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Does Corruption, Unemployment, and Investment Affect Economic Growth in ASEAN-9

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INTRODUCTION

Economic growth serves as benchmark for evaluating a nation's economic progress, with the intent to achieve substantial economic growth being a common aspiration across all countries. It signifies a more sophisticated phase of economic development (Malizia, 1990; Nuraini & Hariyani, 2019; Ray, 1998). Economic growth is a central thing promoted by various countries. Even though there are exceptions within the Association of Southeast Asian Nations (ASEAN), economic growth in the ASEAN region tends to increase. In 2022, ASEAN's economic growth reached 5.7%, representing an increase from the previous year and making it the fifth largest in the world. The average economic growth from 2012 to 2022 is 4.4% (The ASEAN Secretariat, 2023).

The high economic growth in the ASEAN region is inseparable from the role of foreign direct investment (FDI) as one of the determinants of economic growth seen from the macroeconomic side. Foreign direct investment supports economic growth (Almasaied et al., 2008; Hussin & Saidin, 2012; Liu et al., 2009; Nasir et al., 2021; Pheang et al., 2017). Foreign direct investment in the ASEAN region in 2022 reached an all-time high. Moreover, ASEAN's share of global FDI has increased from 14.4% to 17.3% in 2022 (The ASEAN Secretariat, 2023). This certainly influences economic growth in ASEAN. This happens because foreign direct investment is a type of investment that is not only in the form of financial investment but is also an investment that can help the host country gain many benefits. After all, there is a process of technology transfer, management, and abundant knowledge (spillover) from the investing country.

On the other hand, high economic growth in ASEAN needs attention because this high economic growth has been accompanied by controlling factors inhibiting economic growth, such as unemployment (Imran et al., 2015; Mujitapha et al., 2023). In addition, Kim et al. (2020) research asserts a correlation between unemployment rates and economic growth in several ASEAN countries, as unemployment negatively impacts economic growth. If the unemployment rate is not controlled, it may cause various economic and social impacts. Nguyen (2022) states that the unemployment rate must be handled judiciously because increased unemployment leads to vulnerabilities such as crime, uncontrolled migration, and strain on social welfare. Taresh A. et al. (2020) stated that reducing unemployment increases economic growth. Line Abraham & Nosa (2018) and Adelowokan et al. (2019) demonstrate an inverse correlation between unemployment and economic growth, where an increase in the number of employed individuals leads to a corresponding increase in economic growth. In line with Hjazeen et al. (2021), there is a contradiction between economic growth and unemployment, meaning that an increase in economic growth results in a fall in the unemployment rate. Similarly, W & Sheu (2015) said that in the long term, unemployment hurts economic growth.

After looking at the problems faced with economic growth from a macroeconomic perspective, there is something urgent that must be paid attention to regarding its impact on economic growth, in the form of practical corruption. Corruption is a complex problem in all countries; regardless of developing or developed countries or a country's social and economic perspective, corruption still exists.

According to the United Nations (2018), approximately USD1 trillion is spent yearly on bribery, while corruption accumulates around USD2.6 trillion. This accounts for 5% of the total world gross domestic output. Moreover, in developing nations, such as those in ASEAN, the money lost due to corruption is believed to be ten times greater than the amount of official development assistance (World Bank, 2020). Within the ASEAN area, most countries are classified as developing nations and exhibit either

high levels of corruption or a low corruption perception index (CPI). The issue is the prevalence of elevated degrees of corruption within the ASEAN countries. Nevertheless, FDI and economic growth continue to be substantial, and numerous countries have successfully managed to keep unemployment rates under control. This prompts inquiries on the influence of corruption on these macroeconomic variables.

In looking at the relationship between corruption and economic growth, economists have been involved in a long debate as to whether corruption hinders economic growth or even greases the wheels of the economy. In general, corruption disrupts economic activity and tends to endanger the efficient allocation of resources. Many researchers argue that corruption tends to distort the economy.

One of the essential contributions to research on corruption was made by (Mauro, 1995). He conducted empirical and systematic research across countries, which linked indicators of honesty and bureaucratic efficiency with economic growth, where the empirical results demonstrated the evident and immense harmful impact of corruption on economic growth and investment. Shleifer and Vishny (1993) state that corruption distorts investment and economic growth due to its secretive nature. Tanzi (1998) expressed the same opinion that corruption distorts markets and resource allocation and tends to reduce economic efficiency and growth. Blackburn et al. (2006) corruption and economic growth are negatively related, where corruption creates a loss of income caused by tax evasion, corruption also eliminates resources available for productive investment as a result of the hidden nature of corruption (Ahmad et al., 2012; Nawatmi, 2014). Lower corruption correlates with higher economic growth. Del Monte & Papagni (2001) analyzed the Italian region and found that corruption had two adverse effects on economic growth, first through private investment and then through the efficiency of spending on public investment, which impacted reducing economic growth. Tanzi & Davoodi (1997) Corruption diminishes economic growth by several means, such as by inflating public investment while diminishing productivity. Corruption hampers economic growth through three main channels. Firstly, it increases public investment in wages and salaries. Secondly, it diminishes economic growth by lowering the quality of existing infrastructure. Lastly, corruption reduces government revenues that could have been used for productive activities, further impeding economic growth. According to Gründler & Potrafke (2019), corruption is corrosive because it reduces economic growth and investment levels and increases political instability when corruption increases. d'Agostino et al. (2016) state that the interaction between corruption and investment harms economic growth.

Furthermore, Mauro (1997) states that corruption has a negative impact on economic growth, hinders investment, and impairs the allocation of public expenditure. Ishola Mobolaji and Omoteso (2009) validate Mauro's premise that corruption has a detrimental influence on economic growth. Carlos and Weidmann (1999) stated the same thing. In the long run, corruption has a counterintuitive impact on economic growth. As corruption worsens, it leads to a decrease in economic growth. (Chêne, 2014; Shera et al., 2014) Corruption and economic growth have an inverse association. Maiyaki (2010) shows his findings that corruption slows down economic growth, causes investment in the public sector to become useless, and reduces foreign investment. Gyimah-Brempong (2002) It is said that corruption has a negative impact on economic growth, both through direct and indirect means.

Additionally, corruption is found to contribute to an increase in income disparity. Johnson et al. (2011) discovered that corruption has an essential and causal impact on diminishing development and investment. Dridi (2013) discovered that corruption hurts economic

growth due to human resources and political instability. In addition, Uddin and Rahman (2022) show that corruption and unemployment harm economic growth in the short and long term. Yu et al. (2022) also show that corruption and unemployment negatively influence economic growth. Ajie & Wokekoro (2012) show a positive relationship between unemployment and corruption, which indicates that the government creates job and reduce corruption.

Although most empirical studies agree that corruption negatively affects economic growth, few empirical studies show otherwise. Some researchers believe that corruption increases the administrative efficiency of government agencies and reduces transaction time costs, which ultimately positively affects economic growth. Leff (1964) states that corruption can increase economic growth through "fast money" practices that allow individuals to avoid bureaucratic delays and increase economic efficiency. Bayley (1966) and Huntington (1968) suggest that individuals or companies take bribes to reverse the favorable circumstances caused by existing laws and regulations and other political inflexibility, increasing economic efficiency. Colombatto (2003) states that corruption helps eliminate certain factors hindering economic development in some developing or totalitarian countries. Huang (2016) found evidence that corruption in several countries in Asia Pacific drives economic growth.

After explaining the impact of each variable used in this research, this research combines macroeconomic and non-economic variables to see their influence in ASEAN countries. This research aims to see whether there is a causal relationship, either one-way or two-way, or even not at all, between these variables. Then, this research aims to see how macroeconomic and non-economic variables influence each other and are influenced in the short term. Then, in the long term, this research focuses on the influence that corruption, foreign direct investment, and unemployment have on economic growth.

This research provides an opinion regarding the impact of macroeconomic and non-economic variables in the short and long term and tries to see the causal relationship between them. This research also provides policy recommendations based on the empirical results found.

RESEARCH METHODS

This research uses quantitative methods. This research combines time series and cross-section data called panel data. This research uses data from 9 countries in the ASEAN region from 2012 to 2022. The nine countries in question are Indonesia, Malaysia, Singapore, Vietnam, the Philippines, Thailand, Laos, Myanmar and Timor Leste.

On economic growth data, corruption index, and foreign direct investment, a natural logarithm (Ln) transformation is carried out before the data processing is carried out. However, this, of course, aims to prevent or handle situations with a non-linear relationship between variables; on the other hand, this is used for data that initially has an abnormal distribution that becomes normal or close to normal (Benoit, 2011).

Table 1. Variable Description and Sources

Variables	Description	Units	Source
LNKOR	Corruption	Index	Transparency International
LNFDI	Foreign Direct Investment	US$	World Bank
UNP	Unemployment	Per cent	World Bank
LNGDP	Economic Growth	US$	World Bank

Source: Data Processed, 2024

The Vector Error Correction Model (VECM) approach was used to analyze the response between variables in the short and long term, addressing the problems in this research. Long-term equilibrium relationships can be investigated using various models, but they are only sometimes constant. The VECM approach was used in this study because, considering the influence of exogenous shocks, variables in the short term may deviate from their long-term equilibrium state. The VECM model describes this dynamic process, which anticipates long-run equilibrium relationships between factors and short-term errors corrected to a long-term equilibrium state. Preventing endogeneity problems does not change the subject of this process. The following are the VECM stages used in this research:

The first stage of this research was a stationary test. This is because the stationary assumption is one of the requirements for carrying out a cointegration test. The unit root test that is popularly used is the Augmented Dickey-Fuller test (ADF test). Dickey & Fuller (1981) developed the Augmented Dickey-Fuller test (ADF test) to test the existence of a uni root in a variable in the AR model with order more than one or (AR(P)) in the ADF unit root test, the residuals in the model are assumed are autocorrelated or have a relationship. Data is said to be stationary if the ADF probability is less than the 5% absolute level.

In determining data stationarity, it can be written using the following model equation:

$$Y_1 = \delta Y_{t-1} + U_t \quad \text{.....(1)}$$

If the above equation is reduced Y_{t-1}, Then we will get the right and left sides:

$$Y_t - Y_{t-1} = \delta Y_{t-1} - Y_{t-1} + U_t \quad \text{.....(2)}$$

$$\Delta Y_t = (\delta - 1) Y_{t-1} - U_t \quad \text{.....(3)}$$

Alternatively, it can be stated as follows:

$$\Delta Y_t = \beta Y_{t-1} + U_1 \quad \text{.....(4)}$$

Based on equation 4, a stationary test hypothesis can be formed using the ADF type as follows (Gujarati & Porter, 2013): $H_0: \beta = 0$ (has a unit root/non-stationary); and $H_1: \beta < 0$ (does not have a unit root/stationary).

Next is the determination of a stable optimal lag length. Determination of stable optimal lag length in this study using roots of characteristic polynomial. The optimal lag length is stable with a modulus root value below one. A stable optimal lag length results in a valid Impulse Response Function (IRF) and Variance Decomposition (VD) (Rusydiana, 2017).

Then, optimal lag length is determined. This is necessary because the optimal lag length is essential in forming the VECM model. Moreover, VECM is very sensitive to the lag length used. This study used the Akaike Information Criterion (AIC) criteria to determine the optimal lag length. It is defined as follows:

$In(AIC)$

$$AIC = In \frac{\sum \hat{u}_i^2}{n} + \frac{2k}{n} \quad \text{..... (5)}$$

With $\sum \hat{u} \frac{2}{i}$ is the sum of the squared residuals, k represents the number of independent variables, and n represents the number of observations. The smaller the AIC or minimum AIC value is used to determine the best or optimal lag length. In other words, the minimum the AIC value, the better the model (Machmudin & Ulama, 2012).

In order for there to be a long-term relationship, there must be cointegration between time series data. Robert F. Engle & Granger (1987) If time series data are cointegrated, there is a long-term relationship between the time series data. This research uses the Johansen cointegration test to determine whether cointegration exists. In this test, trace test statistics and maximum eigenvalue statistics with an absolute level of 5% are used, which are expressed as follows:

Trace statistical test:

$$LR_{tr}(r|k) = -T \sum_{i=r+t}^{k} log(1 + \lambda_i) \quad \text{..... (6)}$$

Maximum eigenvalue Statistical Test:

$$LR_{max}(r|k) = -T\sum_{i=r+t}^{k} log(1-\lambda_i) = LR_{tr}(r|k) - LR_{tr}(r+1|k) \quad .....(7)$$

Where $r = 0,1,\cdots\cdots,k,-$, with $\lambda_i = i$ the most significant value of the matrix:

$$\pi = (\lambda_1 \leq \lambda_2 \leq \cdots \lambda_n) .....(8)$$

T represents the number of observed observations, and K is the number of dependent variables. So, the hypothesis can be presented as follows: $H_0 =$ There are no r cointegration equations; and $H_1 =$ There are r cointegration equations.

The Granger causality test determines whether a statistically significant causality relationship (two-way and one-way) exists between variables (Granger, 1969). The hypothesis used in this study with a significant level of 5% is as follows: $H_0 =$ There is no causality >5%; and $H_1 =$ There is causality <5%.

VECM views all variables as variables that can influence or be influenced by each other, called endogenous variables. In other words, VECM ignores exogenous variables. In line with the previous description, this research aims to look at the influence of corruption, foreign direct investment, and unemployment levels on economic growth in 9 countries in ASEAN with the equation:

$$LNGDP = C_1 + a_{1i}\sum_{i=1}^{K} LNCOR_{t-k} + a_{1i}\sum_{i=1}^{k} LNFDI_{t-k} + a_{1i}\sum_{i=1}^{k} UNP_{t-k} + \varepsilon_1 \quad .....(9)$$

In equation (9), the variable that is used as the dependent variable is economic growth (LNGDP). Meanwhile, corruption (LNCOR), foreign direct investment (LNFDI), and unemployment rate (UNP) are the independent variables that influence economic growth.

$$LNCOR = C_2 + a_{2i}\sum_{i=1}^{K} LNGDP_{t-k} + a_{2i}\sum_{i=1}^{k} LNFDI_{t-k} + a_{2i}\sum_{i=1}^{k} UNP_{t-k} + \varepsilon_2 \quad .....(10)$$

The variable that receives influence is the corruption variable (LNCOR), as seen in model equation (10). On the other hand, the variables that have an influence are economic growth (LNGDP), foreign direct investment (LNFDI), and unemployment rate (UNP).

$$LNFDI = C_3 + a_{3i}\sum_{i=1}^{K} LNGDP_{t-k} + a_{3i}\sum_{i=1}^{k} LNCOR_{t-k} + a_{3i}\sum_{i=1}^{k} UNP_{t-k} + \varepsilon_3 \quad ..... (11)$$

Model equation (11) shows that economic growth (LNGDP), corruption (LNCOR), and unemployment rate (UNP) influence the level of investment in 9 countries in ASEAN which is reflected based on foreign direct investment (LNFDI).

$$UNP = C_4 + a_{4i}\sum_{i=1}^{K} LNGDP_{t-k} + a_{4i}\sum_{i=1}^{k} LNCOR_{t-k} + a_{4i}\sum_{i=1}^{k} LNFDI_{t-k} + \varepsilon_4 \quad ..... (12)$$

In model equation (12), we will see the response produced by the unemployment rate (UNP) in 9 countries in ASEAN, influenced by economic growth (LNGDP), corruption (LNCOR), and foreign direct investment (LNFDI).

RESULTS AND DISCUSSION

The Augmented Dickey-Fuller (ADF) technique was employed to carry out a stationary test, and the findings are displayed in Table 2. Based on the results, none of the variables show stationarity at the threshold for significance of 5%. Because there are no stationary variables at the level, which proves that there are still unit roots in the data, a differencing process must be carried out to eliminate unit roots. This first-order differencing process is called the first difference. This process takes the difference between time data and data at time t-1 (Sianipar et al., 2016).

Table 2. Stationary Test

Variable	Level		1st difference		2nd difference	
	Probability	Information	Probability	Information	Probability	Information
LNCOR	0.3322	Non-stationary	0.0002	Stationary	0.0000	Stationary
LNFDI	0.4384	Non-stationary	0.1932	Non-stationary	0.0027	Stationary
UNP	0.7454	Non-stationary	0.0001	Stationary	0.0000	Stationary
LNGDP	0.9997	Non-stationary	0.0214	Stationary	0.0323	Stationary

Source: Data Processed, 2024

After carrying out a stationary test at the first difference level, it was found that there were at least three stationary variables, namely corruption, unemployment, and economic growth, with a probability more diminutive than the absolute level of 5%, meaning that there were no unit roots in these three variables after the first order differencing process was carried out. On the other hand, the foreign direct investment (FDI) variable is still not stationary at the first difference level. So, it is necessary to continue with the second difference process to eliminate the unit root in the foreign direct investment variable.

In the second difference process, all variables were tested again. The results found that all variables no longer had unit roots, as evidenced by everything from corruption, foreign direct investment, and unemployment rates to economic growth, which had a probability that was smaller than the absolute level of 5%, which means all variables are stationary at the second difference level.

Table 3. Stability Lag Length Optimal

Root	Modulus
-0.973318	0.973318
-0.359107 – 0.691953i	0.779588
-0.359107 + 0.691953i	0.779588
-0.280267 – 0.677565i	0.733242
-0.280267 + 0.677565i	0.733242
-0.546335 – 0.394739i	0.674019
-0.546335 + 0.394739i	0.674019
0.208908	0.208908

Source: Data Processed, 2024

The output results in Table 3 show that the optimal stable lag length is up to the second lag length. This is proven by all the root values having modulus values ranging below one (<1). This suggests that the optimal stable lag length is up to the second lag length. Then next, it is necessary to test the optimal lag length to determine the optimal lag length used for this research.

Table 4. Optimal Lag Length

Lag	Akaike Information Criterion (AIC)
0	2.049187
1	0.768636
2	0.392127*

Note: The * sign indicates the optimal lag length criterion
Source: Data Processed, 2024

The findings for determining the optimal lag length in this study are presented in Table 4, where the optimal lag length selected based on the Akaike Information Criterion (AIC) criteria is the second lag length with an AIC value of 0.392127. Determining the optimal lag length helps to know the length of the period of influence of past variables on other endogenous variables (Nizar, 2015).

Table 5. Cointegration Test

Rank Test (Trace)			
Hypothesized	**Probability**	**Trace Statistic**	**Critical Value**
None*	0.0000	172.5902	40.17493
At most 1*	0.0000	111.4089	24.27596
At most 2*	0.0000	58.86797	12.32090
At most 3*	0.0000	27.17989	4.129906
Rank Test (Maximum Eigenvalue)			
Hypothesized	**Probability**	**Maximum Eigen Statisitik**	**0.05 Critical Value**
None*	0.0000	61.18130	24.15921
At most 1*	0.0000	52.54092	17.79730
At most 2*	0.0000	31.68807	11.22480
At most 2*	0.0000	27.17989	4.129906

Note: The * sign indicates significant at the 5% level
Source: Data Processed, 2024

The results of the Johansen cointegration test are displayed in Table 5. Where starting from the results of the cointegration test based on the trace results with the hypothesis none, at most 1, at most 2 to at most three has a probability value of 0.0000, which means it is smaller than the absolute level of 5% (0.05) or it can also be seen based on the results of The trace statistic value for all hypotheses has a value greater than the critical value, which indicates that there is cointegration of this data. In addition, to provide additional evidence of the presence or absence of cointegration in this study, the results of the maximum eigenvalue test can be examined. The test was conducted under various hypotheses, ranging from none to at most three. The probability value obtained was 0.0000, lower than the 5% significance level (0.05). Furthermore, all maximum statistical eigenvalues for each hypothesis were found to be more significant than the critical value. According to the cointegration test findings, at least four cointegrations in this study indicate long-term balance, so the Vector Error Correction Model is more appropriate for this research.

Table 6. Granger Causality Test

Null Hypothesis:	Probability
LNCOR does not Granger Cause LNGDP	0.5526
LNGDP does not Granger Cause LNCOR	0.4345
LNFDI does not Granger Cause LNGDP	0.6029
LNGDP does not Granger Cause LNFDI	0.2480
UNP does not Granger Cause LNGDP	0.2674
LNGDP does not Granger Cause UNP	0.0521
LNFDI does not Granger Cause LNCOR	0.9703
LNCOR does not Granger Cause LNFDI	0.2777
UNP does not Granger Cause LNCOR	0.6451
LNCOR does not Granger Cause UNP	0.4583
UNP does not Granger Cause LNFDI	0.4256
LNFDI does not Granger Cause LNUNP	0.1428

Source: Data Processed, 2024

According to the findings of Table 6, the Granger causality test indicates no significant causal association among the variables at a significance level of 0.05. Specifically, there is no causal relationship between corruption and economic growth, corruption and foreign direct investment, corruption and unemployment, and vice versa in nine countries in ASEAN. Foreign direct investment with economic growth and vice versa, FDI with unemployment and vice versa, followed by unemployment with economic growth and vice versa. Statistically, all variables have a probability value more significant than the actual direction, so they do not have a causal relationship. In line with research from Huang (2016), There is no causal relationship between macroeconomic variables, such as economic growth, and non-economic ones, such as corruption.

Table 7. Short-Term VECM Estimation Test

VECM short-term				
Error Correction:	**D(LNGDP,2)**	**D(LNKOR,2)**	**D(FDI,2)**	**D(UN,2)**
CointEq1	-0.052448	0.166083	-1.350389	1.302529
	[-0.84982]	[5.34951]*	[-3.18164]*	[5.50452]*
D(LNGDP(-1),3)	-1.108800	0.020416	1.207885	-2.995028
	[-5.64311]*	[0.20655]	[0.89388]	[-3.97555]*
D(LNGDP(-2),3)	0.105523	0.120922	-1.563697	-2.447569
	[0.36016]	[0.82042]	[-0.77604]	[-2.17875]*
D(LNCOR(-1),3)	-0.342054	-0.341510	-6.239687	6.382675
	[-1.27534]	[-2.53117]*	[-3.38285]*	[6.20674]*
D(LNCOR(-2),3)	-0.319334	-0.231024	-3.060870	3.064818
	[-1.62750]	[-2.34058]*	[-2.26836]*	[4.07392]*
D(LNFDI(-1),3)	0.020818	-0.038558	-0.827956	-0.269338
	[0.80981]	[-2.98158]*	[-4.68313]*	[-2.73255]*

Error Correction:	D(LNGDP,2)	D(LNKOR,2)	D(FDI,2)	D(UN,2)
D(LNFDI(-2),3)	0.002965	-9.58E-05	-0.514455	-0.186762
	[0.13552]	[-0.00871]	[-3.41955]*	[-2.22665]*
D(UNP(-1),3)	-0.000599	0.178257	-1.124431	0.084199
	[-0.00891]	[5.26642]*	[-2.42999]*	[0.32638]
D(UNP(-2),3)	0.046916	0.077414	-0.702557	-0.138698
	[0.95252]	[3.12436]*	[-2.07408]*	[-0.73444]
R-Squared	0.706289	0.832657	0.723925	0.826258

Note: Sign (-1) is the lag length, sign [ ] is the absolute sign, and the * sign indicates significant at the 5% level

Source: Data Processed, 2024

Table 7 presents the short-term Vector Error Correction Model (VECM) estimation results, indicating the presence of hysteresis in each variable at the second difference level and the existence of both short- and long-term relationships. VECM results in the short term are considered statistically significant if the variable has a t-statistic value greater than 1.96. The results of the VECM estimation in the short term found that the error correction for corruption, foreign direct investment, and unemployment was significant. The purported significant error correction parameter offers proof of a mechanism for adjusting the balance from the short to the long term. This implies that there is an adaptation from the immediate term to the extended term based on the coefficient of each variable. In other words, each previous period's error is corrected by the coefficient of each variable.

In the short-term estimation results with economic growth being the endogenous variable or the variable receiving influence, it was found that in the past two periods, economic growth did not significantly influence economic growth in the present or current period in ASEAN-9. Nevertheless, the economic growth experienced in the previous period has significantly affected the current economic growth of the ASEAN-9 countries. This suggests a strong correlation between the previous periods and current economic growth. On the other hand, in the short term, corruption in the past two or one period did not significantly impact economic growth in ASEAN-9 today. Even though the impact is insignificant in the short term, corruption in ASEAN-9 still has a destructive influence on economic growth. Researchers can provide a simple analogy to understand the complexity of corruption. If one lost money in their wallet or if it was stolen by someone else, would they immediately realize it at that moment? Of course not. This is the same as corruption because corruption is an illegal and hidden act. It takes time to find out. Therefore, in the immediate term, corruption has a negligible effect on economic growth but hampers economic growth. While foreign direct investment (FDI) in the previous two or one period did not significantly impact economic growth in the present, it still has a constructive impact on economic growth. This indicates that foreign direct investment is needed for countries in the ASEAN-9 region to optimize economic growth. Widia et al. (2019) prove the crucial influence of FDI on the economy, but the impact is only visible in the long term. Furthermore, unemployment in the short term has not had a significant influence on economic growth either in the past two or one period on economic growth in the present. On the other hand, the impact caused by unemployment in the previous period reduces economic growth.

Furthermore, when corruption was a variable that received influence from other variables, the results were found that the short-term economic growth in two or one past period did not significantly affect corruption in the

current period. Although not significant, the impact of two or one period of economic growth in the past has the potential to increase corruption in the present over a short period in ASEAN-9. This follows the opinion that corruption can make economic activities more effective and increase economic growth (Huntington, 1968; Leff, 1964; Leys, 1965; Lui, 1985). Corruption can enhance the functioning of government agencies and decrease the time and expenses involved in transactions. This ultimately has a positive impact on economic growth. Corruption acts as an incentive for bureaucrats, encouraging them to provide government services more efficiently. It also allows entrepreneurs to bypass ineffective regulations or laws. Then, in the past two or more periods, corruption has had a significant and negative influence on corruption in the present; this indicates that corruption in the past can reduce corruption in the present in the ASEAN-9 region; this can happen due to corruption in the past can be an evaluation of the current state of corruption. Then, foreign direct investment in the two previous periods had no significant effect on corruption in the present but had a negative influence or, in other words, still reduced corruption at this time.

On the other hand, foreign direct investment in the past significantly influenced corruption in the present, with a negative influence. In other words, increasing foreign direct investment reduces corruption in the short term in the ASEAN-9 region. Then, unemployment in two or one period in the past significantly influences current corruption. This means that an increase in the unemployment rate tends to increase acts of corruption in the present. This happens because funds that should be used for productive activities, such as providing more job opportunities, are misallocated due to corruption.

Meanwhile, continuing with foreign direct investment, the dependent variable, the results showed that economic growth in the previous one or two periods did not significantly influence FDI. Continuing with this, corruption in one or two previous periods has had a significant influence on foreign direct investment in the present, with a corrosive influence on FDI in ASEAN-9. This is in line with the findings of Fazira and Cahyadin (2018) that the influence of corruption, as reflected by the corruption perception index (CPI), has a significant and negative impact on FDI. This indicates that controlling and even reducing corruption can stimulate foreign direct investment. This is similar to the findings of Sarkar and Hasan (2001), who stated that an increase in corruption decreases investment levels. Similar to Canare's (2017) statement, countries with lower corruption levels receive more inflows from foreign direct investment (FDI). This occurs because foreign companies experience difficulties dealing with a corrupt business climate, especially when predicting the recipients and amounts of bribes that need to be paid is challenging. This impacts foreign companies' reluctance to enter a country with high abuse and arbitrariness, reducing the level of FDI in that country (Lee & Oh, 2007).

In this regard, Setyadharma and Fadhilah (2021) show that increasing the corruption perception index (improving) encourages an increase in foreign direct investment (FDI). Their research states that corruption is an indicator that can proxy for the motive of efficiency-seeking investment. This asserts that eliminating national corruption decreases investment expenses, enhances the caliber of institutions/government, and improves the investment environment. The eradication of corruption enhances efficiency, motivating investors to invest (Hoang, 2012). According to Wibowo and Indrayanti (2020), enhancing oversight of corrupt conduct enhances the caliber of institutions. This additionally mitigates political risks associated with

investments and promotes the influx of FDI. In the short term, foreign direct investment in previous periods notably impacts FDI.

However, the coefficient is of concern, as it has a negative direction in both two periods and one period in the past. This indicates that FDI in the past reduced the level of FDI in the current year in the short term. This can be caused by several things, such as FDI in the recipient country being less profitable for investors, so the investing country reduces its investment. Policies in the investment recipient country are not profitable for the country that invests foreign direct investment, such as high levels of taxation and Insufficient infrastructure, which cause companies that provide foreign direct investment to reduce their investment. Then, the existence of tariff and non-tariff barrier policies from the host country also influences the FDI process. Unemployment in the preceding one or two periods significantly and adversely influences FDI. In other words, unemployment starting in the short term has negatively influenced FDI. This is due to the inability of labor resources in ASEAN to meet the qualifications of the country of origin or the country that invests its resources (companies) in foreign direct investment. Companies often ask for highly qualified workers (skilled workers) in their business operations, and there is no place for unskilled workers (Kim et al., 2020).

Next, when unemployment is a variable that is influenced in the short term by other variables, it is found that economic growth in the previous one or two periods has a significant and negative effect on unemployment in the present. This indicates that increased economic growth in the previous one or two periods reduces unemployment in the current ASEAN-9. This confirms Okun's law, which states that increased economic growth in the past or present can impact the unemployment rate in the present. This finding is consistent with Okun's law, which posits an inverse correlation between economic growth and unemployment. Specifically, it suggests that the unemployment rate falls as economic growth increases. Apart from that, corruption in one or two periods in the past had a significant and consistent influence on unemployment in ASEAN-9.

This means that unemployment increases when corruption has increased in one or two past periods. This indicates that corruption has a destructive nature. This can be caused by fraud as a result of corruption itself. Then, in the short term, foreign direct investment significantly and negatively impacted unemployment in ASEAN-9 in the previous one or two periods. Mujitapha et al. (2023) also found that foreign direct investment significantly and negatively influenced unemployment. This means that when there is an increase in foreign direct investment in one or two past periods, it has the impact of reducing unemployment in the present. The state structure of ASEAN countries relies heavily on FDI to support their economies. Finally, in the short term, unemployment in one or two previous periods does not significantly influence unemployment in the present. Even though the effect is insignificant, the direction of the coefficient for unemployment in the previous period is positive. This indicates that economic conditions are deteriorating because it increases unemployment in the following period.

Table 8. Long-Term VECM Estimation Results

VECM long-term				
Cointegrating Eq:	**D(LNGDP(-1)2)**	**D(LNCOR(-1)2)**	**D(LNFDI(-1)2)**	**D(UNP(-1)2)**
CointEq1	1.000000	-6.133960	0.315401	-1.329575
		[-4.80706]*	[2.34073]*	[-5.66043]*

Note: Sign (-1) is the lag length, [ ] is the absolute sign, and the * sign indicates significant at 5% level
Source: Data Processed, 2024

This study examines the impact of macroeconomic and non-economic factors, specifically corruption, on the economic growth of the ASEAN-9 region over a lengthy period. The results presented in Table 8 demonstrate the long-term effects of corruption on economic growth in the ASEAN region, as indicated by the VECM estimates. Specifically, the results reveal corruption's significant and negative impact on economic growth in the long run. Corruption significantly threatens economic growth in the long run due to its detrimental effects. Detrimental to the economic progress of the ASEAN. Similar to the findings of Thach et al. (2017), The argument posits that corruption exerts a substantial and adverse impact on economic growth, functioning as a hindrance to economic progress, particularly in nations characterized by elevated levels of corruption.

These results are also consistent with research (Alfada, 2019; Haw et al., 2020). Corruption has a substantial and detrimental impact on economic progress. Corruption at higher levels has a more detrimental effect on economic progress. This research further validates the neo-classical theory, which posits that corruption impedes the economic development of a nation grappling with a significant corruption issue. Apart from that, Yunan and Andini (2018) found that economic growth significantly and positively affects corruption. This means that when economic growth increases, the corruption perception index (CPI) also increases for the better. Even though the direction is different, this indicates that a country with lower levels of corruption will have better economic performance. In other words, lower levels of corruption correlate with better (increased) economic growth.

Furthermore, at the micro level, many empirical studies show that corruption reduces efficiency in allocating and using production factors (Dal Bó & Rossi, 2007). According to de Soto (2000), Bribes required by the government, like taxes, burden the business world; this occurs because there is a barrier to bribery, and it makes up a more significant proportion of income for small businesses compared to large businesses. In addition, corruption undermines government services such as education and health services, which are essential services for society. In places where officials accept bribes to provide services, people classified as poor cannot even access services, even if they are of low quality.

In addition, at the macro level, corruption influences investment and economic growth (Mauro, 1995, 1996). Countries with inefficient policies, ineffective government spending, and high levels of corruption cause damage to macroeconomic growth and development, negatively impact property, reduce competitiveness, result in ineffective allocation of resources, and damage infrastructure. Damaged and misallocated budgets for education, health, and social affairs are not channeled optimally (Murphy et al., 1991; Yunan & Andini, 2018).

Corruption is pervasive worldwide, irrespective of social and economic circumstances. Corruption is most prone at the intersection of the public and private sectors, particularly when public officials are directly involved in choosing public services or enforcing specific regulations. Corruption hinders economic development, particularly in the economic sector. Conversely, within the private sector, corruption escalates expenses due to illicit payments and the potential for agreements to be terminated or subjected to investigations. On the other hand, corruption can make bureaucratic processes easier by giving bribes to officials who make or are related to these regulations. However, the private sector's use of bribes to simplify bureaucratic processes makes competition inefficient, especially in the long term. Another destructive impact is that corruption has created distortions in the public sector by diverting public investment to inefficient projects (which can be manipulated). Corruption in politics can hinder

democracy and good governance by undermining established formal processes. Public government corruption leads to social services inequality (Nawatmi, 2014).

Conceptually, if viewed from the rent-seeking theory, corruption in rent-seeking means seeking profits (more monopolistic) through manipulation of the economic situation (politics, rules, regulations, tariffs, et cetera) rather than through trade. Furthermore, rent-seeking occurs in synergistic collaboration between private individuals with domestic and foreign capital and bureaucrats or officials with access to permits and bureaucracy, regional facilities, protection from other entrepreneurs. When the private sector obtains profits through cheap resources, easy access to information, and policies favoring entrepreneurs, officials gain profits through bribes and opportunities for collusion and corruption. Rent-seeking refers to public decision-makers granting preferential treatment, which can be seen as corruption. Corruption is the term used to describe rent-seeking when the competition for special treatment is restricted to a small group of individuals and when the costs associated with rent-seeking are considered desirable to the person receiving them. (Lambsdorff, 2002).

In addition, Chetwynd et al. (2003), the correlation between corruption and economic growth is intricate, and corruption hampers economic growth according to economic theory, which proposes numerous notions as follows: Corruption hinders both foreign and domestic investment by increasing expenses and generating uncertainty. This, in turn, diminishes the motivation for local and international investors.

Entrepreneurial tax corruption involves obtaining licenses and permissions from entrepreneurs and innovators. However, paying bribes for these requirements diminishes profit margins. Corruption diminishes the caliber of public infrastructure as it involves the diversion of public resources towards private interests. This results in neglecting standards and redirecting monies for operation and maintenance towards more lucrative profit-seeking endeavors.

Corruption diminishes tax collections, prompting corporations to operate in the informal or grey sector to maximize profits while leading to decreased taxes in exchange for bribes to tax officials. Corruption redirects skilled individuals towards seeking personal gain through exploitation, causing officials who should be engaged in productive endeavors to focus on extracting benefits, leading to a cycle where growing profits incentivize further exploitation. Corruption ultimately skews the allocation of public funds, as those seeking personal gain would prioritize initiatives that offer the most accessible opportunities for rent-seeking, so resources are diverted away from critical sectors like education and health. Corruption has a deleterious impact on economic growth, remarkably when it endures for a prolonged duration. Afterward, foreign direct investment (FDI) in the ASEAN region significantly and positively impacted long-term economic growth. These results are comparable to the discoveries of (Almasaied et al., 2008; Long, 2020; Pheang et al., 2017), whose research states that FDI has a significant effect and positively contributes to economic growth in ASEAN. This shows the role of FDI as a supporter of economic growth in ASEAN. Therefore, in the long term, FDI plays a vital role in ASEAN's economic growth. This is because, in FDI, there is a transfer process of technology, management, and expertise brought by the investing country (spillovers).

In addition, if we rely on endogenous growth theory, economic growth can be achieved in three ways: endogenous technological change through the accumulation of knowledge and the creation of new ideas by companies due to knowledge spillover. Scientific production factors produce goods and will grow without limit. This is related to the

benefits of FDI, where FDI, in the process, provides technology transfer that cannot be achieved through financial investment or trade in goods and services. Then, countries that receive foreign direct investment will provide employee training as a product—an automated byproduct of operating a new business. Resource development like this has an important role not only for production workers but also for managers and executives; in other words, it is a management process brought about by the investing country as a result of FDI. In addition, equity capital that generates profits in the host country (the country that receives FDI) receives a share due to the taxes imposed on these profits (Feldstein, 2000). This undoubtedly encourages economic growth in the ASEAN region in the long term.

Long-term unemployment has significant and destructive impact on ASEAN's economic growth. This shows that unemployment in ASEAN is corrosive to economic growth. This correlates with the findings of Panigrahi et al. (2020), who state that unemployment has a significant and adverse impact on economic growth in ASEAN in the short and long term. This indicates that the higher the economic growth reflected by gross domestic product, the lower the number of unemployed (Hasan & Sasana, 2020). In ASEAN's economic development, the main problem is the unemployment crisis. High unemployment occurs when existing labor resources are used inefficiently.

These findings validate Okun's law, posing a paradoxical link between the unemployment rate and economic growth. In order to stimulate economic growth, it is typically necessary employ additional workers to boost the production of products and services in an economy. On the other hand, in line with this, if we refer to Keynes's view, to maintain the level of economic growth, it is necessary to control the level of unemployment so that the level of consumption can be maintained because the cause of hampered economic growth is not due to low production but low consumption due to high unemployment rates.

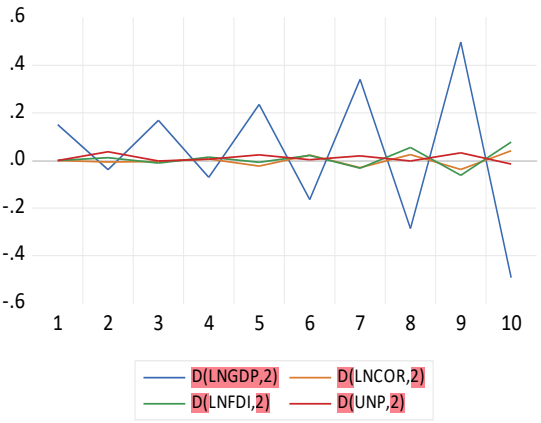

Figure 2(a). Response of LNGDP

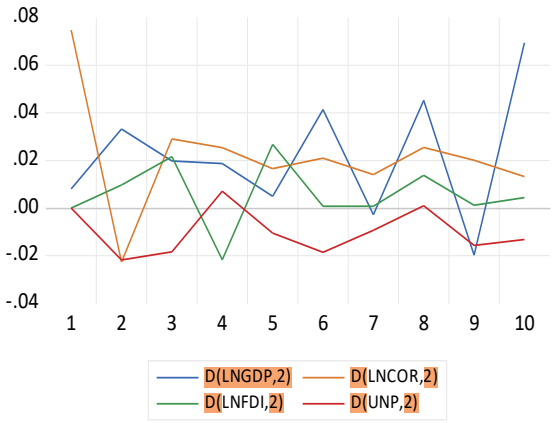

Figure 2(b). Response of LNCOR

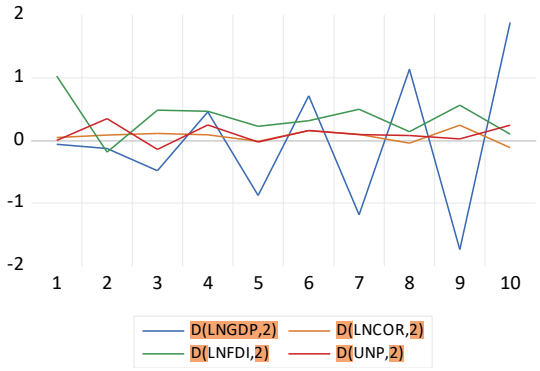

Figure 2(c). Response of LNFDI

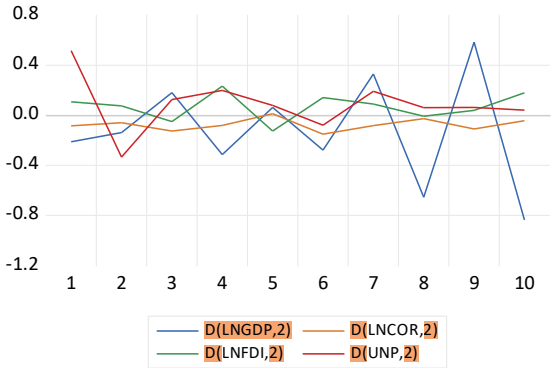

Figure 2(d). Response of UNP

Figure 1. Impulse Response Function
Source: Data Processed, 2024

Figure 2 below presents the results of the impulse response function (IRF) from the previous VECM estimation model. The IRF is used to see the marginal effect of a shock from one variable on another (Lütkepohl, 2010). In the impulse response function results, the horizontal axis is the reaction period expressed in years, while the vertical axis shows the response value expressed in percentage. In the first picture, Figure 2(a) shows the IRF of economic growth (LNGDP), where economic growth receives a response from shocks from corruption (LNCOR), foreign direct investment (LNFDI), and unemployment (UNP). In the first period, when there were no shocks from the variables of corruption, FDI, and unemployment, economic growth responded positively to the shocks it was given. Starting to enter the second and third periods, corruption, foreign direct investment, and unemployment began to give shocks. It was responded to by economic growth in the second period by experiencing a decline when there was a decrease in corruption and an increase in FDI and unemployment. In the third period, economic growth responded to shocks from corruption, FDI, and unemployment by increasing, while there was a decline in corruption, FDI, and unemployment. Starting from the fourth to the tenth period, the response of economic growth to shocks caused by corruption, foreign direct investment, and unemployment continues to fluctuate. However, from the fourth to the tenth period, the response received by economic growth when there is a decline in corruption increases.

Figure 2(b) shows the response received by corruption when shocks occur due to economic growth, FDI, and unemployment. In the first period, FDI and unemployment did not provide any shocks to corruption. However, economic growth has provided shocks starting from the first period with positive shocks, and corruption responded positively. Entering the second period, when economic growth provides increasing shocks, corruption responds by experiencing a decline. This coincides with increasing foreign direct investment shocks and decreasing unemployment shocks and entering the third and fourth periods, when the shocks provided by economic growth decrease, followed by an increasing response from corruption. Apart from that, foreign direct investment in the third period gave increasing shocks; in the fourth period, it decreased. Unemployment in the third period experienced an increase in shocks but was still negative; in the fourth period, the shocks provided by unemployment were positive. Let us look at the fifth period onwards, namely the tenth period, the response to corruption caused by shocks from economic growth. Foreign direct

investment (FDI) and unemployment continue to fluctuate, just as the shocks from economic growth, FDI, and unemployment also fluctuate.

Figure 2(c) shows the response of foreign direct investment when receiving shocks from economic growth variables, corruption, and unemployment. In the first period, when the response given by economic growth was negative, corruption provided a positive but low shock, and unemployment did not provide any shocks. Foreign direct investment responded positively to these shocks. Entering the second period, the shocks provided by economic growth were still adverse. However, the shocks provided by corruption increased, and unemployment began to provide positive shocks, which were responded to by decreasing foreign direct investment. This indicates that when corruption increases, the level of investment is reduced. Podobnik et al. (2008) also stated that when the level of the corruption perception index (CPI) increases (decrease in the level of corruption), it results in increased economic growth and attracts investors so that FDI will increase. Then, in the third period, the shocks provided by economic growth still tended to decrease and were negative. However, the shocks provided by corruption increased, the shocks provided by unemployment decreased, and FDI responded by increasing. Economic growth shocks continued to fluctuate from the fourth to the tenth period. Likewise, corruption fluctuated from the fourth to the tenth period. This was followed by an increase in unemployment in the fourth period. In the fifth period, it experienced decreasing and adverse shocks, then from the sixth to the ninth period, it tended to decrease, and in the tenth period, it again experienced an increase, and foreign direct investment responded with a fluctuating response.

Figure 2(d) shows the response of unemployment when given shocks from economic growth, corruption, and unemployment. In the first and second periods, the shocks provided by economic growth and corruption were adverse; foreign direct investment provided positive shocks, and unemployment responded positively in the first period and negatively during the decline period. The shocks fluctuate for economic growth from the third to the tenth period. However, the shocks given by corruption from the third period to the tenth period, except for the fifth period, were adverse and fluctuating. This was followed by shocks given by foreign direct investment starting from the fourth period to the tenth period, which also fluctuated and responded to unemployment with a response which also fluctuated.

In addition, over a long period, the impact of corruption in the ASEAN region becomes increasingly challenging to predict because the nature of corruption fluctuates wildly over a more extended period. Likewise, economic growth, FDI, and unemployment also fluctuate. However, this indicates that in the long term, the effects of corruption are difficult to predict, so this can worsen economic conditions by creating uncertainty. This uncertainty can have various impacts, including increasing costs related to corruption, such as how much and when to pay investors bribes, so the impact worsens economic conditions. As Campos et al. (1999) stated, corruption has increasingly dangerous impacts when unpredictable.

The function of variance decomposition in the VECM model is to describe the influence of each variable individually on the response received by other variables. On the other hand, variance decomposition is used to determine the contribution or composition of a variable that plays the most role in explaining changes in a variable

Table 9. Variance Decomposition of LNGDP

Period	D(LNGDP,2)	D(LNCOR,2)	D(LNFDI,2)	D(UNP,2)
1	100.0000	0.000000	0.000000	0.000000
2	94.25132	0.199579	0.550513	4.998586
3	97.01240	0.144466	0.479298	2.363840
4	96.86832	0.194912	0.737045	2.199722
5	97.37261	0.611188	0.439806	1.576397
6	97.23899	0.838682	0.650349	1.271981
7	97.58340	0.826494	0.762878	0.827227
8	97.15541	0.796010	1.422894	0.625685
9	97.28704	0.707338	1.477124	0.528496
10	97.17701	0.690450	1.729308	0.403230

Source: Data Processed, 2024

Table 9 states the variance decomposition of economic growth. In the first period, the composition that had the most significant influence on the diversity of economic growth was economic growth itself of 100%. Corruption, foreign direct investment, and unemployment could not explain economic growth diversity in the first period. Starting to enter the second period, the contribution made by economic growth in explaining diversity itself decreased to 94%. Entering the second period of corruption, foreign direct investment and unemployment began to contribute to the diversity of economic growth at 0.19% each, followed by foreign direct investment at 0.55% and unemployment at 4.99%. The immense contribution from economic growth in explaining diversity in economic growth itself continues until the tenth period, a long-term period of 97%. From the second to the sixth period, unemployment was second in contributing to economic growth diversity. Then, in the eighth to tenth period, the second most significant contribution was made by foreign direct investment, followed by corruption and unemployment, which contributed the smallest in the long-term period.

Table 10. Variance Decomposition of LNCOR

Period	D(LNGDP,2)	D(LNCOR,2)	D(LNFDI,2)	D(UNP,2)
1	1.144689	98.85531	0.000000	0.000000
2	14.82452	77.88010	1.174919	6.120457
3	15.69613	70.37834	5.627687	8.297836
4	16.66794	66.64746	9.049193	7.635409
5	15.36511	62.86591	13.92164	7.847334
6	24.17981	55.34775	11.61637	8.856067
7	23.76589	55.56982	11.39559	9.268696
8	31.26284	50.31584	10.61678	7.804541
9	31.61565	49.66727	10.04653	8.670555
10	44.62298	39.83401	7.990227	7.552779

Source: Data Processed, 2024

Table 10 shows us the variance decomposition of corruption. If we look at the first period, the tremendous variation in changes in corruption is explained by corruption itself, amounting to 98%. Followed by economic growth of 1%, and for foreign direct investment also, unemployment has yet to explain the diversity that occurred in corruption at the beginning of the period. Meanwhile, the contribution made by corruption decreased throughout the period until its peak in the tenth period. In the tenth period, the composition that explained the most tremendous variation in corruption was economic growth at 44%. Then, from the third to the tenth period, foreign direct investment makes a more significant contribution than unemployment in explaining the diversity of corruption.

Table 11. Variance Decomposition of LNFDI

Period	D(LNGDP,2)	D(LNCOR,2)	D(LNFDI,2)	D(UNP,2)
1	0.374216	0.181330	99.44445	0.000000
2	1.712363	0.747777	87.88715	9.652713
3	14.69006	1.213584	76.02700	8.069360
4	20.67711	1.305837	69.02972	8.987326
5	40.48263	0.961939	51.98090	6.574535
6	46.98676	1.441534	45.49691	6.074795
7	58.57471	1.161887	35.92232	4.341085
8	66.31799	0.962327	29.14410	3.575584
9	73.99896	1.213223	22.41403	2.373779
10	80.29220	0.988345	16.55327	2.166191

Source: Data Processed, 2024

Table 11 demonstrates the diversity of foreign direct investment starting from the beginning of the period. Economic growth contributed 0.37%, followed by corruption of 0.18%, but on the other hand, unemployment did not contribute to foreign direct investment. At the beginning of the period, the most enormous contribution in explaining the diversity that occurred in foreign direct investment was foreign direct investment itself at 99%. However, as the period progressed into the long term, namely the tenth period, the composition provided by foreign direct investment continued to decline. On the other hand, the contribution of economic growth to foreign direct investment continued to increase from the second period to the tenth period; in the sixth period, the largest contribution in explaining foreign direct investment was taken over by economic growth until the tenth period, amounting to 80%. This indicates that the contribution in explaining the diversity of foreign direct investment is not only from the foreign direct investment itself, but other variables also play a role and can better explain the diversity of foreign direct investment in the long term. Meanwhile, the contribution from corruption is in last place after unemployment in explaining the diversity of foreign direct investment.

Table 12. Variance Decomposition of UNP

Period	D(LNGDP,2)	D(LNCOR,2)	D(LNFDI,2)	D(UNP,2)
1	13.69015	2.126110	3.513076	80.67066
2	13.65402	2.258196	3.684408	80.40337
3	18.06201	4.961366	3.695603	73.28102
4	26.57008	4.511987	10.11539	58.80254
5	26.19391	4.378687	11.81973	57.60767
6	31.20990	6.292981	12.37205	50.12507
7	36.78615	5.974821	11.23967	45.99936
8	55.01030	4.270650	7.950147	32.76891
9	62.85447	4.095954	6.476580	26.57300
10	72.05201	2.999899	5.881061	19.06703

Source: Data Processed, 2024

Table 12 explains the variance decomposition of unemployment. In the first period, the unemployment variable played the most prominent role in explaining variations in the unemployment rate of 80%—followed by the economic growth variable of 13%, corruption at 2%, and foreign direct investment at 3.5%. If we look at it from the short period to the long period, the role of unemployment is getting weaker. However, the contribution of economic growth is getting stronger, reaching a peak in the tenth period of 72%. On the other hand, the contribution made by corruption and foreign direct investment in explaining the diversity of unemployment could be better. Therefore, the contribution of economic growth can better explain the diversity of unemployment.

CONCLUSION

This study combines macroeconomic variables (FDI, unemployment, and economic growth) and non-economic variable (corruption) to see their interaction in the short term and then focus on the influence of foreign direct investment, unemployment, and corruption on economic growth in the long run, and see if there is a relationship (causality) with each other from these variable variables. Using methods from the Vector Error Correction Model (VECM), this study is motivated by the question of why countries in ASEAN can attract foreign direct investment and achieve high economic growth and, in some countries, have controlled unemployment amid high levels of corruption. At the same time, other countries experienced economic stagnation. Expanding the existing literature, we looked at the impact of macroeconomic variables and corruption not only from one period but also separated between short-term and long-term impacts to clarify the impact of these variables on the complex ASEAN economy.

Based on empirical results, it was found that there is no causality relationship between macroeconomic variables (foreign direct investment, unemployment, and economic growth) and the non-economic variables used is (corruption) with each other in ASEAN. Then, some results were found relying on the results of the VECM estimate in the short term. When economic growth becomes variable-dependent, only economic growth itself is significant. While corruption is a variable influenced by other variables, corruption, foreign direct investment, and unemployment significantly affect corruption. Then, when foreign direct investment is the dependent variable, corruption, foreign direct investment, and unemployment are found to have a significant effect. Lastly, in the short run, when unemployment becomes a non-free

variable, it is found that economic growth, corruption, and foreign direct investment have significant influences.

Then, based on the results of VECM in the long run, where economic growth is the dependent variable, it was found that corruption and unemployment have a significant and negative effect on economic growth. In contrast, foreign direct investment significantly and positively affects economic growth in nine ASEAN countries. Based on the empirical results, researchers concluded that corruption in the short term does not have a significant effect on the economic growth of ASEAN. Nevertheless, in the long run, corruption is very destructive to economic growth in the nine ASEAN countries. In sum, this research supports the view that corruption harms economic growth. Based on the conclusions drawn, researchers can recommend several policies for countries in ASEAN.

Policymakers in the Association of Southeast Asian Nations (ASEAN) countries can implement policies to attract foreign direct investment to enter ASEAN countries, such as providing favorable tax rates for both parties (host countries and investor/company countries), improving infrastructure, improving the quality of human resources to create a skilled workforce, avoid applying tariff and non-tariff barriers in international trade, which further make it difficult for companies or investor countries. Instead, share incentives in the form of subsidies to countries that want to invest in the form of foreign direct investment. In the sense that countries in ASEAN must create a good ecosystem.

The unemployment rate should be a concern for countries in ASEAN. Researchers can suggest several policies, such as encouraging and focusing on improving the quality of human resources (both in terms of education and training) so that they can compete in the labor market, such as accountable training for job seekers who cooperate with related institutions. Furthermore, according to the International Labour Organization (ILO) and the United Nations, this includes income guarantees in the form of cash transfers and basic employment guarantees in the form of public works programs. Then, countries in ASEAN should improve public employment services and have a fully functional unemployment insurance system (UI) because this has three dimensions to protect and support unemployment reduction, namely, protecting the unemployed and underemployed, and families from the effects of unemployment, the second, facilitating the return of jobs as soon as possible (stabilizing employment), then the third, improving skills and abilities in order to get better jobs in a constantly changing labor market (adapting to changing economic conditions).

The last is the anti-corruption policy for the ASEAN region. In formulating this policy, caution is needed because of the complexity of corruption and its hidden nature, so it takes work to formulate a policy. Researchers can suggest policies such as, rather than making too many policies or laws and many anti-corruption institutions that make them less effective. On the contrary, researchers suggest that countries in the ASEAN region can learn from Singapore to eradicate corruption in their country. Singapore has an anti-corruption institution that is very independent and not tampered with by powerful politicians. This indicates that instead of forming many anti-corruption rules and institutions, it is better to maintain one very independent institution. Of course, this can also be achieved when accompanied by a strong commitment from political leaders to fighting corruption. Singapore's Corrupt Practices Investigation Bureau (CPIB) is independent of political power and empowered to investigate bank accounts and arrest suspects without a warrant. One more thing, when referring to the GONE theory, researchers suggest that countries in ASEAN can provide punishments that deter perpetrators of corruption acts to provide a deterrence effect to perpetrators.

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