



Export Led Growth Hypothesis on 8 – ASEAN Countries


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 10.24269/ekulibrium.v21i1.2026.pp35-51

ARTICLE INFO

Article history

Received:
20-07-2025

Revised:
05-02-2026

Accepted:
24-02-2026

Keywords

Consumer Price Index
Export Led Growth Hypothesis
Exchange Rate
Foreign Exchange Reserves
Gross Domestic Product

ABSTRACT

This study aims to examine the relevance of the export-led growth model across eight ASEAN countries. Panel data analysis was used to examine the correlation between the variables of export growth and gross domestic product, supported by control variables such as exchange rates, consumer price index, real interest rates, and foreign exchange reserves. The Fixed Effect Model was selected as the best analytical model for this study. The data used in this research were sourced from the World Bank, utilizing data from 8 countries: Indonesia, Thailand, Vietnam, Malaysia, Singapore, the Philippines, Brunei Darussalam, and Timor-Leste, covering the period from 2014 to 2023. The study results support the Export-Led Growth Hypothesis hypothesis, meaning that exports have a significant positive impact on economic growth in the 8 ASEAN countries. Exchange rates and foreign exchange reserves also play a significant positive role in driving GDP. Meanwhile, the CPI has little impact on GDP. On the other hand, real interest rates have a significant negative effect on GDP. The contribution of this study highlight the importance of product diversification and value addition to enhance the competitiveness of export products for the eight ASEAN countries, thereby reducing dependence on oil and gas commodities and raw materials. Additionally, the implementation of responsive monetary policies to global market dynamics is necessary to maintain economic stability and achieve sustainable growth.

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1. Introduction

The global economy directly affect every country's economic progress. One of the elements that influences this is the economic and diplomatic relations between countries (Marpaung & Purba, 2017); (Zatira et al., 2021). This condition creates competitiveness as a determining factor in competition between countries to benefit from global economic openness. Development priorities in developing countries focus on the economic sector, as economic growth can serve as a catalyst for progress in various other fields (Ginting et al., 2016). One of the macroeconomic indicators used to see the real economic performance of a region is economic growth (Dyah et al., 2022).

Todaro & Smith (2020) define economic development as the ability to generate and sustain GDP growth over the long term, even when initial conditions are unfavorable and stagnant. Since economic development encompasses more than just economic progress, economic development can never be separated from it. GDP growth is a measure of economic growth. The definition of economic growth can be considered as the development of economic activities that cause an increase in the production of commodities and services by the community. Rismawan et al., (2021) Indirectly, the increase in GDP shows remuneration from each production factor that has been used in these production activities.

This condition represents the aggregate monetary value generated by society through economic activities. Gross Domestic Product encapsulates the total worth of goods and services produced within a specific timeframe (Alfarisy et al., 2013; Sedyaningrum et al., 2016; Silitonga & Ishak, 2017). The country's capacity to produce goods and services using factors of production evolves over time. Many aspects and methodologies can influence GDP growth. Indonesia's GDP growth is supported by its large population, which drives production levels to meet the needs of the community.

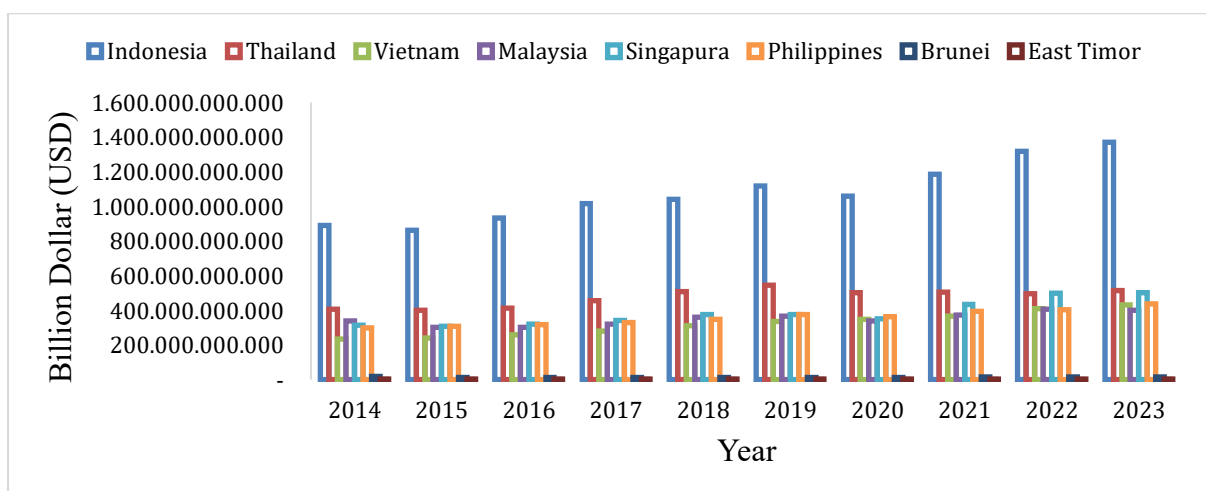


Figure 1 GDP of 8 - ASEAN Countries

Source : World Bank, 2025

Based on Figure 1, it shows a trend of increasing GDP in the period 2014–2023. However, it should be noted that there was a downward trend in all countries in 2020 due to the COVID-19 pandemic, which forced all communities in the affected countries to undergo lockdowns and quarantines. This situation shows the relationship and similarities that have an impact on the economies of different countries. In 2021, the trend began to show an increase. Activities were gradually permitted again, though still under supervision and with restrictions. Production began to resume, and digitalization emerged as a solution to help stimulate consumption and gradually revive the economy. This was also implemented by developed countries, where the digitalization of the national economy played an important role in integrating the economy (Jurayevich & Bulturbayevich, 2020).

Within the framework of the global economy, achieving total output is possible when a country gains advantages from product specialization. This potential is realized if there exists a sufficiently large market capable of absorbing the resulting production. Such a situation is typically facilitated by active participation in international trade and investment. Consequently, this engagement expands market access, generates employment opportunities for the local workforce, and enables the transfer of technology and expertise. Ultimately, these factors increase funding requirements and contribute to the acceleration of economic growth in ASEAN. (Crescenzi et al., 2021).

The Open Trade System creates opportunities for various countries to improve their welfare. Free and open trade allows each country to conduct transactions and exchange the goods and services they need. This is called International Trade, and debates related to international trade have been a topic of ongoing development since ancient times. Developing countries in Southeast Asia are very active in international trade. This is because these countries have the raw materials needed by developed countries for production. This is then utilized by resource-providing countries to improve and enhance the economies of countries, especially in the Southeast Asian region.

Table 1. Top 8 Export Commodities - ASEAN Countries

Country	Total Value of Main Commodity Exports (million USD)	Featured Commodities
Singapore	25.220	Mineral fuels, electronics, machinery, plastics
Malaysia	11.880	Electronics, machinery, plastics, chemicals
Philippines	639	Semiconductor devices, integrated circuits
Brunei	158	Mineral fuels, vehicles, processed products
Cambodia	62	Electronics, machinery, cereals
East Timor	6	Coffee, vanilla, oilseeds
Indonesia	21.428	Palm oil, coal, textiles, electronics
Thailand	54	Automotive, electronics, agriculture

Source : World Trade Organization, 2025

Table 1 shows the leading sectors of the 8 ASEAN countries. Singapore achieved the highest exports, with the majority of its products being oil, according to data from the World Trade Organization. Indonesia ranked second, with the highest production of palm

oil. Malaysia ranked third, with electronic products. In the implementation of international trade, the application of export policies is aimed at improving the welfare of each country. Supported by research presented by Tung (2024), the ELG hypothesis suggests that strong exports can help developing countries overcome some barriers to economic growth. The export-led growth approach can be particularly beneficial for nations that have access to substantial export markets. Nevertheless, its success is contingent upon the magnitude of foreign demand, making exports a critical driver of economic advancement in developing economies. Amid escalating global competition, exports increasingly serve as a central metric for accelerating economic growth and promoting wider market integration. Singapore, Taiwan, and Korea, which adopted export-oriented international trade policies from the outset, have shown better results compared to countries that were slower to implement such policies (Balassa, 1978). In recent decades, developing countries have implemented important economic growth policies known as the Export-Led Growth model (Ghazouani et al., 2020).

Previous research on Export-Led Growth in ASEAN has yielded mixed findings and generally used different time periods, methods, and control variables. Therefore, it has not specifically tested eight ASEAN countries within the latest panel data framework, incorporating exchange rates, CPI, real interest rates, and foreign exchange reserves. Therefore, this study fills this gap by comprehensively analyzing the validity of Export-Led Growth in eight ASEAN countries during 2014–2023.

2. Literature Review

Keynesian economic growth theory states that in order to increase total output, aggregate demand must be taken into account. To build a positive relationship with economic activity and reduce unemployment, the aggregate demand strategy contains several components, including consumption, investment, government expenditure, and net exports. The Great Depression of 1929-1930 became the driving force behind the Keynesian hypothesis, which is considered appropriate for short-term stability rather than long-term development issues (Sugiyono, 2021).

$$Y=C+I+G+(X-M) \dots\dots\dots(1)$$

Absolute Advantage as proposed by Adam Smith. This theory states that total output can also be increased through international trade. Smith showed how countries can make profit from trade by specializing in the production, export, and import of goods that are more efficient than other countries (Salvatore, 2004).

Comparative Advantage by David Ricardo explains this from a different perspective. Ricardo's theory refers to a country's ability to produce at a lower opportunity cost (Nyasulu, 2013). According to him, even if a country does not have an absolute advantage, it can still benefit from international trade by focusing on the production of commodities that have the greatest comparative advantage in terms of productivity and importing commodities that have the smallest comparative advantage.

Anwar et al., (2024) examined the ELG Hypothesis using the REM method on 8 ASEAN countries with exports, imports, FDI, and labor as the components and proved that the ELG Hypothesis is valid from the period 2000–2022. Appropriate trade policies are needed to support this hypothesis.

Tung (2024) research validated evidence of the ELG Hypothesis through a modified Cobb-Douglas production model in developing countries (ASEAN + 4), namely Malaysia, Indonesia, the Philippines, and Thailand. The findings revealed that the ELG Hypothesis has made a significant contribution in the long term. Research by Kurniawan & A'yun (2022) found that the ELG and FDI Led Growth Hypothesis are valid in Indonesia in the short term from the period 1970–2020. The implementation of the research results provides policymakers with an overview that strong economic growth can attract export capabilities in Indonesia. Therefore, export market diversification policies need to be implemented immediately to reach a wider market.

Manik's (2024) research shows that exports have a significant effect on economic growth from 2018 to 2020 in Indonesia. In order to boost economic growth in Indonesia, macroeconomic indicators must be improved. This includes increasing exports and reducing imports by creating opportunities for industries through enhancing infrastructure for domestic product exports. Additionally, promoting production and seeking new, more potential markets can help increase commodity prices for the welfare of the people.

Chinwoke (2024) found that oil and non-oil exports have a positive impact in Nigeria from 1981 to 2022 using the OLS method. Also Shadab (2021) empirically explains this by testing that export diversification can promote growth. The results revealed that all variables are cointegrated and move together in the long term. Lastri & Anis (2020) investigated the determinants of economic growth in Indonesia and found that e-commerce and exchange rates have a significant long-term effect, but inflation does not. In the short term, e-commerce has a positive effect, while inflation and exchange rates have a negative effect. Using an associative descriptive approach, the data used ranged from 2011Q1 to 2018Q4 and was sourced from relevant institutions. The data was analyzed using the ECM method to examine short-term effects and the OLS method to examine long-term effects.

Hakim (2023) and Harswari & Hamza (2017) conducted research to examine the effects of inflation and interest rates on economic growth. The results show that inflation and interest rates have a significant negative effect on gross domestic product. Zuhroh & Harpiyansa et al., (2022) Economic indicators that have a strong relationship in the occurrence of a crisis are macroeconomics, especially economic growth and inflation in a country. Davcev et al., (2018) conducted research on the former Yugoslavian countries of Bulgaria and Romania from 2000 to 2018 and found evidence that real interest rates have a slightly negative significant impact towards economic growth in Bulgaria. In Romania, the effect is relatively larger.

Rahayuningsih et al., (2024) found that external debt has a negative and significant impact on economic growth in both the short and long term, while foreign exchange

reserves have a relatively small short-term impact but a significant long-term impact on Indonesia's economic growth between 1991 and 2021.

3. Research Method

According to Sugiyono (2021) a quantitative approach is suitable for analyzing numerical data and testing pre-established hypotheses. The data obtained from the World Development Indicators by the World Bank. The data used for this research is panel data. In this analysis, we use annual data from 2014 to 2023 from eight ASEAN member countries such as Indonesia, Thailand, Vietnam, Malaysia, Singapore, the Philippines, Brunei Darussalam, and Timor-Leste. This study uses panel data regression, which combines time series and cross-sectional data. That is, individual units are observed over a certain period of time. In short, panel data has spatial and temporal dimensions. Savitri et al., (2022) states that the panel data equation in this study is written in equation (1) as follows:

$$\ln GDP_{it} = \beta_0 X_{it} + \beta_1 \ln EG_{it} + \beta_2 \ln ER_{it} + \beta_3 CPI_{it} + \beta_4 RIR_{it} + \beta_5 \ln FER_{it} + e_{it} \dots \dots \dots (2)$$

Where:

lnGDP	=	Gross Domestic Product
lnEG	=	Export Growth
ER	=	Exchange Rate
CPI	=	Consumer Price Index
RIR	=	Real Interest Rate
lnFER	=	Foreign Exchange Reserves
B0	=	Intercept
B1 & B2	=	Coefficients of Independent Variables
I	=	Country (cross-section)
t	=	Year (time series)
e	=	Error term
ln	=	Natural Logarithm Form

According to Baltagi (2011), the use of panel data offers several important methodological advantages in empirical economic analysis. Panel-based estimation methods are able to capture inter-individual variation more clearly, allowing for more accurate accounting of differences in the specific characteristics of each observation unit. Furthermore, combining time and individual dimensions allows for richer information, reduces the potential for multicollinearity among independent variables, increases degrees of freedom, and produces more efficient estimates. Panel data are also highly suitable for dynamic research because they can track changes in economic behavior over time. Furthermore, this approach allows researchers to identify and adequately quantify influences that cannot be adequately observed using only time-series or cross-sectional data, and facilitates the analysis of more complex behavioral patterns. With a larger

number of observations, panel data also plays a role in reducing bias due to individual aggregation, resulting in more reliable conclusions in explaining economic phenomena.

In estimating relationships between variables, panel regression offers three alternative approaches: CEM, FEM, and REM. The most appropriate model among the three can be determined using the Chow and the Hausman test (Widarjono, 2005). According to Napitupulu et al., (2021) in testing the classical assumptions of the OLS model, only the multicollinearity and the heteroskedasticity test are required, while the normality test is needed to validate the results of the T-test. According to Baltagi (2011); Ghozali (2011), classical assumption testing in panel data regression focuses on multicollinearity and heteroskedasticity tests, while autocorrelation is not tested. The autocorrelation test has characteristics closer to cross-sectional data, so the autocorrelation test is considered unnecessary because the time sequence is not always consistent between cross-sections.

4. Results and Discussion

Descriptive Statistical Analysis

According to Kurniawan (2024) descriptive statistical analysis objective is to facilitate a clearer understanding and interpretation of the data by readers. The following is a descriptive statistical analysis.

Table 2 Descriptive Statistical Analysis

Variable	Obs	Mean	Standard Deviation	Min	Max
Gross Domestic Product	80	25.70	2.02	21.09	27.94
Export Growth	80	8.29	1.52	2.91	9.86
Exchange Rate	80	5.31	3.73	0.00	10.07
Consumer Price Index	80	2.20	2.13	-1.33	8.42
Real Interest Rate	80	5.41	8.84	-30.10	41.16
Foreign Exchange Reserves	80	24.46	2.06	19.45	26.77

Source : author calculation.

Based on Table 2, it can be seen that Export Growth, Exchange Rate, Consumer Price Index, and Foreign Exchange Reserves and Gross Domestic have a standard deviation smaller than the mean value, meaning that the data is homogeneous with the assumption that each variable has relatively small data variability. Meanwhile, one independent variable, Real Interest Rate, has a standard deviation $>$ mean, meaning that the data variability is relatively high with heterogeneous data. This study uses 80 observations with 8 cross sections, namely 8 ASEAN member countries.

Table 2 also explains the maximum and minimum values of each variable. For GDP, the minimum value of 21.09 billion (US\$) is located in Timor Leste in 2014. Meanwhile, the maximum value of 27.94 billion (US\$) is located in Indonesia in 2023. The independent variable of export growth has a minimum value of 2.91% in Timor-Leste in 2017 and a maximum value of 9.86% in Singapore in 2014. For the exchange rate, the minimum value of 0.00 is located in Timor-Leste in 2023, as the exchange rate unit used

is (US\$) and the currency of Timor-Leste is (US\$), so the value is the same or considered 0, and the maximum value of 10.07 is located in Vietnam in 2023. The CPI variable with a minimum value of -1.33 is located in Timor-Leste in 2016, and the maximum value of 8.42 is located in Timor-Leste in 2023. The Real Interest Rate variable with a minimum value of -30.10 is located in Timor-Leste in 2020, and the maximum value of 41.16 is also located in Timor-Leste in 2021. The foreign exchange reserves variable has a minimum value of 19.45 in Timor-Leste in 2016 and a maximum value of 26.77 in Singapore in 2021

Best Model Selection Test (Goodness of Fit)

Table 3 Chow Test

Description	Statistic	d.f	Prob.
Cross Section F	65.355557	(7,67)	0.00000
Cross Section Chi Square	164.618532	7	0.00000

Source : author calculation

Based on the results of the Chow Test in Table 3, the Cross-section F statistic value was obtained at 65.355557 with degrees of freedom (7.67) and a probability of 0.00000, and the Cross-section Chi-square value was 164.618532 with a probability of 0.00000. The probability value is much smaller than the 5 percent significance level indicating that the null hypothesis which states that the most appropriate model is the Common Effect Model (CEM) is rejected. Thus, there are significant differences in individual characteristics between ASEAN countries in the observation period, so the more appropriate model is the Fixed Effect Model (FEM).

Table 4 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-section Random	283.510474	5	0.00000

Source : author calculation

Subsequently, the Hausman test yielded a p-value of 0.000, indicating that the Fixed Effect Model is the most suitable estimation method. Given that both tests consistently supported the selection of the FEM, it was deemed unnecessary to conduct the Lagrange Multiplier (LM) test.

Classical Assumption Test

Normality test is employed to determine whether the research data follows a normal distribution, which is essential for validating the results of the T-test. Presented below are the outcomes of the normality test:

Table 5 Normality Test

Jarque - Bera	Prob.
5.162274	0.075688

Source : author calculation

The results shows that the p-value is $0.075688 > 0.05$, which indicates that the research data is normally distributed.

Multicollinearity test is conducted to examine the presence of correlations among the independent variables. Utilizing the Pairwise Correlation method, the correlation coefficient should ideally be less than 0.85 to indicate the absence of multicollinearity. The results of the multicollinearity test are presented as follows.

Table 6 Multicollinearity Test

	lnExport Growth	lnExcRate	Consumer Price Index	Real Interest Rate	lnForeign Exchange Reserves
lnExport Growth	1.000000	0.198607	0.071413	-0.253935	0.583510
lnExchange Rate	0.198607	1.0000000	0.123491	-0.041636	0.160758
Consumer Price Index	0.071413	0.123491	1.0000000	-0.116063	0.108011
Real Interest Rate	-0.253935	-0.041636	-0.116063	1.0000000	-0.321807
lnForeign Exchange Reserves	0.583510	0.160758	0.108011	-0.321807	1.0000000

Source : author calculation

The results presented in the table above indicate that all correlation values are below the threshold of 0.85. This suggests the absence of significant correlations among the independent variables in this study. Consequently, the data can be considered free from multicollinearity concerns.

Employing the Glejser method involves regressing the absolute residuals against the independent variables. To indicate the absence of heteroskedasticity issues, the p-value should exceed the significance level of alpha (0.05). The main reason is to identify whether there are variations in the residual variances across different observations. The results of the Glejser test are presented below.

Table 7 Heteroskedasticity Test

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
C	0.056096	0.109560	0.512013	0.6103
lnExport Growth	0.000727	0.000887	0.819626	0.4153
lnExchange Rate	-0.005241	0.018397	-0.284898	0.7766
Consumer Price Index	-0.000174	0.000436	-0.399907	0.6905
Real Interest Rate	-4.413706	8.927605	-0.049400	0.9607
lnForeign Exchange Reserves	-0.001212	0.003584	-0.338164	0.7363

Source : author calculation

Based on the results presented in the table above, the probability values for all variables exceed the significance level alpha (0.05). This suggests that there is no presence of heteroscedasticity among the independent variables. In other words, the dataset is free from heteroscedasticity issues.

Intercept Cross-Section Analysis of 8 Countries

Table 8 Intercept Cross-Section Analysis of 8 Countries

Country	CrossID	Effect
Indonesia	1	0.264
Thailand	2	-0.012
Vietnam	3	-0.033
Malaysia	4	-0.080
Singapore	5	-0.127
Philippines	6	0.182
Brunei Darussalam	7	-0.271
East Timor	8	0.079

Source : author calculation

The fixed effect cross-section table presents the intercept values or fixed effects for each cross-sectional unit incorporated in the model. This study involves eight cross sections, representing countries within the Southeast Asian region. According to the results, the effects column displays both positive and negative values. Countries such as Indonesia, the Philippines, and Timor-Leste exhibit positive fixed effects, suggesting that their individual effects exceed the overall average. Conversely, Vietnam, Malaysia, Thailand, Singapore, and Brunei Darussalam display negative fixed effects, indicating that their individual effects fall below the average.

Estimation Results

The best estimation model selected after conducting the Goodness of Fit test is the Fixed Effect Model. Statistically, the variables are explained in the following table:

Table 9 Results of T-Test, F-Test, and R-Squared

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.95425	1.707273	7.001955	0.0000***
lnExport Growth	0.048627	0.013829	3.516284	0.0008***
lnExchange Rate	0.906900	0.286679	3.163472	0.0023***
Consumer Price Index	0.008981	0.006789	1.322893	0.1904
Real Interest Rate	-0.004218	0.001391	-3.032708	0.0034***
lnForeign Exchange Reserves	0.348770	0.055852	6.244501	0.0000***
F-Statistic			2684.144***	
Prob. F-Statistic			0.0000	
R-Squared			0.9979	
Adjusted R-Squared			0.9975	

Source : author calculation

Note: ***, **, * indicate statistical significance levels of 1%, 5%, and 10%, respectively.

$$\ln GDP_{it} = 11.95425 + 0.048627 \ln EG_{it} + 0.906900 \ln ER_{it} + 0.00891 CPI_{it} + 0.00421 RIR_{it} + 0.348770 \ln FER_{it} + e_{it} \dots\dots\dots (3)$$

Explanation:

- lnGDP = Gross Domestic Product
- lnEG = Export Growth
- lnER = Exchange Rate

CPI = Consumer Price Index
 RIR = Real Interest Rate
 lnFER = Foreign Exchange Reserves
 ln = Natural Logarithm Form

Based on the estimation results for the fixed effect panel data regression model, the following equation is obtained:

- a. The constant value of ASEAN Gross Domestic Product is 11.95425, which means that assuming all variables remain constant or *ceteris paribus*, the value of Gross Domestic Product is 11.95425.
- b. The coefficient value for export growth is 0.048627, with a t-statistic of 3.516284 > t-table 1.992, and a p-value of 0.0008 < alpha 0.05, indicating a significant positive effect of export growth on GDP. In other words, every 1% increase in export growth will increase the GDP of the 8 ASEAN countries by 0.048627.
- c. The exchange rate coefficient value is 0.906900, t-Statistic 3.163472 > t-table 1.992, P-Value 0.0023 < Alpha 0.05, indicating a significant positive effect between the exchange rate and GDP. In other words, every 1 US\$ increase in the exchange rate will increase the GDP of the 8 ASEAN countries by 0.906900.
- d. The CPI coefficient value is 0.008981, t-Statistic 1.322893 < t-table 1.992, P-Value 0.1904 > Alpha 0.05, indicating a non-significant positive effect between the exchange rate and GDP. In other words, every 1 USD increase in the exchange rate will increase the GDP of the 8 ASEAN countries by 0.008981.
- e. The Real Interest Rate coefficient value is -0.004218, t-Statistic -3.032708 > t-table 1.992, P-Value 0.0034 < Alpha 0.05, indicating a significant negative effect between RIR and GDP. In other words, every 1% increase in the Real Interest Rate will reduce the GDP of the 8 ASEAN countries by -0.004218.
- f. The value of the foreign exchange reserves coefficient is 0.348770, the t-statistic value is 6.244501 > t-table 1.992, P-value 0.0000 < Alpha 0.05, indicating a significant positive effect between foreign exchange reserves and GDP. In other words, every increase in foreign exchange reserves of 1 (billion US\$) will increase the GDP of the 8 ASEAN countries by 0.348770
- g. The F-statistic value is 2684.144 > 2.50 F-table, and the significance level is 0.000 < 0.05. It can be concluded that export growth, exchange rate, consumer price index, real interest rate, and foreign exchange reserves all impact economic growth simultaneously.
- h. The R-squared value above shows 0.9979 or 99.79%, meaning that the independent variables in the model can explain the dependent variable by 99.79% or nearly 100%.

Discussion

Export growth demonstrates a significant positive effect on GDP, This finding supports Ricardo's assertion that "Export is the engine of Growth." Expansion in exports boosts production, thereby increasing labor demand and reducing unemployment rates. This dynamic contributes to enhanced economic growth and simultaneous

unemployment reduction within the ASEAN region. However, it is crucial to recognize that, while the Export Led Growth (ELG) hypothesis holds, overreliance on raw material exports is not sustainable in the long term. Supporting this, Sunaryati (2015) highlighting the strategic role of diversified and manufactured exports in driving the region's development.

This proves that ASEAN countries still rely on export activities as a tool to boost economic growth. ASEAN countries have abundant raw materials needed by developed countries to be processed into finished goods. This should be the focus of developing countries. A similar situation occurred in Nigeria, which found that international trade can create economic growth Obadan & Okojie (2017). Sub-Saharan African countries also support the ELG hypothesis (Ee, 2016). Developing countries must increase the value added to their export commodities. In addition to promoting economic growth through exports, increasing the value added of export commodities through increased technology absorption and skill enhancement can encourage developing countries to become developed countries. Manik (2023) and Kurniawan & A'yun (2022) also state in their research that the ELG hypothesis is valid in the short term in Indonesia. Appropriate policies are needed to ensure that exports continue to have a significant positive impact in the long term. This shows the need for policies that are oriented towards diversification and increasing the added value of export products.

The exchange rate shows a significant positive effect towards GDP. This result aligns with empirical evidence suggesting that exchange rate fluctuations can influence economic output differently over time, whereby depreciation may stimulate GDP growth by enhancing export competitiveness, yet appreciation or volatility may suppress GDP in the short term. This is supported by research conducted by Lastri & Anis (2020), which found a significant positive impact between the exchange rate and GDP in the long term.

In line with the research by Kogid et al., (2012), which found that there is a significant positive relationship between the exchange rate and GDP in the long term in Malaysia. This statement uses a policy perspective, where stakeholders implement exchange rate policies designed to stimulate economic growth, so that the exchange rate can be used as a tool to create economic growth. Aslam (2016) also says the same thing, with a similar situation occurring in Sri Lanka when the government implemented a policy that made the exchange rate high/rise, which could trigger economic growth.

The Consumer Price Index has no relationship with significance level of 0.1904 > greater than 0.05, so it can be concluded that in this study, the Consumer Price Index has insignificant effect. Research by Efriani & Goestjahjanti, (2022); Warkawani et al., (2020) also found similar results. Based on the data used in this study, Indonesia, Singapore, Brunei Darussalam, Thailand, Vietnam, Malaysia, Timor-Leste, and the Philippines showed a declining trend in CPI values from 2014 to 2020. In fact, some countries such as Singapore, Brunei Darussalam, Thailand, and Timor Leste have negative CPI values, indicating deflation in those countries. The CPI is an index that measures changes in the average prices of goods and services purchased by consumers over a specific period. If

the CPI rises, it indicates inflation. Deflation, on the other hand, signifies a decrease in prices, which can lead to a decline in consumer demand and economic slowdown.

Consumers may postpone consumption in anticipation of further price declines, waiting to purchase at the lowest possible price. While prices of goods may be low, production costs such as wages do not decrease, leading to reduced profit margins for companies, which may even turn negative. This results in layoffs, increased unemployment, and a decline in purchasing power, ultimately causing GDP to decrease. Inflation can support economic growth through increased productivity and total output. On the other hand, in the long term, inflation is no longer an appropriate instrument to drive economic growth. This is because excessive inflation also has adverse effects on the economy. An economy that continues to experience bubbles in the long term will overheat, leading to financial instability.

Real interest rates have a positive relationship with GDP. This finding aligns with (Harswari & Hamza, 2017). This is consistent with endogenous growth theory and the IS-LM model, which state that an increase in interest rates leads to a decrease in output. Keynesian theory also states that high interest rates increase the desire to save more than consume. High real interest rates can reduce investment and consumption, thereby lowering GDP. High real interest rates make borrowing costs more expensive, thereby reducing aggregate demand and GDP. Additionally, excessively high real interest rates can increase production costs, thereby reducing corporate profits and increasing product prices.

Confirmed by research conducted by Ar (2022) and Hakim (2023) Interest rates influence economic growth by impacting the level of investment. Elevated interest rates tend to discourage investment activities by raising borrowing costs, which can subsequently diminish profitability and hinder overall investment. Interest rate hikes also encourage people to reduce consumption, as the returns is higher than normal amounts people prefer to save. This shows the need for policies to control the size of real interest rates to maintain economic growth.

Foreign exchange reserves shows positive corellation with GDP. Similar to that research by (Khan et al., 2015) revealed the same results in Pakistan. Bentum-ennin (2014) also found that foreign exchange reserves can drive long-term economic growth in the West African monetary zone. Large foreign exchange reserves enable governments to import goods and services needed to increase production and economic growth. Thus, foreign exchange reserves can help increase GDP by enabling governments to meet the import needs required to increase production and economic growth. In addition, sufficient foreign exchange reserves can also reduce the risk of financial crises and increase economic stability, thereby increasing investor confidence and investment.

Foreign exchange reserves can contribute to economic growth if actively invested in activities such as manufacturing, infrastructure, energy, education, and research and development. The findings of this study imply that ASEAN countries should allocate their FER toward these real sector domains to effectively stimulate economic growth. Moreover, to foster sustained long-term growth, it is essential for ASEAN nations to

prioritize the utilization of foreign exchange reserves in sectors that can promote growth (Saraan et al., 2023)

5. Conclusion

The findings of this study demonstrate that export growth positively and significantly influences gross domestic product in eight ASEAN countries, thereby confirming the validity of the ELG hypothesis within this region. To ensure sustainable growth, it is imperative to reduce dependence on raw material exports and instead focus on enhancing the value added to exported goods, which can drive further economic development and increase GDP. Additionally, the exchange rate has a positive effect on GDP, indicating that well-designed exchange rate policies can be effective tools for promoting GDP growth. The CPI exhibits a positive but statistically insignificant impact on GDP; short-term price increases may stimulate aggregate demand and thereby raise GDP, whereas prolonged inflation can have detrimental effects on the economy. Real interest rates show a negative and significant relationship with GDP, as elevated rates tend to discourage investment and consumption by encouraging saving, ultimately leading to a reduction in economic output. Furthermore, FER have a positive and significant contribution to GDP. From the research findings, it indicates the need for balanced policies between the real and financial sectors in order to support sustainable growth. The limitations of this research are that it only covers eight ASEAN countries in the 2014–2023 period and uses macroeconomic variables, which subsequent research could add to regarding structural, institutional, and sectoral dynamics aspects that can influence economic growth.

Acknowledgment

This research was supported by the Department of Development Economics, Faculty of Economics and Business, Ahmad Dahlan University. The researchers would like to express their gratitude for the support provided.

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