

Analysis of the Impact of Corruption on GDP Per Capita (Case Study: ASEAN Countries 2010 - 2020)

Dr. Nugroho SBM, M.Si.¹

Lecture on Department Economics and Development Studies
Faculty Economic and Business, Diponegoro University. Semarang, Indonesia

Fitri Bahari, S.E.²

Student in Master of Economic and Development Studies
Faculty of Economic and Business, Diponegoro University. Semarang, Indonesia

Abstract:- This study aims to analyze the effect of foreign investment, and corruption, on GDP per capita in ASEAN countries from 2010-to 2020. This study uses GDP per capita as the dependent variable, Foreign Investment (FDI), and corruption uses the Corruption Perception Index as the independent variable. The data used in this study is panel data (time-series data for eleven years from 2010-to 2020 and 10 cross-sectional data representing ASEAN countries). The analysis method of this research uses a fixed-effect model panel data. Panel data regression analysis was used to determine the effect of independent variables on economic growth. The estimation results in this study indicate that the estimation results show that the foreign investment variable (FDI) has a positive and significant effect on the five percent significant levels of GDP per capita in ASEAN countries. The variable corruption has a negative and significant effect on the five percent significant level of GDP per capita in ASEAN countries. Recommendations for further research need to be analyzed, on the contrary, namely economic growth in the per capita GDP of ASEAN countries. More serious efforts are needed for policies to reduce corruption because it has been proven to harm economic growth.

Keywords:- Corruption, FDI, GDP per capita, Economic Growth.

I. INTRODUCTION

Since the 1970s, economic development has been redefined. According to Todaro (2020), the emergence of new views on the purpose of development is not just to create high economic growth but how to overcome poverty, income inequality, and the availability of jobs. However, in reality, economic development is also hindered by various problems: corruption. Corruption occurs in almost every country, both developed and developing countries. Seen from the potential for corruption in developing countries is more significant than in developed countries.

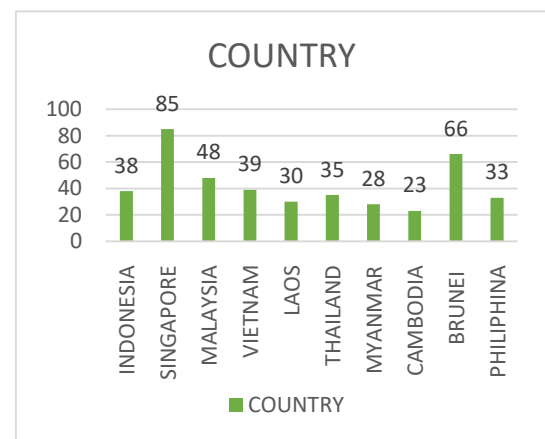


Fig. 1: Score of CPI in ASEAN at 2021

Source: Transparency, 2022.

Data from Transparency (2022) shows that in 2021 ASEAN countries will have a low Corruption Perception Index (CPI) value. This data can be seen in Figure 1. The highest CPI value in Singapore, with a score of 85, and the country with the lowest CPI Index value is Cambodia at 28.

In various literature on corruption, there are different views about its origin, the influence of corruption on economic development, Etc. Leff (1964) and Huntington (1968) argue that corruption positively affects the functioning of the economic system because it reduces some bureaucratic delays and transaction costs. On the other hand, authors such as Kaufman and Wei (1999), Aidt (2009), Mauro (1995, 1997), Shleifer and Vishny (1993), and Blackburn et al. (2009), Barreto (1996), Tanzi and Davoodi (1997), Etc. States that corruption harms the economy. The harmful impact of corruption on the economic development of countries is widely recognized in the economic literature. Using a formal and empirical approach, some authors show that corruption reduces investors, reduces the productivity of public spending, distorts resource allocation, and thereby reduces economic growth.

Based at the heritage defined previously, there are extraordinary evaluations approximately the effect of corruption on GDP according to capita in numerous literature. Therefore, the writer desires to studies the impact of overseas investment (FDI) and corruption on GDP according to capita in ASEAN international locations with the title: "ANALYSIS OF THE IMPACT OF CORRUPTION ON GDP PER CAPITA (Case Study: ASEAN Countries 2010 - 2020)".

II. LITERATURE THEORY

A. Economic Growth

Economic growth theory provides a theoretical framework for analyzing endogenous growth, where economic growth is the result of internal economic systems. According to Romer (in Todaro, 2020), the theory assumes that economic growth is determined more by the production system than outside the system. Technological progress is endogenous, and growth is part of an economic agent's decision to invest in knowledge. When the growing capital is not only physical capital but also human capital, the role of capital is more important than a part of income.

Capital accumulation is the main source of economic growth. The definition of capital was expanded to include scientific and human capital models. Technological change does not come from outside the model, nor is it exogenous, but technology is part of the economic growth process. In endogenous growth theory, investment in physical and human capital also determines long-term economic growth (Mankiw, 2006). The endogenous growth model is slightly different from the Solow model, and the endogenous growth model modifies the total production function as (Siregar, 2006):

$$Y = A f(K,H,L) \dots\dots\dots(2.1)$$

- Where:
- Y = output
- A = technology
- K = capital
- L = labor
- H = Human resources

In formula (2.1), human resources are the accumulation of education and training. According to Mankiw (in Siregar, 2006), a country that places more emphasis on the education of its people will achieve better economic growth than a country that places no emphasis on education. In other words, investing in human resources by promoting education will lead to higher national income or economic growth.

B. Corruption

Corruption, etymologically according to Hamzah (1995), comes from the Latin word "corruptio" or "corruptus," which later appeared in many European languages such as English and French, namely "corruption," in Dutch "korrupctie," which subsequently appeared in the Indonesian treasury: corruption, which can mean being bribed. According to Koeswadji (1994), there are two elements regarding corruption, namely:

- Every act that is carried out by anyone, either for the benefit of oneself, another person, or for the benefit of something, an agency, directly or indirectly causes a loss to state finances or the state economy.
- Every act carried out by an official who receives salary/wages from (derived from) state or regional finance or an agency that receives assistance from state or regional finance, who by using the opportunity/authority/power given to him because of his position, directly or indirectly bring him financial or material benefits.

According to Darsono (2001), corruption is classified based on its typology into five, namely:

- Transaction corruption is reciprocal corruption (close to collusion) so that it is mutually beneficial.
- Extortion corruption occurs in an unbalanced of power. For example, the service is made complex, so it creates bribes.
- Investive corruption in the form of giving now to reap in the future.
- Nepotism corruption is an appointment due to kinship, except for those that meet the technical requirements and application procedures.
- Support corruption is an effort to support one party so that it can be backed up.

III. HYPOTHESIS

Hypotheses are statements made so far, and the truth is still weak. The hypothesis is also considered a preliminary conclusion. Following the research framework above, the hypothesis for this study is formulated as follows:

- Foreign direct investment is considered to have a positive and significant impact on the per capita GDP of ASEAN countries.
- It is suspected that corruption has a negative and significant effect on GDP per capita in ASEAN countries.

IV. RESEARCH METHOD

The method used to analyze this study is the Panel Data model. This model uses a cross-sectional data unit and a time series data set. The Panel Data model is the most appropriate because this study uses a time series of GDP per capita in ASEAN countries, which is then cross-sectioned with time-series data for eleven years (2010-2020). The analysis tool is Eviews 12 software to estimate the significance of the determinants of GDP per capita by using the Data Panel.

In this study, the authors used regression analysis obtained from previous studies. The variables used in this study represent GDP per capita as a representation of economic growth, namely Y, FDI, X1, and the corruption participation rate index, X2, so the following equation is obtained:

$$Y_{it} = \beta_0 + \beta_1 \ln(X1_{it}) + \beta_2 \ln(X2_{it}) + \epsilon_{ijt}$$

where:

β_0 = constant (intercept)

Y = GDP per capita

X1 = FDI

X2 = CPI

ϵ_{ijt} = random error.

In this study, a linear model was used using the OLS method. The problem with using this approach is that the OLS approach can result in estimates that fall outside the specified GDP per capita range. These estimation deviations can be ignored because the focus of this study is not on forecasting but hypothesis testing. Moreover, using a range of values for the estimated variables will be necessary for OLS if this approach is compared with other approaches (Thorpe, 2005).

V. RESULT

The coefficients of variables of the regression equations were estimated using Eviews 12 software. Regression analysis was used to estimate the impact of foreign direct investment and corruption on economic growth in ASEAN countries during 2010-2020. First, a model estimation test is performed.

Variable	Koefisien	t-ratio (signif)
konstanta	7.316696	17.09694 (0.0000)
LnX1	0.072847	3.342827 (0.0012)
LnX2	-0.121864	-2.278565 (0.0249)
R-square	0.995136	
Adj. R-square	0.994584	
F-ratio (signif)	1804.015	
Jumlah variabel signifikan	2 dari 2 variabel (100%)	
N	110	
Dw	0.527018	

Table 1: Result Estimation With Fix-Effect Model

Source: Secondary Data, Processed, 2022.

This estimate uses panel data as described in Research Methods. The decision to use a panel data model (fixed effects model) was based on the sample in this study. In this study, the fixed-effects model was the model of choice when using the panel data approach. This choice is based on a series of tests and the assumption that each user is heterogeneous as the study sample, i.e. the value of GDP per capita as a measure of economic growth. The use of a fixed-effects model allows for variation in the intercept value for each individual and assumes that the difference in this value is the difference between individual units.

The normality test is designed to test whether the noise or residual variables in the regression model are normally distributed. Judging from the JarqueBera score 4.57355, less than 5.99, and the probability value 0.101603 (= greater than 0.05), the data accept the null hypothesis. From this we can conclude that the data are normally distributed.

The multicollinearity test finds the cross-correlation between the independent variables used in the regression equation. To test for the presence or absence of multicollinearity in this study, this can be confirmed by comparing the Rsquared values of the partial Rsquared regression (auxiliary regression) with the first-order regression.

	LNx1	LNx2
LNx1	1.000000	0.252097
LNx2	0.252097	1.000000

Table 2: Matrix Correlation

Source: Secondary Data, Processed, 2022.

As shown in Table 2, the correlation estimation results show that the correlation value between independent variables is less than 0.90, meaning that the correlation value is smaller so that there is no multicollinearity in this model.

The autocorrelation test compares the presence or absence of spurious errors in a particular time period with the errors in the previous time period of the regression model. Decisions do not automatically correlate with the limits of the Durbin-Watson test. Based on studies of fixed effects models, the Durbin Watson value (d) is 0.523997. The DurbinWatson test shows that the values of dL and du with independent variables 2 and 110 are dl (1.6523), du (1.7262), 4 du (2.2738), 4 dl (2.3477). increase. The d value of the fixed effects model is 0.523997, the data reject H0 in decision making, and is autocorrelated.

The heteroscedasticity test aims to test whether, in the regression model, there is an inequality of variance from the residuals of one observation to another observation. The General least square method gives weight to the variation of the data used, heteroscedasticity and autocorrelation can be overcome. Because in estimating the model, cross-section SUR (PCSE) treatment is given to standard errors and covariance. So the assumption of heteroscedasticity and autocorrelation can be ignored.

The coefficient of determination (R2) measures the extent to which the model explains the variation of the dependent variable. The coefficient of determination has a value between 0 and 1. The regression results shown in the table show that the coefficient of determination or the value of R2 is 99.5136 percent of the fluctuations in economic growth of ASEAN countries between 2010 and 2020, as determined by the independent variable (FDI, and

corruption). The size of). At the same time, the rest is explained by variables outside the model.

The F-test examines whether there is a combined effect of foreign direct investment and corruption levels on the economic growth of ASEAN countries between 2010 and 2020. From the estimation results, we can see that the probability value of Fstatistics is 0.00000 and the significance is 0.05. In addition, the Ftable value is 3.081193, while the Fstatistics is 1804.015. Therefore, Fstatistics > Ftable means that H0 is discarded and the independent variable acts together with the dependent variable.

The statistical t-test shows how the effect of each independent variable individually explains the variation of the dependent variable. Ttest compares Tstatistical with Ttable. This estimate has a Tstatistical of 3.182466 and a Tstatistic probability of 0.05, indicating that there is a significance level. The estimation results show that the FDI variables and the level of corruption are stats > ttable and probability values. Statistic & It; significance level is 0.05, so reject H0 and accept H1. This means that this variable has a significant impact on economic growth.

VI. HYPOTHESIS TEST

A. FDI Effect on GDP per capita

The coefficient of foreign investment (FDI) shows a positive and significant effect at a significance level of 0.05. This result means that every increase in foreign investment (FDI) will increase the value of GDP per capita growth in ASEAN countries.

The Foreign Direct investment variable has a positive and significant relationship with influencing GDP per capita growth in ASEAN countries. The results of this study are in accordance with research conducted by Rabnawaz & Sohail Jafar (2015), which explains that public investment and GDP per capita have a positive and significant relationship. This shows that public investment made by governments in ASEAN countries has a direct relationship and can significantly influence GDP per capita. This relationship and influence can occur because public investment made by the government is divided into several sectors. From all these sectors, there are various sectors that can create jobs for workers as a result of public investment. In addition to creating jobs, the Foreign Direct investment made by the government can also create business opportunities or opportunities for people who are around the location of government investment projects. Therefore, the Foreign Direct investment made by the government can provide various multiplier effects on the economy. So, according to the results of the analysis conducted in this study, public investment has a positive and significant relationship to GDP per capita because of the increase in job opportunities and business opportunities as a result of public investment.

B. Corruption Effect on GDP Per Capita

Based on the estimation, results show that the coefficient of the level of corruption shows a negative and significant effect at a significance level of 0.05. This means that any increase in corruption will reduce the value of GDP per capita growth in ASEAN countries.

The results of the same study were also stated by research conducted by Dzhumashev (2009), which found that corruption has a negative relationship and does not have a direct impact on economic growth. The negative relationship between economic growth and corruption leads to a decrease in productivity due to a lack of efficiency and effectiveness in the production process Dzhumashev (2009). This can happen because the productivity level is also influenced by several things, namely the quality of the institution and also the effectiveness of the institution, in this case, namely the quality and effectiveness of public services provided by the government and people who have authority. The negative relationship between corruption and GDP per capita can also be caused by the non-optimal allocation of resources both in the production process and in the development process. This can occur because of a leak in the funding used for financing resources so that they cannot obtain resources optimally. In addition, the negative relationship between corruption and GDP per capita can also be caused by misallocation of resources, such as the inappropriate use of resources both in the production process, in development, and in the placement of human resources.

VII. CONCLUSION AND SUGGESTION

A. Conclusion

Based on the findings and discussions on the impact of foreign investment (FDI) and corruption on the economic growth of ASEAN countries, the following conclusions can be drawn:

- The estimation results show that the FDI variable has a positive and significant effect at the significance level of 5% of GDP per capita in ASEAN countries.
- Estimates show that fluctuating corruption has a positive and significant impact on GDP per capita in ASEAN countries at a significance level of 5%.

B. Suggestion

The recommendation for further research from the results of this study is that it is necessary to analyze the opposite of this research, namely the influence of GDP per capita on corruption. As for the policy recommendations drawn from this research, the eradication of corruption must be taken seriously in ASEAN countries because it is evident from the results of this study that corruption has a negative and significant effect on GDP per capita.

REFERENCES

- [1.] Barreto, R.A. (1996), "Endogenous Corruption, Inequality and Growth," *European Economic*
- [2.] Blackburn, K. and Forgues-Puccio, G.F.(2009)." Why is Corruption Less Harmful in Some Countries Than
- [3.] Darsono. (2001). "Korupsi sebagai Kompensasi Underpayment: Suatu Tinjauan Teori Equity". *Jurnal Bisnis dan Akuntansi*. Vol. 3, No. 2; Agustus, hal 477-487.
- [4.] Dzhumashev, R. (2009). Is there a direct effect of corruption on (Issue 18489).
- [5.] Hamzah, A. (1995). Delik-delik Tersebar Di Luar KUHP dengan Komentar. Jakarta: Pradnya Paramita.
- [6.] Huntington, S. P. (1968). *Political Order in Changing societies*, New Haven, Yale University press.
- [7.] in Others? *Journal of Economic Behavior and Organization*, 72, 797-810.
- [8.] Investment, and Government Expenditure," IMF Working Paper 96/98 (Washington: International Monetary Fund).
- [9.] Kaufmann, D. and S-J. Wei (1998)" Does Grease Money Speed Up the Wheels of Commerce?" *NBER Working Paper* No. 7093.
- [10.] Koeswadji, H.H. (1994). Korupsi di Indonesia dari Delik Jabatan ke Tindakan Pidana Korupsi. Bandung: Citra Aditya Bakti.
- [11.] Leff, N. H. (1964). Economic development through bureaucratic corruption. *American behavioral scientist*, 8(3), 8-14.
- [12.] Mauro, P. (1997), "The Effects of Corruption on Growth,
- [13.] Rabnawaz, A., & Sohail Jafar, R. (2015). Impact of Public Investment on Economic Growth. *Munich Personal RePEc Archive*, 70377, 1–14.
- [14.] *Review*, Vol. 44, No. 1: 35-60.
- [15.] Shleifer, A, and Vishny,R, (1993), "Corruption," *Quarterly Journal of Economics*, Vol. 108, No. 3, pp. 599–617.
- [16.] Tanzi, V. and Davoodi, H. (1997), *uCorruption, Public Investment, and Growth*," IMF Working Paper 97/139, Washington, D.C.
- [17.] Todaro, M. P., & Smith, S. C. (2020). *Economic development*. Pearson UK.
- [18.] Transparency. 2022. "Database". www.transparency.org. (March 19, 2022).
- [19.] World Bank. 2022. "Database". <https://data.worldbank.org/>. (March 19, 2022).