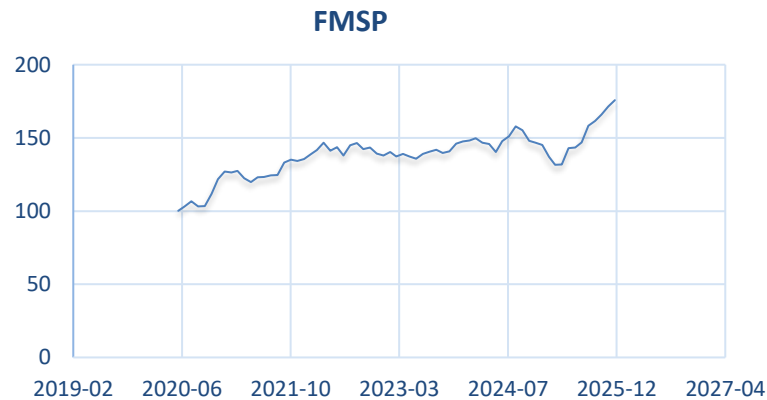


Figure 1. Movement of Financial Market Share Price
Source: OECD via FRED (2025)

The period 2022-2025 was marked by the most aggressive global monetary tightening since the 2008 financial crisis. In response to post-pandemic inflation, the Federal Reserve raised the Federal Funds Rate (FFR) from near-zero levels to above 5 percent and implemented Quantitative Tightening (QT) beginning in June 2022. This policy had wide-ranging effects on developing countries through shifts in capital flows, global liquidity, risk premiums, and exchange rates (Chasnaf et al., 2025). Theoretically, rising global interest rates tend to exert pressure on the financial markets of developing economies through capital outflows, a strengthening US dollar, and increased borrowing costs (Beltrán, 2025).

However, Indonesia's financial market demonstrated relatively strong resilience during this period. Despite the rise in the FFR and the implementation of QT, Indonesia's stock market maintained an upward trend, indicating that the domestic market's response did not fully conform to the financial tightening channel mechanism. Under certain conditions, an increase in the FFR may even be perceived as a signal of improving economic prospects in the United States and stronger global economic growth, thereby fostering investor optimism toward emerging markets (Abid, 2025).

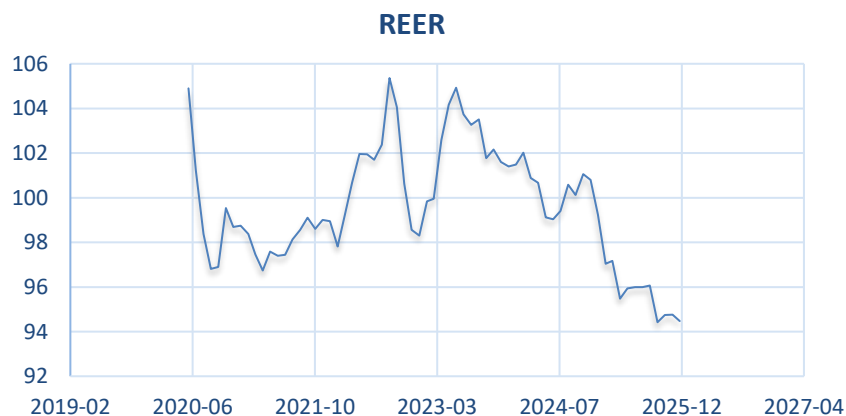


Figure 2. Movement of the Real Exchange Rate
Source: Bank for International Settlements (BIS) (2025)

Empirical findings regarding the effect of the FFR on financial markets also remain mixed. Ching et al. (2026) and Prasetya and Athoillah (2023) found a positive effect on stock markets, whereas Kurniasari et al. (2023) reported a negative effect and Septiana and Retnasih (2025) found no

statistically significant effect. These divergent results suggest that the transmission of US monetary policy to the financial markets of developing countries has yet to yield a clear consensus. Accordingly, the global monetary tightening episode of 2022–2025 provides a relevant context for re-examining the effect of the Federal Funds Rate on Indonesia's Financial Market Share Price (FMSP).

Beyond global monetary factors, the trajectory of Indonesia's external competitiveness as reflected in the Real Effective Exchange Rate (REER) exhibited a declining trend over the observation period, while the Financial Market Share Price (FMSP) experienced a relatively consistent increase. This condition suggests that the relationship between the exchange rate and the financial market is not always linear. Theoretically, exchange rate movements can affect the stock market through international trade, corporate profitability, and capital flows. A depreciation of the Rupiah has the potential to enhance export competitiveness and the performance of export-oriented firms, thereby supporting stock market gains. This view is corroborated by [Januadi et al. \(2026\)](#) and [Pangestuti \(2023\)](#), who found a positive effect of exchange rate depreciation on the JCI.

However, a number of studies report contrasting results. [Siska et al. \(2023\)](#) and [Subakir and Waqar \(2025\)](#) found that exchange rate depreciation can trigger capital outflows, heighten market uncertainty, and suppress stock market performance. Furthermore, [Suriani et al. \(2022\)](#) concluded that the stock market's response to exchange rate movements is dynamic and conditioned by monetary stability and investor sentiment. These divergent findings indicate that the effect of the REER on Indonesia's financial market has yet to yield a strong empirical consensus, thereby warranting further investigation.

Another set of factors with the potential to influence Indonesia's financial market includes world Brent crude oil prices and the Domestic Policy Rate. Changes in oil prices can affect inflation, production costs, corporate profitability, and investor expectations. Meanwhile, the Domestic Policy Rate influences the cost of capital, investment decisions, and investors' preferences in selecting financial instruments. Nevertheless, prior studies continue to report mixed results regarding the effect of both variables on the stock market. From a domestic perspective, the Domestic Policy Rate, as Bank Indonesia's primary monetary policy instrument, also shapes financial market developments through its effects on the cost of capital, investment levels, and investor preferences. Theoretically, an increase in interest rates tends to dampen investor appetite for risk assets such as equities, given the enhanced attractiveness of interest-bearing financial instruments. [Ratnaningrum et al. \(2023\)](#) and [Akbar \(2024\)](#) found that the Domestic Policy Rate exerts a negative effect on the JCI, indicating that rising interest rates can suppress stock market performance. A similar finding was reported by [Febriyanti et al. \(2026\)](#), who documented a negative relationship between the Domestic Policy Rate and the JCI. In contrast, [Saputri and Irawati \(2023\)](#) found the effect of the Domestic Policy Rate to be negative but statistically insignificant, while [Sari \(2025\)](#) found that the Domestic Policy Rate has no significant effect on the JCI. These divergent results suggest that the relationship between the Domestic Policy Rate and Indonesia's financial market has yet to produce a robust empirical consensus, thus necessitating further examination.

The development of Indonesia's Financial Market Share Price (FMSP) is presumed to be influenced by a combination of external and domestic factors, including the Federal Funds Rate (FFR), the Real Effective Exchange Rate (REER), world Brent crude oil prices, and the Domestic Policy Rate. Nevertheless, the findings of prior studies regarding the effects of these variables remain varied, and no strong empirical consensus has yet been established. Moreover, the majority of earlier studies have predominantly employed conventional stock market indicators such as the JCI, stock returns, and sectoral indices. The Financial Market Share Price (FMSP), by contrast, offers advantages in terms of methodological consistency and cross-country comparability, and thus holds the potential to provide a more comprehensive perspective in macro-financial analysis. Despite this, the use of the FMSP as a proxy for Indonesia's financial market remains relatively limited and calls for further empirical investigation.

Literature Review

Macroeconomic Drivers of Financial Markets

Financial Market Share Price (FMSP)

The Financial Market Share Price (FMSP) is a financial market share price index for Indonesia published by the Organization for Economic Co-operation and Development (OECD) with a base year of 2015=100.

This index is constructed using an internationally standardized methodology, making it more standardized than domestic stock exchange indices, and reflects the aggregate development of share prices and the overall performance of Indonesia's financial market. Within the framework of the Efficient Market Hypothesis (EMH) proposed by Fama (1970), share prices are assumed to reflect all available market information rapidly and accurately, rendering movements in this index highly sensitive to a range of macroeconomic fundamentals as well as global market sentiment. Furthermore, the Arbitrage Pricing Theory (APT) asserts that the returns on financial assets are influenced by a number of multidimensional systematic factors.

As the dependent variable in this study, the FMSP represents the aggregate performance of Indonesia's financial market on an internationally standardized scale, making it more appropriate for use in analyses involving global variables such as the FFR, Brent crude oil prices, and the REER. A body of research has documented that share prices in Indonesia are influenced by both domestic and global macroeconomic variables. Andriyani and Pimada (2025) found in their study that external variables such as oil prices and volatility indices exert a significant influence on Indonesia's stock index, indicating that the FMSP is not insulated from the dynamics of international financial markets.

Federal Funds Rate (FFR)

Changes in the Federal Funds Rate (FFR) have broad implications for global financial conditions by influencing liquidity, capital allocation, and investor behavior across international markets. Based on the Financial Tightening Channel Theory, an increase in the FFR encourages capital to shift toward dollar-denominated assets perceived as safer and higher-yielding, thereby exerting downward pressure on the exchange rates of emerging economies, raising funding costs, and depressing financial asset prices (Obstfeld & Rogoff, 1996). Meanwhile, the Global Demand and Economic Activity Channel Theory explains that a rise in the FFR, when it reflects a strengthening US economy, has the potential to increase global demand, which may in turn positively affect the exports and stock market performance of emerging economies such as Indonesia. Accordingly, from a theoretical standpoint, the FFR may exert either a negative or a positive influence on the Financial Market Share Price (FMSP) in Indonesia.

Empirical evidence on the impact of the FFR on the FMSP in emerging economies has been extensively documented. Beltrán (2025), employing a Structural VAR approach with external instruments, found that pure US monetary policy shocks appreciate the real exchange rate and widen the EMBI spread of emerging economies, implicitly signaling pressure on share prices through an increase in the risk premium. Furthermore, Ching et al. (2026), in their study of ASEAN-5 stock markets using a panel ARDL framework, found that the Federal Funds Rate has a positive and significant effect on ASEAN stock indices in the long run, a finding that suggests US monetary policy signals also shape the growth expectations of regional investors.

World Oil Prices (Brent)

World oil prices, represented by Brent Crude, constitute the most widely used international crude oil benchmark in global energy trading. According to Mankiw (2019), increases in energy prices, including crude oil, represent one of the primary sources of cost-push inflation, driving up production costs broadly. On this basis, a rise in Brent crude oil prices has the potential to compress corporate profitability, particularly in energy-intensive sectors, which may ultimately depress equity valuations.

On the other hand, Mishkin (2019) explains that commodity price movements may also reflect the state of the global economic cycle. A rise in oil prices in this context can serve as a signal of improving global demand, potentially increasing revenues for firms in the energy and natural resources sectors. In the context of Indonesia as a net oil-importing country, the stock market nonetheless retains considerable exposure to the energy and commodity sectors. Consequently, changes in Brent crude oil prices can influence the Financial Market Share Price (FMSP) through their effects on production costs, inflationary pressures, and the performance of commodity-based firms.

Andriyani and Pimada (2025), in an ARDL study using monthly data for the period 2018-2024, found that Brent crude oil prices have a positive and significant effect on the JCI, indicating that rising global oil prices can, under certain conditions, be perceived positively by the market, particularly for issuers in the natural resources sector. Consistent with this, Shidqi and Rizal (2024), in a panel VECM-based study of the ASEAN energy sector, found that Brent crude oil prices have a positive effect on

energy sector stock returns in the short run.

Real Effective Exchange Rate (REER)

As an indicator of external competitiveness, REER provides information on how domestic goods and services are priced relative to those of trading partners after accounting for differences in inflation and exchange-rate movements. Unlike the bilateral nominal exchange rate, the REER more comprehensively reflects the relative competitiveness of an economy. According to the Goods Market Theory, the REER affects the financial market through its impact on international trade competitiveness and real sector activity (Krugman et al., 2018). An appreciation of the REER causes domestic goods to become relatively more expensive than foreign goods, which can erode export competitiveness and reduce the revenues of export-oriented firms. This deterioration in corporate performance may ultimately exert downward pressure on share prices in the financial market. Conversely, a depreciation of the REER can enhance the competitiveness of domestic products in global markets, stimulate export growth, improve corporate profitability, and produce a positive effect on the Financial Market Share Price (FMSP). Therefore, based on the Goods Market Theory, changes in the REER can influence stock market performance through their effects on international trade and real economic activity.

Beyond the trade channel, the stock market may also be affected through the mechanism of international portfolio allocation. An exchange rate appreciation lowers the risk borne by foreign investors when investing in domestic assets, thereby increasing their interest in the domestic financial market. This stimulates capital inflows that ultimately support higher domestic share prices (Krugman et al., 2018).

Empirical evidence on the relationship between the real exchange rate and share prices yields varied results depending on the research context and time period. Ceylan and Ceylan (2023), using Panel ARDL and Nonlinear Panel ARDL approaches on the Fragile Five countries including Indonesia, found that the exchange rate has an asymmetric effect on share prices in both the short and long run, with differing patterns observed during crisis periods and the COVID-19 pandemic. Ching et al. (2026) also found that the REER has a positive effect on ASEAN-5 stock indices in the short run. These findings indicate that the REER is an important determinant of the FMSP, although the direction of its effect depends on prevailing economic conditions and the exchange rate regime in place.

Domestic Policy Rate

The Domestic Policy Rate is the policy interest rate set by Bank Indonesia as the benchmark for the national financial system. According to Interest Rate Theory, the level of interest rates directly influences investors' portfolio allocation decisions (Mishkin, 2019). When the Domestic Policy Rate rises, fixed-income instruments such as deposits and bonds offer higher returns, prompting investors to reallocate their funds away from the stock market toward instruments perceived as safer. This shift has the potential to suppress demand and share prices in the financial market.

This explanation is also consistent with the Dividend Discount Model (DDM), a valuation model that determines the intrinsic value of a share based on the present value of expected future dividends (Brealey et al., 2020). When the Domestic Policy Rate increases, the discount rate applied by investors in valuing equities also rises, lowering the present value of future cash flows and placing downward pressure on share prices. Accordingly, from a theoretical standpoint, an increase in the Domestic Policy Rate is expected to exert a negative effect on the Financial Market Share Price (FMSP) in Indonesia.

Suhendra and Anwar (2022), using a Structural VAR approach with quarterly data from 1990 to 2020, found that monetary tightening through central bank interest rate increases leads to a decline in share prices over the subsequent five periods, while simultaneously appreciating the exchange rate and raising bond yields; variance decomposition results further confirmed that the interest rate is the most predictive variable for bond market movements. Permada et al (2022), in an OLS study covering the period 2011-2020, found that the Domestic Policy Rate does not exert a significant effect on the JCI, although the sign of the coefficient is consistent with theoretical predictions. The divergence in findings across these studies is likely attributable to differences in sample periods and methodological approaches; nonetheless, from a theoretical perspective, the Domestic Policy Rate remains one of the principal determinants shaping the direction of FMSP movements in Indonesia.

Although theoretically the impact of the Federal Funds Rate (FFR) can be ambiguous, recent

empirical evidence in ASEAN markets indicates the dominance of the Global Demand Channel. Thus, in the context of Indonesia, this study anticipates a positive effect. Therefore, the research hypotheses are formulated as follows:

H₁: The Federal Funds Rate (FFR) has a significant effect on Indonesia's Financial Market Share Price (FMSP) in both the long run and the short run, where the direction of the effect (positive or negative) depends on the dominant transmission channel.

H₂: World Brent crude oil prices (LN_BRENT) have a positive and significant effect on Indonesia's Financial Market Share Price (FMSP) in both the long run and the short run.

H₃: The Real Effective Exchange Rate (REER) has a negative and significant effect on Indonesia's Financial Market Share Price (FMSP) in both the long run and the short run.

H₄: The Domestic Policy Rate (DPR) has a negative and significant effect on Indonesia's Financial Market Share Price (FMSP) in both the long run and the short run.

Research Method

Indonesia's financial market operates within an environment where international and domestic developments interact continuously. Changes in U.S. monetary policy, commodity prices, exchange-rate conditions, and domestic interest rates may influence investor expectations and financial-sector valuations through different transmission channels. To capture these interactions, this study employs Financial Market Share Price (FMSP) as the dependent variable and examines its relationship with the Federal Funds Rate, Brent crude oil prices, the Real Effective Exchange Rate, and the Domestic Policy Rate. The analysis utilizes quarterly observations spanning 2010Q1–2025Q4, a period characterized by several major economic disruptions and policy transitions.

The empirical investigation is conducted using the ARDL framework. Rather than separating long-run and short-run analyses into different procedures, this approach allows both dimensions to be evaluated within a unified specification. In addition, the method remains applicable when the variables do not share identical integration characteristics, provided that none exhibit second-order integration. These properties make the framework suitable for examining macroeconomic relationships that evolve gradually over time and may respond differently across adjustment horizons (Enders, 2014; Pesaran, 2015).

Table 1. Definition of Variables

Variable	Operational Definition	Measurement	Unit	Data Source
FMSP	Financial Market Share Price (FMSP) is Indonesia's financial market stock price index published by the OECD, reflecting stock price developments and the performance of the domestic financial market.	Financial Market: Share Prices for Indonesia	Index (2015=100)	OECD via FRED
FFR	The Federal Funds Rate (FFR) is used as a proxy for global monetary conditions, which can affect Indonesia's financial market through financial channels and global economic activity.	Federal Funds Effective Rate	Percent (%)	FRED – of St. Louis
LN_BRENT	Brent crude oil price as an indicator of global energy prices.	Natural logarithm of Brent Crude Oil price	Log (USD/barrel)	FRED – Federal Reserve Bank of St. Louis
REER	The Real Effective Exchange Rate (REER) is used to represent Indonesia's external competitiveness. Changes in REER can affect corporate profitability, export prospects, and investor perceptions of domestic economic fundamentals.	Real Effective Exchange Rate Index	Index	Bank for International Settlements (BIS)
DPR	Bank Indonesia's benchmark policy interest rate.	Domestic Policy Rate	Percent (%)	Bank Indonesia

Data and Variable Definitions

Table 1 presents the operational definitions of the variables, their measurement proxies, and the data sources used in this study. It is important to note that the Domestic Policy Rate (DPR) series used in this study is a continuous proxy constructed by splicing three consecutive monetary policy regimes implemented by Bank Indonesia during the 2010Q1–2025Q4 observation period. Specifically, the data incorporates the traditional BI Rate for the period of 2010Q1–2016Q2, the BI 7-Day Reverse Repo Rate (BI7DRR) for 2016Q3–2023Q4, and the renamed BI-Rate (which maintained the BI7DRR operational framework) from 2024Q1 onwards. Splicing these series provides a conceptually consistent measure of the central bank's actual monetary stance across different policy tenors

Econometric Model Specification

In analyzing the relationship between the Financial Market Share Price (FMSP) and macro-financial variables, this study employs the ARDL approach to capture short-run dynamics alongside long-run equilibrium within a single model framework. Conceptually, the structural relationship among the variables is expressed as follows.

$$FMSP_t = f(FFR_t, LN_BRENT_t, REER_t, DPR_t) \quad (1)$$

The long-run linear form of this relationship is.

$$FMSP_t = \beta_0 + \beta_1 FFR_t + \beta_2 LN_BRENT_t + \beta_3 REER_t + \beta_4 DPR_t + \varepsilon_t \quad (2)$$

The general form of the ARDL model is written as follows.

$$FMSP_t = \alpha_0 + \sum_{i=1}^p \alpha_i FMSP_{t-i} + \sum_{j=0}^{q_1} \beta_j FFR_{t-j} + \sum_{k=0}^{q_2} \gamma_k LN_BRENT_{t-k} + \sum_{l=0}^{q_3} \delta_l REER_{t-l} + \sum_{m=0}^{q_4} \theta_m DPR_{t-m} + \varepsilon_t \quad (3)$$

The model is then reparameterized into the Unrestricted Error Correction Model (UECM) form as follows (Pesaran, 2015).

ARDL-ECM Equation

$$\begin{aligned} \Delta FMSP_t = & \phi_0 + \lambda_1 FMSP_{t-1} + \lambda_2 FFR_{t-1} + \lambda_3 LN_BRENT_{t-1} + \lambda_4 REER_{t-1} + \lambda_5 DPR_{t-1} + \\ & \sum_{i=1}^{p-1} \alpha_i \Delta FMSP_{t-i} + \sum_{j=0}^{q_1-1} \beta_j \Delta FFR_{t-j} + \sum_{k=0}^{q_2-1} \gamma_k \Delta LN_BRENT_{t-k} + \\ & \sum_{l=0}^{q_3-1} \delta_l \Delta REER_{t-l} + \sum_{m=0}^{q_4-1} \theta_m \Delta DPR_{t-m} + \varepsilon_t \end{aligned} \quad (4)$$

To determine whether a stable long-run association exists among the variables, the Bounds Testing approach is employed within the UECM framework. Evidence of cointegration allows the analysis to proceed with the estimation of an Error Correction Model, which separates transitory fluctuations from equilibrium relationships. The coefficient attached to the error-correction component indicates the extent to which disequilibrium from the previous period is eliminated, thereby describing the convergence process toward the long-run steady state after a disturbance (Pesaran, 2015). The general form of the ECM is given below.

$$\begin{aligned} \Delta FMSP_t = & \phi_0 + \sum_{i=1}^{p-1} \alpha_i \Delta FMSP_{t-i} + \sum_{j=0}^{q_1-1} \beta_j \Delta FFR_{t-j} + \sum_{k=0}^{q_2-1} \gamma_k \Delta LN_BRENT_{t-k} + \\ & \sum_{l=0}^{q_3-1} \delta_l \Delta REER_{t-l} + \sum_{m=0}^{q_4-1} \theta_m \Delta DPR_{t-m} + \psi ECT_{t-1} + \varepsilon_t \end{aligned} \quad (5)$$

where

$$ECT_{t-1} = FMSP_{t-1} - (\hat{\beta}_0 + \hat{\beta}_1 FFR_{t-1} + \hat{\beta}_2 LN_BRENT_{t-1} + \hat{\beta}_3 REER_{t-1} + \hat{\beta}_4 DPR_{t-1}) \quad (6)$$

In this specification, ECT_{t-1} represents the lagged residual derived from the estimated long-run cointegrating relationship. The coefficient ψ measures the proportion of disequilibrium from the previous period that is corrected over time, thereby reflecting the adjustment process toward long-run equilibrium after a temporary disturbance. A negative and statistically significant value of ψ indicates

the presence of an error-correction mechanism, suggesting that deviations from equilibrium gradually diminish as the system returns to its long-run steady state.

The empirical analysis follows a sequence of procedures within the ARDL framework. The analytical steps are conducted in an integrated manner within the ARDL framework, comprising: (1) stationarity testing using the Augmented Dickey-Fuller (ADF) test to ensure that variables are integrated at order $I(0)$ or $I(1)$ (Enders, 2014); (2) optimal lag selection using the Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC) (Pesaran, 2015); and (3) the Bounds Test to examine the existence of a long-run relationship based on a comparison of the F-statistic with the critical values of $I(0)$ and $I(1)$.

Several diagnostic tests are subsequently conducted to assess model adequacy. Serial correlation is examined using the Breusch-Godfrey LM test, heteroscedasticity is evaluated through the Breusch-Pagan-Godfrey test, and residual normality is assessed using the Jarque-Bera test. Parameter stability throughout the sample period is further examined using the CUSUM and CUSUMSQ tests (Enders, 2014; Wooldridge, 2016). Finally, the estimated ARDL model is used to evaluate the magnitude, direction, and adjustment dynamics of the relationship between macro-financial variables and Indonesia's financial market performance.

Results and Discussion

Descriptive Analysis

Table 2 presents the descriptive statistics for all variables across 64 quarterly observations. This summary highlights contrasting behavioral dynamics among the macroeconomic indicators analyzed. Specifically, the financial market share price (FMSP) exhibits the highest relative volatility, evidenced by a widespread between its maximum (171.03) and minimum (53.35) values, alongside a standard deviation of 26.46. This reflects the heightened sensitivity of the domestic capital market to macroeconomic shifts. Conversely, domestic policy variables such as the DPR and REER display lower dispersion, signaling maintained stability due to Bank Indonesia's monetary policy responses and exchange rate interventions.

Table 2. Descriptive Analysis

	FMSP	LN_BRENT	FFR	DPR	REER
Mean	112.6133	4.306283	1.415156	5.656250	101.7156
Median	113.3187	4.335021	0.275000	5.750000	100.9900
Maximum	171.0351	4.774305	5.330000	7.750000	113.0100
Minimum	53.35018	3.507872	0.060000	3.500000	94.66000
Std. Dev.	26.45927	0.317546	1.820296	1.226768	4.705873
Skewness	-0.164103	-0.398665	1.142514	-0.167352	0.594346
Kurtosis	2.307332	2.469656	2.766160	2.151497	2.505383
Jarque-Bera	1.566689	2.445339	14.06942	2.218622	4.420355
Probability	0.456875	0.294443	0.000881	0.329786	0.109681
Sum	7207.251	275.6021	90.57000	362.0000	6509.800
Sum Sq. Dev.	44105.85	6.352651	208.7490	94.81250	1395.150
Observations	64	64	64	64	64

Furthermore, the Jarque-Bera test indicates that the majority of the variables follow a normal distribution (p-value > 0.05). Although the US policy rate (FFR) exhibits a non-normal distribution (p-value < 0.05), Policy rates adjusting in discrete, stepwise increments is a standard statistical trait; this presents no econometric concern. Within the ARDL framework, the normality assumption applies strictly to the estimated model's residuals rather than the individual raw series.

Table 3. Correlation Matrix

	LN_BRENT	FFR	DPR	REER
LN_BRENT	1.000000	0.008325	0.257608	0.291907
FFR	0.008325	1.000000	-0.057249	-0.233802
DPR	0.257608	-0.057249	1.000000	0.094896
REER	0.291907	-0.233802	0.094896	1.000000

Table 3 presents the Pearson correlation matrix among the independent variables as a preliminary diagnostic for potential multicollinearity. Overall, pairwise correlations among the regressors range from weak to moderate. Global crude oil prices (LN_BRENT) exhibit moderate positive correlations with REER (0.292) and DPR (0.258), whereas REER and FFR share a weak negative correlation (-0.234).

Crucially, all correlation coefficients remain well below the conventional threshold of 0.80, confirming the absence of severe multicollinearity within the ARDL specification. Notably, the correlation between the two policy rate proxies, FFR and DPR, is exceptionally low at -0.057. This near-zero value demonstrates that external and domestic monetary policy stances operated independently, thereby justifying the simultaneous inclusion of both variables in the model. Therefore, despite the presence of weak to moderate correlations among certain macroeconomic indicators, the overall ARDL model remains structurally stable and completely free from multicollinearity biases.

Unit Root Test Results

Augmented Dickey-Fuller (ADF) Test

The empirical procedure begins with the application of the Augmented Dickey-Fuller (ADF) test to assess the stationarity and integration properties of each variable. This step is necessary to establish the order of integration before proceeding with ARDL estimation. Unlike several conventional cointegration techniques that require all variables to be integrated at the same order, the ARDL framework allows for a combination of I(0) and I(1) variables within a single specification. Nevertheless, the presence of variables integrated at I(2) is not permitted, as it violates the theoretical foundations of the ARDL Bounds Testing approach and compromises the validity of the estimated results (Asteriou & Hall, 2021).

Table 4. Integration Order of the Variables

Variable	ADF Test (p-value)	Zivot-Andrews (T-Statistic)	Zivot-Andrews (p-value)	Break Date	Integration Order
FMSP	0.7238	-2.718	0.8235	2020Q2	-
D(FMSP)	0.0000	-6.796*	< 0.01	2025Q1	I(1)
FFR	0.2466	-5.542*	< 0.01	2022Q1	I(0)
D(FFR)	0.0372	-	-	-	-
LN_BRENT	0.4416	-2.885	0.746	2014Q2	-
D(LN_BRENT)	0.0000	-7.726*	< 0.01	2020Q2	I(1)
REER	0.0889	-4.475*	0.0462	2013Q2	I(0)
D(REER)	0.0000	-	-	-	-
DPR	0.2432	-4.628*	0.0303	2019Q1	I(0)
D(DPR)	0.0001	-	-	-	-

The empirical procedure begins with the Augmented Dickey-Fuller (ADF) test, which initially suggested that all variables are integrated of order one, I(1). However, standard unit root tests are known to have low power in the presence of structural breaks. To ensure robustness, the Zivot-Andrews breakpoint unit root test was subsequently employed to account for regime shifts and exogenous shocks, such as the COVID-19 pandemic and domestic monetary policy transitions. The breakpoint test results reveal a combination of integration orders, where FFR, REER, and DPR are stationary in levels I(0), while FMSP and LN_BRENT become stationary in first differences, I(1). Crucially, the absence of variables integrated at I(2) confirms that the dataset perfectly meets the strict integration requirements of the ARDL methodology. Given these robust mixed integration characteristics, the analysis can proceed with the Bounds Testing procedure to investigate the existence of a long-run equilibrium relationship, followed by the estimation of both short-run and long-run coefficients.

ARDL Estimation

Cointegration Bounds Testing

The cointegration test using the Bounds Testing approach is presented in Table 5. The results of the Bounds Testing procedure reported in Table 5 provide strong evidence of a long-run equilibrium relationship among the variables. The calculated F-statistic of 9.319 is substantially higher than the upper-bound critical values across all conventional significance levels. This outcome leads to the

rejection of the null hypothesis of no cointegration, indicating that FMSP, FFR, LN_BRENT, REER, and DPR move together in the long run despite potential short-run fluctuations ([Asteriou & Hall, 2021](#); [Pesaran, 2015](#)).

Table 5. Bounds Test

F-Statistic	k	Significance Level	Critical Value I(0)	Critical Value I(1)
9.319	4	1%	3.71	4.965
		5%	2.743	3.792
		10%	2.323	3.273

ARDL Long-Run Estimation

The ARDL model in this study was estimated with an automatically determined optimal lag length using the Schwarz criterion (SIC), with a maximum lag of 4. Based on an iterative process evaluating 2,500 models, the best-fitting specification selected was ARDL(2, 0, 0, 2, 0). This model was estimated using 62 effective observations covering the period from 2010Q3 to 2025Q4.

Table 6. Long-Run Estimation

Variable	Coefficient	Std. Error	t-Statistic	Probability
FFR	8.7373	0.6384	13.6866	0.0000
LN_BRENT	10.2245	4.3641	2.3429	0.0229
REER	-2.7229	0.2990	-9.1073	0.0000
DPR	-8.7468	1.0091	-8.6683	0.0000
Constant (C)	384.8476	28.383	13.5591	0.0000

Long-run estimates reveal that the Federal Funds Rate (FFR) exerts a positive and significant effect on the Financial Market Share Price (FMSP). This finding aligns with several studies indicating that an increase in the Federal Funds Rate or FFR can enhance stock market performance in Indonesia and the broader ASEAN region, such as on the IHSG ([Prasetya & Athoillah, 2023](#)), IDX30 ([Mubarrok & Iriani, 2025](#)), ISSI and IHSG ([Indarta & Setiawan, 2025](#)), and the ASEAN-5 stock indices ([Ching et al., 2026](#)). These results demonstrate that the effect of the FFR on emerging market financial systems is not inherently contractionary as posited by the Financial Tightening Channel Theory, but can yield a positive response under specific conditions.

Within the context of this study, the positive impact of the FFR indicates that the Global Demand and Economic Activity Channel mechanism dominates over the Financial Tightening Channel. Typically, an FFR hike is associated with global liquidity tightening that potentially drives capital outflows and depresses financial asset prices. However, an increasing FFR can also reflect strengthening economic activity in the United States and improving prospects for global economic growth. Such conditions bolster market sentiment regarding emerging market prospects, including Indonesia, allowing the positive spillover from heightened global economic activity to offset or even outweigh the pressure stemming from global monetary tightening. This dynamic is particularly pronounced given the structural composition of Indonesia's financial market, which is heavily weighted toward the commodity and banking sectors. When an FFR hike signals robust global economic expansion, it stimulates global demand for commodities, elevating export revenues in resource-based industries while simultaneously boosting domestic credit demand and financial intermediation, which drives the profitability expectations of the banking sector.

This finding is further supported by [Ching et al. \(2026\)](#), who documented a positive and significant effect of the FFR on ASEAN-5 equity indices, as well as [Marino et al. \(2024\)](#), who observed a positive relationship between the FFR and portfolio equity flows in Southeast Asia. Additionally, [Dasman et al. \(2024\)](#) found that the FFR positively influences Indonesian government bond prices.

Collectively, these findings indicate that financial asset responses in emerging markets do not invariably move in a negative direction during FFR hikes. In this study, global economic expansion is expected to enhance financial intermediation, improve profitability prospects across the financial sector, and foster investor optimism, ultimately manifesting in higher Financial Market Share Price (FMSP) valuations.

Model estimations for world Brent crude oil prices (LN_BRENT) reveal a positive and significant coefficient relative to FMSP. This finding implies that the Commodity Exporter and Terms of Trade Channel mechanism plays a more dominant role than the Cost-Push Inflation Channel in influencing financial sector performance. Theoretically, rising oil prices elevate production costs and trigger inflationary pressures that can dampen economic activity. However, for an economy deeply intertwined with commodity sectors, higher oil prices improve the terms of trade and boost export revenues. Indeed, rising oil prices have been shown to stimulate commodity-related sectors and reinforce overall macroeconomic sentiment ([Andriyani & Pimada, 2025](#)).

These conditions strengthen cash flows for natural resource-based corporations, stimulate investment and financing activities, and bolster credit demand within the domestic financial system. Enhanced economic activity and growing financing needs subsequently create better prospects for the financial sector, driving up Financial Market Share Price (FMSP) valuations. This outcome is consistent with [Nugroho and Dwiridotjahjono \(2025\)](#) as well as [Shidqi and Rizal \(2024\)](#), who found that rising Brent crude oil prices positively impact stock market performance and sectors benefiting from robust commodity activities. Consequently, the positive effect transmitted through commodity trade channels appears stronger than the cost-push pressures arising from higher energy prices.

The Real Effective Exchange Rate (REER) carries a negative coefficient of -2.7229, significant at the 5% level. This result indicates that a long-run real exchange rate appreciation in Indonesia tends to depress the Financial Market Share Price (FMSP). This finding accords with Goods Market Theory, which asserts that exchange rate appreciation diminishes domestic product competitiveness in international markets, thereby suppressing export-oriented corporate earnings, dampening investor earnings expectations, and ultimately weakening stock market performance ([Krugman et al., 2018](#)).

These results are also consistent with empirical literature demonstrating that exchange rate depreciation tends to exert a positive impact on equity markets. Although some studies employ nominal exchange rates as a proxy, the underlying economic logic aligns with these findings: depreciation enhances export competitiveness and corporate profitability, whereas appreciation produces the opposite effect. [Januadi et al. \(2026\)](#) found that Rupiah depreciation significantly increases stock indices by raising corporate revenues denominated in local currency. Similarly, [Pangestuti \(2023\)](#) reported that currency weakness enhances domestic firm competitiveness and receives a positive market response. From a theoretical standpoint, [Wong \(2022\)](#) explains that real exchange rate depreciation boosts export corporate profitability, propelling stock prices upward. In line with this, [Suriani et al. \(2022\)](#) concluded that exchange rate movements favorably influence long-run stock market performance by improving corporate asset value prospects.

The Domestic Policy Rate exhibits a negative coefficient (-8.7468) and is statistically significant at the 5 percent level. This indicates that increases in the policy rate are followed by lower FMSP values in the long run. From an investment perspective, higher interest rates tend to shift investor preferences toward fixed-income instruments while increasing borrowing costs for firms. These conditions may reduce expected profitability and place downward pressure on stock prices. Similar findings are reported by [Ratnaningrum et al. \(2023\)](#) and [Siska et al. \(2023\)](#), who also identify a negative relationship between interest rates and stock market performance.

From a theoretical perspective, this relationship can be explained by Interest Rate Theory and the Dividend Discount Model (DDM). An increase in interest rates raises corporate financing costs while simultaneously increasing the discount rate applied by investors when valuing expected future cash flows, thereby reducing stock valuations ([Febriyanti et al., 2026](#)). Furthermore, higher returns on interest-bearing financial instruments, such as deposits and bonds, may encourage investors to shift their portfolios away from riskier assets toward fixed-income securities. This portfolio reallocation mechanism is in line with the findings of [Suriani et al. \(2022\)](#), who argued that a tighter interest rate policy diminishes the attractiveness of equity investments. Consequently, demand for stocks weakens, placing downward pressure on FMSP over the long term.

Overall, the long-run estimation results indicate that Indonesia's FMSP is influenced by a combination of global and domestic factors. The FFR and world oil price variables exert a positive effect on FMSP, while REER and the Domestic Policy Rate exert a negative effect. These findings suggest that

the dynamics of Indonesia's financial market are not solely determined by domestic economic conditions, but are also substantially influenced by developments in the global economy and financial environment.

ARDL Short-Run Estimation

The Bounds Test suggests the presence of a stable long-run equilibrium among the variables. Building on this result, short-term adjustments were analyzed through the error-correction representation of the ARDL specification. The estimated coefficients are summarized in Table 7.

Table 7. Short-Run Estimation (ARDL-ECM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FMSP(-1))	0.2529	0.0927	2.7284	0.0086***
D(REER)	-0.2494	0.3224	-0.7736	0.4426
D(REER(-1))	0.9070	0.3484	2.6036	0.0119**
CointEq(-1)*	-0.5613	0.0718	-7.8224	0.0000***
<i>R-squared</i>	0.5303	<i>Mean dependent var</i>		1.8254
<i>Adjusted R-squared</i>	0.5060	<i>S.D. dependent var</i>		6.7309
<i>S.E. of regression</i>	4.7308	<i>Akaike info criterion</i>		6.0084
<i>Sum squared resid</i>	1298.0650	<i>Schwarz criterion</i>		6.1456
<i>Log likelihood</i>	-182.2610	<i>Hannan-Quinn criter.</i>		6.0623
<i>Durbin-Watson stat</i>	1.9172	<i>Included observations</i>		62

The short-run ARDL-ECM estimates reveal that past movements in FMSP, changes in the real effective exchange rate, and the error-correction mechanism play important roles in explaining short-term fluctuations in Indonesia's financial market performance. Among these variables, the first lag of FMSP remains positive and statistically significant, with a coefficient of 0.2529 at the 1 percent significance level. This result suggests that developments in the previous period continue to affect market conditions in the current period, indicating a degree of persistence in stock price movements. Such persistence may arise because investors often incorporate recent market performance into their expectations and portfolio decisions. Consequently, price adjustments do not occur instantaneously, allowing information from earlier periods to continue influencing market outcomes over the short run.

The variable D(REER) has a negative coefficient of -0.2494; however, it is statistically insignificant, with a probability value of 0.4426. This result indicates that changes in REER during the current period are not yet capable of exerting a direct effect on FMSP. This suggests that Indonesia's stock market does not immediately respond to changes in the real effective exchange rate within the same period, as investors require time to adjust their expectations regarding the impact of changes in trade competitiveness and macroeconomic conditions.

In contrast, the variable D(REER(-1)) has a positive coefficient of 0.907 and is significant at the 5% significance level. This result indicates that REER appreciation in the preceding period leads to an increase in the Financial Market Share Price (FMSP) in the current period. This finding suggests that in the short run, financial markets are more responsive to shifts in investor sentiment and capital flows than to adjustments in the real sector. From the perspective of Portfolio Balance Theory, exchange rate appreciation can increase the attractiveness of domestic assets by reducing exchange rate risk, thereby encouraging capital inflows and driving stock price increases (Mishkin, 2019). The presence of a lagged effect also indicates that the transmission of REER changes to financial markets requires time before being fully reflected in investment decisions.

The coefficient attached to CointEq(-1) is negative (-0.5613) and statistically significant. This finding implies that whenever the system moves away from its long-run path, market forces gradually work to reduce the gap. The estimated magnitude indicates that around 56% of the previous period's imbalance is absorbed within one period, suggesting a relatively strong tendency to return to equilibrium. Therefore, although temporary fluctuations may occur, they do not appear to persist for long.

Overall, the short-run results indicate that fluctuations in FMSP are shaped by both past market performance and movements in the real effective exchange rate. The significance of the lagged FMSP variable suggests that market adjustments do not occur instantaneously, as information from previous periods continues to influence investor behaviour. In addition, the significant error-correction term

implies that short-run deviations are gradually absorbed, supporting the existence of a stable long-run relationship between FMSP and the macroeconomic variables examined in this study.

Normality Test

Residual normality was tested using the Jarque-Bera statistic. The test results are presented in Figure 3. The Jarque-Bera statistic produces a probability value of 0.7093, suggesting that the residuals do not exhibit significant departures from normality.

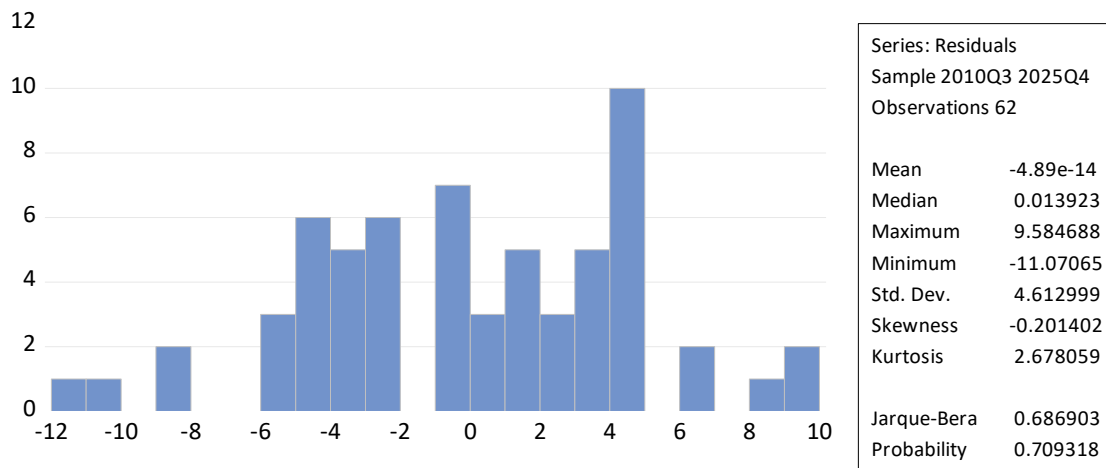


Figure 3. Residual Normality Test

Autocorrelation Test

To evaluate whether the residuals are serially correlated, the Breusch-Godfrey Serial Correlation LM Test was employed. The corresponding results are reported in Table 8. The Obs*R-squared statistic produces a probability value of 0.7462. Given that this probability exceeds 0.05, serial correlation is not detected in the estimated model, indicating that the residuals satisfy the assumption of serial independence.

Table 8. Diagnostic Results for Serial Correlation

Indicator	Value	Probability
F-statistic	0.24317	Prob. F(2,51) = 0.7850
Obs*R-squared	0.585651	Prob. Chi-Square(2) = 0.7462

Heteroscedasticity Test

To assess the homoscedasticity assumption of the model, the Breusch-Pagan-Godfrey Test was conducted. The corresponding results are reported in Table 9. The Breusch-Pagan-Godfrey test yields an Obs*R-squared probability of 0.1557. This result provides insufficient evidence to reject the null hypothesis of constant error variance, suggesting that heteroscedasticity is not present in the estimated model.

Table 9. Diagnostic Results for Heteroscedasticity

Indicator	Value	Probability
F-statistic	1.57352	Prob. F(8,53) = 0.1551
Obs*R-squared	11.89949	Prob. Chi-Square(8) = 0.1557
Scaled explained SS	7.295817	Prob. Chi-Square(8) = 0.5051

Parameter Stability Test

Model stability was assessed using the CUSUM and CUSUMSQ tests, as illustrated in Figures 4 and 5. Based on Figures 4 and 5, both the CUSUM and CUSUMSQ lines remain within the 5% critical bounds throughout the entire observation period. This finding indicates that the model does not experience any significant structural break, and the model's parameters can therefore be considered stable.

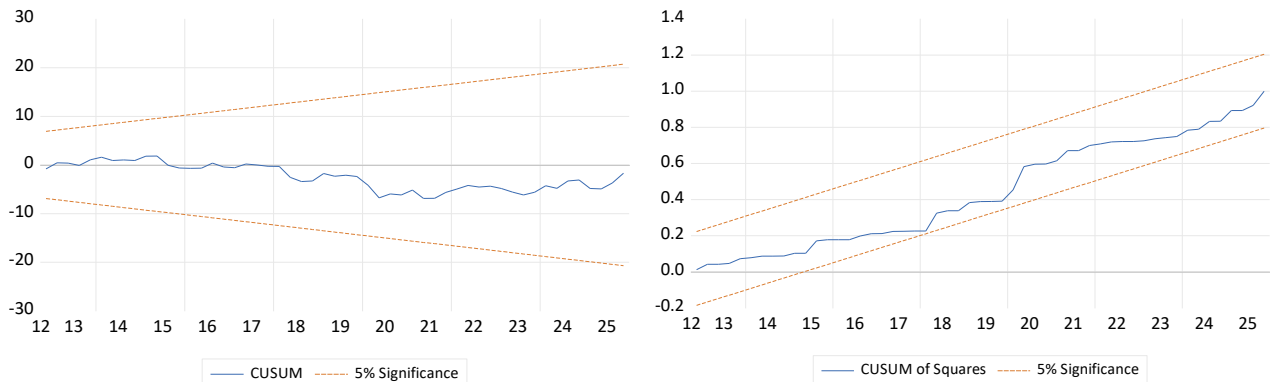


Figure 4. CUSUM and CUSUMSQ

Conclusions

The empirical evidence obtained in this study highlights the importance of considering both international and domestic macroeconomic developments when evaluating the performance of Indonesia's financial market. Rather than being driven exclusively by internal economic conditions, Financial Market Share Prices (FMSP) appear to respond to a broader set of influences, including monetary policy developments, commodity market fluctuations, exchange-rate movements, and domestic interest-rate adjustments.

A notable finding is that external factors remain highly relevant in explaining financial market behaviour. Developments in global monetary conditions and commodity markets are associated with changes in financial-sector valuations, suggesting that Indonesia's financial market remains closely connected to international economic developments. At the same time, exchange-rate dynamics and domestic monetary policy continue to play an important role in shaping market outcomes, reflecting the interaction between external exposure and domestic macroeconomic management.

The short-run results further indicate that market responses do not always occur immediately. Some macroeconomic influences take time to be fully reflected in financial market performance, implying that investors adjust their expectations gradually as new information is absorbed by the market. Nevertheless, the estimated adjustment mechanism indicates that temporary deviations from the long-run path tend to diminish over time, suggesting a relatively stable underlying relationship between financial market performance and its macroeconomic determinants.

Taken together, these findings suggest that Indonesia's financial market operates within an environment where global and domestic forces interact simultaneously. Consequently, monitoring developments in international financial conditions, commodity prices, exchange rates, and monetary policy remains essential for understanding the evolution of financial-sector performance in Indonesia.

This study has several limitations. The FMSP index, constructed by the OECD as a standardized cross-country indicator, may not fully reflect the sectoral composition or trading dynamics of Indonesia's conventional stock market, as represented by the JCI=IHSG. Therefore, the findings should be interpreted with caution when applied specifically to JCI-based analyses. The Domestic Policy Rate (DPR) series also spans different stages of Indonesia's monetary policy framework, including the BI Rate and the BI 7-Day Reverse Repo Rate, which was later renamed the BI Rate in 2023. These rates are treated as a single continuous policy-rate series under the DPR label in this study. While this treatment facilitates consistency across the sample period, it may mask potential changes in the operational framework or policy-rate dynamics that are not explicitly modeled. The ARDL framework further assumes a linear relationship and does not capture potential asymmetric effects (e.g., REER appreciation

versus depreciation, or Domestic Policy Rate increases versus decreases). Finally, reliance on the aggregate FMSP index may mask sector-specific responses, for instance, financial-versus manufacturing-sector shares reacting differently to the FFR, Brent oil prices, REER, or the Domestic Policy Rate, so future research using sector-level data is encouraged.

Implications for Practice and Policy

The findings of this study offer meaningful implications for both policy formulation and investment strategy. Since an increase in the Domestic Policy Rate significantly and negatively affects FMSP in the long run, Bank Indonesia should avoid aggressive or abrupt tightening and instead favor gradual, well-communicated rate adjustments to limit adverse spillovers to the financial market. Meanwhile, the error-correction term shows that 56.13 percent of short-run disequilibrium is corrected within a single quarter. This indicates that shock-induced mispricing triggered by changes in the FFR, Brent oil prices, REER, or the Domestic Policy Rate tends to revert quickly, allowing investors to exploit this rapid mean-reversion through short-horizon portfolio adjustments during periods of macroeconomic volatility.

CRedit Author Statement

Ahmad Ilham Abtasuni: Conceptualization, Methodology, Formal analysis, Writing – original draft. **Murtisari Dewi:** Conceptualization, Data curation, Formal analysis, Writing – original draft. **Azzahra Marsya Ardelia:** Conceptualization, Writing – original draft, Writing – review & editing. **Deswita Herlina:** Validation, Supervision.

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ChatGPT tools were used to assist with language translation, grammar and spelling checks, and improvements to linguistic consistency and readability. AI was not used to develop the research design, conduct data analysis, interpret empirical results, or draw the study's conclusions. All AI-assisted text was reviewed and verified by the author, who remains fully responsible for the accuracy, content, and integrity of the manuscript; the authors reviewed and edited the content as needed and take full responsibility for the final content of the publication.

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