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Integrating Financial Market Indicators and Macroeconomic Fundamentals in Explaining Exchange Rate Dynamics: Evidence from ASEAN Countries

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ABSTRACT

Purpose: This study aims to examine the effects of stock indices, trade balance, and economic growth on exchange rates in ASEAN countries.

Method: This study adopts a quantitative approach using panel data from ten ASEAN member countries during the 2013–2022 period. The data were obtained from official publications of the World Bank and Investing.com. Panel data regression was employed as the analytical method. Based on the results of the Chow and Hausman tests, the Fixed Effects Model (FEM) was selected as the most appropriate model for estimating the relationships among the variables.

Result: The results found that stock indices and trade balance have a positive effect on exchange rates. Meanwhile, economic growth has a negative effect on exchange rates in ASEAN countries.

Practical Implications for Economic Growth and Development: The findings highlight the importance of maintaining financial market stability, improving international trade performance, and promoting sustainable economic growth to support exchange rate stability. These factors are essential for strengthening regional economic resilience in ASEAN.

Originality/Value: This study incorporates financial market indicators and macroeconomic fundamentals within a cross-country panel data framework. By focusing on ASEAN countries during the 2013–2022 period, this study provides a more comprehensive understanding of the determinants of exchange rates in developing economies.

Keywords: *Exchange Rate, Stock Index, Trade Balance, Economic Growth, ASEAN, Panel Data*

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INTRODUCTION

In the era of economic globalization, the exchange rate has become a key macroeconomic indicator that reflects a country's economic condition and its competitiveness in the international economy. The exchange rate plays a strategic role in influencing international trade, investment flows, and financial market performance. Exchange rate fluctuations may affect export and import activities, production costs, foreign investment decisions, and overall national economic performance (Morina et al., 2020; Lin & Chen, 2021). In developing countries, exchange rate stability is particularly important because their economic structures are often highly dependent on international trade and foreign capital inflows. As a result, exchange rate fluctuations may have broad implications for inflation, trade balance, and long-term economic growth (Doojav et al., 2024; Matsvai, 2025). In this study, the terms exchange rate dynamics, changes, and conditions are used to describe macroeconomic phenomena, while the empirical variable refers to the official exchange rate measured in local currency units per U.S. dollar (LCU/USD). Thus, the exchange rate serves not only as an instrument for international transactions but also as a fundamental indicator of a country's macroeconomic stability and external position.

In the Association of Southeast Asian Nations (ASEAN) region, exchange rates against the U.S. dollar are influenced by both global and domestic economic conditions. External factors, such as the tightening of U.S. monetary policy, geopolitical tensions, and uncertainty in global financial markets, frequently increase demand for foreign currencies and place pressure on ASEAN currencies (Lastauskas & Nguyen, 2024; Zhou et al., 2025). These conditions may lead to an increase in exchange rates measured in LCU/USD, indicating depreciation of domestic currencies against the U.S. dollar, particularly during periods of global economic slowdown or financial instability. In addition to external factors, exchange rates are also shaped by domestic economic fundamentals, including trade performance, capital market conditions, and economic growth. Countries with stronger macroeconomic fundamentals generally tend to experience more stable exchange rate conditions than countries with weaker economic performance (Pebriyanti & Khoirudin, 2024; Octavia & Soelistyo, 2025).

A number of empirical studies have examined the determinants of exchange rates. Ogawa and Luo (2025) show that exchange rate movements in ASEAN countries are strongly influenced by global sentiment, particularly changes in United States monetary policy. Other studies emphasize the role of financial markets, especially stock indices, in affecting exchange rates through international capital flow mechanisms. Nusair and Al-Khasawneh (2022) and Chancharat and Suwannapak (2024) identify a long-term relationship between stock markets and exchange rates in Asian countries, including ASEAN economies. Similar findings are reported by Dang et al. (2020) and Sheikh et al. (2020), who demonstrate that stock market performance influences exchange rates through changes in investor expectations and portfolio allocation decisions.

Other strands of literature focus on macroeconomic fundamentals, particularly trade balance and economic growth. Neumann and Tabrizy (2021) argue that countries with stronger trade performance tend to experience more stable exchange rate conditions due to higher foreign exchange earnings from exports. Kayani et al. (2023) also find that trade balance has a significant effect on exchange rate movements in Asian countries. Furthermore, Chikwira and Jahed (2024) and McCloud et al. (2024) indicate that higher economic growth may encourage foreign capital inflows, strengthen investor confidence, and influence exchange rate movements in developing economies.

Despite the extensive literature on exchange rate determinants, several research gaps remain. First, most previous studies examine exchange rate determinants separately by focusing either on financial market variables, such as stock indices, or on macroeconomic variables, such as trade balance and economic growth. Studies that integrate financial market indicators and macroeconomic fundamentals simultaneously within a single empirical framework remain limited, particularly in the ASEAN context. Second, many previous studies focus on individual countries or the ASEAN-5 group, resulting in limited cross-country evidence for the broader ASEAN region. Third, empirical findings on the relationships among stock markets, trade balance, economic growth, and exchange rates remain inconsistent in developing economies, indicating the need for further empirical investigation.

Based on these gaps, this study contributes to the literature by integrating stock indices, trade balance, and economic growth into a single panel data model covering ten ASEAN countries during the 2013–2022 period. Unlike previous studies that tend to examine financial and macroeconomic aspects separately, this study provides a more comprehensive analysis by simultaneously assessing the role of capital market performance and macroeconomic fundamentals in explaining exchange rate movements in ASEAN countries. The use of a panel data approach also allows this study to capture cross-country heterogeneity and intertemporal dynamics in exchange rate behavior.

Therefore, this study aims to analyze the effects of stock indices, trade balance, and economic growth on exchange rates in ASEAN countries during the 2013–2022 period. The findings are expected to provide comprehensive empirical evidence on the determinants of exchange rates in ASEAN and contribute to the development of international economics literature. In addition, the results may serve as a reference for policymakers and market participants in formulating exchange rate policies and strengthening regional economic resilience amid increasingly complex global economic dynamics.

Hypotheses Development

The Effect of Stock Indices on Exchange Rate

Stock indices are key indicators of capital market performance and investor perceptions of a country's economic prospects. Based on Portfolio Balance Theory, investors allocate their portfolios by considering expected returns and risks across various financial instruments, including equities and foreign currency-denominated assets (Koumou, 2020). An increase in the stock index reflects stronger investor confidence in domestic economic conditions. This may encourage foreign capital inflows into the domestic stock market, increase demand for the domestic currency, and subsequently lead to currency appreciation (Camanho et al., 2022).

The relationship between stock indices and exchange rates can also be explained through the Flow-Oriented Model, which argues that exchange rate movements are influenced by financial market dynamics and international capital flows (Efuntade & Efuntade, 2022). Improved stock market performance is generally associated with higher foreign portfolio investment, which increases demand for the domestic currency and strengthens its value. Conversely, a decline in stock indices may trigger capital outflows, place pressure on the domestic currency, and lead to depreciation (Tabash et al., 2023).

In this study, the exchange rate is measured as local currency units per U.S. dollar (LCU/USD). Therefore, a decrease in the exchange rate indicates domestic currency appreciation, while an increase indicates depreciation. Accordingly, an increase in stock indices is expected to strengthen the domestic currency and reduce the exchange rate against the U.S. dollar.

H1: Stock indices have a negative effect on exchange rate.

The Effect of Trade Balance on Exchange Rate

The trade balance is a fundamental indicator in an open economy, reflecting the difference between a country's exports and imports. According to the Elasticity Approach to exchange rate determination, exchange rates are influenced by international trade performance (Bussière et al., 2020). Countries with trade surpluses tend to receive foreign exchange inflows from export activities, which may increase demand for the domestic currency (Kayani et al., 2023). This higher demand can lead to domestic currency appreciation.

The relationship between trade balance and exchange rates can also be explained through the Mundell–Fleming Model. This model suggests that external sector performance, including exports and imports, affects balance of payments equilibrium, which subsequently influences exchange rate movements (Kocoglu & Kula, 2025). A trade surplus may increase foreign exchange reserves and strengthen the domestic currency in international markets.

In this study, the exchange rate is measured as local currency units per U.S. dollar (LCU/USD). Therefore, domestic currency appreciation is reflected in a lower exchange rate, while depreciation is reflected in a higher exchange rate. Accordingly, an improvement in the trade balance is expected to strengthen the domestic currency and reduce the exchange rate against the U.S. dollar.

H2: Trade balance has a negative effect on exchange rate.

The Effect of Economic Growth on Exchange Rate

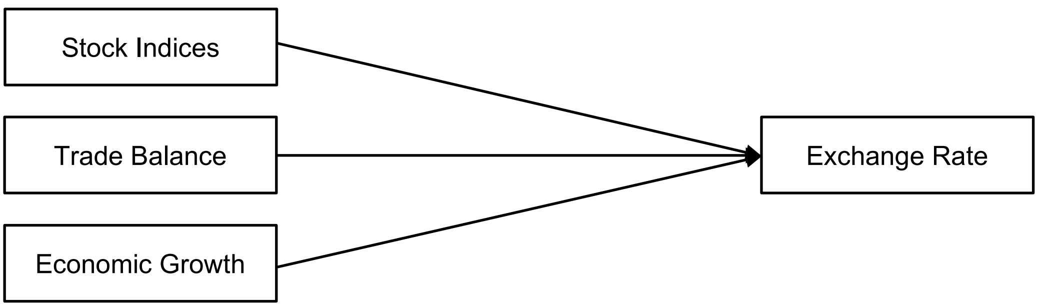
Economic growth reflects an increase in a country's production capacity and overall economic activity over a specific period. The Balassa–Samuelson Effect is primarily associated with real exchange rate appreciation. However, its underlying mechanism remains relevant for explaining nominal exchange rate movements through improvements in productivity, competitiveness, and investor confidence in countries with higher economic growth rates (Seraj & Coskuner, 2021). Countries with stronger economic growth tend to attract greater foreign investment inflows, which increase demand for the domestic currency and may subsequently lead to nominal exchange rate appreciation.

The relationship between economic growth and exchange rates can also be explained through the Monetary Approach to Exchange Rate determination. This approach suggests that economic growth influences exchange rates through changes in money demand and domestic economic activity (Chugunov et al., 2021). Higher economic growth increases demand for domestic currency in line with rising production, consumption, and investment activities. This condition may strengthen the value of the domestic currency.

In this study, the exchange rate is measured as local currency units per U.S. dollar (LCU/USD). Therefore, appreciation of the domestic currency is reflected in a lower exchange rate, while depreciation is reflected in a higher exchange rate. Accordingly, higher economic growth is expected to strengthen the domestic currency and reduce the exchange rate against the U.S. dollar.

H3: Economic growth has a negative effect on exchange rate.

Figure 1. Conceptual Framework



Source: Developed by the authors (2026)

METHOD

This study adopts a quantitative approach to examine the determinants of exchange rates in ASEAN countries. This approach is appropriate because the study analyzes the empirical relationship between independent variables and the dependent variable using numerical data and inferential statistical techniques (Ghanad, 2023; Lim, 2024). Specifically, the analysis focuses on the effects of stock indices, trade balance, and economic growth on exchange rates in the ASEAN region.

The data used in this study are secondary data obtained from official publications of the World Bank and Investing.com. The study covers ten member countries of the Association of Southeast Asian Nations (ASEAN), namely Indonesia, Malaysia, Singapore, Thailand, the Philippines, Vietnam, Brunei Darussalam, Cambodia, Laos, and Myanmar, during the 2013–2022 period. The combination of cross-sectional and time-series dimensions produces a balanced panel dataset consisting of 100 observations. The use of panel data enables the analysis to capture both intertemporal variation and cross-country heterogeneity (Athey et al., 2021). Macroeconomic data were obtained from the World Development Indicators database, accessed in March 2026.

Stock market data were collected from Investing.com using the main stock market indices of each ASEAN country. These indices include the IDX Composite for Indonesia, FTSE Bursa Malaysia KLCI for Malaysia, Straits Times Index for Singapore, SET Index for Thailand, PSEi for the Philippines, VN Index for Vietnam, FTSE Bursa Brunei Index for Brunei Darussalam, CSX Index for Cambodia, LSX Composite for Laos, and YSX Index for Myanmar. Annual stock index data were measured using the year-end closing value of each index during the observation period.

Because ASEAN member countries use different domestic currencies, the exchange rate variable is standardized using the official exchange rate expressed as local currency units per U.S. dollar (LCU/USD). The use of a common reference currency, namely the U.S. dollar, improves comparability across countries in the panel analysis. However, differences in the numerical scale of national currencies remain a methodological concern. Therefore, this study applies a natural logarithmic transformation to the exchange rate variable before estimation. This transformation helps reduce heteroskedasticity, minimize scale disparities across countries, and improve the interpretation of the regression coefficients within the panel data model (Baltagi, 2021). Under this specification, the coefficients can be interpreted in terms of changes in the exchange rate associated with changes in the independent variables. In this measurement framework, an increase in the exchange rate value indicates depreciation of the domestic currency against the U.S. dollar, while a decrease indicates appreciation.

The dependent variable in this study is the exchange rate. The independent variables consist of stock indices, trade balance, and economic growth. The operational definitions, measurements, and data sources of each variable are presented in Table 1.

Table 1. Research Variables

Variable	Operational Definition	Unit	Indicator/Source
Exchange Rate	Official exchange rate representing the value of the domestic currency against the U.S. dollar.	Local currency per US$ (LCU/USD)	Official exchange rate (LCU per US$, period average) – PA.NUS.FCRF
Stock Index	Composite stock price index reflecting capital market performance in each country.	Index	Stock index data from investing.com
Trade Balance	The difference between the value of exports and imports of goods and services.	Million US Dollars	Trade balance in goods and services (current US$) – BN.GSR.GNFS.CD

Variable	Operational Definition	Unit	Indicator/Source
Economic Growth	Annual growth rate of real Gross Domestic Product (GDP).	Percent (%)	GDP growth (annual %) – NY.GDP.MKTP.KD.ZG

Source: Compiled by the authors (2026)

Data analysis was conducted using panel data regression, which consists of three estimation approaches: the Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM) (Baltagi, 2021). The selection of the most appropriate model was carried out through a series of specification tests. The Chow test was used to determine whether CEM or FEM was more suitable, while the Hausman test was employed to select between FEM and REM. Furthermore, the F-test was used to examine the simultaneous significance of the independent variables, whereas the t-test was applied to assess the partial effect of each independent variable on the dependent variable. All data processing and estimation procedures were performed using EViews software. The empirical regression model used in this study is specified as follows:

$$\ln ER_{it} = \beta_0 + \beta_1 SI_{it} + \beta_2 TB_{it} + \beta_3 EG_{it} + \varepsilon_{it}$$

Where:

$lnER_{it}$: Natural logarithm of the exchange rate of country *i* in year *t*
SI_{it} : Stock index of country *i* in year *t*
TB_{it} : Trade balance of country *i* in year *t*
EG_{it} : Economic growth of country *i* in year *t*
β_0 : Constant
$\beta_1, \beta_2, \beta_3$: Regression coefficients of independent variables
ε_{it} : Error term
i : Country
t : Observation year

Because the dependent variable, namely the LCU/USD exchange rate, was transformed into its natural logarithmic form, all estimation results were adjusted accordingly and have been updated to reflect this transformation.

RESULT AND DISCUSSION

Result

The results of panel data estimation using the Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM), along with the model selection tests, are summarized in Table 2.

Table 2. Panel Data Regression Estimation Results

Variable	CEM	FEM	REM
Constant (C)	4.466*(0.000)	4.835*(0.000)	4.839*(0.000)
Stock Index (SI)	1.570(0.964)	5.080*(0.000)	5.040*(0.000)
Trade Balance (TB)	2.330*(0.006)	3.800**(0.048)	3.770(0.135)
Economic Growth (EG)	0.286*(0.001)	−0.007***(0.053)	−0.007*(0.002)
R-squared	0.163	0.999	0.376
Adjusted R-squared	0.137	0.999	0.357
F-statistic	6.217	16,307.59	19.312
F-probability	0.000	0.000	0.000
Model Selection Tests:			

Chow Test: Cross-section F = 18204.654; Prob. F = 0.000
Hausman Test: Cross-section random χ^2 = 9.079; Prob. χ^2 = 0.028

*Notes: Values in parentheses indicate probability values. *** significant at 1%; ** significant at 5%; * significant at 10%.*

Source: Processed data (2026)

After estimating the Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM), model selection was conducted in two stages to determine the most appropriate specification for the panel data analysis. First, the Chow test was employed to compare the CEM and FEM. Second, the Hausman test was conducted to determine whether the FEM or REM was more appropriate for the estimation model.

The Chow test results presented in Table 2 show a Cross-section F statistic of 18,204.654 with a probability value of 0.000, which is lower than the 5% significance level. This result indicates that the Fixed Effects Model (FEM) is more appropriate than the Common Effects Model (CEM). Furthermore, the Hausman test results show a Cross-section random chi-square statistic of 9.079 with a probability value of 0.028, which is also lower than 0.05. This finding indicates that the FEM is statistically more suitable than the Random Effects Model (REM).

Based on these model selection tests, the FEM was selected as the most appropriate estimation model for this study. The use of the FEM is also justified by the presence of structural heterogeneity across ASEAN countries, including differences in exchange rate regimes, financial market development, trade structures, and macroeconomic conditions. The FEM is considered more appropriate because it can control for unobserved country-specific effects that may influence exchange rate movements but are not fully captured by the explanatory variables included in the model (Breuer & DeHaan, 2024). The FEM estimation results are presented in Table 3.

Table 3. Fixed Effects Model (FEM) Estimation Results

Variable / Model Statistic	Coefficient	Std. Error	t-Statistic	Probability
Constant (C)	4.835*	0.083	58.374	0.000
Stock Index (SI)	5.080*	7.850	6.464	0.000
Trade Balance (TB)	3.800**	1.660	2.284	0.048
Economic Growth (EG)	−0.007***	0.003	−2.230	0.053
R-squared	0.999	—	—	—
Adjusted R-squared	0.999	—	—	—
F-statistic	16,307.59	—	—	—
Prob. F-statistic	0.000	—	—	—

*Notes: *Significant at 1%; **significant at 5%; ***significant at 10%. Values in the probability column indicate p-values.*

Source: Processed data (2026)

Based on the FEM estimation results in Table 3, the R-squared value is 0.999, the F-statistic is 16,307.59, and the probability of the F-statistic is 0.000. Since the probability value is lower than the 5% significance level, stock indices, trade balance, and economic growth simultaneously have a significant effect on exchange rates. The R-squared value of 0.999 indicates that 99.9% of the variation in exchange rates can be explained by the independent variables included in the model, while the remaining 0.1% is explained by other factors outside the model.

Table 4. Partial Test Results (t-test) of the Fixed Effects Model (FEM)

Variable	Coefficient	Probability (t)	Decision
SI	5.080*	0.000	SI has a positive effect on ER.
TB	3.800**	0.048	TB has a positive effect on ER.
EG	−0.007***	0.053	EG has a negative effect on ER.

*Notes: *Significant at 1%; **significant at 5%; ***significant at 10%.*

Source: Processed data (2026)

The t-test results in Table 4 show that stock indices and trade balance have a positive effect on exchange rates in ASEAN countries, while economic growth has a negative effect. The stock index (SI) coefficient is positive at 5.080 and statistically significant at the 1% level ($p = 0.000 < 0.01$). Since the dependent variable is expressed as the natural logarithm of the exchange rate (lnER), this coefficient indicates that a one-unit increase in the stock index is associated with an approximately 5.080% increase in the exchange rate. Because the exchange rate is measured as local currency units per U.S. dollar (LCU/USD), an increase in the exchange rate reflects depreciation of the domestic currency against the U.S. dollar. Thus, higher stock indices are associated with domestic currency depreciation. The trade balance (TB) coefficient is positive at 3.800 and statistically significant at the 5% level ($p = 0.048 < 0.05$). This result indicates that a USD 1 million increase in the trade balance is associated with an approximately 3.800% increase in the exchange rate. In the LCU/USD framework, this means that an improvement in the trade balance is associated with domestic currency depreciation against the U.S. dollar. The economic growth (EG) coefficient is negative at −0.007 and statistically significant at the 10% level ($p = 0.053 < 0.10$). This finding indicates that a 1% increase in economic growth is associated with an approximately 0.007% decrease in the exchange rate. Since a lower LCU/USD value indicates domestic currency appreciation, higher economic growth is associated with appreciation of the domestic currency against the U.S. dollar.

Discussion

The findings indicate that the stock index has a positive effect on the exchange rate. This implies that an increase in the stock index is associated with an increase in the exchange rate, reflecting depreciation of the domestic currency against the U.S. dollar. Therefore, the first hypothesis (H1), which states that the stock index has a negative effect on the exchange rate, is rejected. This result suggests that the relationship between stock market performance and exchange rates in ASEAN countries is not fully consistent with conventional theoretical expectations. In theory, an increase in the stock index reflects stronger corporate performance and more favorable economic prospects, which may attract foreign capital inflows and strengthen the domestic currency. However, the positive relationship found in this study indicates that stock market improvement in ASEAN countries may occur alongside domestic currency depreciation. This condition may be explained by the complexity of capital flow dynamics in developing economies with a high degree of financial openness. Stock market growth may be accompanied by portfolio diversification into global assets, profit repatriation by foreign investors, and hedging activities against exchange rate risk. Although these mechanisms were not directly tested in this study, they may help explain why stronger stock market performance does not necessarily lead to domestic currency appreciation. This finding is consistent with Camanho et al. (2022) and Tabash et al. (2023), who show that in open financial systems, stock market movements are not always followed by domestic currency appreciation because of global sentiment and short-term capital mobility.

The findings also show that the trade balance has a positive effect on the exchange rate. Thus, the second hypothesis (H2), which states that the trade balance has a negative effect on the exchange rate, is rejected. Theoretically, a trade surplus increases foreign exchange inflows and strengthens the domestic currency. However, the results of this study indicate that an improvement in the trade balance is associated with exchange rate depreciation in

ASEAN countries. This finding reflects the complexity of trade structures and external sector dependence in ASEAN economies. One possible explanation is that improvements in the trade balance may still be accompanied by high import dependence, particularly for raw materials, intermediate goods, and capital goods used to support domestic production and export activities. Consequently, demand for foreign currency remains high even when the trade balance improves. In addition, the dominance of the U.S. dollar in international trade transactions may further sustain strong demand for foreign exchange. Although these factors were not empirically examined in the model, they provide a plausible explanation for the positive relationship between the trade balance and the exchange rate. This result is in line with Bhat and Bhat (2020) and Van Cauwenberge et al. (2021), who argue that the relationship between the trade balance and the exchange rate is not always linear, particularly in countries with high trade openness. Umeaduma et al. (2023) also emphasize that trade structure, especially dependence on imported intermediate and capital goods, plays an important role in determining exchange rate movements. Therefore, an improvement in the trade balance cannot automatically be interpreted as a factor that strengthens domestic currencies in ASEAN countries.

Meanwhile, economic growth has a negative effect on the exchange rate, indicating that higher economic growth contributes to domestic currency appreciation. Therefore, the third hypothesis (H3), which states that economic growth has a negative effect on the exchange rate, is accepted. This finding is consistent with macroeconomic theory, which suggests that strong economic growth reflects higher productivity, investment expansion, and improved economic stability. From an investor perspective, higher economic growth strengthens confidence in a country's long-term economic prospects. This condition may encourage foreign capital inflows in the form of both foreign direct investment and portfolio investment. Increased capital inflows raise demand for the domestic currency in the foreign exchange market, thereby contributing to currency appreciation. This finding is supported by Raghutla and Chittedi (2020) and Asamoah and Alagidede (2021), who show that economic growth plays an important role in strengthening exchange rates in developing countries. Chikwira and Jahed (2024) also emphasize that, in open economies, economic growth is a key determinant of exchange rate conditions. In ASEAN countries, which are characterized by regional economic integration and high capital mobility, economic growth serves as an important signal for global investors in determining investment allocation. Thus, economic growth plays a significant role in strengthening domestic currencies in international markets.

CONCLUSION

This study analyzes the effects of stock market indices, trade balance, and economic growth on exchange rates in ASEAN countries. The results show that stock market indices and trade balance have positive effects on exchange rates, while economic growth has a negative effect. These findings indicate that the first hypothesis (H1) and the second hypothesis (H2) are rejected, whereas the third hypothesis (H3) is accepted. Increases in stock market indices and trade balance are associated with depreciation of domestic currencies against the United States dollar. In contrast, higher economic growth contributes to domestic currency appreciation.

Based on these findings, several policy implications can be drawn. First, the positive relationship between stock market indices and exchange rates indicates that stronger stock market activity may coincide with exchange rate depreciation. This finding highlights the need for stronger supervision of short-term capital flows and foreign portfolio movements in ASEAN countries. Strengthening macroprudential regulations and maintaining domestic financial market stability are necessary to reduce exchange rate pressures caused by financial market volatility. Second, the positive effect of trade balance on exchange rates indicates that an improvement in trade balance alone is not sufficient to strengthen domestic currencies, particularly in countries that remain highly dependent on imported raw materials, intermediate goods, and capital goods. Therefore, ASEAN governments need to promote export diversification, strengthen domestic industrial capacity, and reduce import dependence on strategic production inputs. Third, the negative effect of economic growth on exchange rates confirms that stronger economic growth contributes to domestic currency appreciation. This finding emphasizes the importance of maintaining sustainable and inclusive economic growth through investment expansion, infrastructure development, and productivity improvement. These efforts are essential for supporting exchange rate stability and sustaining long-term macroeconomic performance.

This study has several limitations. First, the model only includes stock market indices, trade balance, and economic growth, and therefore does not fully capture all factors affecting exchange rates. Second, this study does not incorporate global variables, such as international interest rates, inflation, and global financial market volatility, which may also influence exchange rate dynamics in developing countries. Future research is recommended to expand the analytical model by including additional macroeconomic variables, such as inflation, interest rates, foreign exchange reserves, and global financial stability indicators. In addition, future studies may employ more dynamic methodological approaches, such as the Vector Error Correction Model (VECM), Panel Vector Autoregression (PVAR), or dynamic panel models, to provide deeper insights into the short-term and long-term relationships among variables influencing exchange rates.

REFERENCES

Asamoah, M. E., & Alagidede, I. P. (2021). Foreign direct investment, real sector growth and financial development. *International Journal of Finance & Economics, 28*(1), 626–643. https://doi.org/10.1002/ijfe.2440

Athey, S., Bayati, M., Doudchenko, N., Imbens, G., & Khosravi, K. (2021). Matrix completion methods for causal panel data models. *Journal of the American Statistical Association, 116*(536), 1716–1730. https://doi.org/10.1080/01621459.2021.1891924

Baltagi, B. H. (2021). *Econometric analysis of panel data* (6th ed.). Springer. https://doi.org/10.1007/978-3-030-53953-5

Bhat, S. A., & Bhat, J. A. (2020). Impact of exchange rate changes on the trade balance of India: An asymmetric nonlinear cointegration approach. *Foreign Trade Review, 56*(1), 71–88. https://doi.org/10.1177/0015732520961328

Breuer, M., & DeHaan, E. D. (2024). Using and interpreting fixed effects models. *Journal of Accounting Research, 62*(4), 1183–1226. https://doi.org/10.1111/1475-679X.12559

Bussière, M., Gaulier, G., & Steingress, W. (2020). Global trade flows: Revisiting the exchange rate elasticities. *Open Economies Review, 31*(1), 25–78. https://doi.org/10.1007/s11079-019-09573-3

Camanho, N., Hau, H., & Rey, H. (2022). Global portfolio rebalancing and exchange rates. *The Review of Financial Studies, 35*(11), 5228–5274. https://doi.org/10.1093/rfs/hhac023

Chancharat, S., & Suwannapak, S. (2024). The dynamic relationship between ASEAN+6 exchange rates and stock markets: Application of the ARDL model. *Journal of Asian Business and Economic Studies, 31*(5), 365–377. https://doi.org/10.1108/JABES-01-2024-0026

Chikwira, C., & Jahed, M. I. (2024). Analysis of exchange rate stability on the economic growth process of a developing country: The case of South Africa from 2000 to 2023. *Economies, 12*(11), 296. https://doi.org/10.3390/economies12110296

Chugunov, I., Pasichnyi, M., Koroviy, V., Kaneva, T., & Nikitishin, A. (2021). Fiscal and monetary policy of economic development. *European Journal of Sustainable Development, 10*(1), 42. https://doi.org/10.14207/ejsd.2021.v10n1p42

Dang, V. C., Le, T. L., Nguyen, Q. K., & Tran, D. Q. (2020). Linkage between exchange rate and stock prices: Evidence from Vietnam. *The Journal of Asian Finance, Economics and Business, 7*(12), 95–107. https://doi.org/10.13106/jafeb.2020.vol7.no12.095

Doojav, G. O., Purevdorj, M., & Batjargal, A. (2024). The macroeconomic effects of exchange rate movements in a commodity-exporting developing economy. *International Economics, 177*, 100475. https://doi.org/10.1016/j.inteco.2023.100475

Efuntade, A. O., & Efuntade, O. O. (2022). Systematic review of nexus between exchange rate fluctuations and stock market price movements: Flow-oriented theory, stock-oriented theory and portfolio balance theory. *International Journal of Social Sciences and Management Research, 8*(4), 98–115. https://doi.org/10.56201/ijssmr.v8.no4.2022.pg98.115

Ghanad, A. (2023). An overview of quantitative research methods. *International Journal of Multidisciplinary Research and Analysis, 6*(8), 3794–3803. https://doi.org/10.47191/ijmra/v6-i8-52

Kayani, U. N., Aysan, A. F., Gul, A., Haider, S. A., & Ahmad, S. (2023). Unpacking the asymmetric impact of exchange rate volatility on trade flows: A study of selected developed and developing Asian economies. *PLOS ONE, 18*(10), e0291261. https://doi.org/10.1371/journal.pone.0291261

Kocoglu, M., & Kula, F. (2025). Testing the equilibrium path of exchange rates, monetary policy, and trade balance in Türkiye. *Economic Change and Restructuring, 58*(3), 31. https://doi.org/10.1007/s10644-025-09874-3

Koumou, G. B. (2020). Diversification and portfolio theory: A review. *Financial Markets and Portfolio Management, 34*(3), 267–312. https://doi.org/10.1007/s11408-020-00352-6

Lastauskas, P., & Nguyen, A. D. M. (2024). Spillover effects of US monetary policy on emerging markets amidst uncertainty. *Journal of International Financial Markets, Institutions and Money, 92*, 101956. https://doi.org/10.1016/j.intfin.2024.101956

Lim, W. M. (2024). What is quantitative research? An overview and guidelines. *Australasian Marketing Journal, 33*(3), 325–348. https://doi.org/10.1177/14413582241264622

Lin, C. C., & Chen, K. M. (2021). Market competition, exchange rate uncertainty, and foreign direct investment. *Review of Development Economics, 26*(1), 405–422. https://doi.org/10.1111/rode.12813

Matsvai, S. (2025). Exchange rates and inflation dynamics in multicurrency regimes: The case of Zimbabwe (2014 to 2024). *International Journal of Financial Studies, 13*(2), 93. https://doi.org/10.3390/ijfs13020093

McCloud, N., Delgado, M. S., & Jin, M. (2024). Foreign capital inflows, exchange rates, and government stability. *Empirical Economics, 66*(3), 945–977. https://doi.org/10.1007/s00181-023-02490-y

Morina, F., Hysa, E., Ergün, U., Panait, M., & Voica, M. C. (2020). The effect of exchange rate volatility on economic growth: Case of the CEE countries. *Journal of Risk and Financial Management, 13*(8), 177. https://doi.org/10.3390/jrfm13080177

Neumann, R., & Tabrizy, S. S. (2021). Exchange rates and trade balances: Effects of intra-industry trade and vertical specialization. *Open Economies Review, 32*(3), 613–647. https://doi.org/10.1007/s11079-020-09612-4

Nusair, S. A., & Al-Khasawneh, J. A. (2022). On the relationship between Asian exchange rates and stock prices: A nonlinear analysis. *Economic Change and Restructuring, 55*(1), 361–400. https://doi.org/10.1007/s10644-021-09318-8

Octavia, N., & Soelistyo, A. (2025). Determinants of exchange rates in ASEAN-5: Analysis of macroeconomic variables for the period 2013–2023. *Jurnal Ilmu Ekonomi JIE, 9*(2), 185–198. https://doi.org/10.22219/jie.v9i02.40070

Ogawa, E., & Luo, P. (2025). Global risk factors and their impacts on interest and exchange rates: Evidence from ASEAN+4 economies. *Journal of Risk and Financial Management, 18*(7), 344. https://doi.org/10.3390/jrfm18070344

Pebriyanti, I., & Khoirudin, R. (2024). Analysis of determinants of foreign exchange reserves in ASEAN-5 countries. *BALANCE: Economic, Business, Management and Accounting Journal, 21*(1), 116–130. https://doi.org/10.30651/blc.v21i1.22113

Raghutla, C., & Chittedi, K. R. (2020). Financial development, real sector and economic growth: Evidence from emerging market economies. *International Journal of Finance & Economics, 26*(4), 6156–6167. https://doi.org/10.1002/ijfe.2114

Seraj, M., & Coskuner, C. (2021). Real exchange rate effect on economic growth: Comparison of fundamental equilibrium exchange rate and Balassa–Samuelson based Rodrik approach. *Journal of Applied Economics, 24*(1), 541–554. https://doi.org/10.1080/15140326.2021.1977083

Sheikh, U. A., Asad, M., Ahmed, Z., & Mukhtar, U. (2020). Asymmetrical relationship between oil prices, gold prices, exchange rate, and stock prices during global financial crisis 2008: Evidence from Pakistan. *Cogent Economics & Finance, 8*(1), 1757802. https://doi.org/10.1080/23322039.2020.1757802

Tabash, M. I., Sheikh, U. A., Asad, M., & Azim Khan, A. (2023). Do positive and negative variations in stock indexes lead to depreciation in local currencies? A beyond symmetrical evidence from ASEAN-5 region. *Economic Research-Ekonomska Istraživanja, 36*(3), 2208635. https://doi.org/10.1080/1331677X.2023.2208635

Umeaduma, C. M. G., & Dugbartey, A. N. (2023). Effect of exchange rate volatility on export competitiveness and national trade balances in emerging markets. *International Journal of Computation Applied Technology Research, 12*(11), 57–71. https://doi.org/10.7753/ijcatr1211.1008

Van Cauwenberge, A., Vancauteren, M., Braekers, R., & Vandemaele, S. (2021). Measuring and explaining firm-level exchange rate exposure: The role of foreign market destinations and international trade. *Economic Modelling, 105*, 105667. https://doi.org/10.1016/j.econmod.2021.105667

Zhou, H., Bian, J., Qin, Q., & Yu, M. (2025). Does US monetary policy affect the interconnectedness of global financial markets? *Review of International Economics, 33*(4), 988–1016. https://doi.org/10.1111/roie.12812