Research Article

Analysis of Exports, Imports, Exchange Rates, and Inflation on Economic Growth in 5 ASEAN Countries

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Abstract: This study uses a quantitative associative approach to analyze the influence of exports, imports, inflation, and exchange rates on economic growth in five ASEAN member countries: Indonesia, Malaysia, Singapore, Thailand, and Vietnam. The data used are secondary data obtained from the World Bank for the period 2013–2023. The analysis technique used is the Panel Autoregressive Distributed Lag (Panel ARDL) Model, which begins with stationarity and cointegration tests. Results The ARDL Panel Model estimation in this study is declared valid because it meets the main requirements, namely having a cointegrated lag with a negative coefficient value of -0.831550 and significant at the 5% significance level (probability 0.0000 < 0.05). The long-term estimation results indicate that only the inflation variable has a significant influence on Gross Domestic Product (GDP) in the 5 ASEAN countries studied. Meanwhile, in the short term, no variables were found to have a significant influence on GDP in the 5 countries. Furthermore, country-level estimations show varying results. Indonesia is the only country that shows a significant influence of exports, imports, inflation, and exchange rates on GDP. Thailand shows a significant influence of exports and exchange rates, while Malaysia, Singapore, and Vietnam do not show any significant influence of exports, imports, inflation, and exchange rates on GDP. These findings reflect that the relationship between macroeconomic variables and economic growth in ASEAN countries is heterogeneous and is strongly influenced by the structural characteristics of each country.

Keywords: ASEAN Countries; Economic Growth; Exchange Rates; Exports; Imports

1. Introduction

Economic growth is one of the main indicators used to assess the success of a country's development. In general, economic growth reflects the extent to which a country's economy is able to develop, create jobs, and improve public welfare. A country's economic growth is inseparable from the global economy, where relations between countries play a crucial role in determining the direction and rate of growth. For example, international trade relations, foreign investment, and global economic policies significantly influence the domestic economy (Wulandari & Laut, 2022).

Table 1. Economic Growth Data of ASEAN Countries in 2022.

No	Country	Trillion USD
1	Indonesia	1,318,807
2	Thailand	536,160
3	Singapore	466,789
4	Malaysia	407,923
5	Vietnamese	406,452
6	Philippines	404,261
7	Myanmar	56,757
8	Cambodia	28,820
9	Brunei Darussalam	16,639
10	Laos	15,304

Source: https://en.wikipedia.org/wiki/List_of_ASEAN_countries_by_GDP

Based on the table above, Indonesia recorded the highest Gross Domestic Product (GDP) value among ASEAN countries in 2022, at USD 1,318.807 trillion. This achievement strengthens Indonesia's position as a major economic power in the Southeast Asian region. Thailand ranks second with a GDP of USD 536.160 trillion, followed by Singapore (USD 466.789 trillion), Malaysia (USD 407.923 trillion), and Vietnam (USD 406.452 trillion). These countries demonstrate significant economic capacity, particularly in driving collective regional growth. The Philippines ranks sixth with a GDP of USD 404.261 trillion, demonstrating relatively stable competitiveness. Meanwhile, countries with smaller economies such as Myanmar (56.757 trillion USD), Cambodia (28.820 trillion USD), Brunei Darussalam (16.639 trillion USD), and Laos (15.304 trillion USD) recorded lower GDP figures, reflecting limited economic capacity and dependence on primary sectors such as agriculture and natural resources.
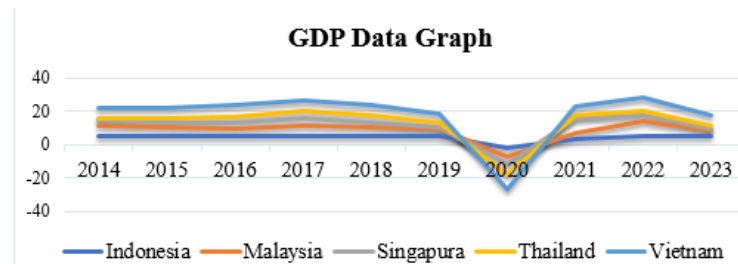
Figure 1. GDP Data Graph 2014 – 2023.
Source: www.worldbank.ac.id

The economic growth chart for the five ASEAN countries—Indonesia, Malaysia, Singapore, Thailand, and Vietnam—during the period from 2014 to 2023 shows fluctuating dynamics. Prior to 2020, the five countries generally recorded stable growth. However, the COVID-19 pandemic that struck in 2020 was a turning point, causing a sharp contraction across the region's economies. Singapore was the fastest recovering country, with growth surging in 2021 and stabilizing again in 2023. Malaysia also demonstrated a strong post-crisis recovery, although it began to slow in the final year. Meanwhile, Indonesia experienced a slower recovery, with growth remaining flat until 2023.

Hodijah and Angelina (2021) emphasized that exports not only contribute to state revenue but also play a strategic role in expanding markets and increasing national productivity. Andi et al. (2023) added that high import activity has the potential to increase demand for money, which then triggers inflationary pressures and impacts the country's monetary stability.
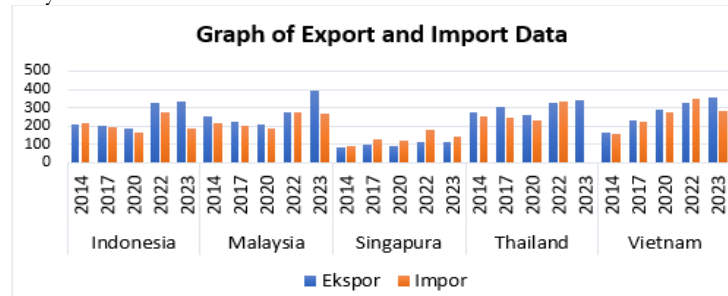
Figure 2. Graph of Export and Import Data for 2014 – 2023.

Source: www.worldbank.ac.id

The graph of exports and imports of five ASEAN countries from 2014 to 2023 shows a fluctuating pattern, but generally shows an upward trend towards the end of the period. A significant decline in exports occurred in 2020, triggered by the COVID-19 pandemic, which disrupted global supply chains and reduced international demand. However, since 2021, exports have begun to recover in line with improving global economic conditions. Countries such as Vietnam and Indonesia recorded strong export increases, primarily supported by their manufacturing sectors and leading commodities. Conversely, import trends also show a similar dynamic. After experiencing a sharp decline in 2020, imports rose significantly again in 2021 and 2022. This surge reflects the growing need for raw materials, capital goods, and consumer products to support the recovery of production and industrial activity. The increase in imports also reflects the recovery in international trade mobility and stronger growth in domestic demand.

The exchange rate, or exchange rate, not only acts as a means of payment in international transactions, but also reflects the strength of the national economy (Susilowati & Rosento, 2020).
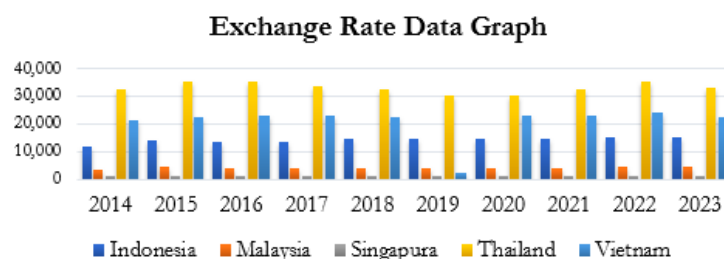

Figure 3. Exchange Rate Data Graph for 2014 – 2023.
Source: www.worldbank.ac.id

The graph of the exchange rate movements of five ASEAN countries against the US dollar during the period 2014–2023 shows a depreciation trend in most countries. Indonesia and Malaysia experienced gradual exchange rate depreciation almost every year, reflecting ongoing external pressures, particularly from global economic fluctuations and changes in monetary policy in developed countries. Singapore displayed relatively strong exchange rate stability compared to other countries in the region, which is in line with its position as a financial center with solid economic fundamentals. On the other hand, Thailand and Vietnam showed quite significant fluctuations, especially towards the end of the observation period, influenced by global market volatility and international trade conditions.

According to Tambunan (2017), uncontrolled inflation, whether too high or too low, can reduce market confidence, hinder investment flows, and weaken economic activity.
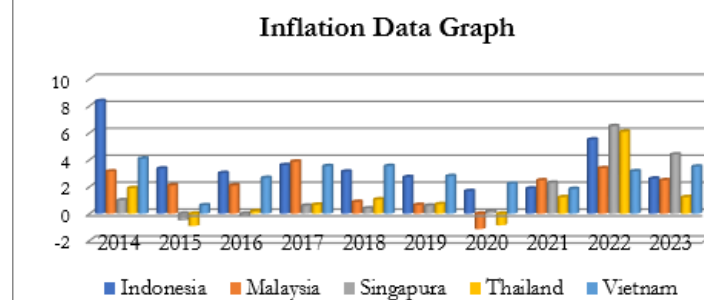
Figure 4. Inflation Data Graph for 2014 – 2023.
Source: www.worldbank.ac.id

The graph of annual inflation rates in the five ASEAN countries for the 2014–2023 period shows a fluctuating pattern between countries. This inflation movement reflects the dynamics of each country's domestic conditions as well as its response to global pressures. At the beginning of the period, Indonesia recorded the highest inflation, primarily driven by its energy subsidy adjustment policy. Conversely, Malaysia, Singapore, and Thailand recorded relatively low inflation, even experiencing deflation in certain years, such as 2015 and 2016. 2020 marked a significant decline in inflation in the region due to weakening aggregate demand during the COVID-19 pandemic. However, inflation spiked again in 2022 in line with rising global energy and food prices. Nevertheless, in 2023, most countries succeeded in

reducing inflation to more moderate levels. This indicates a recovery in economic stability and the effectiveness of the monetary policies implemented by each country.

This study aims to provide a comprehensive overview of the relationship between these variables and to formulate appropriate policy recommendations to encourage sustainable economic development in the region.

2. Literature Review

2.1. Keynesian Theory

Keynesian theory, developed by John Maynard Keynes, emphasizes the central role of aggregate demand in determining a country's level of economic activity. In his view, economic growth can be enhanced through government intervention, private investment, and export activity, which boost overall demand for goods and services. These three components are believed to be able to drive the economy, especially when the private sector is experiencing a downturn (Putong, 2015).

2.2 Economic growth

Economic growth is a crucial indicator for assessing a country's performance. Rangkuty et al. (2020) explain that international trade, particularly exports and imports, plays a key role in accelerating economic growth. This is because trade between countries can expand markets, increase production, and encourage job creation. Similarly, Mulya (2019) emphasizes that economic growth is not solely related to increased output of goods and services but also reflects progress in infrastructure development and national production capacity.

2.3 Export

Exports are a crucial component of an open economic system. Nasution (2018) states that exports are part of domestic output sold abroad and serve as a source of state revenue. In the context of national income, exports are categorized as inflows because they bring new income into the domestic economy. Apridar (in Putri, 2023) adds that export activities not only provide economic benefits in the form of the exchange of goods between countries but also help increase the country's foreign exchange reserves, which can then be used to finance development in various sectors.

2.4 Import

Import is the activity of bringing goods into a country from abroad, conducted legally in accordance with customs regulations. Tandjung (in Putri, 2023) explains that imports are a crucial part of meeting domestic needs, especially for goods that cannot yet be efficiently produced domestically. Inequality in resource availability, technological limitations, and specialization between countries are the primary reasons why imports are necessary to maintain stable supply and prices of goods.

2.5 Exchange rate

The exchange rate is a crucial indicator in international trade. Saragih (in Putri, 2023) states that a decline in the exchange rate, or depreciation, reflects weak demand for the domestic currency. This is often influenced by external factors such as global economic conditions, as well as internal factors such as national economic instability. Depreciation makes imports more expensive, which ultimately can suppress purchasing power and drive inflation.

2.6 Inflation

Inflation describes a general and persistent increase in prices over a specific period. Rangkuty and Nasution (2018) define inflation as an indicator that indicates a decrease in the value of money due to increases in the average price of goods and services. Meanwhile, Suseno and Astiyah (in Putri, 2023) emphasize that inflation should be viewed as a broad phenomenon, not just an increase in one or two types of commodities. Therefore, high inflation can impact people's purchasing power and overall economic instability.

3. Method

The approach used in this study is a quantitative associative approach. This research was conducted in five ASEAN member countries: Indonesia, Malaysia, Singapore, Thailand, and Vietnam. Secondary data was obtained from the World Bank. The collection technique was a documentation study with a library approach, covering the period from 2013 to 2023. The ARDL Panel Model data analysis method:

Panel Regression Testing with the formula

$EG_{it} = \alpha + \beta_1 E_{it} + \beta_2 I_{it} + \beta_3 NT_{it} + \beta_4 INF_{it} + e$

Here is the panel formula based on country:

$EG_{Indonesia} = \alpha + \beta_1 He_y + \beta_2 I_{it} + \beta_3 NT_{it} + \beta_4 INF_{it} + e$

$EG_{Malaysia} = \alpha + \beta_1 He_y + \beta_2 I_{it} + \beta_3 NT_{it} + \beta_4 INF_{it} + e$

$EG_{Singapore} = \alpha + \beta_1 He_y + \beta_2 I_{it} + \beta_3 NT_{it} + \beta_4 INF_{it} + e$

$EG_{Thailand} = \alpha + \beta_1 He_y + \beta_2 I_{it} + \beta_3 NT_{it} + \beta_4 INF_{it} + e$

$EG_{Vietnam} = \alpha + \beta_1 He_y + \beta_2 I_{it} + \beta_3 NT_{it} + \beta_4 INF_{it} + e$

The acceptance criterion for the ARDL Panel model is if the model shows lag cointegration, with the main assumption that the coefficient in the Short Run Equation has a negative slope and is significant at the 5% level. In other words, the ARDL Panel model is acceptable if the coefficient value is negative and significant (prob < 0.05).

4. Results and Discussion

Table 2. ARDL Panel Model.

Dependent Variable: D(GDP)
Method: ARDL
Date: 07/10/25   Time: 19:52
Sample: 2014 2023
Included observations: 48
Number of cross-sections: 5
Dependent lags: 1 (Automatic)
Automatic-lag linear regressors (1 max. lags): EXPORT IMPORT INFLATION
EXCHANGE RATE
Deterministics: Restricted constant and no trend (Case 2)
Model selection method: Akaike info criterion (AIC)
Number of models evaluated: 16
Selected model: PMG(1,1,1,1,1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Long-run (Pooled) Coefficients				
EXPORT	0.007724	0.087307	0.088475	0.9299
IMPORT	-0.002804	0.097294	-0.028822	0.9771
INFLATION	0.850513	0.099020	8.589333	0.0000
EXCHANGE RATE	-0.026768	0.026709	-1.002215	0.3218
C	2.056989	0.539656	3.811668	0.0004
Short-run (Mean-Group) Coefficients				
COINTEQ	-0.831550	0.146567	-5.673515	0.0000
D(EXPORT)	0.536456	1.162765	0.461362	0.6469
D(IMPORT)	-0.744784	0.886635	-0.840012	0.4055
D(INFLATION)	0.017930	0.332656	0.053901	0.9573
D(EXCHANGE_RATE)	-16.97704	18.24635	-0.930435	0.3573
Log-Likelihood:	-69.90034			

Source: Output Eviews13 (2025)

The accepted ARDL Panel Model is a model with cointegrated lags, where the main assumption is that the coefficient value has a negative slope and is significant at the 5% significance level. The acceptance requirement for the ARDL Panel Model is that if the

coefficient value is negative (-0.831550) and significant (probability 0.0000 < 0.05), then the model is declared valid and can be used in the analysis. Based on the estimation results, overall, in the long run, only the inflation variable has a significant effect on GDP in the five ASEAN countries. Meanwhile, in the short run, no variables were found to have a significant effect on GDP in the five countries.

With the acceptance of the ARDL Panel model, further analysis was conducted using country-level panel estimation to see the dynamics of short-term and long-term relationships more specifically in each country (cross-section).

4.1 Indonesia Country Panel Analysis

Table 3. Results of the Indonesian ARDL Panel Test.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ	-1.145814	0.103262	-11.09613	0.0001
D(EXPORT)	-3.086284	0.390674	-7.899896	0.0005
D(IMPORT)	1.532231	0.201559	7.601898	0.0006
D(INFLATION)	0.443696	0.135054	3.285321	0.0218
D(EXCHANGE_RATE)	-1.391502	0.275218	-5.056002	0.0039

Source: Output Eviews13 (2025)

1. Exports have a negative (-3.086284) and significant impact on GDP as indicated by the Prob sig value of 0.0005 < 0.05.
2. Imports have a positive (1.532231) and significant impact on GDP as indicated by the Prob sig value of 0.0006 < 0.05.
3. Inflation has a positive (0.443696) and significant impact on GDP as indicated by the Prob sig value of 0.0218 < 0.05.
4. The exchange rate has a negative (-1.391502) and significant influence on GDP as indicated by the Prob sig value of 0.0039 < 0.05.

4.2 Malaysia Country Panel Analysis

Table 4. Results of the Malaysia ARDL Panel Test.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ	-1.088752	0.629794	-1.728744	0.1444
D(EXPORT)	3.827614	1.527614	2.505616	0.0541
D(IMPORT)	-3.748602	1.623554	-2.308887	0.0690
D(INFLATION)	-1.257010	0.641065	-1.960814	0.1072
D(EXCHANGE_RATE)	10.24341	4.474495	2.289288	0.0707

Source: Output Eviews13 (2025)

1. Exports have a positive (3.827614) and insignificant effect on GDP as indicated by the Prob sig value of 0.0541 > 0.05.
2. Imports have a negative (-3.748602) and insignificant impact on GDP as indicated by the Prob sig value of 0.0690 > 0.05.
3. Inflation has a negative (-1.257010) and insignificant effect on GDP as indicated by the Prob sig value of 0.1072 > 0.05.
4. The exchange rate has a positive influence (10.24341) and is not significant on GDP as indicated by the Prob sig value of 0.0707 > 0.05.

4.3 Singapore Country Panel Analysis

Table 5. Results of the Singapore ARDL Panel Test.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ	-0.319164	0.405102	-0.787862	0.4665
D(EXPORT)	-0.657759	0.639945	-1.027838	0.3512
D(IMPORT)	0.287738	0.706050	0.407532	0.7005
D(INFLATION)	0.390640	0.203174	1.922694	0.1125
D(EXCHANGE_RATE)	-89.34381	38.06095	-2.347388	0.0658

Journal of Global Human Resource Management 2025 (December), vol. 2, no. 2, Alfiani, et al.

14 of 16

Source: Output Eviews13 (2025)

1. Exports have a negative (-0.657759) and insignificant effect on GDP as indicated by the Prob sig value of 0.3512 > 0.05.
2. Imports have a positive (0.287738) and insignificant effect on GDP as indicated by the Prob sig value of 0.7005 > 0.05.
3. Inflation has a positive (0.390640) and insignificant effect on GDP as indicated by the Prob sig value of 0.1125 > 0.05.
4. The exchange rate has a negative influence (-89.34381) and is not significant on GDP as indicated by the Prob sig value of 0.0658 > 0.05.

4.4 Thailand Country Panel Analysis
Table 6. Results of the Thailand ARDL Panel Test.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ	-0.787192	0.296950	-2.650922	0.0454
D(EXPORT)	0.802219	0.229972	3.488339	0.0175
D(IMPORT)	-0.449374	0.184874	-2.430707	0.0593
D(INFLATION)	0.533684	0.394899	1.351444	0.2345
D(EXCHANGE_RATE)	-1.543152	0.444848	-3.468945	0.0179

Source: Output Eviews13 (2025)

1. Exports have a positive (0.802219) and significant influence on Economic Growth as indicated by the Prob sig value of 0.0175 < 0.05.
2. Imports have a negative (-0.449374) and insignificant impact on Economic Growth as indicated by the Prob sig value of 0.0593 > 0.05.
3. Inflation has a positive (0.533684) and insignificant effect on Economic Growth as indicated by the Prob sig value of 0.2345 > 0.05.
4. The exchange rate has a negative (-1.543152) and significant influence on GDP as indicated by the Prob sig value of 0.0179 < 0.05.

4.5 Vietnam Country Panel Analysis
Table 7. Results of the Vietnam ARDL Panel Test.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ	-0.816830	0.275920	-2.960381	0.0595
D(EXPORT)	1.796488	0.865058	2.076725	0.1294
D(IMPORT)	-1.345913	0.588920	-2.285390	0.1064
D(INFLATION)	-0.021359	0.357204	-0.059794	0.9561
D(EXCHANGE_RATE)	-2.850148	4.877020	-0.584404	0.6000

Source: Output Eviews13 (2025)

1. Exports have a positive (1.796488) and insignificant influence on GDP as indicated by the Prob sig value of 0.1294 > 0.05.
2. Imports have a negative (-1.345913) and insignificant impact on GDP as indicated by the Prob sig value of 0.1064 > 0.05.
3. Inflation has a negative (-0.021359) and insignificant effect on GDP as indicated by the Prob sig value of 0.9561 > 0.05.
4. The exchange rate has a negative influence (-2.850148) and is not significant on GDP as indicated by the Prob value of sig 0.6000 > 0.05.

5. Conclusions

Based on the ARDL Panel Model estimation results, the model used in this study is declared valid because it meets the main requirements, namely having a cointegrated lag with a negative coefficient value of -0.831550 and significant at the 5% significance level (probability 0.0000 < 0.05). Thus, the model can be used for further analysis of the relationship between export, import, inflation, and exchange rate variables on economic growth in 5 ASEAN countries. The long-term estimation results show that only the inflation

variable has a significant influence on Gross Domestic Product (GDP) in the 5 ASEAN countries studied. Meanwhile, in the short term, no variables were found to have a significant influence on GDP in the 5 countries.

Based on country-level estimates, it was concluded that Indonesia was the only country where all analyzed macroeconomic variables exports, imports, inflation, and the exchange rate significantly impacted GDP. Thailand only showed a significant influence of exports and the exchange rate on GDP. Malaysia, Singapore, and Vietnam did not show any significant influence of exports, imports, inflation, or the exchange rate on GDP. These findings indicate that short-term fluctuations in these macroeconomic variables have not significantly impacted Gross Domestic Product (GDP) in these three countries.

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