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Original Article

Examining the Effect of Trade Openness, Foreign Direct Investment and Corruption on Economic Growth: An Evidence from Indonesia

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Abstract: Numerous pieces of literature have been analyzing the determinants of a country's economic growth, but limited studies have tried to combine the positive sides of Trade Openness (TO) and Foreign Direct Investment (FDI) with the negative side of corruption and its effect on Indonesia's economic growth both in the short and long term. Likewise, no studies have tried to analyze the effect of corruption on economic growth through FDI as moderation in Indonesia. Using data for 1995-2019 with Autoregressive Distributed Lag (ARDL) and path analysis methods, this study found that TO negatively affected economic growth in the short and long term. FDI has proven to increase economic growth in the short term but has no long-term effect. Then, similar to TO, corruption is contradicted by the theory that a high level of corruption tends to increase economic growth both in the short and long term. Also, this study proves that FDI cannot moderate the effect of corruption on economic growth. Considering TO and corruption that is found not to be in line with theory, this study suggests the government can focus more their policies on the productive side rather than the consumptive side of TO to increase technological development and improve the quality of the utilization of both natural and human resources, as well as intervene in all market behavior that has the potential to distort healthy economic competition and closing opportunities for corruptors to impede the effectiveness of implementing government policies.

Keywords: economic growth; trade openness; foreign direct investment; corruption perception index; autoregressive distributed lag approach

1. Introduction

Economic growth (EG) is the primary indicator for all countries in the goal of achieving sustainable social welfare, which provides investment and consumption opportunities, employment, social mobility and other great opportunities that can increase living standards (Asongu & Odhiambo, 2020; Doğan et al., 2020). World Bank's publication shows that Indonesia's EG rate movement was relatively stable years 2000-2019, but there was a sharp decline from 1995-1999

due to the financial crisis. In 1995, Indonesia's EG rate was relatively high at 8.22 per cent, but it dropped drastically in 1998 and was recorded at minus 13.13 per cent. Then, the Indonesian economy improved slightly in 2001, reaching a positive number of 3.64 per cent. In the following years, Indonesia's EG continued to improve and tended to be stable, recording an average rate of 5.67 per cent. Many kinds of literature have analyzed the determinants of EG in the country context. However, there is still little research trying to combine the positive sides of Trade Openness (TO) and Foreign Direct Investment (FDI) and the negative sides of corruption in looking at the impact simultaneously in the short and long term on EG in Indonesia. However, this study seeks to examine the effect of corruption on Indonesia's EG through foreign investment.

Several previous studies have studied related to EG (e.g., Doğan et al., 2020; Elfaki et al., 2021; Fetahi-Vehapi et al., 2015; Kong et al., 2021; Ridha & Budi Parwanto, 2020). They found that TO has a positive and significant effect on increasing EG. Furthermore, the study by Osei & Kim (2020), Asongu & Odhiambo (2020), Muhammad & Khan (2019) has also proven that FDI has a significant positive effect on EG. Then, the studies by Malanski & Póvoa (2021), Alfada (2019), Gründler & Potrafke (2019), d'Agostino et al. (2016) found that the level of corruption significantly influences EG. As described in international economic theory, the relationship between TO and EG can be seen from the ability of TO to improve the quality of EG, which encourages capital formation and increases the efficiency of resource allocation so that it can facilitate the improvement of the EG quality of a country (Elfaki et al., 2021; Kong et al., 2021; Ridha & Budi Parwanto, 2020). World Bank publications show the development of Indonesia's TO for the 1995-2019 period, where the movement of numbers slightly fluctuated. Still, Indonesia can be said to be quite open to international trade. In 1995 Indonesia's TO number was 53.96 per cent. In 1998 there was a financial crisis, and Indonesia opened the widest possible openness to international trade to stabilize exchange rates and make Indonesia's TO as much as 96.19 per cent. When the Indonesian economy began to improve, in 2001 the TO number then decreased to 69.79 percent. The TO number continued to decline slowly in the following 20 years where in 2019 it was recorded at 37.63 percent.

Likewise with FDI, neoclassical theory and endogenous economic growth explained the relationship between FDI and EG, where FDI can increase the size and efficiency of investment and can direct EG both in the short and long term (Bluedorn et al., 2013; Muhammad & Khan, 2019; Osei & Kim, 2020). The development of Indonesia's FDI for the 1995-2019 period, on the basis of the World Bank data, showed a fairly volatile movement in numbers. In 1995 the inflow of foreign capital was recorded at $434 billion. But in 1998 during the financial crisis, it recorded minus $240 billion. In the following three years, the rate of FDI in Indonesia has not improved, where it was recorded at minus $298 billion. However, 2004 Indonesia again recorded a positive FDI figure of $190 billion. Over the next 15 years, FDI showed positive numbers, with an average value of $386 billion.

In addition, besides the importance of the driving factors from the side of TO and FDI to EG, the inhibiting factor, namely the level of corruption, has also become the focus in many studies on countries' EG. Corruption is understood as a factor that disrupts market behaviour which is capable of distorting the expected function of economic competition, undermines EG when the cost of conducting business activities increases due to price increases resulting from bribery, reduces the government's ability to enforce regulations and take action to correct market failures, and hampered government intervention due to motivation from corrupt behaviour (Alfada, 2019; Malanski & Póvoa, 2021).

Regarding the phenomenon of the level of corruption in Indonesia for the 1995-2019 period, based on the Corruption Perception Index (CPI) published by Transparency International, Indonesia's achievements in eradicating corrupt practices can be said to be relatively low, with an average CPI score of 27 out of a maximum 100. However, every year shows an increasing trend. In 1995 Indonesia's CPI score was recorded at 19 and has shown a significant increase. In 2019, Indonesia's CPI score was at 40. Apart from the very few and not comprehensive studies that combine the positive sides of TO and FDI and the negative sides of corruption in looking at the impact on Indonesia's EG, some data phenomena are not in line with the theory. The theory says that TO positively impacts EG, but in 2010-2011 TO increased from 46.70 per cent to 50.18 per cent, but Indonesia's EG decreased from 6.22 per cent to 6.17 per cent. In contrast, in 2015-2016, there was a decrease in TO from 41.94 per cent to 37.42 per cent, but EG increased from 4.88 per cent to 5.03 per cent.

Similarly, in many studies, FDI has been proven to have a positive impact on EG, but in 2010-2015, there was a trend of increasing FDI from $153 billion in 2010 to $251 billion in 2015, but the EG trend decreased from 6.22% in 2015 to 5.01% in 2015. In contrast, in 2017-2019, FDI dramatically reduced from $454 billion in 2017 to $189 billion in 2019, but EG increased from 5.03 per cent in 2017 to 5.17 per cent in 2019. The phenomenon of corruption level also shows the same thing where the literature proves that corruption has a negative impact on EG. Still, from 2010-2019, the level of corruption in Indonesia decreased, where the CPI score increased quite high from 28 in 2010 to 40 in 2019, while the EG trend decreased from 6.22 per cent in 2010 to 5.02 per cent in 2019. Thus, the current study seeks to investigate the integration effect of the TO and FDI positive side as well as the corruption negative side simultaneously toward EG both in the short and long term, also proofing FDI effectiveness in mediating the influence of CPI against EG.

2. Literature Review

The early neo-classical EG theory popularised by Solow stated that the production, labour and capital factors are determinants of a country's EG without considering technological advances. Solow updated his theory and included technological changes in the production function (Mankiw, 2006). Furthermore, to overcome some of the problems in the neo-classical growth theory, the theory of endogenous economic growth emerged, which was developed by Romer (1986). He stated that long-term EG is determined by accumulating knowledge of economic actors with human resources as the main key in the economy (Todaro & Smith, 2012). Economists use the Gross Domestic Product (GDP) to measure EG by calculating each person's national income and expenditure (Mankiw, 2006). TO is the sum of a country's exports and imports divided by GDP (Squalli & Wilson, 2011). According to the World Bank, TO is the ratio of the total exports and imports of goods and services with other countries and was measured as a part of GDP. Then FDI can be interpreted as investing assets or production to overseas companies (Noor, 2007). FDI also plays an important role in ensuring the continuity of development not only because of the capital flow or portfolio but also because FDI is usually followed by the transfer of technology, know-how and management skills (Mäler, 2013).

Transparency International and the World Bank define corruption as the behaviour of public officials, politicians and civil servants who improperly and illegally enrich themselves or certain groups by abusing the public power entrusted to them. Widiastuti (2008) states that corruption generally occurs at the government bureaucratic level rather than in the private sector. The most commonly used indicator of the level of corruption is the Corruption Perception Index (CPI) published by Transparency International, a composite index that measures perceptions of corruption globally. CPI is often used to compare corruption conditions in one country. The CPI only measured the level of perceptions of corruption in the public sector, namely corruption committed by state officials and politicians, and did not include cases of corruption in the realm of the non-public sector.

Many pieces of literature have studied EG's determinants, one of which was a study by Fetahi-Vehapi et al. (2015), who proved the positive effect of TO on EG in Southeast European countries. Also, the Doğan et al. (2020) study proved that TO and FDI significantly affect increasing EG. Then, Kong et al. (2021) studied the effect of TO on EG quality in China using the ARDL approach and found a stable long-term cointegration relationship between TO and EG quality, significantly improving EG quality in the short and long term. However, Elfaki et al. (2021) used the ARDL approach to determine the impact of TO on EG in Indonesia. They found that TO has a negative effect on EG.

A study by Muhammad & Khan (2019) examined the factors that improve the EG in Asian countries. They showed that FDI inflows and outflows positively and significantly affected EG in Asian countries. Then, a study by Asongu & Odhiambo (2020) using the Generalized Method of Moments (GMM) approach also found that FDI had a positive and significant effect on the EG of 25 countries in Sub-Saharan Africa. Likewise, a study by Osei & Kim (2020) using a dynamic panel model found evidence of the significance of FDI in encouraging PE in 62 countries with middle to high GDP. In Indonesia itself, a study by Ridha & Budi Parwanto (2020) which examined the effect of FDI on EG using the Error Correction Model (ECM), found the opposite, where FDI had a negative and significant effect on EG in the long term and had no effect in the short term.

In addition to the positive sides of TO and FDI on EG, a relatively lot related to the effect of corruption on EG in the literature, such as a study by Alfada (2019) which looked at the effect of corruption on EG in all provinces in Indonesia and showed that the impact of corruption had proven to worsen EG. Research by d'Agostino et al. (2016) using a panel data model simulation from 106 countries also showed that the interaction between corruption and investment, as well as corruption and military spending has a strong negative impact on EG. In addition, a study by Gründler & Potrafke (2019) analyzed the effect of corruption on EG in 175 countries using a dynamic panel data regression approach, and they proved that corruption had a negative and significant effect on EG. It is also reinforced by the findings by Malanski & Póvoa (2021) using the GMM approach in the Asian region, where corruption had a negative effect on EG.

In general, the theory said that an increase in TO can accelerate technical progress in the industry, as well as significantly increase output by expanding market size, thereby encouraging an increase in economic quality which in turn has the potential to advance the EG (Abid, 2020; Mensi et al., 2019; Wang et al., 2019). Furthermore, the theory mentioned that FDI increased the size and efficiency of total investment and positively affected EG (Asongu & Odhiambo, 2020; Bluedorn et al., 2013). In addition, corruption was considered detrimental to EG when the costs of conducting business activities increased due to increased prices caused by bribery, reduced the government's ability to implement regulations and take action required to correct market failures, and some possibilities made government intervention hampered due to the influence from corrupt behavior (d'Agostino et al., 2016; Gründler & Potrafke, 2019; Malanski & Póvoa, 2021).

3. Materials and Methods

3.1. Materials

This study uses annual time-series data ranging from 1995 to 2019 because the corruption variable's availability was only up to 1995. Likewise, the reason for the researchers not taking 2020-2021 was that during its period, the

COVID-19 pandemic occurred, which resulted in a drastic reduction in almost all economic indicator numbers so that it had the potential to disrupt the normality of data which in turn makes the estimation results less accurate. The data were collected from World Bank, Transparency International, and other related sources.

3.2. Methods

3.2.1. Autoregressive Distributed Lag (ARDL)

The analytical method used in this research is quantitative analysis. The first quantitative method used in this study to analyze the short-term and long-term impacts of TO, FDI, and CPI on EG is Autoregressive Distributed Lag (ARDL). The formulation of the ARDL model used in this study is written as follows (Muhammad & Khan, 2019):

$$EG_t = \beta_0 + \beta_1 TO_t + ... + \beta_q TO_{t-q} + \beta_2 FDI_t + ... + \beta_q FDI_{t-q} + \beta_2 CPI_t + ... + \beta_q CPI_{t-q} + \varepsilon_t \quad (1)$$

where EG is economic growth, TO is trade openness, FDI is foreign direct investment, and CPI is corruption perception index.

3.2.2. Path Analysis

The second quantitative method used in this study is path analysis, which analyses causal relationships through the Ordinary Least Square (OLS) approach, where the independent variable indirectly influences the dependent variable through mediating variables.

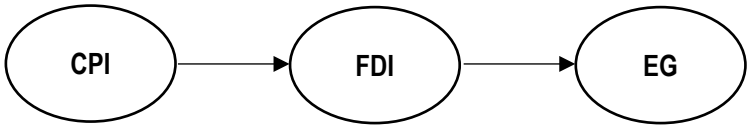

Figure 1. Path Analysis

Figure 1 illustrates the path analysis approach. It shows that the CPI affect the EG through the FDI. The path analysis model in this study is divided into two sub-structural. The formulation of the first and second sub-structural models is as follows (Gründler & Potrafke, 2019):

$$FDI_t = \beta_0 + \beta_1 CPI_t + \varepsilon_t \quad (2)$$

$$EG_t = \beta_0 + \beta_1 CPI_t + \beta_2 FDI_t + \varepsilon_t \quad (3)$$

where EG is economic growth, FDI is foreign direct investment, and CPI is corruption perception index. Afterwards, the formulation proceeded with the Sobel test with the following formula:

$$t = \frac{ab}{\sqrt{\left(b^2 SEa^2\right) + \left(a^2 SEb^2\right)}} \quad (4)$$

Where a is the coefficient value of the influence path of CPI on FDI, b is the coefficient value of the influence path of FDI on EG, and SE is the standard error value.

4. Results

4.1. Stationarity Test

Before embarking on the ARDL model, this study examined the unit root test (stationary data). It aims to identify whether the data variance and average value are constant. Data requirements to use the ARDL model must have at least one non-stationary variable at the level, and all variables must be stationary at the first difference. The stationarity test uses the Augmented Dickey-Fuller (ADF) approach; the estimation results as presented in Table 1.

Table 1. The result of unit root testing (stationary data).

Variable(s)	Sig. I(0)	Sig. I(1)	Conclusion
Economic Growth (EG)	0.0754	0.0001	Stationary
Trade Openness (TO)	0.6040	0.0003	Stationary
Foreign Direct Investment (FDI)	0.1035	0.0017	Stationary
Corruption Perception Index (CPI)	0.9360	0.0290	Stationary

Table 1 shows the result of stationarity testing and indicates that all variables are not stationary at the level. Thus, the ARDL model can be applied when all variables are stationary at the first difference.

4.2. Cointegration Test

The cointegration test aims to examine short and long-term relationships. The short-term cointegration test in this study uses the Johansen cointegration test and the bound test approach for the long term. An ARDL model is said to have short-term cointegration if the trace statistic value obtained is greater than the critical or x probability value is below 0.05. The estimation results are shown in Table 2 and Table 3.

Table 2. Results of Johansen Cointegration Testing.

ARDL Model	Trace Statistic	Critical Value	Prob.
EG	64.29258	47.85613	0.0007

Table 2 shows that the trace statistic obtained exceeds the critical value. The probability value obtained is less than 0.05. It indicates that there is a short-term relationship.

Table 3. The result of the Bounds testing approach.

Test Statistic	Value	k
F-Statistics		
EG Model	49.93404	3
Critical Value Bonds		
Significance	I(0)	I(1)
10%	2.37	3.20
5%	2.79	3.67
2.5%	3.15	4.08
1%	3.65	4.66

Table 3 displays the result of the bounds testing. The result indicates that the ARDL EG model has a long-term cointegration. The statistical test value obtained is 49.93 and is greater than the value of the critical bound at all levels of significance. Thus, this study concludes that there is a long-term relationship.

4.3. Model Stability Test

This study uses the CUSUM test to identify the model's stability. It intended to identify the changes in the average variables in the ARDL model. The criterion is a stable ARDL model if the CUSUM line is inside or between the significant lines. The results are shown in Figure 2 and Figure 3.

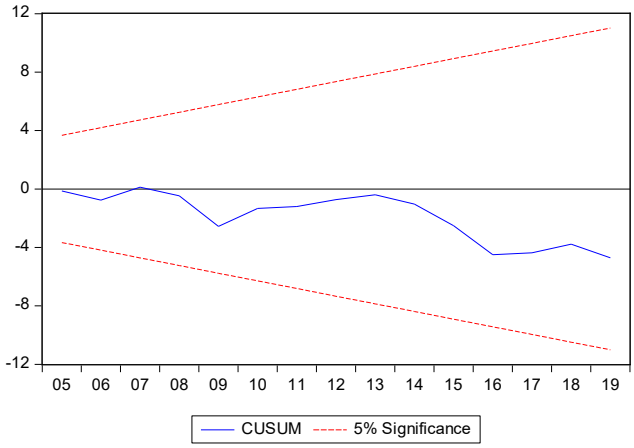

Figure 2. Result of the CUSUM Test

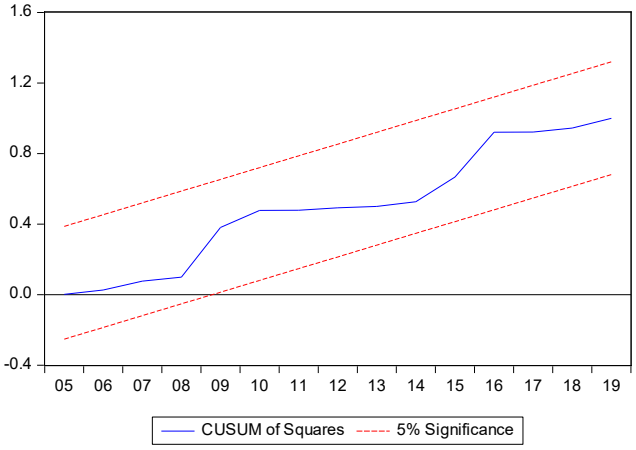

Figure 3. Results of the CUSUM Square Test

Figure 2 and 3 captures two CUSUM tests for the ARDL EG model. The results show that the model is stable. It can be seen from the CUSUM line (blue color) is within or between the 5 per cent significant line (red color) based on both the CUSUM test and CUSUM square test results.

4.4. Model Diagnostics

4.4.1. Normality Testing

Figure 4 displays the probability value of residual normality test results obtained at 0.548, which is greater than 0.05 and indicates that the data were normally distributed.

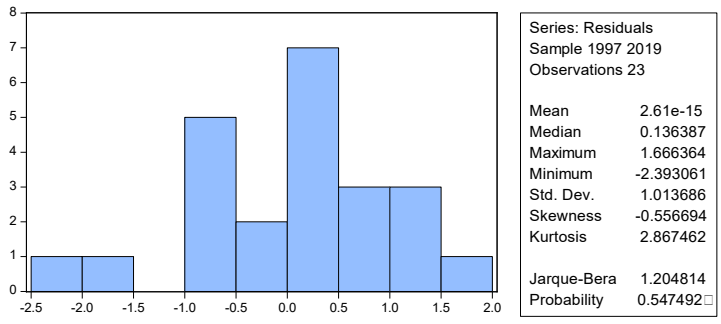

Figure 4. The result of normality testing.

4.4.2. Multicollinearity Testing

Table 4 indicates no correlation between the independent variables (r=0.80). So, this study concluded that there was no multicollinearity between the independent variables selected in this study.

Table 4. The results of the multicollinearity test.

Variable(s)	EG	TO	FDI	CPI
Economic Growth (EG)	1.0000	-0.7006	0.4167	0.2297
Trade Openness (TO)	-0.7006	1.0000	-0.3395	-0.7625
Foreign Direct Investment (FDI)	0.4167	-0.3395	1.0000	0.2961
Corruption Perception Index (CPI)	0.2297	-0.7625	0.2961	1.0000

4.4.3. Heteroskedasticity Test

Table 5 captures the estimation results based on the Breusch-Pagan-Godfrey Heteroskedasticity Test obtained a prob. chi-square value on Obs*R-Squared is 0.579 and greater than 0.05, which means that the ARDL model is homoscedasticity or there is no problem with the assumption of heteroscedasticity.

Table 5. The result of heteroskedasticity testing.

F-statistic	0.701	Prob. F	0.672
Obs*R-squared	5.668	Prob. Chi-Square	0.579

4.4.4. Autocorrelation Testing

Table 6 reports the autocorrelation result using the Breusch-Godfrey Serial Correlation LM Test. The prob. chi-square value obtained on Obs*R-Squared is 0.579 and greater than 0.05. It means that there is no autocorrelation issue in this study.

Table 6. The results of autocorrelation testing.

F-statistic	0.323	Prob. F	0.729
Obs*R-squared	1.090	Prob. Chi-Square	0.580

4.5. ARDL Estimation Results

4.5.1. Short Term

EG of the previous two years significantly affects the current EG in the short term. EG coefficient value was a negative effect with a value of -0.242107. It indicates that when there was a decrease in EG by the previous two years by 1 per cent, it would increase the current EG by 0.242 per cent. Conversely, when there was an increase in EG by the previous two years by 1 per cent, it would decrease the current EG by 0.242 per cent.

Table 7. The result of short-term relationship using ARDL approach.

Variable(s)	Coefficient(s)	Prob.
C	28.23000	0.000
EG(-1)	0.10081	0.280
EG(-2)	-0.24211	0.012
TO	-0.28732	0.000
FDI	0.00000	0.029
FDI(-1)	0.00000	0.250
CPI	0.27876	0.287
CPI(-1)	-0.58629	0.020
R-squared	0.934	
Adjusted R-squared	0.903	
F-statistic	30.401	
Prob.	0.000	

Then, TO was found to affect EG in the short term significantly. However, the TO coefficient has a negative effect with a value of -0.287316 which indicates that when there is an increase in TO of 1 percent, it will decrease EG by 0.287 percent. Conversely, when there is a decrease in TO by 1 percent, it will increase PE by 0.287 percent. Furthermore, FDI was also found to affect PE in the short term significantly. The FDI coefficient value was obtained under the theory, which has a positive effect with a value of 0.00000253 which indicates that when there is an increase in FDI of $1 billion,

it will increase EG by 0.00000253 percent. Conversely, when there is a decrease in FDI of $1 billion, it will also reduce EG by 0.00000253 per cent. Likewise, the CPI of the previous year has a significant effect on EG in the short term. However, the value of the CPI coefficient one year earlier has a negative effect with a value of -0.586 which indicates that when there is an increase in the CPI by 1 score, it will decrease EG by 0.586 per cent. Conversely, when there is a decrease in CPI by 1 score, it will increase EG by 0.586 per cent.

4.5.2. Long Term

Table 8 displays the results of the long-term EG using the ARDL model. In the long term, TO significantly affects EG. However, the coefficient obtained shows the same negative value of -0.252, which states that when there is an increase in TO in the long term of 1 per cent, EG will decrease by 0.252 per cent. Conversely, when there is a decrease in TO in the long run by 1 per cent, EG will increase by 0.252 per cent.

Table 8. The result of long-term effect using ARDL model.

Variable(s)	Coefficient(s)	Prob.
C	24.73505	0.0001
Trade Openness (TO)	-0.251745	0.0001
Foreign Direct Investment (FDI)	1.28E-06	0.1555
Corruption Perception Index (CPI)	-0.269457	0.0019

In contrast with the TO, FDI does not affect EG in the long term. Then, CPI has a significant effect on EG in the long term. However, the coefficient obtained is negative by -0.270, which shows that when there is an increase in CPI which indicates a decrease in the level of corruption in the long term by 1 score, EG will decrease by 0.252 per cent. Conversely, when there is a decrease in the long-term CPI of 1 score, EG will increase by 0.252 per cent.

4.6. Results of Path Analysis

The path analysis in this study is divided into two sub-structural regression models, and then the estimation results are used to calculate the Sobel test. The estimation results of the two sub-structural models are shown in Table 9 and Table 10.

Table 9. The result of path analysis for the first sub-structural model.

Variable	Coefficient	Standard Error	Prob.
C	-170.5264	282.1044	0.5514
Corruption Perception Index (CPI)	15.1205	10.1685	0.1506

Table 10. The result of path analysis for the second sub-structural model.

Variable(s)	Coefficient(s)	Standard Error	Prob.
C	1.9284	2.8836	0.5106
Corruption Perception Index (CPI)	0.0625	0.1080	0.5687
Foreign Direct Investment (FDI)	0.0040	0.0021	0.0709

The regression results on the first sub-structural model show that the direct effect of corruption on EG is found to be insignificant with a prob. value. obtained by 0.1506, which is greater than 0.05. The estimation results in the second sub-structural model also show that the direct effect of corruption and FDI on EG is found to be insignificant, with a prob. value for corruption found to be 0.5687 and the prob. value for FDI obtained by 0.0709 where both are greater than 0.05. After obtaining the coefficient values and standard error values from the regression results of two sub-structural models, the Sobel test was carried out to identify the significant effect of CPI on EG through FDI as moderation. The Sobel test calculation (t) is equal to 1.177. The t-table value based on the 25-years data period is 2.074. The corruption variable significantly affects EG through FDI as a moderation variable if the t-count value from the Sobel test estimation results is greater than the t-table value. However, the t-count value obtained is equal to 1.177, which is smaller than the t-table value of 2.074, so it is concluded that based on the estimation results of the Sobel test, corruption did not significantly affect EG through FDI as a moderation variable.

5. Discussion

Numerous studies have investigated Indonesian EG's determinants in the literature. Still, only some authors have tried to integrate the positive sides of TO and FDI, as well as the negative sides of corruption, in looking at the simultaneous effects on national EG both in the short and long term. Likewise, those tried to investigate the effect of corruption on EG through FDI as mediation. This research focuses on the purpose of answering these two problems. Regarding the first problem, through Autoregressive Distributed Lag (ARDL) approach, the estimation results of the partial test found that TO, FDI, and CPI significantly affected EG in the short term. Likewise, simultaneous test estimates found that TO, FDI and CPI simultaneously or together could influence EG in the short term indicating that the selection of the determinant variable of EG in this study was appropriate. Conversely, in the long term, only TO and CPI are proven to have a significant effect, while FDI does not affect EG.

Indications of the estimation results show that TO has a negative effect on EG both in the short and long term. This finding is contrary to the general theory where it is said that an increase in a country's TO with other countries will increase the variety of goods and services available domestically and open up a wider market for exports of domestic products, increasing national EG. Likewise, previous studies such as by Doğan et al. (2020), Elfaki et al. (2021), Fetahi-Vehapi et al. (2015), and Kong et al. (2021) found that TO has a positive effect on EG. Analysis of the empirical findings of TO toward EG, which are not in line with theory, we conclude that this is because Indonesia is still a developing country, the majority of TO is dominated by the consumptive side rather than the productive side, causing low technology and knowledge development in improving the quality of good utilization for natural and human resources which are essential factors in increasing a country's EG.

Furthermore, FDI positively affects EG in the short term but not in the long term. These results are consistent with previous theories and studies such as those by Asongu & Odhiambo (2020), Doğan et al. (2020), Muhammad & Khan (2019) and Osei & Kim (2020) stated that FDI is one of the main driving wheels in increasing a country's EG. Even though the presence of FDI in Indonesia is still constrained by the minimal availability of supporting facilities, unskilled workforce and inadequate technology, the contribution of FDI as a driving force for EG in Indonesia is considered quite optimal. However, various problems such as the weak enforcement of the rule of law, weak labor law, and other issues that lead to EG being not conducive to the investment climate have an impact on FDI that is not significant on EG in the long run. Then, CPI was found to have a negative effect on EG both in the short and long term. Contrary to the general understanding, a high CPI indicates a low level of corruption and should positively affect increasing EG. Theory said that corrupt practices harm investment and growth and increase economic uncertainty. Previous research has also corroborated this, such as by Alfada (2019), d'Agostino et al. (2016), Gründler & Potrafke (2019) and Malanski & Póvoa (2021) proves that the damaging effect of corruption on EG.

Although several studies have shown a supporting effect of corruption on economic development, it is said that corruption has strong effectiveness in increasing EG. In general, the findings of the damaging effects of corruption are far more numerous where corruption is understood as a factor that disrupts market behavior and is capable of distorting the expected function of economic competition, hindering EG when the cost of conducting business activities increases due to price increases resulting from bribery, reduces the government's ability to implement regulations and take action to correct market failures, and has the opportunity to hinder government intervention due to motivation from corrupt behavior. We suspect that other factors are more significant in driving EG, such as the level of public consumption, investment from within and outside the country, and government spending, making a high corruption level seem to increase EG. Still, it is these factors that drive EG numbers. Regarding the second problem, through the Path Analysis approach, the estimation results found that the effect of corruption on EG through FDI as mediation was insignificant. The hypothesis about the effect of corruption on EG through the FDI as moderation is not proven. We suspect that this is most likely influenced by not including corruption cases that occurred in the non-public sector in the making of CPI so that FDI is not relevant to be used as moderation in viewing the influence of the CPI on EG. Transparency International clearly states the indicators forming the CPI and only includes records of corruption cases in the government environment.

6. Conclusions

In conclusion, this study indicated that TO has a negative effect on EG both in the short and long term. We conclude that most Indonesian TO is still dominated by the wasteful rather than the productive side, causing low technology and knowledge development in improving the quality of natural and human resources, which is essential to increasing a country's EG. Then, this study provides a positive effect of FDI on EG in the short term and reinforces the perception that FDI is currently quite optimal in helping to increase national EG, but various problems such as the lack of strong enforcement of the rule of law, weak labor laws, and other issues which leads to the non-conducive EG for the investment climate resulting no significant impact of FDI in this study for the long term. Similar to TO, corruption has contradicted the theory and evidence from previous studies. This study found that corruption has a significant positive effect on increasing EG both in the short and long term.

Although several studies have shown a supporting effect of corruption on economic development, it is said that corruption has strong effectiveness in increasing EG. In general, the findings of the damaging effects of corruption are far more numerous where corruption is understood as a factor that disrupts market behavior, distorts economic competition, and impedes EG when the cost of carrying out business activities increases due to the increase in prices resulting from bribery, and hinders government intervention due to motivation from corrupt behavior. We suspect that other factors are more significant in driving EG, such as the level of public consumption, domestic and foreign investment, and government spending, which makes a high level of corruption seem to increase EG. Still, it is these factors that drive EG numbers.

Furthermore, we also estimated the effect of CPI on EG through FDI as moderation and found it insignificant. The hypothesis that corruption can affect EG through FDI in this study is not proven. We suspect that this is most likely influenced by not including corruption cases that occurred in the non-public sector in the making of CPI so that FDI is not relevant to be used as moderation in viewing the influence of the CPI toward EG. We suggest that future studies use other moderation variables where these variables are included in one of the indicators forming the CPI or a corruption index other than the CPI, which includes cases of corruption that occur in the non-public sector as one of the indicators forming the index.

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