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How International Trade, Investment, and Exports Affect GDP Growth

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ABSTRACT

This study aims to empirically examine the impact of exports, imports, and foreign direct investment (FDI) on economic growth in five ASEAN countries Indonesia, Malaysia, Brunei Darussalam, the Philippines, and Timor-Leste over the period 2014–2023. The research employs secondary panel data sourced from the World Bank and applies panel data regression analysis. Model selection is conducted using the Chow test, Hausman test, and Lagrange Multiplier test, which collectively indicate that the Common Effect Model (CEM) is the most appropriate specification. The empirical results reveal that exports, imports, and FDI do not have a statistically significant effect on economic growth, either individually or simultaneously. Exports exhibit a negative but insignificant relationship with economic growth, suggesting structural weaknesses in export composition. Imports show a positive yet insignificant effect, indicating that imported goods may not sufficiently enhance domestic productive capacity. Meanwhile, FDI demonstrates a very weak and statistically insignificant contribution, implying limited spillover effects on host economies during the study period. The coefficient of determination (R^2) of 3.59% indicates that only a small proportion of economic growth variation is explained by the three variables, highlighting the dominant role of other structural and institutional factors. These findings suggest that economic growth in ASEAN countries is influenced more strongly by variables beyond trade flows and foreign investment, such as human capital development, institutional quality, technological innovation, and domestic investment. Therefore, policy strategies should move beyond trade and investment expansion alone and focus on strengthening structural foundations to achieve sustainable economic growth.

INTRODUCTION

Economic growth represents a long-term and structural challenge faced by regions and countries worldwide. Fundamentally, economic growth refers to a sustained increase in a region's productive capacity over time, reflected in rising output per capita and improved purchasing power of society (Todaro & Smith, 2020). From a macroeconomic perspective, economic growth is also indicated by the expansion of goods and services production that supports economic activities and enhances overall welfare (Mankiw, 2021). Regional governments therefore prioritize economic growth as a central objective of development policy, as higher growth rates are expected to generate positive spillover effects on social stability, political resilience, and cultural advancement (Barro, 2015; Acemoglu & Robinson, 2019).

International trade, particularly exports and imports, along with foreign direct investment (FDI), has long been recognized as a key driver of economic growth. Export expansion enables countries to increase industrial production capacity, improve foreign exchange earnings, and achieve economies of scale, thereby strengthening national income and competitiveness (Krugman, Obstfeld, & Melitz, 2018; Helpman, 2021). Empirical studies consistently highlight that export-oriented strategies can accelerate growth, especially in developing and emerging economies (Balassa, 1985; Frankel & Romer, 1999). However, the effectiveness of exports depends heavily on export composition, value-added intensity, and technological content (Hausmann, Hwang, & Rodrik, 2007).

Imports also play a crucial but complex role in economic growth. On the one hand, imports provide access to intermediate inputs, capital goods, and advanced technologies that enhance domestic productivity and industrial upgrading (Coe & Helpman, 1995; Grossman & Helpman, 2018). On the other hand, excessive reliance on imports may exert pressure on the trade balance and, in national accounting terms, reduce gross domestic product (GDP) in the short run (Blanchard, 2022). The growth-enhancing impact of imports therefore depends on whether imported goods are used productively within domestic industries rather than for consumption alone (Harrison & Rodríguez-Clare, 2010).

Foreign direct investment constitutes another critical channel through which economic growth may be stimulated. FDI contributes not only capital inflows but also managerial expertise, technological transfer, and access to global production networks, which can improve productivity and create employment opportunities in host countries (Borensztein, De Gregorio, & Lee, 1998; Alfaro et al., 2004). Endogenous growth theory suggests that FDI can generate positive spillover effects when host economies possess sufficient human capital and institutional quality to absorb new technologies (Romer, 1990; Lucas, 1988). Nevertheless, the empirical evidence on the growth effects of FDI remains mixed, with several studies indicating that FDI does not automatically translate into higher growth without supportive domestic conditions (Aitken & Harrison, 1999; Durham, 2004).

In an increasingly globalized economy, establishing economic relations among countries is essential to promote mutual benefits and shared development. International economic integration facilitates cooperation across trade, investment, innovation, and labor mobility, allowing participating countries to enhance competitiveness and generate new ideas through cross-border interaction (Baldwin, 2016; Pico, 2020). Regional integration frameworks, such as ASEAN, aim to strengthen economic linkages and reduce development gaps among member states (ADB, 2021). However, the outcomes of such integration are not uniform and often depend on national economic structures, trade policies, and political stability (Rodrik, 2018).

The relationship between exports, imports, and FDI and economic growth is therefore not linear and may vary significantly across countries. Differences in industrial structure, export diversification, institutional quality, and macroeconomic stability can lead to heterogeneous growth outcomes (Easterly, 2001; Rodrik, Subramanian, & Trebbi, 2004). In the ASEAN context, member countries exhibit substantial diversity in terms of economic development, resource endowment, and openness to global markets, which may explain variations in growth responses to trade and investment flows (World Bank, 2023; UNCTAD, 2022).

Given these considerations, this study investigates the impact of exports, imports, and foreign direct investment on economic growth in five ASEAN countries—Indonesia, Malaysia, Brunei Darussalam, the Philippines, and Timor-Leste—over a specified period. By employing a panel data approach, this research aims to provide empirical evidence on whether traditional drivers of open-economy growth remain relevant in the contemporary ASEAN context. The findings are expected to contribute to the literature on international trade, investment, and growth, while offering policy-

relevant insights for governments seeking to design more effective growth strategies in an increasingly interconnected global economy.

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LITERATURE REVIEW

Keynesian Trade Multiplier Theory and Economic Growth

The Keynesian Trade Multiplier theory provides a foundational explanation of how exports influence economic growth in open economies. According to Keynes (1936/2007), exports are an autonomous component of aggregate demand, meaning that increases in exports directly stimulate national income without being constrained by domestic consumption or investment decisions. When export demand rises, domestic producers expand output to meet foreign demand, which leads to increased employment, higher household income, and expanded consumption. This chain reaction amplifies the initial export shock through a multiplier mechanism, making exports a powerful engine of economic growth (Blanchard, 2022; Dornbusch et al., 2018).

However, the effectiveness of the trade multiplier depends on the structure of the economy, particularly the degree of import dependence. Leakages occur when part of the additional income generated from exports is spent on imports rather than domestically produced goods, reducing the net impact on national income (Keynes, 1936/2007; Mankiw, 2021). Empirical studies suggest that economies with strong domestic industrial bases and diversified export structures experience larger multiplier effects compared to economies reliant on imported intermediate goods (Hausmann et al., 2007; Helpman, 2021).

In the context of developing and ASEAN economies, the Keynesian Trade Multiplier remains highly relevant. Export-oriented strategies have been widely adopted to accelerate growth, generate foreign exchange, and enhance industrial capacity (Rodrik, 2018; UNCTAD, 2022). Nevertheless, the success of such strategies depends on complementary policies, including industrial upgrading, trade facilitation, and technological innovation, to ensure that export growth translates into sustainable economic expansion rather than short-term output gains.

Heckscher–Ohlin Theory and the Role of Imports

The Heckscher–Ohlin (H–O) theory explains international trade patterns based on differences in factor endowments among countries. According to Ohlin (1933), countries tend to export goods that intensively use their abundant production factors while importing goods that rely on relatively scarce resources. From this perspective, imports are not inherently harmful to economic growth, as they allow countries to access goods and services that are inefficient or costly to produce domestically (Krugman et al., 2018).

Imports can contribute positively to economic growth when they consist of capital goods, intermediate inputs, and advanced technologies that enhance domestic productivity. Studies by Coe and Helpman (1995) and Grossman and Helpman (2018) demonstrate that technology-intensive imports can accelerate innovation and support long-term growth by improving production efficiency. This is particularly relevant for developing countries, where access to modern machinery and production inputs is critical for industrialization and competitiveness.

However, the growth impact of imports is conditional. Excessive reliance on consumer goods imports may weaken domestic industries, increase trade deficits, and reduce net exports, thereby slowing economic growth (Rodrik, 2018). In ASEAN economies, the balance between productive and

consumptive imports plays a crucial role in determining whether imports act as a growth-enhancing or growth-constraining factor (Asian Development Bank, 2021; UNCTAD, 2022).

Harrod–Domar Model, Foreign Direct Investment, and Growth

The Harrod–Domar growth model emphasizes the importance of investment in driving economic growth through capital accumulation. According to Harrod (1939) and Domar (1946), growth depends on the level of savings and the productivity of investment, implying that insufficient capital formation can constrain economic expansion. In this context, foreign direct investment (FDI) serves as a vital external source of capital, particularly for developing countries facing domestic savings gaps (Hermawan, 2020).

FDI contributes to economic growth not only through capital inflows but also via technology transfer, managerial expertise, and integration into global value chains (Borensztein et al., 1998; Alfaro et al., 2004). Empirical evidence indicates that FDI can enhance productivity, create employment opportunities, and stimulate export capacity, especially when host countries possess adequate human capital and institutional quality (Durham, 2004; Acemoglu & Robinson, 2019).

Nonetheless, the impact of FDI on growth is not automatic. Several studies highlight that weak institutions, low absorptive capacity, and unfavorable regulatory environments can limit the benefits of foreign investment (UNCTAD, 2022; World Bank, 2023). Consequently, the growth-enhancing effects of FDI in ASEAN countries depend on policy coherence, labor market readiness, and the alignment of foreign investment with national development objectives.

Exports, Imports, FDI, and Economic Growth: Empirical Evidence

A substantial body of empirical research examines the relationship between exports, imports, FDI, and economic growth, producing mixed results. Fathoni et al. (2017) find that exports, imports, and FDI do not significantly influence GDP growth in Indonesia, suggesting limited contributions of these variables during the observed period. In contrast, Nur (2023) reports that exports exert a positive and significant effect on Indonesia's economic growth, while imports negatively affect GDP, reflecting the role of net exports in national income accounting.

Further studies reinforce the importance of exports and investment in driving growth. Putri (2021) demonstrates that export expansion significantly promotes economic growth, while imports tend to suppress growth by reducing net exports. Destiani et al. (2023) find that investment positively affects economic growth, although its statistical significance remains weak, indicating delayed or indirect effects. Conversely, Kinski et al. (2023) report that exports may negatively impact growth under certain structural conditions, highlighting the importance of export composition and domestic value added.

In the ASEAN context, these divergent findings suggest that the effects of exports, imports, and FDI on economic growth are highly country-specific and dependent on structural, institutional, and policy factors. As open and developing economies, ASEAN countries rely heavily on international trade and foreign investment; however, their growth outcomes vary based on how effectively these external drivers are integrated into domestic economic systems (ADB, 2021; UNCTAD, 2022). This diversity underscores the need for empirical analysis that captures cross-country differences and temporal dynamics, as undertaken in the present study.

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METHODS

Data Type and Data Sources

This study employs secondary data obtained from officially published and internationally recognized sources. All data used in this research are sourced from the World Bank, ensuring reliability, consistency, and comparability across time. Secondary data refer to data that have been previously collected, processed, and disseminated by authorized institutions for purposes other than the present study, but are suitable for empirical analysis (Gujarati & Porter, 2010).

The dataset consists of annual time-series observations covering the period 2014–2023, including data on exports, imports, foreign direct investment (FDI), and economic growth. The use of World Bank data enhances the credibility of the analysis, as the institution applies standardized methodologies in data collection and reporting across countries.

Population and Sample

In quantitative research, a population is defined as a generalized area consisting of objects or subjects that possess specific characteristics determined by the researcher for drawing conclusions (Sugiyono, 2017). In this study, the population comprises the national economy of Indonesia, as represented by macroeconomic indicators related to international trade and investment.

The sample refers to a subset of the population that reflects its essential characteristics (Sugiyono, 2017). Accordingly, the sample used in this research consists of annual macroeconomic data for Indonesia from 2014 to 2023, selected using a purposive approach based on data availability and consistency. This sampling strategy ensures that the selected observations adequately represent the dynamics of Indonesia's economic growth in relation to exports, imports, and FDI during the study period.

Analytical Technique

The collected data are analyzed using EViews 12, a widely used econometric software for time-series and panel data analysis. This study applies a multiple linear regression approach to examine the relationship between the independent variables—exports (X_1), imports (X_2), and foreign direct investment (X_3)—and the dependent variable, economic growth (Y).

The empirical analysis is conducted through several systematic stages. First, model specification and selection are performed to determine the most appropriate estimation technique using the Chow test, Hausman test, and Lagrange Multiplier (LM) test. These tests are applied to ensure that the selected model provides unbiased and efficient estimates. Second, diagnostic testing is conducted, including heteroskedasticity tests, to verify that the regression model satisfies classical econometric assumptions.

Subsequently, multiple linear regression analysis is employed to estimate the magnitude and direction of the relationships among variables. Hypothesis testing is conducted using the t-test to assess the partial effects of each independent variable and the F-test to evaluate their joint significance. Finally, the coefficient of determination (R^2) is calculated to measure the proportion of variation in economic growth that can be explained by exports, imports, and FDI.

The regression model used in this study is specified as follows:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$$

Where:

Y	= Economic growth
X_1	= Exports
X_2	= Imports
X_3	= Foreign Direct Investment (FDI)
A	= Constant term
$\beta_1, \beta_2, \beta_3$	= Regression coefficients
ε	= Error term

RESULT AND DISCUSSION

Panel Data Model Selection

The selection of an appropriate panel data regression model is a fundamental step to ensure that the estimated coefficients are unbiased, efficient, and consistent. Panel data analysis typically offers three alternative specifications, namely the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM), each of which relies on different assumptions regarding cross-sectional heterogeneity. An incorrect model choice may lead to misleading statistical inference and inaccurate conclusions. Therefore, formal statistical testing is required to identify the most suitable model for the data structure. In this study, model selection is conducted systematically using the Chow test, Hausman test, and Lagrange Multiplier test.

These three tests are applied sequentially to evaluate whether individual effects exist and whether such effects should be treated as fixed or random. The Chow test examines the necessity of fixed effects, the Hausman test compares fixed and random effects, and the Lagrange Multiplier test determines whether random effects are preferable to pooled estimation. This approach is consistent with standard econometric procedures in panel data analysis. By implementing all three tests, the study minimizes the risk of model misspecification. The final model choice is based on a comprehensive comparison of the test results.

Chow Test

The Chow test is used to determine whether the Fixed Effect Model provides a statistically better fit than the Common Effect Model. This test evaluates whether cross-sectional units exhibit distinct characteristics that significantly influence the dependent variable. If such differences exist, the Fixed Effect Model would be more appropriate. Conversely, if the differences are statistically insignificant, the Common Effect Model is sufficient. The decision rule is based on the probability value of the test statistic compared to a 5 percent significance level.

Table 1. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-sections F	0.2555349	(4, 42)	0.9048
Cross-section Chi-square	1.201396	4	0.8779

The results presented in Table 1 indicate that the probability value of the cross-sections F statistic is 0.9048, which is substantially higher than the conventional significance threshold of 0.05. Similarly, the Chi-square probability value of 0.8779 also exceeds the critical value. These findings suggest that there is no statistically significant difference across cross-sectional units in the model. In other words,

the characteristics of the observed countries do not significantly alter the relationship between the independent variables and economic growth. As a result, the Fixed Effect Model is not required.

From an econometric standpoint, the absence of significant cross-sectional effects implies that pooling the data across countries does not introduce systematic bias. This indicates that the slope coefficients are homogeneous across the observed countries. Consequently, applying the Common Effect Model is appropriate at this stage of analysis. The Chow test results therefore support the use of a pooled regression approach rather than a fixed-effects specification. This conclusion provides the foundation for subsequent model selection tests.

Hausman Test

The Hausman test is conducted to compare the Fixed Effect Model and the Random Effect Model. This test assesses whether the individual-specific effects are correlated with the explanatory variables included in the model. If such correlation exists, the Fixed Effect Model is preferred due to its consistency. However, if no correlation is detected, the Random Effect Model is considered more efficient. The null hypothesis of the Hausman test states that the Random Effect Model is appropriate.

Table 2. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.586857	3	0.8994

As shown in Table 2, the probability value of the Hausman test is 0.8994, which is significantly greater than the 0.05 significance level. This result indicates that there is no systematic difference between the coefficient estimates of the Fixed Effect Model and the Random Effect Model. Consequently, the null hypothesis cannot be rejected. This suggests that the individual effects are not correlated with the independent variables.

From a methodological perspective, this outcome implies that the Random Effect Model provides consistent and efficient estimates. Since the Random Effect Model retains more degrees of freedom than the Fixed Effect Model, it is generally preferred when its assumptions are satisfied. The Hausman test results therefore indicate that the Random Effect Model is superior to the Fixed Effect Model. This finding guides the analysis toward the next stage of model selection using the Lagrange Multiplier test.

Lagrange Multiplier (LM) Test

The Lagrange Multiplier test is applied to determine whether the Random Effect Model is more appropriate than the Common Effect Model. This test evaluates whether there are significant random effects across cross-sections, time periods, or both. If the probability value is greater than 0.05, the Common Effect Model is sufficient. Conversely, a probability value below 0.05 indicates that random effects should be incorporated into the model. The Breusch–Pagan statistic is commonly used as the primary reference for this decision.

Table 3. Lagrange Multiplier Test Results

Test	Cross-section	Time	Both
Breusch–Pagan	1.888442 (0.1694)	1.633351 (0.2012)	3.521793 (0.0606)
Honda	-1.374206 (0.9153)	-1.278026 (0.8994)	-1.875411 (0.9696)
King-Wu	-1.374206 (0.9153)	-1.278026 (0.8994)	-1.852330 (0.9680)

Based on the results in Table 3, the Breusch–Pagan probability value for the combined effect is 0.0606, which is higher than the 0.05 significance level. This indicates that the null hypothesis cannot be rejected. In practical terms, this suggests that random effects are not statistically significant in the model. Therefore, the Random Effect Model does not offer a meaningful improvement over the Common Effect Model.

Considering the outcomes of the Chow test, Hausman test, and Lagrange Multiplier test collectively, the Common Effect Model is selected as the most appropriate specification for this study. The consistency of results across these tests strengthens the robustness of the model selection decision. As a result, all subsequent analyses, including classical assumption tests and hypothesis testing, are conducted using the Common Effect Model. This model serves as the final estimation framework for examining the impact of exports, imports, and FDI on economic growth.

Classical Assumption Tests

Multicollinearity Test

The multicollinearity test is conducted to examine whether strong correlations exist among the independent variables included in the regression model. Multicollinearity may distort coefficient estimates and inflate standard errors, leading to unreliable statistical inference. A commonly used approach to detect multicollinearity is the correlation matrix, where correlation coefficients exceeding 0.85 indicate a potential multicollinearity problem. If the correlation values remain below this threshold, the model is considered free from serious multicollinearity issues. This test is essential to ensure the robustness and stability of the regression estimates.

Table 4. Multicollinearity Test Results

Variable	X1 (Exports)	X2 (Imports)	X3 (FDI)
X1	1.000000	0.444484	-0.179825
X2	0.444484	1.000000	-0.502978
X3	-0.179825	-0.502978	1.000000

The results in Table 4 indicate that the correlation coefficient between exports (X1) and imports (X2) is 0.444484, which is well below the critical threshold of 0.85. Similarly, the correlation between exports (X1) and FDI (X3) is -0.179825, indicating a weak and negative relationship. The correlation between imports (X2) and FDI (X3) is -0.502978, which also remains within acceptable limits. These values suggest that no strong linear relationship exists among the independent variables.

From an econometric perspective, the absence of high correlations implies that the estimated coefficients are not affected by redundancy among explanatory variables. This condition ensures that each independent variable contributes unique information to the model. Consequently, the regression results can be interpreted reliably without concerns about inflated variances. The multicollinearity test therefore confirms that the model satisfies one of the key classical assumptions. The analysis can proceed to the next diagnostic test.

Heteroskedasticity Test

The heteroskedasticity test is employed to determine whether the variance of the residuals remains constant across observations. Homoskedasticity is a fundamental assumption in classical linear regression, as heteroskedastic residuals can lead to inefficient estimators and biased standard errors. In

this study, heteroskedasticity is assessed using a graphical examination of residuals. Visual inspection allows the identification of patterns, clusters, or extreme fluctuations that may indicate non-constant variance. Although graphical methods are exploratory in nature, they provide valuable initial insights into residual behavior.

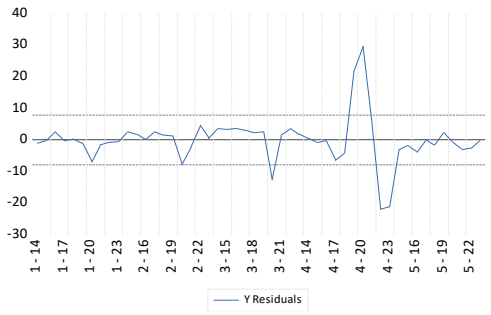

Figure 1. Residual Scatter Plot

Based on the residual plot, most residual values are distributed within a range of approximately -10 to +10, indicating a relatively stable variance across observations. However, several extreme spikes are observed between periods 4-20 and 4-23, where residuals sharply increase to nearly +30 and decline to around -25. These sudden fluctuations suggest the presence of outliers that may influence variance consistency. While the residual distribution appears relatively stable outside these extreme points, the noticeable spikes indicate potential heteroskedasticity. Therefore, the model shows symptoms of heteroskedasticity, and caution is required when interpreting standard errors.

Panel Data Regression Results

After selecting the Common Effect Model and confirming the classical assumptions, panel data regression analysis is conducted to estimate the relationship between exports, imports, foreign direct investment, and economic growth. The regression equation captures the average effect of each independent variable on economic growth across the observed period. This estimation provides insight into both the direction and magnitude of the relationships. The coefficients obtained reflect marginal changes in economic growth associated with changes in each explanatory variable. The estimated regression equation is presented as follows:

$$Y = 1{,}46 - 0{,}028X_1 + 0{,}033X_2 + 1{,}782X_3$$

The constant term of 1.46 indicates that when exports, imports, and FDI are assumed to be zero, economic growth is predicted to be 1.46 percent. This value represents the baseline level of growth independent of the explanatory variables. The coefficient of exports (X1) is -0.028, suggesting a negative relationship between exports and economic growth. This implies that a one-unit increase in exports is associated with a 0.028 percent decrease in economic growth, holding other variables constant. Such a result may reflect export structures dominated by low value-added commodities or vulnerability to external market fluctuations.

The import coefficient (X2) is positive at 0.033, indicating that imports contribute positively to economic growth. This suggests that imported goods, particularly capital goods and intermediate inputs, may support domestic production processes. Meanwhile, the FDI coefficient (X3) is the largest at 1.782, implying that foreign direct investment has the strongest positive association with economic growth. This finding highlights the potential role of FDI in enhancing capital accumulation, technology

transfer, and productivity. Nevertheless, statistical significance must be examined through hypothesis testing to validate these interpretations.

Hypothesis Testing

Partial Test (t-test)

The t-test is applied to evaluate the individual effect of each independent variable on economic growth. This test examines whether each regression coefficient differs significantly from zero. A probability value below 0.05 indicates a statistically significant effect, while a value above this threshold suggests insignificance. The t-test allows for a detailed assessment of each explanatory variable's contribution. The results of the partial significance test are presented in Table 5.

Table 5. t-test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.466152	4.350566	0.337003	0.7376
X1 (Exports)	-0.028986	0.051327	-0.564721	0.5750
X2 (Imports)	0.033449	0.084591	0.395424	0.6944
X3 (FDI)	1.78E-10	1.57E-10	1.128381	0.2650

The results indicate that exports (X1) have a probability value of 0.5750, which exceeds the 0.05 significance level. This suggests that exports do not have a statistically significant effect on economic growth. Similarly, imports (X2) show a probability value of 0.6944, indicating no significant influence on economic growth. Although the t-statistic for FDI (X3) is higher than those of the other variables, its probability value of 0.2650 remains above the critical threshold. Therefore, FDI also does not exert a statistically significant partial effect.

Overall, the partial test results demonstrate that none of the independent variables significantly affect economic growth on an individual basis. This finding suggests that changes in exports, imports, or FDI alone are insufficient to explain variations in economic growth. It also implies the presence of other dominant factors influencing growth dynamics. These results align with studies that highlight the limited explanatory power of trade and investment variables in certain economic contexts. Further analysis is required through simultaneous testing.

Simultaneous Test (F-test)

The F-test is conducted to examine whether all independent variables jointly influence economic growth. This test evaluates the overall significance of the regression model. A probability value below 0.05 indicates that the explanatory variables collectively have a significant effect. Conversely, a probability value above 0.05 implies that the model lacks explanatory power. The results of the F-test are presented in Table 6.

Table 6. F-test Results

Indicator	Value
R-squared	0.035888
Adjusted R-squared	-0.026989
F-statistic	0.570765
Prob (F-statistic)	0.637100

The F-statistic probability value of 0.637100 is substantially higher than the 0.05 significance level. This result suggests that exports, imports, and FDI do not collectively exert a statistically significant impact on economic growth. Consequently, the null hypothesis cannot be rejected. The regression model as a whole lacks explanatory strength.

This outcome suggests that factors beyond trade and foreign investment drive economic growth in the observed context. Structural characteristics, institutional quality, domestic policies, and human capital may play more prominent roles. The lack of joint significance reinforces the findings of the partial tests. Therefore, the model's ability to explain economic growth remains limited.

Coefficient of Determination (R^2)

The coefficient of determination measures the proportion of variation in the dependent variable that can be explained by the independent variables. A higher R^2 value indicates stronger explanatory power. In contrast, a low R^2 suggests that the model explains only a small portion of the observed variation. This metric is particularly useful for assessing the overall fit of the regression model. The R^2 results are summarized in Table 7.

Table 7. Coefficient of Determination (R^2)

Indicator	Value
R-squared	0.035888
Adjusted R-squared	-0.026989

The R-squared value of 0.035888 indicates that only 3.59 percent of the variation in economic growth is explained by exports, imports, and FDI. This relatively low value suggests that the model has weak explanatory power. Furthermore, the negative adjusted R-squared reinforces the conclusion that the included variables do not adequately explain economic growth dynamics. The remaining 96.41 percent of variation is attributable to other factors not captured in the model.

From a policy and research perspective, these findings highlight the need to incorporate additional variables in future studies. Factors such as human capital, institutional quality, technological innovation, and fiscal policy may provide greater explanatory power. The low R^2 does not invalidate the model but indicates its limited scope. Therefore, caution should be exercised when interpreting the regression results for policy formulation.

Discussion

The empirical findings of this study reveal that exports, imports, and foreign direct investment (FDI) do not exert a statistically significant effect on economic growth in the observed ASEAN countries during the study period. This result challenges the conventional assumption in open-economy growth models that international trade and capital inflows automatically stimulate economic expansion. Classical and neoclassical growth theories often emphasize the role of trade openness and investment as engines of growth; however, empirical evidence increasingly suggests that their effectiveness is highly context-dependent. The insignificant results indicate that the growth impact of external economic variables may be mediated by domestic structural conditions. Therefore, the findings highlight the importance of examining not only the volume of trade and investment but also their quality and absorptive capacity within the host economies.

From the perspective of the Keynesian Trade Multiplier theory, exports are expected to stimulate economic growth by increasing aggregate demand and national income through multiplier effects

(Keynes, 1936/2007). However, the negative yet insignificant coefficient of exports observed in this study suggests that export expansion alone may not translate into sustained growth. This outcome may occur when exports are dominated by primary commodities with low value added or when export revenues are vulnerable to global price volatility. Similar findings have been reported by Fathoni et al. (2017), who argue that export growth does not necessarily enhance economic performance if domestic linkages remain weak. Consequently, without industrial upgrading and diversification, the multiplier effect of exports may be substantially reduced.

The positive but insignificant impact of imports on economic growth aligns partially with the Heckscher–Ohlin framework, which posits that countries import goods that are scarce domestically, such as capital goods and advanced technologies (Ohlin, 1933). Imports can contribute to growth by supporting domestic production and improving efficiency. Nevertheless, the insignificant result indicates that imported goods may not be optimally utilized for productive purposes in the studied economies. Prior studies, such as Nur (2023) and Putri (2021), show that excessive reliance on consumption-based imports can suppress domestic industries and offset potential growth benefits. Thus, the growth contribution of imports depends heavily on whether they are directed toward productive investment or consumption.

Regarding foreign direct investment, the Harrod–Domar growth model emphasizes investment as a key driver of capital accumulation and economic growth. In theory, FDI should enhance growth through capital inflows, technology transfer, managerial expertise, and job creation. Although the estimated coefficient of FDI in this study is positive and relatively large, its lack of statistical significance suggests that these theoretical benefits may not be fully realized. This finding is consistent with Destiani et al. (2023), who report that FDI does not significantly affect growth when host countries lack sufficient human capital, institutional quality, or technological readiness. Therefore, FDI alone is insufficient to drive growth without supportive domestic conditions.

The low coefficient of determination (R^2) further indicates that exports, imports, and FDI explain only a small fraction of economic growth variation in the sampled ASEAN countries. This result implies that other factors play a more dominant role in shaping growth trajectories. Endogenous growth theory emphasizes the importance of human capital, innovation, institutional quality, and policy effectiveness as long-term growth determinants. Empirical studies by Kinski et al. (2023) and Pico (2020) highlight that government expenditure, institutional stability, and technological progress often outweigh external trade variables in explaining growth. Thus, focusing solely on external economic flows may provide an incomplete understanding of growth dynamics.

Moreover, the findings underscore the concept of non-inclusive growth, where increases in trade and investment do not necessarily generate broad-based economic benefits. Economic growth driven by enclave sectors or capital-intensive industries may fail to create sufficient employment or income spillovers. This phenomenon is particularly relevant in developing and emerging ASEAN economies, where structural transformation remains uneven. Studies on ASEAN economies suggest that growth outcomes depend on how well trade and FDI are integrated into domestic production networks. Without strong backward and forward linkages, the macroeconomic impact of openness remains limited.

In summary, this study contributes to the growing literature that questions the automatic growth-enhancing role of exports, imports, and FDI. The results suggest that the effectiveness of these variables depends on domestic absorptive capacity, institutional frameworks, and structural economic conditions. Policymakers should therefore shift attention from merely increasing trade volumes and attracting foreign investment toward improving the quality of exports, directing imports toward productive uses, and enhancing the domestic benefits of FDI. Future research should incorporate variables such as human capital development, institutional quality, technological innovation, and fiscal policy to obtain a more comprehensive explanation of economic growth in ASEAN countries.

CONSLUSION

Based on the empirical analysis of five ASEAN countries over the 2014–2023 period, this study concludes that exports, imports, and foreign direct investment (FDI) do not exert a statistically significant influence on economic growth. The negative but insignificant effect of exports may be attributed to export structures that remain heavily dependent on primary commodities with limited value added, thereby reducing their growth-enhancing potential. Imports exhibit a positive yet insignificant relationship with economic growth, suggesting that imported goods have not been optimally utilized to enhance domestic industrial productivity or technological upgrading. Similarly, FDI demonstrates a very small and statistically insignificant contribution, indicating that its growth impact may be constrained by structural, institutional, or absorptive capacity limitations within the host economies. The low coefficient of determination ($R^2 = 3.59\%$) further confirms that the three variables jointly explain only a minor portion of economic growth variation, while the F-test results indicate no significant simultaneous effect. These findings imply that economic growth in ASEAN countries is predominantly driven by other factors beyond trade flows and foreign investment, such as institutional quality, human capital development, technological innovation, and domestic policy effectiveness. Consequently, policymakers should re-evaluate trade and investment strategies to ensure stronger domestic linkages and complement them with structural reforms aimed at achieving sustainable and inclusive economic growth.

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