



The Effect of Foreign Direct Investment (FDI) and Government Capital Expenditures on Environmental Quality in Indonesia

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KeyWords

Foreign direct investment (FDI), government capital expenditure, GDP per capita, poverty and environmental quality index.

ABSTRACT

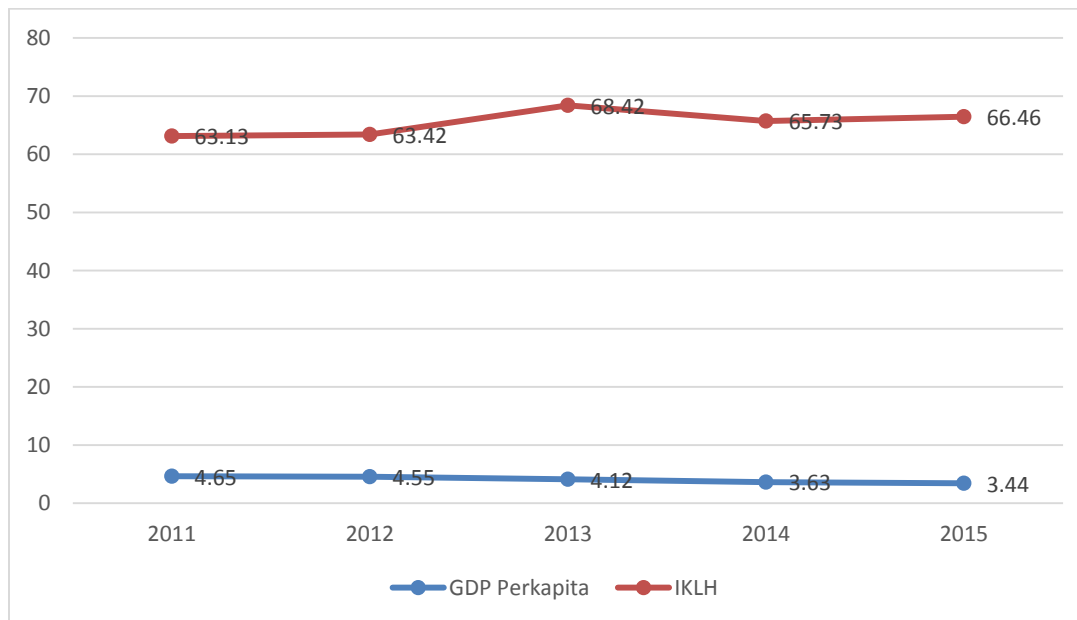
This study aims to determine the direct and indirect effects, foreign direct investment (FDI) and government capital expenditure on environmental quality in Indonesia. The data analysis technique used to discuss the problems in this study is the structural analysis model. The results showed that direct foreign investment (FDI) had no direct effect on environmental quality, but direct foreign investment (FDI) had a negative effect on environmental quality through GDP per capita and poverty, and for government capital expenditure directly had a negative effect on environmental quality, whereas Government capital expenditure has a positive effect on environmental quality through GDP per capita and poverty

I. Introduction

Sustainable development and prosperity are issues that continue to be discussed with poverty as a major problem that has not been resolved in recent decades. There have been many studies and studies, both theoretical and empirical that have tried to create a model of sustainable development, which not only prioritizes growth and poverty aspects but also involves environmental aspects, because development is as important as environmental quality.

Environmental damage and degradation of natural resources have become the news that is often heard lately. Environmental damage will not only reduce the ability of natural resources and environmental services to supply human needs, but also have considerable consequences in the midst of the suffering suffered by the community due to environmental damage, such as drought and food shortages. Not to mention if we calculate the enormous social costs borne by the community due to environmental damage that occurred. Various parties claim that qualitatively. there is an increasing trend of natural damage occurring in the Indonesian region. This tendency is in some ways triggered by the increasing economic needs with continued increase in population. Thus not only the amount of natural resources and the environment that is increasingly consumed but also the intensity is increasing. The nature of

natural resources which are public goods then lead to externalities that result in over consumption and over extraction of natural resources and the environment (Fauzi, 2009).



Sources; *Central Statistics Agency (data processed)*

Based on graph 1.1 above, GDP per capita from 2011-2015 tends to decrease, this gives an indication of the growth rate of real GDP per capita Indonesia shows a downward trend, in 2011 the growth rate of real GDP per capita reached 4.65 percent and gradually every the year continues to decline. Until 2015 Indonesia's real GDP per capita growth rate was only 3.44 percent. This figure is only half of the target of at least 7 percent per year. This shows that it still needs to work hard to achieve the goals of inclusive economic growth.

Whereas in graph 1.1 above the environmental quality index in Indonesia still has problems in its resolution, in general it has not shown any consistent improvement in the performance of environmental protection and management since 2011-2015, this gives an indication that the efforts made by the government in the performance of environmental protection and management is still not optimal to improve the quality of the environment in Indonesia.

Based on the description above concerning environmental issues, poverty and economic growth, a systematic concept framework is needed with a model of inclusive and sustainable growth that links the GDP per capita to poverty and the environmental quality index so that what the goals and ideals of development can be realized fair and equitable, therefore the author tries to analyze "The Effect of Foreign Direct Investment (FDI) and Government Capital Expenditures on Environmental Quality in Indonesia"

II. Theoretical Review

John Volger (2007), in his book *The International Politics of Sustainable Development* noted, at that time there were 27 experts who tried to articulate the relationship between environment and development. They stated that although in individual instances there were conflicts between environmental and economic priorities, they were intrinsically two sides of the same coin (Paul,

2008). This shows that basically environmental problems have the same priority value as development.

This research tries to use the pattern of handling the environment by analyzing the relationship between economic growth and the environment. In 1991 Grossman and Krueger developed the concept of Environmental Kuznet Curve (EKC) in which they applied the Kuznet hypothesis to determine the relationship of economic growth with environmental quality. The EKC hypothesis shows the contribution of economic growth to higher emissions but further economic growth is then able to reduce environmental degradation. This is due to technological advances and a shift to a service-based economy (Grossman & Krueger, 1991).

In addition, rapid economic growth is generally accompanied by environmental damage. Economic growth requires an increase in the production of goods or services so that people's needs can be met and can reach the needs of the global community. On the other hand, economic growth leads to reduced natural resources and causes environmental damage such as pollution. Pollution is a negative externality as a consequence of producing goods or services. In almost all cases of economic activity, production and consumption technology automatically generates pollution (Lipsey & et al, 1994). Meanwhile, Daly (1997) argues that economic growth will push the world economy toward its limits or the carrying capacity of the environment is increasingly limited.

Trade affects the environment as a result of increased economic activity. Some environmental damage in the world occurs as a result of increasing scale of global economic activities such as international trade. Trade changes the composition of economic activity and production techniques which causes increased pollution (Grossman & Krueger, 1991). Trade liberalization tends to increase trade volume, expand economic activity, and affect environmental quality. Some empirical evidence shows that trade openness has led to lower environmental standards (Opoku E. E., 2013).

Based on the description and research above, the authors believe that the influence of foreign direct investment (FDI) has a major contribution to environmental quality, this depends on the policy patterns and investment objectives of certain economic sectors, with investments in the right economic sector will certainly have a positive impact on the environment, conversely investment that is merely profit oriented and ignores environmental issues will have a negative impact on environmental quality.

III. Research Methods

The type of data to be analyzed in this study is secondary data in the form of panel data (pooled data) with the characteristics of a cross section and time series simultaneously. The cross section data in this study is data that consists of provincial data in Indonesia. As for the time series data, it is time series data with the time / period dimension in this study using the 2011-2017 period.

The analysis technique used in this study is a structural model analysis method to determine the effect of Foreign Direct Investment and Government Capital Expenditure on environmental quality in Indonesia, with the following equation.

Structural analysis equation can be written into the equation as follows:

$$y_1 = f(x_1, x_2)$$

$$y_2 = f(y_1)$$

$$y_3 = f(x_1, x_2, y_1, y_2)$$

Equation can be summarized as:

$$Y_3 = A_0 + A_1 \ln X_{1it} + A_2 \ln X_{2it} + A_3 Y_{1it} + \mu_{123}$$

Where :

$$A_0 = \delta_0 + \delta_3 a_0 + \delta_4 \beta_0$$

$$A_1 = \delta_1 + \delta_3 a_1$$

$$A_2 = \delta_2 + \delta_3 a_2$$

$$A_3 = \delta_4 \beta_1$$

$$\mu_{123} = \delta_3 \mu_1 + \delta_1 \mu_2 + \mu_3$$

Where A_0 , A_1 , A_2 , and A_3 are the parameters to be estimated, while μ_{123} is the team error from the environmental quality index variable.

Information :

Y_3 = Environmental Quality Index

Y_2 = Poverty

Y_3 = GDP Per Capita Growth

X_1 = Foreign Direct Investment (FDI)

X_2 = Government Capital Expenditures

IV. Results And Discussion

a. Effect of direct variables

Table 1 Effect of Direct Variables

Variable Relationship	Koefisien	Probabilitas	Information
GDP Per Capita <--- FDI	0,161	0,112	Not significant
GDP Per Capita <--- Government Capital Expenditures	-0,913	0,000	significant
Poverty <--- GDP Per Capita	0.007	0,947	Not significant
IKLH <--- Poverty	0,057	0,947	Not significant
ILKH <--- GDP Per Capita	-0,747	0.006	significant
ILKH <--- FDI	-0,326	0,387	Not significant
ILKH <--- Government Capital Expenditures	-5,407	0.000	significant

Source; SPSS (data processed)

Based on the analysis of the direct effects presented in Table 1, the following results are obtained:

The estimated results of the regression coefficient value of FDI to GDP per capita are (0.161) and probability values (0.112). This indicates that FDI has a positive but not significant effect on GDP per capita. This means that any change in either an increase or decrease in FDI does not affect the increase in GDP per capita

The estimated results of the regression coefficient value of government capital expenditure on GDP per capita of (-0,913)

and the probability value (0,000). This indicates that government capital expenditure has a negative and significant effect on GDP per capita. This means that every 1 percent increase in government capital expenditure will reduce GDP per capita (0.913) percent and vice versa every 1 percent decrease in government capital expenditure will increase GDP per capita by (0.913).

The estimation results of the regression coefficient value of GDP per capita to poverty amounted to (0.007) and probability values (0.947). this indicates that GDP per capita has a positive and not significant effect on poverty. This means that any increase or decrease in GDP per capita does not affect poverty.

The estimated results of the poverty regression coefficient values for IKLH are (0.057) and probability values (0.947). This indicates that poverty has a positive but not significant effect on IKLH. This means that any increase or decrease in poverty does not affect IKLH.

The estimation results of the GDP per capita regression coefficient value for IKLH are (-0.747) and the probability value (0.006). This indicates that GDP per capita has a negative and significant effect on IKLH. This means that every 1 percent increase in GDP per capita will decrease IKLH by (0.747) and vice versa every decrease in GDP per capita 1 percent will increase IKLH by (0.747).

The estimated results of the FDI regression coefficient value for IKLH are (-0.326) and the probability value (0.387). This indicates that FDI has a negative and not significant effect on IKLH. This means that any increase or decrease in FDI has no effect on IKLH.

The estimated results of the coefficient value of the government capital expenditure regression to IKLH are (-5.407) and the probability value (0,000). This indicates that government capital expenditure has a negative and significant influence on IKLH. This means that every 1 percent increase in government capital expenditure will reduce IKLH by (5,407). And vice versa, every decrease in government capital expenditure by 1 percent will increase IKLH by (5,407).

b. The effect of indirect variables

Table 2 Effect of indirect variables

Variable Relationship			Koefisien	Probabilitas	Information
Poverty	<---	FDI	0,001	0,106	Not significant
Poverty	<---	Government Capital Expenditures	-0.006	0,000	significant
IKLH	<---	FDI	-0.120	0,001	significant
IKLH	<---	Government Capital Expenditures	0,682	0.000	significant

Source; SPSS (data processed)

Based on the analysis of the relationship of variables indirectly can be presented as follows:

The estimated results of the regression coefficient value of the indirect relationship of FDI to poverty is (0.001) and the probability value is (0.106). This indicates that FDI has a positive but not significant effect, meaning that any increase and decrease in FDI does not have an impact on poverty.

The estimated results of the regression coefficient value of the indirect relationship of government capital expenditure to

poverty is (-0.006) and the probability value is (0,000). This indicates that government capital expenditure has a negative and significant impact on poverty. This means that every 1 percent increase in government capital expenditure will reduce poverty (0.006), on the contrary every decrease in government spending will increase poverty (0.006).

The estimated results of the regression coefficient value of the indirect relationship of FDI to IKLH is (-0.120) and the probability value is (0.001). This indicates that FDI has a negative and significant effect on IKLH. This means that every 1 percent increase in FDI will reduce IKLH by (0.120) Conversely, every 1 percent decrease in FDI will increase IKLH by (0.120).

The estimated results of the regression coefficient value of the indirect relationship of government capital expenditure to IKLH are (0.682) and the probability value is (0.000). This indicates that government capital expenditure has a positive and significant influence on IKLH. This means that even a 1 percent increase in government capital expenditure will increase IKLH by (0.682) and vice versa any decrease in government capital expenditure by 1 percent will reduce IKLH by (0.682).

Conclusion

Based on the data that is processed and analyzed, it can be concluded:

- a. Direct foreign investment (FDI) does not directly affect environmental quality, but indirectly foreign direct investment (FDI) has a negative effect on environmental quality through GDP per capita and poverty.
- b. Government capital expenditure directly has a negative effect on environmental quality, but indirectly government capital expenditure has a positive effect on environmental quality through GDP per capita and poverty.

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