INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 16, Issue 11, (2026) E-ISSN: 2222-6990

Aggregate Determinants in Attracting FDI: Evidence from Selected ASEAN Countries

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DOI Link: http://dx.doi.org/10.6007/IJARBSS/v16-i11/29353

Published Date: 19 November 2026

Abstract

ASEAN countries have emerged as attractive destinations for foreign investors. This is due to their strategic geographical location, abundant natural resources, and expanding markets. Therefore, maintaining a conducive environment for foreign direct investment (FDI) is crucial for the host countries. However, the factors influencing FDI inflows vary across countries and over time. This study thus investigates the aggregate determinants of FDI attractiveness in selected ASEAN countries. The Panel Least Square method is used to analyze the annual data from 2004 to 2024 from six (6) countries. The findings revealed that GDP and inflation show a negative relationship with FDI. In contrast, the interest rate, infrastructure and natural resources showed a positive relationship with FDI. All the variables chosen are statistically significant. This research provides valuable insights for governments and investors looking to boost FDI in their respective countries. Proactive measures should be taken by the government to concentrate the macroeconomic indicators to enhance FDI.

Keywords: Fdi, Macroeconomic Indicators, Interest Rate, Panel Data

Introduction

Foreign direct investment (FDI) refers to the act of a person or company from one country investing in the assets or enterprises of another country (Sahu & Dash, 2021), with the intention of establishing and maintaining an economic stake and participating in the enterprise's management over a prolonged period. It has become one of the most important sources of external financing for developing economies. FDI is an important element for a developing country, as it helps in accessing international trade promotion and technology transfer between countries. This has a vital influence on the economy's growth and the financial globalization process, as it also helps boost the manufacturing and services sectors, which indirectly results in an increase in jobs and can help reduce unemployment rates in the country (Karimov et al., 2020). Unlike portfolio investment, FDI provides long-term capital commitments and facilitates technology transfer, managerial expertise, productivity enhancement, and employment opportunities. As a result, attracting foreign investment remains a central objective of economic policy in many developing countries.

The Association of Southeast Asian Nations (ASEAN) has become one of the most dynamic economic regions globally. According to the ASEAN Investment Report (2022), ASEAN received solid investments in manufacturing with a growth of 134% and in finance, which remains the largest FDI recipient with 22% growth. Investment facilitation has been a key tool for ASEAN to attract investment, and it has been moving towards implementing exclusive measures for investment, which contribute to an improvement of ASEAN foreign direct investment (FDI). Rapid industrialization, trade liberalization, economic integration, and demographic advantages have enhanced the region's attractiveness to multinational corporations. Despite these favorable conditions, FDI inflows among ASEAN countries remain uneven due to differences in economic fundamentals, institutional quality, infrastructure development, and resource endowments.

Foreign direct investment (FDI) inflows into ASEAN have experienced a strong rebound, with most member countries recording increases in FDI and reinforcing the region's position as an important engine of economic growth. However, the distribution of FDI inflows across ASEAN countries remains highly uneven. According to the ASEAN Investment Report (2022), Singapore ranked first in attracting FDI, recording a substantial increase of 31.26%, followed by Indonesia in second place with an increase of 8.06%. These differences highlight the uneven distribution of FDI inflows among ASEAN member countries, despite the region's overall positive performance. Such disparities raise important questions about the underlying macroeconomic and structural factors that influence the ability of individual countries to attract foreign investment.

Against this backdrop, this study aims to examine the determinants of FDI inflows in selected ASEAN countries. Specifically, it provides an integrated empirical assessment of the macroeconomic and structural determinants of FDI by incorporating conventional macroeconomic indicators alongside resource-related factors within a unified panel data framework. This approach offers a broader understanding of the factors shaping FDI inflows and the differences in investment attractiveness across the selected ASEAN economies.

Literature Review

There are numerous empirical studies on the area of FDI particularly on the determinants of FDI. Macroeconomic variables such as GDP are among the center of example, the study on the relationship research. For example, the relationship between GDP and FDI has been studied by Sahu and Dash (2021), Sijabat (2023), Ofori and Asongu (2022), Okello and Badj (2023) and Nguyen (2024). Sahu and Dash (2021) investigated the factors influencing foreign direct investment (FDI) inflows in five ASEAN economies using data from 1985 to 2017. The study used fixed-effects quantile regression (QR) and found that FDI is positively and significantly related to GDP. The finding shows that FDI inflows may affect the GDP per capita growth rate in both upper and lower quantiles. Sijabat (2023) obtained a similar result to Sahu and Dash (2021), which was that FDI and GDP have a positive and significant relationship in ASEAN. They discovered that FDI has a long-term favorable and considerable impact on economic growth. Ofori and Asongu (2022) employed the Generalized Method of Moments (GMM) estimator to analyze panel data from Sub-Saharan Africa spanning 1990 to 2020. Their findings indicate that foreign direct investment (FDI) promotes economic growth in both the short and long run. However, the magnitude of this positive effect depends largely on governance quality. Countries with stronger institutional frameworks and better governance

tend to benefit more from FDI inflows, resulting in enhanced economic growth. In contrast, Nguyen (2024), focusing on Asia, and Okello and Badj (2023), examining Kenya using the ordinary least squares (OLS) method over the period 1970 to 2019, found a negative relationship between FDI and economic growth. This adverse effect was attributed to structural and policy-related factors, including Kenya's historical reliance on import-substitution strategies and the unintended consequences of trade policies aimed at stimulating growth in Asian economies.

Tri et al. (2019) studied the relationship between interest rate and FDI. They found that there is a significant negative relationship between FDI and the interest rate. The study examines the impact of financial integration and other variables on foreign direct investment capital inflows in ASEAN-3 and ASEAN-5. Tri et al. (2019) use panel ordinary least square estimation with the method of first differencing for the period between 1996 and 2016. While Wijaya et al. (2020) discovered that interest rates and foreign direct investment (FDI) are significantly negative. The study examined foreign direct investment (FDI) from 1981 to 2018 in relation to infrastructure spending and macroeconomic variables. Francis (2023) investigated the relationship between FDI and interest rates in Nigeria from 1980 to 2020 using a linear regression model estimated via OLS. The study revealed that interest rates were found to be statistically insignificant. Nonetheless, broader evidence using the Johansen and Juselius (1988) maximum likelihood cointegration framework suggests that and interest rates exert long-run influences on FDI. This finding highlights that optimal interest rate levels and encourage sustained FDI inflows.

Similarly, Isiaka et al. (2022) examined the relationship between interest rates and FDI in selected Sub-Saharan African countries from 1990 to 2019 using a nonlinear autoregressive distributed lag (NARDL) model. The results show that interest rates have significant long-run effects on FDI in the symmetric model, but are insignificant in the short run. In the asymmetric framework, interest rates exhibit a positive long-term relationship with FDI but a negative short-term effect. The study also finds that increases in interest rates may initially stimulate FDI inflows but ultimately reduce them over time, whereas decreases in interest rates tend to attract FDI in the short run but not sustain it in the long run. Another study by Zuhroh and Harpiyansa (2022), found that there is a negative relationship and a significant factor between the interest rate and foreign direct investment (FDI). The methodology used is similar to the method used by Wijaya et al. (2020), which uses time series data. Based on previous studies, it is found that most of the findings revealed that there is a negative and significant relationship between interest rates and foreign direct investment (FDI).

Inflation is another factor that can influence FDI. Tsaurai (2018) for example, investigated the effects of inflation on FDI in Southern Africa. The finding suggests a positive relationship between inflation and FDI in Southern Africa, although this relationship is not statistically significant. While Dang and Nguyen (2021), examined the influence of institutional quality, tax burden, and various macroeconomic factors on attracting foreign direct investment (FDI) in the ASEAN-7 region. The findings suggested that inflation has a significant role in attracting foreign direct investment (FDI). Another study by Maibetly and Idris (2022) examined the various factors that impact Foreign Direct Investment (FDI) in ASEAN countries with lower middle-income status. The findings revealed that inflation negatively impacts FDI inflows to ASEAN countries.

Phuditshinnapatra et al. (2022) investigate the factors of infrastructure in attracting foreign direct investment (FDI) in Thailand. It proposes research with multiple regression analysis on the differences in logarithmic terms with a one-year lag. Infrastructure availability shows an insignificant positive relationship with FDI. This implies that infrastructure improvements are not significant in influencing FDI in Thailand.

Another positive and significant relationship regarding infrastructure, which is considered a crucial factor in attracting FDI, was found in the study by Shaari et al. (2023). The researchers aimed to determine if environmental degradation has a significant impact on FDI in ASEAN+3 countries. The researchers used data and variable explanations to measure the relationship between FDI and its variables. The study revealed that infrastructure and other variables, such as market size, positively correlated with FDI. Conversely, inflation was found to have a negative relationship with FDI, highlighting the importance for governments to address and reduce inflation to encourage FDI.

Sasana and Fathoni (2019) utilized multiple linear regression as the analytical method to investigate the various factors that influence Foreign Direct Investment (FDI) in ASEAN countries. Specifically, they focused on countries such as Cambodia, Malaysia, the Philippines, Thailand, and Vietnam from 2016 to 2017. The study examined several independent variables, including infrastructure, which is considered a crucial factor in accelerating economic development and was found to have a significant and positive correlation with FDI. Additionally, the government was advised to prioritize increasing market size, as this variable was found to have a noteworthy and positive relationship with FDI.

Natural resources such as oil, natural gas, minerals, timber, and agricultural resources attract multinational corporations seeking access to these valuable inputs. This type of investment is known as resource-seeking FDI. Lu et al. (2020) studied the relationship between Foreign Direct Investment (FDI) and natural resources. The researchers found a positive relationship between FDI and natural resources, specifically focusing on the abundance of oil reserves. To fully harness the potential of these resources, member states must implement well-designed policy initiatives. However, it is crucial to emphasize that these policies should prioritize transparency and fairness, aiming to stimulate innovation and foster a healthy competitive market environment. Similarly, in a study by Huang et al. (2020), the authors investigate the impact of natural resource utilization, foreign direct investment (FDI), and fossil fuel consumption on economic growth in 25 developing Asian countries over 20 years (1996-2016). The researchers used panel data and the Pooled Mean Group (PMG) regression method to analyze the data. The study results reveal that the rent received from forests significantly drives economic growth in these developing Asian countries. Furthermore, the findings highlight that an increase in FDI stimulates economic growth in these nations. The utilization of rents from natural resources also has a positive impact on the business environment, attracting more FDI to developing countries. This indirectly suggests a positive relationship between FDI and natural resources.

However, Elheddad et al. (2020) examined a similar factor, which is the impact of natural resource abundance and oil price volatility on total sectoral FDI inflows over the period 1980-2017 in oil-rich countries known as the Gulf Cooperation Council (GCC) countries. It was discovered that natural resources, despite their abundance in the region, had a significant and

negative relationship with FDI. This implies that natural resources may not necessarily attract foreign direct investment in the GCC countries.

Method

This study investigates FDI in 6 (six) ASEAN countries from 2001 to 2024 (23 years) with 144 observations. Data were obtained from the World Development Indicators (WDI), and the data were analyzed using panel data analysis. The study adapts the models used by Sahu and Dash (2021), Sijabat (2021), and Ofori and Asongu (2022) to estimate the determinants of FDI;

$$FDI_{it} = \alpha_o + \beta_1 GDP_{it} + \beta_2 INF_{it} + \beta_3 INT_{it} + \beta_4 INFRA_{it} + \beta_5 NAT_{it} + \varepsilon \quad (1)$$

Where:
-FDI = Foreign Direct Investment
- INF = Inflation
- INF = Interest rate
- GDP = Gross Domestic Product Growth
- INFRA = Government expenditure on infrastructure
- NAT = Natural resources
- ε = Error term
- i = Country
- t = Time period

Results and Discussion

The results of the panel data analysis are shown in Table 1. The model reports an R-squared value of 0.3285, indicating that approximately 32.85% of the variation in FDI is explained by the included explanatory variables. The overall model is statistically significant at the 1% level, as indicated by the F-statistic probability of 0.000, suggesting that the selected macroeconomic variables jointly have a significant effect on FDI.

Table 1
Panel Data Analysis

R Squared 0.3285		**F stat (prob) = 0.000**	
Variables	**Coefficient**	**T statistics**	**P-Value**
C	-2.13	5.7774	0.0000
GDP	-0.082	6.1951	0.0000
INF	-1.13	2.5925	0.0169
INT	1.87	2.0857	0.0008
INFRA	0.64	5.4779	0.0000
NAT	1.41	4.6488	0.0000

The constant term is also statistically insignificant, implying no meaningful interpretation when explanatory variables are held at zero. The first determinant of GDP shows the coefficient of -0.0082, and it is statistically significant at the 1% level (p-value = 0.0000). The negative sign of the coefficient suggests that an increase in GDP is associated with a decrease in FDI, holding other variables constant. This result is significant at the 1% significance level however, it contradicts the conventional expectation that FDI promotes development. Nonetheless, this finding is consistent with Nguyen (2024) and Okello and Badj (2023) who found that the negative relationship between GDP and FDI in developing countries. As most of the ASEAN countries share the same characteristics, this finding revealed that the

developing countries may create a crowding out effect on local investment in the long term. Local firms may lose market share or shut down, therefore contributing to negative economic growth.

The finding revealed that inflation negatively impacts FDI inflows to ASEAN countries. The coefficient is found to be 1.13 and a p-value of 0.0169. The finding is parallel with the finding by Maibetly and Idris (2022). The negative relationship revealed that inflation tends to raise the overall cost of conducting business in these nations. High inflation creates uncertainty about future costs, prices, and profitability. Foreign investors prefer stable economic environments because uncertainty makes it difficult to forecast returns on investment. As a result, foreign companies may find it less appealing to invest in these countries due to the increased expenses associated with inflation.

The coefficient of interest rate (INT) is 1.87, with a t-statistic of 2.0857 and a p-value of 0.0008, indicating that the variable is statistically significant at the 1% significance level. This finding contradicts earlier studies such as Tri et al. (2019), Wijaya et al. (2020), Isiaka et al. (2022) and Zuhroh and Harpiyansa (2022). Although many studies find a negative relationship between interest rates and Foreign Direct Investment (FDI), a positive relationship can also occur, which indicates that higher interest rates may reflect a strong and growing economy where demand for credit is high due to expanding business activities. Foreign investors may interpret higher rates as a signal of robust economic conditions and profitable investment opportunities.

The coefficient on government expenditure on infrastructure (INFRA) is highly significant ($p < 0.0001$), demonstrating a strong degree of persistence in government expenditure over time. Nonetheless, the magnitude of the coefficient is positive but relatively small, suggesting that government expenditure contributes to rising FDI. This could imply that the composition and efficiency of government spending play a critical role. Productive and well targeted public investment could have a different long term impact on FDI. This is parallel to the findings by Phuditshinnapatra, Tungbenchasirikul, and Sethjinda (2022), Sasana and Fathoni (2019)

The natural resources (NAT) exhibit statistically highly significant effects on FDI, with p-values of 0.0000. This suggests that, within the context of this model and the sample period, natural resources exert a direct and immediate impact on FDI. This finding is similar to Lu et al. (2020) and Huang et al. (2020). The relationship between natural resources (NAT) and Foreign Direct Investment (FDI) is generally true particularly in developing and resource-rich countries. Resource-rich countries often offer opportunities for high profits, especially in extractive industries such as mining and petroleum. Foreign investors are motivated to invest where valuable resources can be exploited efficiently.

Conclusion

This study examined the impact of several key macroeconomic determinants of FDI in selected ASEAN countries. Using panel data analysis, six ASEAN countries were analyzed over 23 years. The results revealed that GDP, inflation, interest rates, infrastructure expenditure, and natural resources are significant determinants of FDI inflows in selected ASEAN countries. It was found that GDP and inflation have negative effects on FDI, suggesting that economic growth may not necessarily attract foreign investment in developing economies and that

macroeconomic instability discourages investors. Conversely, interest rates, infrastructure expenditure, and natural resources positively influence FDI, indicating that favorable economic conditions, improved public infrastructure, and abundant resource endowments enhance a country's attractiveness to foreign investors. The study reinforces the importance of infrastructure development and natural resource endowments in determining FDI attractiveness. The findings suggest that investment promotion strategies should extend beyond conventional macroeconomic policies to include improvements in physical infrastructure and effective natural resource management. Overall, the findings highlight the importance of maintaining economic stability, improving the quality of infrastructure investment, and effectively managing natural resources to strengthen FDI inflows and support sustainable economic development in the ASEAN region.

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