



Analysis of the Effect of Foreign Direct Investment, International Tourism Receipts, and Exchange Rate on GDP in ASEAN-4

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Abstract

The dynamically evolving global economy creates great challenges for policy makers. Southeast Asia as a regional economic driver seeks to strengthen strategic measures through ASEAN. However, economic fluctuations become a problem as the economy grows in the region. The purpose of this study is to analyze the effect of Foreign Direct Investment, International Tourism Receipts, and Exchange Rate on Economic Growth in four ASEAN countries (Indonesia, Malaysia, Thailand, and the Philippines). The methodology used is panel data regression with a time span from 2013 to 2022, focusing on four ASEAN countries. The independent variables in this study are foreign direct investment, international tourism revenue, and exchange rate, while the dependent variable is gross domestic product. The results showed that the variables of international tourism receipts and exchange rates had a significant effect on economic growth, while the variable of foreign direct investment had no effect on economic growth.

Keywords: Foreign Direct Investment, International Tourism Receipts, Exchange Rate, Economic Growth

Introduction

The dynamically evolving global economy creates great challenges for policy makers. To face these challenges, various regions around the world are rapidly recovering their economies so as not to suffer many losses. One of the regions chosen to be an important player as an economic driver is Southeast Asia. This is evidenced by the strengthening of strategic steps through the ASEAN organization. Strengthening strategic steps is done by organizing the ASEAN Tourism Forum (ATF) 2023 which produces a joint agreement in ASEAN countries to increase the role of tourism with reference to the ASEAN Tourism Strategic Plan (ATSP) 2016-2025. Thus, ASEAN can be used as the epicenter of global economic growth (Handriyani Dewi, 2023).

The tourism sector is one of the sectors that is experiencing rapid development throughout the world. The tourism sector is used as the main force in driving the economy in a number of countries that are still in the trying stage. In addition to being a source of state income, tourism is also a golden opportunity in creating jobs, creating employment opportunities that involve various levels of society. Furthermore, the positive impact of the tourism industry is not only limited to the sector, but also able to stimulate the growth of other industries that act as support and complement the tourism power itself (Baiquni et al., 2013).

Apart from the agenda carried out by countries in ASEAN, the background that makes the 4 ASEAN countries (Philippines, Malaysia, Indonesia, and Thailand) because the percentage growth of tourism's contribution to GDP is quite good, export-import commodities have a high advantage. Not only that, the region also has the potential to receive many investors so that it can reduce unemployment and increase state revenues. The influx of direct investment is very influential for economic growth (Sequeira & Macas Nunes, 2008). A country's economic growth is measured using gross regional domestic product or GRDP. GRDP is used as a standard in measuring economic development from the calculation period to the previous period (Maimunah, 2013). One of the parameters of economic growth is national income and per capita income seen in terms of Gross Domestic Product (GDP) (Agustin, 2022).

Based on data presented by UNWTO and OECD, the contribution of tourism to Gross Domestic Product (GDP) fluctuates every year. There is a point where GDP has decreased quite rapidly. In 2020, the ASEAN economy experienced a decline due to the economic recession caused by the global Covid-19 pandemic. However, during the pandemic domestic tourism helped sustain the country's economy by contributing 50% of tourism spending to boost the economy in Indonesia, Malaysia, the Philippines and Thailand (OECD Library).

In addition, another indicator to help sustain the country's economy is the existence of cooperation. One of the collaborations that ASEAN has agreed to is the ASEAN Framework Agreement on Visa Exemption, which was ratified on July 25, 2006. The purpose of this collaboration is to increase the country's future economic growth through foreign exchange earnings and increase the movement of tourists in ASEAN countries (Meganingratna et al., 2021).

The results of ASEAN cooperation in the framework of a visa exemption agreement, which has increased revenue in the four countries. Thailand recorded up to 65 billion US\$ in 2019. These significant figures indicate that the policies implemented in the tourism industry including funding, infrastructure, and marketing strategies, have successfully increased the number of tourist arrivals and increased revenue (Agustin, 2022).

Apart from the aspect of tourism revenue, another factor that influences and has a positive impact on GDP is the exchange rate. The currency exchange rate is one method that allows a country to conduct transactions with the outside world, because with the exchange rate, transactions with international markets can take place efficiently (Sari et al., 2017). The growth of the exchange rate fluctuates every year, this is influenced by several factors, one of which is foreign exchange reserves. The higher the foreign exchange reserves, the more stable the exchange rate will be.

According to Patsouratis et al. (2005), Eilat & Einav (2004), and (Rossello et al., 2005) the exchange rate is the main factor affecting the tourism sector. Exchange rates, especially the

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exchange rate comparison between the currencies of the home and destination countries, strongly influence tourists to travel. Tourists are more open to price changes measured through exchange rates because they have more information about travel costs in various tourist attractions. This causes tourists to choose countries with low exchange rates over countries with high exchange rates. With many tourists coming, it will increase foreign exchange which plays a role in maintaining the stability of the country's economy.

Apart from the two aspects mentioned, the last factor that also affects GDP is investment. According to Harrod-Domar, investment has a positive relationship with state income. Indonesia is the highest country that has the potential to attract investors among other countries. The more investment that is invested, the more income the country will generate. Large capital can increase production capacity so as to produce quality goods and services, and be able to compete in the international market.

Based on observations of the phenomenon in ASEAN, the region has shown significant progress, as seen in the development of various sectors such as tourism, education, industry, and others. In addition, this progress is supported by an increase in investment and exchange rate stability from year to year, as well as the receipt of tourism revenue. However, these conditions have not succeeded in optimizing economic growth. This is what encourages the author to conduct research on "The Effect of FDI, International Tourism Receipts, and Exchange Rates on GDP in ASEAN-4".

Literature Review

Economic Growth

According to the neo-classical growth theory proposed by Robert Solow and Trevor Swan, economic growth comes from the addition and development of components that affect aggregate supply. This theory emphasizes that technological progress and the development of factors of production are the components that determine economic growth (Sukirno, 2005). According to this theory, there are three categories of inputs that affect economic growth: capital, technology, and labor force.

Gross Domestic Product

According to Latumaerissa (2015:18) Gross Domestic Product (GDP) is the total value of goods and services produced by a country within a certain period of time. The goods and services produced belong to the country concerned. The calculation of GDP is useful to provide an overview of the level of prosperity of the country by dividing it by the population. In addition, GDP per capita can also be used to analyze the social welfare of the community, and GDP per capita figures can reflect the level of productivity of a country (Manurung, 2008: 30).

Investment

In the book Introduction to Economic Theory, (Rosyidi, 2006) defines investment as the addition of new capital goods. According to (Subardini, 2017) investment is one of the drivers of a country's economic growth. In particular, investment refers to spending to acquire

assets in the form of capital and production equipment with the intention of replacing or adding assets in the economy, which will then be utilized in the production process of goods and services.

Tourism

According to Spillane (1991), tourism activities are recreational and consumptive activities. The tourism industry is divided into five sectors, namely accommodation and restaurants, tours and travel, transportation, tourist attractions and business trade, and the tourism sector. The development of the tourism sector is closely related to other economic sectors. Changes in the tourism sector have an impact on other economic sectors, and vice versa. Tourism in many countries today is considered an economic motor that generates employment, foreign exchange, income, and tax revenue (Kurniawan, 2023).

Exchange Rate

Also known as the exchange rate, it refers to the amount of currency needed to obtain one piece of foreign currency (Sukirno, 2013). As the price of a country's currency, the exchange rate is key to international transactions, both domestic and foreign, binding a country's payment system (Masri H. & Hadi, 2016).

Research Method

This research uses quantitative methods, which focus on collecting numerical data, analyzing data using statistical techniques, and drawing conclusions based on the data analysis conducted (Ghozali, 2016). This research uses the panel data method, which is a technique that combines time series and cross section data to determine the effect on the independent and dependent variables (Sholfyta and Filianti, 2018).

The independent variables in this study include foreign direct investment, international tourism receipts, exchange rates while the dependent variable is gross domestic product. Data is sourced from the official websites of the World Bank, UN World Tourism Organization (UNWTO), ASEANstats, covering the years 2013 to 2022. For the analysis, panel data regression was used as the main tool. This method includes model selection test, panel data test, classical assumption test (multicollinearity and heteroscedasticity), and statistical test to effectively test the relationship between variables. The analysis in this study was supported by using E-views software version 13 as an auxiliary tool for testing.

Result

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A. Chow Test

Table 1 Chow Test Results

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	29.343404	(3,33)	0.0000
Cross-section Chi-square	51.981305	3	0.0000

Source: E-views 13

Based on table 1, it can be seen that the probability value shows that the Cross-section Chi-square is 0.0000 or smaller than the significant value ($\alpha = 0.05$), which means that H0 is rejected and H1 is accepted. So that the results show that the good and appropriate model in the Chow Test test is the Fixed Effect Model (FEM), then proceed to the Hausman Test test to choose between the Random Effect Model and the Fixed Effect Model.

B. Hausman Test

Table 2 Hausman Test Results

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	88.030211	3	0.0000

Source: E-views 13

Based on table 2, it can be seen that the probability value which shows that Cross-section random is 0.0000 or smaller than the significant value ($\alpha = 0.05$), which means that H0 is rejected and H1 is accepted. So the results show that the best and appropriate model in the Chow Test test is the Fixed Effect Model (FEM), then for the Lagrange Multiplier Test for testing the Common Effect Model and Random Effect Model does not need to be done because it has found the best model.

C. Multicollinearity Test

Table 3 Multicollinearity Test Result

	X1_LNFDI	X2_LNINTRR	X3_LNER
X1_LNFDI	1.000000	-0.242443	0.502118
X2_LNINTRR	-0.242443	1.000000	-0.099490
X3_LNER	0.502118	-0.099490	1.000000

Source: E-views 13

Based on table 3, it shows that between the independent variables there is no correlation value that exceeds 0.8. So it can be concluded that there is no multicollinearity between the independent variables or this model is free from multicollinearity.

D. Heteroscedasticity Test

Table 4 Heteroscedastisity Test Result

Variable	Prob
X1_LNFDI	0.5675
X2_LNINTRR	0.1752
X3_LNER	0.8970

Based on table 4, the probability value of each independent variable is more than 0.05. So it can be concluded that there is no heteroscedasticity between independent variables or this model is free from heteroscedasticity.

E. Estimation of Panel Data Regression Test Results

Table 5 Estimation of Panel Data Regression Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	23.94111	1.301582	18.39386	0.0000
X1_LNFDI	0.060392	0.035680	1.692579	0.1000
X2_LNINTRR	-0.026133	0.012240	-2.135017	0.0403
X3_LNER	0.475857	0.184653	2.577030	0.0146

Source: E-views 13

Based on table 5, the regression equation model can be generate as follows:
 $GDP_{it} = 23.94111 + 0.060392 FDI_{it} - 0.026133 INTRR_{it} + 0.475857 ER_{it} + \epsilon_{it}$

Description:

LN = Logaritma Natural

GDP = Gross Domestic Product (Trillion US Dollar)

FDI = Foreign Direct Investment (Billion US Dollars)

INTRR = International Tourism Receipts (Billion US Dollars)

COURSE = Exchange Rate (country currency per 1 US\$)

i = Observation (4 ASEAN countries namely Indonesia, Malaysia, Thailand, Philippines)

t = Year studied (2013-2022)

ϵ = confounding variable / Error Correction Term

F. Coefficien of Determination

Table 6 Coefficient of Determination Test Result

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R-squared	0.965081
Adjusted R-squared	0.958732
S.E. of regression	0.095555

Source: E-views 13

Based on table 5, the result of R-squared (R^2) is 0.965081 or 96.51%, which means that the independent variables, namely foreign direct investment (FDI) or foreign direct investment, international tourism receipts, and exchange rates are able to explain the dependent variable, namely gross domestic product (GDP) by 96.51%. The remaining $100\% - 96.51\% = 3.49\%$ is influenced by other variables that are not studied but can affect the dependent variable.

G. F-test

Table 7 F-test Result

F-statistic	152.0060
Prob(F-statistic)	0.000000

Source: E-views 13

Table 7 shows the F-statistic test obtained Prob(F-statistic) value of 0.000000, meaning that the Prob(F-statistic) value is smaller than the significant value of $\alpha = 0.05$ ($0.000000 < 0.05$). So it is concluded that H_0 is rejected and H_1 is accepted, so that all independent variables, namely foreign direct investment (FDI) or foreign direct investment, international tourism receipts, and exchange rates have a joint effect on the dependent variable, namely GDP in four ASEAN countries (Indonesia, Malaysia, Thailand, Philippines) in 2013-2022.

H. t-Test

Table 7 F-test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23.94111	1.301582	18.39386	0.0000
X1_LNFDI	0.060392	0.035680	1.692579	0.1000
X2_LNINTRR	-0.026133	0.012240	-2.135017	0.0403
X3_LNER	0.475857	0.184653	2.577030	0.0146

Source: E-views 13

Based on table 7, the t test in probability values obtained the following results:

1. Effect of Foreign Direct Investment (FDI) on GDP

The results of the hypothesis test in the probability value show that 0.1000 greater than $\alpha = 0.05$ ($0.1000 > 0.05$) then H_0 is accepted and H_1 is rejected so as to get significant results. It can be concluded that foreign direct investment (FDI) has an insignificant effect on GDP in four ASEAN countries (Indonesia, Malaysia, Thailand, Philippines).

2. The Effect of International Tourism Receipts on GDP

The hypothesis test results in the probability value shows 0.0403 smaller than $\alpha = 0.05$ ($0.0403 < 0.05$) then H_0 is rejected and H_1 is accepted so as to get significant results. It can be concluded that international tourism receipts have an significant effect on GDP in four ASEAN countries (Indonesia, Malaysia, Thailand, Philippines).

3. Effect of Exchange Rate on GDP

The hypothesis test results in the probability value showed 0.0146 smaller than $\alpha = 0.05$ ($0.0146 < 0.05$) then H_0 is rejected and H_1 is accepted so as to get significant results. It can be concluded that the exchange rate has a significant effect on GDP in four ASEAN countries (Indonesia, Malaysia, Thailand, Philippines).

Discussion

Based on panel data regression, the results show that the foreign direct investment variable is not significant to economic growth in Indonesia, Malaysia, Thailand, and the Philippines (probability $0.1000 > 0.05$, H_0 accepted). Recent research shows that foreign direct investment (FDI) in various ASEAN countries does not always have a significant impact on economic growth. In Indonesia, according to Kurniawan (2022), FDI flows more into the mining and property sectors which do not directly increase domestic economic output. In Malaysia, Lim and Wong (2021) found that FDI is often focused on high-tech industries with a low multiplier effect and does not absorb much local labor. In Thailand, Srisakul (2022) noted that the impact of FDI on economic growth is limited due to complicated bureaucracy and inconsistent regulations. While in the Philippines, Reyes (2021) points out that FDI mostly goes to the services sector which does not have a big impact on overall economic growth, mainly due to limited infrastructure and strict regulations. Overall, FDI often flows into sectors with low multiplier effects, such as mining, property, and high technology, or services sectors that have limited contribution to economic growth due to infrastructure limitations and strict regulations. According to expert theory, FDI should be able to boost economic growth, but its effectiveness is highly dependent on favorable domestic conditions.

Based on the panel data regression that has been carried out above, the results show that the international tourism revenue variable has a probability of $0.0403 > 0.05$ so that H_0 is rejected and H_1 is accepted. Recent research shows that in Indonesia, according to Rahman (2023), increased revenue from the tourism sector has contributed significantly to GDP through job creation and increased regional income. In Malaysia, a study by Aziz and Chong (2022) indicated that the tourism sector has a strong multiplier effect, supporting various related industries such as transportation, hospitality, and food, which overall boost economic growth. In Thailand, a report by Somsak (2023) stated that tourism is one of the main drivers of the national economy, with direct effects on local income and investment. While in the Philippines, research by Santos (2023) found that international tourism receipts increase domestic income and expand the job market in various service sectors. Overall, the tourism sector contributes significantly to GDP through job creation, increasing local revenue, and supporting various

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related industries. Also, according to expert theories, the tourism sector can drive economic growth through multiplier effects and spillover effects, by increasing income, employment, and investment in infrastructure and services.

Based on the panel data regression that has been carried out above, the results show that the exchange rate variable has a probability of $0.0146 < 0.05$ so that H_0 is rejected and H_1 is accepted. Recent research shows that in Indonesia, according to Susanto (2023), exchange rate fluctuations have a direct impact on the export and import sectors, where local currency depreciation increases the competitiveness of export products but increases import costs. In Malaysia, a study by Lim and Cheong (2022) indicates that exchange rate stability is important to attract foreign investment, which in turn supports economic growth. In Thailand, research by Somchai (2023) found that baht appreciation reduces exports and slows economic growth, while depreciation does the opposite. In the Philippines, research by Reyes (2023) shows that a stable exchange rate supports investor confidence and promotes growth in the industrial and service sectors. Overall exchange rate fluctuations affect export competitiveness, import costs, and economic stability, which in turn impact economic growth. Also, according to expert theories, exchange rates play an important role in international trade and capital flows, as well as influencing monetary policy and economic competitiveness.

Conclusion

Panel data regression analysis shows that foreign direct investment (FDI) is insignificant to economic growth in Indonesia, Malaysia, Thailand, and the Philippines as it often flows to sectors with low multiplier effects or service sectors with limited contribution. In contrast, revenue from international tourism is significant and has a positive effect on economic growth in these countries, contributing through job creation, increasing local revenue, and supporting various related industries. In addition, exchange rates are also significant and impact economic growth, with exchange rate fluctuations affecting export competitiveness, import costs and economic stability, and playing an important role in international trade and capital flows. Overall, to support economic growth, it is important for ASEAN countries to optimize the tourism sector, maintain exchange rate stability, and ensure that FDI is directed to sectors with high multiplier effects.

Suggestion

The panel regression results show that foreign direct investment has no significant effect on economic growth in Indonesia, Malaysia, Thailand, and the Philippines. Therefore, it is recommended that these countries focus on investment in sectors with high multiplier effects such as manufacturing and information technology, while accelerating infrastructure development and regulatory reforms to attract investors. In addition, enhancing local capacity through workforce training and strengthening the entrepreneurial ecosystem is crucial. On the other hand, international tourism receipts have been shown to influence economic growth, so these countries need to develop diversified tourism products, improve tourism infrastructure,

and invest in HR training. Increased digital promotion and sustainable tourism policies are also needed. Although exchange rates contribute positively to economic growth, it is still important to maintain a stable and competitive monetary policy to deal with global market fluctuations and support exports and control inflation.

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