



# The Role of Corruption, FDI, and Unemployment in ASEAN-5 Economic Growth

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## Abstract

Corruption is a global issue that remains unresolved to this day. It can lead to a decrease in investment and inefficiency in government spending allocation, impacting economic growth. Therefore, controlling corruption is a crucial issue that cannot be underestimated. This study uses panel data from 2012 to 2022 in ASEAN-5 countries (Indonesia, Malaysia, Vietnam, Laos, and Thailand). The method used is panel data regression with a fixed-effect model (FEM). The results indicate that foreign direct investment (FDI) has a significant positive effect on economic growth, while the corruption perception index and unemployment have no significant impact in the ASEAN-5 countries. This study suggests that promoting FDI is key to ASEAN-5's economic growth. Additionally, addressing corruption and unemployment through governance and labor market reforms is also crucial for sustainable development in the region.

## Introduction

Recently, the Association of Southeast Asian Nations (ASEAN) countries have experienced significant economic growth, driven by high rates of economic expansion and large populations. This growth is evidenced by rising incomes and increased purchasing power among the populace, leading to heightened demand for goods and services. Furthermore, the developmental stage of ASEAN societies presents substantial opportunities for businesses to prosper, attracting substantial foreign direct investment [1–3]. As Solow's growth theory explains, economic growth depends on capital accumulation, including physical capital consisting of savings, investment, and population growth as a source of labor [4,5].

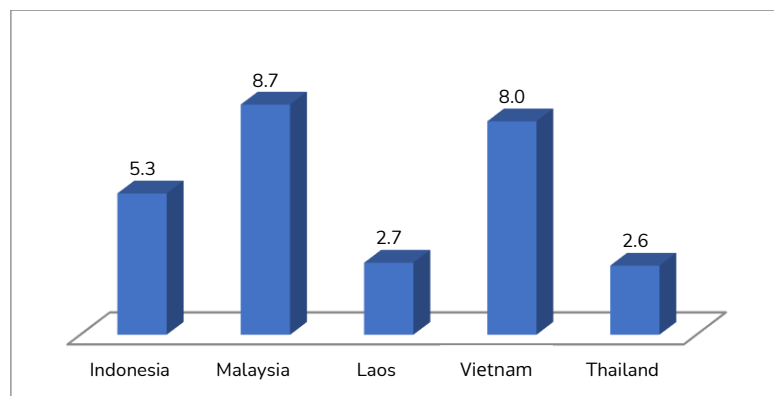


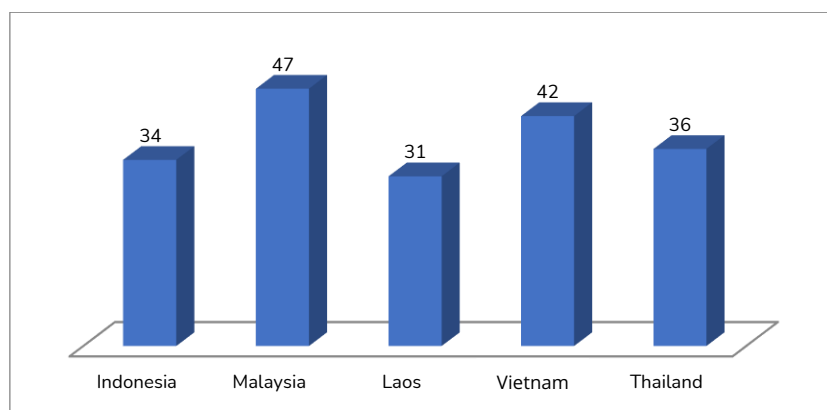
Figure 1. Economic Growth Percentage of ASEAN-5 Countries in 2022. (Source: World Bank)

Economic growth in the ASEAN-5 countries varies among its member countries. As seen in Figure 1, Malaysia and Vietnam contribute significantly to the ASEAN GDP, while Indonesia,

Laos, and Thailand have lower contributions, indicating differing levels of economic development within the region.

Corruption is a key variable that influences ASEAN's economic growth fluctuations. ASEAN faces economic challenges in the form of widespread corruption in developing countries. Developing countries in the region tend to have a higher tolerance for corruption, possibly due to weak institutions or fragility. This tolerance for corruption is reflected in the Corruption Perception Index (CPI), which measures the perceived levels of corruption in a country. Countries with lower corruption levels, as indicated by higher CPI scores, tend to experience better economic performance [6]. The relationship between corruption, FDI, and economic growth is complex, as FDI inflows contribute to economic growth and bring corruption risks.

In corruption, rent-seeking practices are one of the popular theories defining how corruption works, referring to individual efforts to gain more profits without making a productive contribution. Rent-seeking often involves the manipulation of government policies to monopolize the market, and corruption is one form of market monopolization through rent-seeking [7].



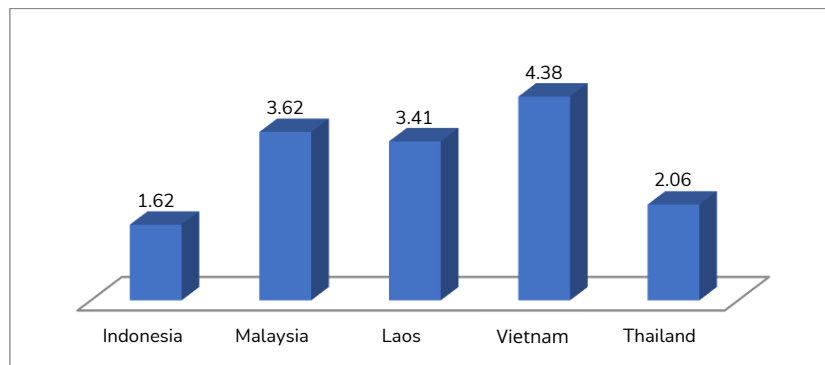
**Figure 2.** Corruption Perceptions Index of ASEAN-5 Countries in 2022. (Source: Transparency International)

Transparency International is a global non-governmental organization that evaluates the level of corruption in various countries using the Corruption Perception Index (CPI). The CPI provides an overview of corruption at the national or regional level. The CPI is measured on a scale of 0 to 100, where a higher score indicates a cleaner perception (very clean), and a lower score indicates a higher level of corruption.

Figure 2 shows fluctuating CPI data with the average CPI value of ASEAN-5 countries below 50; this explains that corruption cases in ASEAN-5 countries tend to be high and concerning. Corruption can increase company costs and create uncertainty regarding long-term investment returns [8]. Addressing the issue of corruption is becoming increasingly urgent due to its negative impact on the ability of countries to promote inclusive economic growth in various regions, including macro-financial stability, investment, human capital accumulation, and productivity [9].

Fajar & Azhar [10] showed a significant positive influence between corruption and economic growth in Southeast Asian countries based on the high or low Corruption Perception Index. Huang [11] studied the impact of corruption in Asia Pacific countries, and his findings indicated that the influence of corruption on economic growth is not significant overall. However, in South Korea, corruption has a positive effect that can enhance economic growth. This is based on the fact that in the economic development of South Korea, corruption can facilitate trade and create efficiency in a bureaucratic government environment.

The effectiveness of fiscal policy implementation can be significantly improved when efforts to minimize corruption levels are made to achieve optimal economic growth [12,13]. Corruption can also slow economic growth, reduce investment, and damage bureaucracy [14]. Corruption can affect resource allocation, growth processes, and income distribution in an economy [15]. The figure below shows the Foreign Direct Investment (FDI) of ASEAN-5 in 2022 measured as a percentage of Gross Domestic Product (GDP).



**Figure 3:** Percentage of GDP of Foreign Direct Investment in ASEAN-5 Countries in 2022. (Source: World Bank)

Based on the FDI data provided in Figure 3, it is evident that Malaysia and Vietnam attract a higher volume of FDI compared to Indonesia, Laos, and Thailand. This discrepancy suggests that Malaysia and Vietnam possess more stable economic conditions and are more appealing to foreign investors. The attractiveness of these countries can be attributed to several factors, including favorable regulatory environments, well-developed infrastructure, and political stability, all of which are conducive to attracting significant FDI inflows [16,17].

Conversely, Indonesia, Laos, and Thailand appear to have lower levels of investment attractiveness. This could be due to various factors, such as complex regulatory frameworks, insufficient infrastructure, or political instability. These countries may need comprehensive reforms to enhance their attractiveness to investors, including regulatory simplification, infrastructure development, and political stabilization [18].

FDI is also influenced by political stability, which is reflected in the quality of government institutions [19,20]. Countries that adhere to anti-corruption principles and good governance tend to create a conducive environment for businesses, ensuring peace and sustainable security, which ultimately supports sustainable economic growth [21]. Pratiwi [22] also emphasizes that political stability positively affects FDI inflows into the ASEAN region. Therefore, it is important to maintain institutional quality and political stability to achieve good economic growth through foreign direct investment.

Furthermore, economic growth is also influenced by labor force conditions in terms of a country's unemployment rate. One theory that explains unemployment is Okun's Law, which states the empirical relationship between unemployment and economic growth [23]. Okun's Law generally states that every one percent increase in the unemployment rate will be associated with a decline of about two percent in economic growth, measured in gross domestic product (GDP) [24].

Iloabuchi [25], in his research, shows that there is a non-significant negative relationship between unemployment and economic growth. In the context of research conducted in Nigeria, the unemployment rate has caused significant social and economic impacts, including increased crime, brain drain, and decreased purchasing power. Although the government has implemented policies and programs to address these issues, factors such as maladministration, corruption, lack of continuity, and poor funding have hindered the success of these efforts. The

impact of unemployment on economic growth underscores the importance of addressing labor force conditions and implementing effective policies to mitigate its adverse effects.

Currently, ASEAN countries face various unemployment challenges. Some countries have relatively low unemployment rates, while others still experience high ones. Some ASEAN countries have implemented policies and programs to address these issues, such as skills training, infrastructure development, and support for specific economic sectors. In the long term, unemployment negatively and significantly impacts economic growth [26]. Unemployment can reduce people's income and push them into poverty, thus affecting a country's economic growth [27]. The amount of investment also significantly impacts the available job opportunities. Increased investment will drive production activities, creating new job opportunities. These new job opportunities then reduce the unemployment rate [28].

The accumulation of physical capital as described in the Solow growth model occurs through the processes of savings and investment, while the labor supply is influenced by population growth [29,30]. This capital investment can come from foreign direct investment (FDI) and domestic investment, and both play a key role in driving a country's economic growth. Therefore, this research is important to conduct given the urgency and impact of Corruption, Investment, and Unemployment on Economic Growth.

ASEAN is a geopolitical and economic organization established on August 8, 1967, in Bangkok. It consists of countries in the Southeast Asian region. ASEAN was established to enhance economic growth, social progress, and cultural development for its member countries. Additionally, ASEAN is also committed to promoting peace and stability at the regional level. ASEAN consists of 11 member countries: Brunei, the Philippines, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam, and Timor Leste.

This research will focus on five ASEAN member countries: Indonesia, Malaysia, Laos, Thailand, and Vietnam. The selection of the five ASEAN countries in this research is based on considering varying levels of economic growth, CPI, FDI receipts, and unemployment rates. These factors are crucial in understanding economic development dynamics and policies' effectiveness within the ASEAN region. By focusing on these five countries, representing a spectrum of economic conditions and governance challenges, the research aims to provide a comprehensive analysis that can offer valuable insights for policymakers and stakeholders in addressing economic issues and promoting sustainable development in the ASEAN region. The results of this study hope to provide valuable insights for policymakers and stakeholders in addressing economic issues and promoting sustainable development in the ASEAN region.

## Materials and Methods

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### *Data and Variables*

The data used in this study are secondary in the form of panel data (time series and cross-section) [31]. The data covers the period from 2012 to 2022 in five ASEAN countries: Indonesia, Malaysia, Thailand, Laos, and Vietnam. The selected countries offer diverse economic structures and governance systems, providing a comprehensive view of ASEAN's economic conditions. This diversity allows for a nuanced analysis of sector-specific policies and their impact on economic growth. All data employed were sourced from Transparency International [32] and the World Bank [33].

The study encompasses various social-economic aspects of the ASEAN-5 region, including economic growth, corruption perceptions index, foreign direct investment, and unemployment. Economic growth is evaluated through the Gross Domestic Product (GDP) growth, measuring the percentage rate of output growth sourced from the World Bank. Open Unemployment (OU), representing those actively seeking employment without a job, is analyzed using the percentage of open unemployment relative to the total labor force, following ILO standards, also sourced

from the World Bank. Foreign Direct Investment (FDI) is assessed by examining FDI receipts as a percentage of GDP from the World Bank. Lastly, the Corruption Perception Index (CPI), sourced from Transparency International, provides insights into corruption levels within countries on a scale from 0 to 100 for the same period.

#### *Model and Method Specification*

The analytical method utilized in this study is panel data regression. The econometric model employed is represented by Equation 1:

$$GDP_{it} = \beta_0 + \beta_1 CPI_{it} + \beta_2 FDI_{it} + \beta_3 OU_{it} + \varepsilon_{it} \quad (1)$$

This model is used to test the influence of the Corruption Perceptions Index (CPI), Foreign Direct Investment (FDI), and Open Unemployment (OU) on economic growth in ASEAN-5 countries. The regression coefficient  $\beta_1$  will indicate the extent of the influence of the CPI on economic growth. In contrast, the regression coefficient  $\beta_2$  will indicate the extent of the influence of FDI on economic growth. The regression coefficient  $\beta_3$  will indicate the extent of the influence of OU on economic growth.

Estimating panel data in this study involves using the Fixed Effect Model (FEM), which is selected based on the results of the Chow Test and Hausman Test. The Chow Test assesses the equality of coefficients between two different models, helping determine if a structural change has occurred in the data. The Hausman Test, on the other hand, compares the efficiency of estimators to choose between fixed effects and random effects models. The decision to use the FEM is based on these tests consistently indicating that it is the appropriate regression model for the panel data in this study.

## Results and Discussion

### *Descriptive Statistics*

Descriptive statistics is a statistical analysis technique used to describe and summarize data in numerical or graphical form. The main objective of descriptive statistics is to present data clearly and understandably, providing a deep understanding of the basic characteristics of the observed data. This method is useful in identifying patterns, trends, and variations in the data.

**Table 1.** Descriptive statistics.

Variable	Minimum	Maximum	Median	Mean	Std. Dev.
GDP	-6.06	8.65	5.06	4.55	2.94
CPI	21.00	53.00	36.00	36.69	7.56
FDI	-0.98	9.91	3.27	3.55	1.96
OU	0.25	4.54	2.88	2.54	1.30

Table 1 presents the descriptive statistical analysis results for ASEAN-5 countries, focusing on four research variables: GDP as the dependent variable and CPI, FDI, and OU as the independent variables. Notably, the mean exceeds the standard deviation, suggesting a normally distributed distribution, as the standard deviation reflects data deviation.

GDP has a mean value of 4.55, indicating that the average economic growth in the five countries studied is 4.55 percent. The minimum value of economic growth is -6.06 percent, which in the data is Thailand's GDP in 2020. The maximum value of economic growth is 8.65 percent, which is Malaysia's economic growth in 2022.

The CPI in these five countries is at an average value of 36.69. This data indicates that these five countries tend to engage in corrupt practices. Based on the CPI data released by Transparency International, the index calculated ranges from 0-100, where higher numbers indicate lower levels of corruption. The statistical figure of 36/100 also indicates that the five countries studied are still vulnerable to corrupt practices. The minimum value of the CPI variable

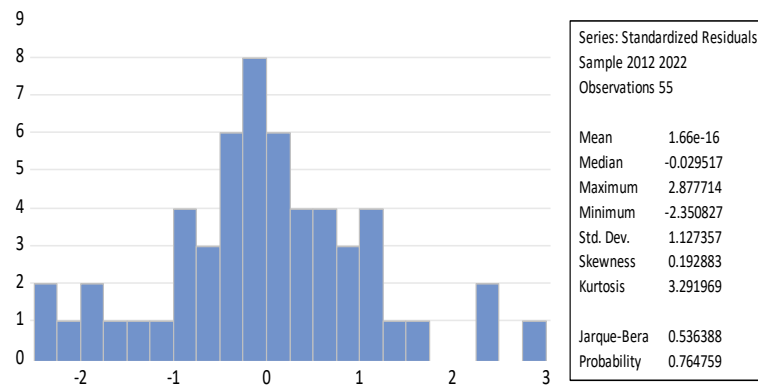
is 21/100, which is the CPI of Laos in 2012. Meanwhile, the maximum value is 53/100 obtained by Malaysia in 2019.

The FDI variable shows an average value of 3.55 percent of GDP. This statistic indicates that the five countries studied contribute an average of 3.55 percent of FDI to GDP. The higher this percentage, the greater the contribution of FDI to total GDP. In this descriptive statistics, the minimum value of FDI is -0.98 percent, Thailand's FDI in 2020. Meanwhile, the maximum FDI value in this study was obtained by Laos in 2017, with a total contribution of FDI to GDP of 9.91 percent.

The OU variable shows that the average value for the five countries studied is 2.54 percent. This figure indicates that the average unemployment rate in Indonesia, Malaysia, Thailand, Laos, and Vietnam is 2.54 percent of the total workforce. The descriptive statistics table shows that the minimum unemployment rate in the five countries studied is 0.25 percent of the workforce. This figure represents the unemployment rate obtained by Thailand in 2013. Malaysia achieved the maximum value in 2020.

*Normality Test*

Based on Figure 4, it can be seen that the Jarque-Bera probability is 0.7648, which is greater than 0.05. Therefore, it can be assumed that the data under study is normally distributed.



**Figure 4:** Results of normality test.

*Multicollinearity Test*

The correlation coefficient between the CPI and FDI is -0.4132 (<0.85), indicating no multicollinearity. Similarly, for the CPI and OU variables, the coefficient is 0.2757, and for the FDI and OU variables, it is -0.0137. It can be concluded that there is no multicollinearity among the independent variables.

**Table 2.** Results of multicollinearity test.

	CPI	FDI	OU
CPI	1	-0,4132	0,2757
FDI	-0,4132	1	-0,0137
OU	0,2757	-0,0137	1

*Heteroskedasticity Test*

The heteroskedasticity test is conducted to determine whether there is inequality in the variables or residuals from one observation to another in a regression model. As seen in Table 3, The CPI, FDI, and OU variables pass the heteroskedasticity test because the probability for both variables is greater than 0.05.

**Table 3.** Results of heteroskedasticity test.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.8446	1.5678	-1.1766	0.2469
CPI	0.0564	0.0411	1.3739	0.1777
FDI	0.1281	0.0926	1.3825	0.1751
OU	0.0651	0.2588	0.2512	0.8030

*Panel Data Regression*

The Fixed Effect Model (FEM) was chosen as the appropriate regression model for the panel data, as confirmed by passing both the Chow Test and the Hausman Test consistently across the ASEAN-5 countries studied. As seen in Table 4, the t-statistic and prob. value results indicate that only the FDI variable significantly impacts GDP in the ASEAN-5 countries. The CPI and OU variables do not have a significant effect on GDP.

The FDI variable has a positive coefficient on economic growth. This positive coefficient indicates a positive impact of the independent variable on the dependent variable. The statistical results indicate that for every 1% increase in FDI, GDP can increase by 0.7098%. Conversely, for every 1% decrease in FDI, GDP can decrease by 0.7098%.

**Table 4.** Results of panel data regression with fixed effect model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.0303	3.3244	1.5131	0.1387
CPI	-0.0299	0.0869	-0.3449	0.7321
FDI	0.7098	0.1964	3.6133*	0.0009
OU	-0.7444	0.5488	-1.3564	0.1832

Note: \* indicate 1% significant level.

Furthermore, the F-test results in Table 5 show that the overall regression model is statistically significant with prob. value 0.000, indicating that the independent variables jointly explain a significant portion of the variation in economic growth across the studied ASEAN-5 countries. Similarly, the coefficient of determination ( $R^2$ ) results in Table 6 show that the model explains a substantial portion of the variation in GDP, indicating a good fit of the model. The Adjusted  $R^2$  value is 0.7864 or 78.64%. This value indicates that the independent variables can explain 78.64% of the GDP variation in the ASEAN-5 countries, while the remaining 21.36% is attributed to other variables not included in this research model.

**Table 5.** Results of F-test.

Model	F-Stat.	Prob.
GDP	12.6947	0.0000

**Table 6.** Results of coefficient of determination ( $R^2$ ) test.

Model	$R^2$	Adjusted $R^2$
GDP	0.8536	0.7864

*Country-Specific Assessment*

This study also examines the average economic growth for each country in the ASEAN-5 during the study period. As shown in Table 7, the percentage of average economic growth for each ASEAN-5 country can be determined by incorporating the constant value with individual fixed-effect cross-values.

Indonesia has the highest average economic growth rate of 7.1512% per year from 2012 to 2022. This is due to its diverse economic structure, with a strong agricultural sector contributing to its resilience against economic turmoil [20]. Malaysia's average economic growth rate is 6.0763% per year. Like Indonesia, Malaysia benefits from high global demand for electronic

products and commodities like oil and gas, which drive its trade [21]. Furthermore, Laos has an average economic growth rate of 4.2096% per year. Its increasing dependence on China has led to higher foreign debt, and despite benefits from the Belt and Road Initiative (BRI), Laos faces challenges in maintaining sustainable domestic programs [22]. Vietnam's average economic growth rate is 5.0706% per year. While its strong growth has reduced poverty, rapid industrialization has strained natural resources, requiring better management for sustainability [23]. Lastly, Thailand has an average economic growth rate of 2.6436% annually. Its economy relies heavily on tourism and manufacturing exports, which are expected to continue driving growth [24].

**Table 7.** Results of country-specific assessment.

Country	Fixed-Effect Cross Value	Constant Value	Sum Value
Indonesia	2.1209		7.1512
Malaysia	1.0461		6.0763
Laos	-0.8206	5.0303	4.2096
Vietnam	0.0403		5.0706
Thailand	-2.3867		2.6436

Note: \* indicate 1% significant level.

*Discussion*

*The Impact of Corruption on Economic Growth*

The regression analysis results explain that corruption in Indonesia, Malaysia, Thailand, Laos, and Vietnam has a negative relationship and an insignificant influence on economic growth. This research highlights that corruption has a detrimental impact on economic growth in the region. Corruption can disrupt economic stability by influencing the inefficient allocation of resources, reducing investment in infrastructure development, and creating an unconducive business environment. High levels of corruption in Indonesia have caused economic instability, reduced investor confidence, and hampered sustainable economic growth [34]. High levels of corruption have hampered the country's economic development efforts [35]. Corruption has led to inefficient allocation of resources and hampered the growth of key economic sectors. Meanwhile, Vietnam is also experiencing a similar impact, where high corruption levels have reduced resource allocation efficiency and hampered sustainable economic growth [36].

*The Impact of Foreign Direct Investment on Economic Growth*

The regression analysis results explain that FDI in Indonesia, Malaysia, Thailand, Laos, and Vietnam has a positive relationship and a significant effect on economic growth. FDI has played an important role in supporting economic growth in the region by increasing foreign investment in strategic sectors. Nguyen and Pham found that FDI had a positive and significant impact on Vietnam's economic growth, significantly increasing productivity and industrial sector growth [37].

According to the Ministry of Finance [38], ASEAN recorded an average economic growth of 5 percent between 2000 and 2022, one of the highest in the world. ASEAN's contribution to global GDP reached 6.4 percent, total trade contributed 7.7 percent, and ASEAN investment contributed 11.6 percent in 2022.

FDI also has a positive and significant impact on Malaysia's economic growth, with a positive contribution to economic growth through increasing investment in high potential sectors [39]. In addition, research by Yurioputra [40] found that FDI plays an important role in increasing productivity and growth of the industrial sector in Indonesia, with a significant impact on the country's economic growth [41].

### *The Impact of Unemployment on Economic Growth*

The regression analysis results explain that unemployment in Indonesia, Malaysia, Thailand, Laos, and Vietnam has a negative relationship and a nonsignificant influence on economic growth. This research highlights that unemployment has a detrimental impact on economic growth in the region. Unemployment can increase social burdens and government costs related to social assistance programs [42].

Priambodo [43], in his research, proves that there is a negative influence between unemployment and economic growth. Karikari-Apau & Abeti [44] found a negative relationship between unemployment and economic growth in the short and long term. Still, the Granger Causality Test shows that the two do not directly influence each other. The high unemployment rate is also caused by inflation that occurs in a country [45]. So, it is necessary to pay close attention to fluctuations in the determinants of unemployment because it is feared that it will be able to disrupt economic circulation in the long term.

## Conclusions

The study found that FDI significantly drives economic growth in ASEAN-5 countries by boosting investment, productivity, and industrial growth. However, corruption and high unemployment rates hinder growth. Corruption discourages investment and erodes confidence, while high unemployment limits purchasing power and stifles innovation. ASEAN-5 countries should prioritize policies that attract FDI and tackle corruption and unemployment to ensure sustainable growth.

Policy recommendations include strengthening anti-corruption measures, enhancing transparency, and improving governance. Addressing unemployment requires investing in education and skills training, promoting entrepreneurship, and creating a business-friendly environment for job creation. Transparency and good governance practices will attract more FDI and improve overall economic performance. By implementing these measures, ASEAN-5 countries can foster a more conducive economic growth and development environment.

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**Data Availability Statement:** The data is available for free download on the official website of Transparency International and World Bank Data.

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