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The Relationship Between Crime and Economics Growth in Indonesia

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Abstract

Indonesia has abundant natural resources and human resources. Those diversities can accelerate the pace of the economy. However, along with that, the number of crimes becomes a serious problem. This study examines another angle in economic growth by using the number of crimes and economic variables in influencing economic growth. Using panel data on provinces in Indonesia is expected to be able to comprehensively see the relationship between Human Development Index, Investment, the level of corruption and the level of crime against economic growth in Indonesia.

Keywords: Crime, human development index, investment, economic growth

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1. Introduction

The complexity of developing countries such as Indonesia in improving public welfare is not only limited to the unemployment problems, per capita income and the factors in economic growth. The security for investments made by both domestic and foreign investors plays an important part in increasing economic growth. Goulas and Zervoyianni, 2013 stated that there is an asymmetric relationship between increasing numbers of criminals and economic growth. Similarly, Peri, 2004 using panel data at the provincial level in Italy between 1951-1999 found that crime having a significant effect on the decline in per capita income and a decrease in the growth of the labor force.

The crime rate will indirectly reduce the quality of economic growth. The crime is not only limited to criminal crimes such as theft, or fraud, but also economic crimes such as corruption. Corruption economically weaken the system of production, distribution, marketing, quality of products produced. The negative impact of an increase in the number of crimes against economic growth in an area is the increase in the variable costs of production produced. Increased costs, will have an impact on the value of the selling price of goods or services produced so that the impact on the amount of goods sold and will reduce the value of Gross Domestic Product (GDP).

The total area of Indonesia which is divided into more than 30 provinces with diverse topography and culture makes the potential for crime to grow well if there is no strict control from the government. Up to 2013 there were 46,064 theft incidents with weighting.

TABLE 1: Crime Type Development in Indonesia.

Crime Type	2013	2014	2015	2016
Murder	1.386	1.277	1.491	1.292
Severe Persecution	15.958	13.996	14.664	14.468
Rape	1.690	1.715	1.739	1.594
Abduction	361	336	380	374
Theft	25.593	24.538	26.298	26.636
Drugs	19.953	19.280	36.874	39.171
Embezzlement	21.345	21.404	21.646	20.459
Corruption	537	814	1.780	1.318

Source: Crime Statistic, 2017

The increase in various types of crime rates in Indonesia will directly impact on the production process to distribution of goods and services ultimately to economic growth. The crime rate will also provide a negative perspective on investors in investing in an area.

Some previous studies that look at crime rates can reduce economic growth, as is the case (Cárdenas, 2007) using data series between 1950-1979 which stated that there was a negative relationship between crime rates and per capita income. Similarly (Mauro and Carmeci, 2007) said that crime has a negative impact on income levels in Italy. (Detotto and Pulina, 2009) using six types of crime rates and unemployment rates in Italy between 1970 and 2004 resulted that the six levels of crime in the long term will have an impact on the decline in unemployment growth. In addition (Chatterjee and Ray, 2009) using data in European countries collected through the United Nations Interregional Crime and Justice Research Institute (UNICRI) with a range of time between 1991 - 2005 in European countries and using human capital and institutional quality as a variable control results in that there is no strong evidence of the relationship between crime and economic growth.

Various results of analytical studies between crime and economic growth in various countries indicate that crime does not always affect economic growth. This can be caused in some countries the crime rate is very low, so that the process of economic activity can run smoothly. Developed countries such as countries in Europe have a good

level of quality human resources so that the percentage of crime in Europe is low and the rate of economy is good as stated (Chatterjee and Ray, 2009). Economic growth in developed countries is supported by quality not only from the level of consumption, but more from the quality of human resources. Being in line with a country that has a large population such as India and Indonesia whose economic growth is supported by the level of consumption of its people (Ernita et al., 2013).

Indonesia as a country with a high level of background diversity both in terms of natural resources and human resources is the background in this study as for the formulation of the problem raised is to determine the impact of crime on economic growth in Indonesia. Knowing the relationship is expected to provide a new discourse on how to increase economic growth.

2. Method

This study uses panel data composed of 31 provinces in Indonesia between 2008 - 2016. Secondary data collection was obtained from the Central Statistics Agency (BPS), namely the Human Development Index (HDI), total investment, general crime index (Cr $_1$), index Economic crime or corruption (Cr $_2$) against Gross Regional Domestic Product (GRDP) to measure economic growth. The form of adopted models developed by (Goulas and Zervoyianni, 2013) is as follows:

$$\text{Ln(PDRB)}_{it} = \delta_0 + \delta_1(IPM)_{it} + \delta_2(INV)_{it} + \delta_3(CR1)_{it} + \delta_4(CR2)_{it} + \varepsilon_{it}$$

δ_i is the parameter to be searched for in the research and ε error, while measuring the index of general crime and economic crime or corruption follows the following equation.

$$CR1 = \frac{\sum \text{Crime}}{\text{population}} \cdot 100\%; \quad CR2 = \frac{\sum \text{corruption crime}}{\text{population}} \cdot 100\%$$

The Human Development Index represents the level of technology inherent in humans, where the elements of the HDI calculation according to the Central Bureau of Statistics consist of health dimensions, education dimensions, and expenditure dimensions. The hypothesis built in this study is on parameters δ_1, δ_2, δ_3, δ_4 having positive influence on economic growth. INV is an investment made both from domestic and abroad. In the data processing the equation above will be tested with 3 models where INV will be divided into 2 variables, namely INV1 (PMA / FDI) and INV2 or PMDN (domestic investment).

Model 1

$$\text{Ln(PDRB)}_{it} = \delta_0 + \delta_1(IPM)_{it} + \delta_2(INV1)_{it} + \delta_3(INV2)_{it} + \delta_4(CR1)_{it} + \delta_5(CR2)_{it} + \varepsilon_{it}$$

Model 2

$$\text{Ln(PDRB)}_{it} = \delta_0 + \delta_1(IPM)_{it} + \delta_2(INV2)_{it} + \delta_3(CR1)_{it} + \delta_4(CR2)_{it} + \varepsilon_{it}$$

Model 3

$$\text{Ln(PDRB)}_{it} = \delta_0 + \delta_1(IPM)_{it} + \delta_2(INV1)_{it} + \delta_3(CR1)_{it} + \delta_4(CR2)_{it} + \varepsilon_{it}$$

3. Results and Discussion

The growth of Indonesia's economy in Indonesia is supported by consumption, increasing government spending in the regions will accelerate the pace of economic growth (Kusuma, 2016). The role of the government is very strategic to drive the rate of economic growth to regional units. Until the second quarter of 2018, the GDP value in Indonesia reached Rp.2,603,748 billion with the dominance of household consumption expenditure of 54%.
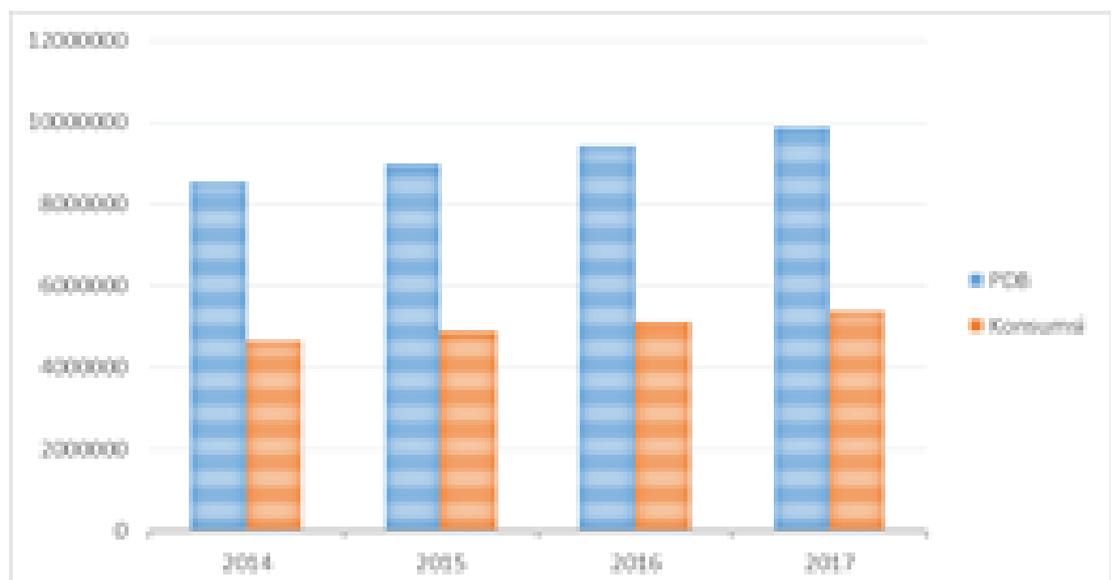
Figure 1: GDP Value and Household Consumption (in Rp. Billion). (Source: BPS, 2018.)

The level of consumption is strongly influenced by the ability of households in income sources. One source of community income is from working returns. Companies in seeking production factor inputs such as labor force certainly consider several things, including the most important are the quality of resources and the needs of the company in the use of labor. The higher the demand for output produced by the company, the more need for labor will increase, so that the returns obtained by the community will be more and more even.

On the other hand, input production factors needed by companies in producing goods and services include investment. Investments in companies that produce in Indonesia, one of which comes from the community, can be in the form of *direct investment* between households with companies or through financial institutions such as banks that function as distributors of communities that have excess funds with companies that need investment.

Indonesia, which grows with diversity of people and natural resources, makes economic character different from other countries. The high level of crime in Indonesia also influences economic activity. In average, the growth rate of crime in Indonesia is under 1%, although in a few years the number of crimes has decreased. the high level of crime can be triggered by several things including the level of unemployment, the level of poverty, the need for food sources.
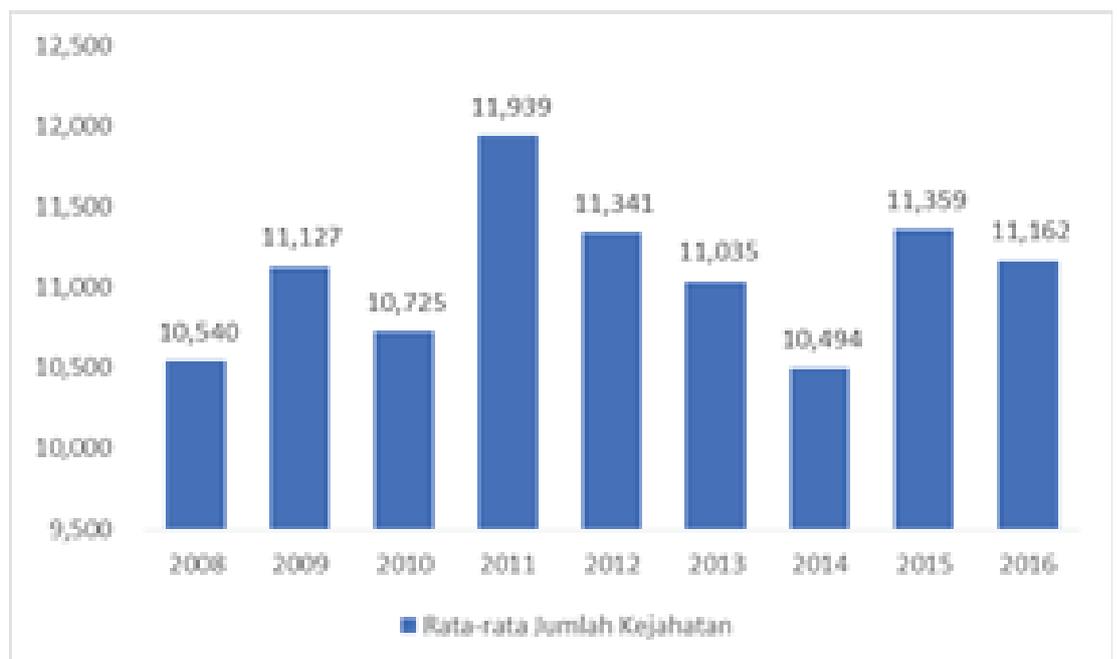
Figure 2: Average Number of Crimes in Indonesia (Source: BPS, 2018).

The quality of human resources as a measure of people's ability to access development results in obtaining income, health and education is reflected in the Human

Development Index (HDI). In the HDI there are 3 main parameters, namely the *first* health index that reflects the quality and life expectancy of the Indonesian people. *Secondly,* education index consisting of school long-term expectations index and average index of school length. *The three* Expenditures Index is information about the amount of expenditure per capita of Indonesian people. In general, the HDI value in Indonesia did not experience a significant increase between 2010 and 2016. The average HDI increase was not more than 1%, only in 2013 experienced an increase of 18.23%.
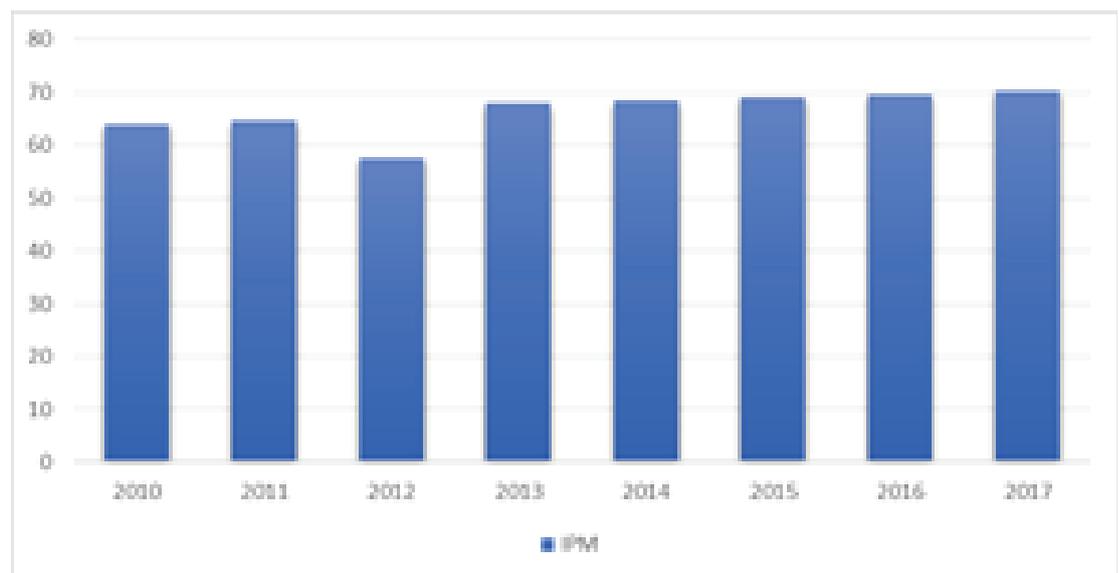
Figure 3: Human Development Index (Source: BPS, 2018).

PLS is the most appropriate approach in answering the formulation of the problem of how the impact of crime on economic growth in Indonesia. The number of cross section data is 31 provinces in Indonesia with the year of observation between 2012 and 2016. The estimation results can be seen in the table below.

The results of analysis using PLS show that FDI has a positive relationship to GRDP growth. As stated by (Barro, 1991, Levine and Renelt, 1992, Bassanini et al., 2001, Adam and Bevan, 2005, Borys et al., 2008, Romero-Avila and Strauch, 2008) which states that economic growth is positively influenced by investment. Investment is one of the backbones in increasing production capacity. Increased investment in the industrial sector is able to reduce the basic and variable costs, so that the amount of output produced is increasing and can reduce prices which ultimately impacts the purchasing power of the people. Investments in the government function to improve services and infrastructure that can be utilized by all communities to accelerate the economy.

TABLE 2: Results of data processing Pooled Least Square.

Dependent Var. Ln (GRDP)	Model 1	Model 2	Model 3
Regressor			
HDI	0.004904 [1,39146]	0.003815 [0.96122]	0.007807 *** [1,881159]
PMA	0.000150 * [6.45428]		0.000251 * [10.95074]
PMDN	2.99E-05 * [7.83196]	4.36E-05 * [12,1566]	
CR1	-0.084217 ** [-2,52360]	-0.088394 ** [-2.34988]	-0.098585 * [-2.498464]
CR2	-117.5927 *** [-1.749791]	-158,9059 ** [-2.10689]	-181.2292 ** [-2,294,122]
C	4,599258 * [18.9110]	4.749974 * [17,40401]	4,490338 * [15,61722]
R-Square	0.657696	0.561994	0.516778
F Test	57.25714	48,11527	40.10404
Prob. F	0.000000	0.000000	0.000000

Description: dependent Var. Ln (GRDP) total panel (balanced) observation 155. * (sig level 1%) * * (sig level 5%) *** (sig level 10%)

Human Development Index on the model 1 shows the coefficient value of 0.004904 positive and not significant. Improving human quality reflected in the HDI cannot accelerate the pace of economic growth in Indonesia. Educated and trained human resources can have a major impact on improving company performance which in turn can have an impact on community income, welfare and economic growth. The distribution of investment in Indonesia is not evenly distributed in each province, the highest concentration is located in the provinces on the island of Java.

Crime in general can interfere with economic, political and security stability activities. The results in model 1 show that there is a negative correlation between general crimes represented by CR1 against GRDP. Likewise, the economic crime represented by the number of criminal acts of corruption with CR2 variables results in a negative relationship to GRDP. This indicates that any general or special crimes such as corruption will reduce the level of GRDP which will then reduce the rate of economic growth in Indonesia.

The role of the government in reducing the level of general crime is needed to create an atmosphere that is conducive to economic activities. General crimes are not only limited to criminal acts, but illegal collection activities that can increase unexpected costs for perpetrators of economic activities. The role of the government in reducing the level of crime and illegal fees will reduce social costs which in turn can boost economic growth in Indonesia.

4. Conclusion

Based on the discussion above, it can be concluded that both domestic and foreign investments have a positive influence on economic growth. While crime in general and corruption affect negatively on economic growth. This indicates that any general or special crimes such as corruption will reduce the level of GRDP which will then reduce the rate of economic growth in Indonesia.

The role of the government and all stakeholders in combating both public crime and financial crime such as corruption is very necessary. Such crimes will increase social costs that will become a burden of the government budget and will reduce economic growth. For this reason, there is a need for synergy in eradicating crime at all levels of society.

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