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# The Links between Economic Reform and Corruption: Evidence from Selected Asian Countries

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## ARTICLE INFO

## ABSTRACT

*This paper aims to explore the links between the economic reform and the corruption. Because of the conducive economic reforms have attracted the interest of academicians and scholars, it's predicted to reduce corruption, as well as being a subject of academic discussion and policy debate. This view is supported by international institutions which also have interests and justifications for reform programs in many countries, both successful and unsuccessful. The article discusses the methods and empirical aspects of using the panel data approach. The paper applies the pooled model, the fixed effects model, and the random effects model. This method helps us to see the link between economic reform and corruption, by involving other variables such as the growth rates of real gross domestic product per capita, the government effectiveness index, and the dummy variables. For dummy variable, we used the political freedom, the freedom of civil society, and the Human Development Index. The data is obtained from the publication of the World Bank, Asian Development Bank, and UNICEF website. The observation period from 1996 to 2017 for selected Asian countries. The study found that the economic reform has a positive effect on corruption, it reinforces the argument that the economic reform will increase welfare, eventhough it's not guarantee reducing the desire to behave in corruption for every economic agent. In addition, the government efficiency plays an important role because it's become a driving force for strengthening the government services, thereby reducing the intensity of corruption.*

# INTRODUCTION

Some researchers saw the corruption has become a universal phenomenon, not only experienced by a country, but also has reached public institutions and also private institutions, where corruption become more widespread, not only in developing countries but also in transition countries and in developed countries. The crisis experienced by several countries, at first the country has been able to achieve high economic growth for several decades, but this country is also not free from the latent potential for corruption so that this country cannot become hostage to the problem of corruption (Yu, 2008). So it is not surprising, the majority opinion stated that the war on corruption, of course this has broad support from the international community. Many negative effects of corruption, including corruption inhibits investment, the allocation of resources is distorted due to corruption, and the economic system becomes inefficient. In addition, the decrease in the intensity of corruption does not always occur in some countries, because corruption has become increasingly adaptive and able to transform with political changes and socio-economic conditions (Kamal et al., 2018).

Many academicians have paid attention to the determinant, reason, and consequences of corruption, as well as trying to find ways to reduce corruption. Existing studies have given identification of two groups of variables as determinants of corruption, namely socio-cultural variables (such as party fragmentation and general elections in a country) and variables related to the economy (Monte and Papagni, 2007). The previous literatures have seen the relation between corruption and some economic outcomes, such as gross domestic bruto, gross domestic bruto per capita, growth, quality of life, and unemployment (Moiseev, 2020). However, from existing studies, there are not many studies that use instruments of economic reform as determinants of corruption prevention (Kamal et al, 2018). Although, there have been several study initiatives that have tried to look at the link between corruption and economic freedom (Pieroni and D'Gostino, 2013; Saha et al., 2009; Goel and Nelson, 2005; Graeff and Mehlkop, 2003).

The literature have identified key proxy variables (such as economic reform variables) and these studies are important, such as Kamal et al. (2018), Olofsgard and Zahran (2008), and Goel and Nelson (2005). Olofsgard and Zahran (2008) use economic reform instruments and shape them into binary variables that are defined as trade openness and equity market liberalization. Goel and Nelson (Ibid.), using the corruption data although this data cannot be compared between time; as for the research of Kamal et al. (2018) using a proxy for economic reform variables in the form of an index of economic reform that has been introduced and also calculated by the Heritage Foundation.

Based on previous studies, it still seems to provide evidence that tends to be ambiguous so this has prompted some researchers to conduct a number of empirical studies involving many countries. While some previous studies have not been able to provide clear conclusions on the relationship between the two variables, not necessarily mean that the previous study failed but due to a number of reasons and assumptions from each study. Studies with this theme are still being conducted, such as, Goel and Nelson (2005) using the Corruption Perception Index (CPI). Kamal et al. (Ibid.) state that there is a change in the measurement methodology, so it's suspected a mismatch of scores that might become incompatible if the research involves a range of certain periods. So, there are still an opportunities to conduct research on this topic, namely the link between economic reforms and corruption, especially if it related to the relationship between the economic reform, as well as its success or failure to reduce the intensity of corruption.

The paper is structured as follows. The next section provides a brief overview of the literature review that discusses economic reform and corruption. Then, the section for the data and analysis techniques used to empirically demonstrate the link between economic reform and corruption. After that, the section for the empirical findings and the empirical results are discussed. The last section summarizes the key points of this study's research findings, the recommendations for the future research, limitations, and the suggestions.

# 1. LITERATURE REVIEW

The link between economic reform and corruption is claimed by various studies and should even have a positive relationship. This claim is believed and understood by most scholars both directly and indirectly. According to Kahn (2011), says that economic reform is expected to produce a society that is not corrupt, where this argument can be found for smaller countries. But this does not always apply, where some experts argue that *"there is a tendency for government authorities to get out of control because they are too big and progressively corrupt"*.

The state generally creates an agency in the form of a working group to tackle corruption in order to promote this. It was also stressed that in different countries , economic policy reform must become one of the key pillars of anti-corruption strategies (Estache et al., 2009). The potential for failure, however, exists as economic reform goes hand in hand with corruption reduction efforts. If it is possible for economic reform policies to fail to eliminate corruption, there would be a range of explanations and arguments to justify the failure (Graeff and Mehlkop, 2003; Goel and Budak, 2006). First, as part of a certain class which profits from the reforms, the reform agenda is often promoted, because it tends to lead to higher compensation. It is also noticed that, facing crucial concerns about the viability of change, there is a change program carried out by domestic opponents with the motive of "ensuring the support" of an foreign audience. Sometimes, these domestic opponents often have a corrupted mindset and often do not have the capacity necessary. Second, the reform does not have to tackle corruption, because policies can be poorly formulated and executed (Graeff and Mehlkop, 2003; Goel and Budak, 2006; Olofsgard and Zahran, 2008; Saha et al., 2009; Pieroni and D'Agostino, 2013).

Based on the explanation above, there are still main issues, not only the concern of researchers and academics, but also several international institutions. The issue of corruption and its relation to economic reform, on the other hand, has become the main issue domain for several international institutions, including the World Bank. According to Kamal et al. (2018), the basic idea is how to make economic reform as a tool to reduce the interest of corruption for economic actors. Where this corrupt behavior often appears in every reform program that is being carried out by a country. Initially, corruption was often used as an excuse to carry out the reform agenda, and then, as an excuse when failures of the reform program that had been implemented.

Some studies seem not to have succeeded in producing findings that can be mutually agreed upon, in other words the findings produced tend to be ambiguous. Of course, this encourages research involving this issue to be more interesting especially from the empirical side by involving the experience of countries that have carried out economic reforms. One study that has been carried out has sought to pay attention to the individual side of corruption and economic reform. The research of Olofsgard and Zahran (2008) has looked at the relationship between corruption and economic reform. However, to assess this, trade openness and stock market liberalization, the study uses two distinct binary metrics. Therefore, it suggests that the different ways in which the government controls the economy have not been able to understand it and therefore may not have the ability to grasp the multidimensional essence of this phenomenon. The trade openness index has also been criticized because two components, namely the black market premium and the state monopoly on key exports, are pushing it too much. As Koyuncu et al (2010) have done with regard to the economic transition conditions that occur in a country, where the economic transition often presents the idea of privatization as a protest effort and a solution to the form of inefficiency caused by corrupt behavior. Similar studies in their development, not only use measures of perception of corruption, but also involve other measures such as the Economic Freedom Index, the Governance Index, and other relevant measures. Although, existing studies seem still not enough to be able to explain the link between economic reforms and corruption, then how the influence between them.

Some academics try to see the relationship between these two main variables by collecting data from various relevant sources. Where the proxy measurement of economic freedom often has several additional components such as the existence of labor market rules that differ in each country. But there are also researchers who refer to relatively similar data sources such as Pieroni and d'Agostino (2013),

Saha et al. (2009), Graeff and Mehlkop (2003), and Goel and Nelson (2005); in their efforts to see the link between economic reform and corruption.

From the review literature above, the authors see that there is still a gap to conduct studies related to the relationship between economic reform and corruption, with a focus on selected Asian countries, particularly countries that are simultaneously experiencing economic and political pressure. Of course, in order to prove whether economic reform will minimize corruption or vice versa, this is a question for a separate discussion. The scope of the analysis is therefore very open and wider for studies that use economic reform measures that are in line with the actual reform measures, especially they have been carried out in different countries.

# 2. DATA, EMPIRICAL MODEL AND PANEL DATA APPROACH

## 2.1 Data

The data for this paper uses annual data, where some countries involved such as Indonesia, Malaysia, Thailand until South Korea; during the 1996-2017 period. This paper model consists of the main dependent variable (corruption) as measured by the aggregate indicator 'Corruption Control obtained from World Governance Indicators published by the World Bank. This indicator represents the public perception of public authority. The value is higher, the corruption tend to lower, besides the value of this indicator can also be used to identify cross-country differences to see whether there is a tendency for changes in corruption between countries and between time.

The main independent variable is the economic reform variable (econref) which was built from IEF (Economic Freedom Index) data was published by the Heritage Foundation. This index was formed from 10 specific components of economic freedom that have four main aspects in which the government has policy power, such as rights to housing and land, effective justice, and government integrity, tax and fiscal rules, government expenditure, labor costs, business procedures, monetary instruments, trade policies, investment regulations, until financial markets. This variable built from the total value that has been calculated and provided by the Heritage Foundation, where this value has a range from 0 to 100.

In addition, this study also involves control variables consisting of growth rates of real gross domestic product per capita (grpdbkapita), government effectiveness index (goveff), dummy variables, namely representation of political freedom (dpolright) and freedom of civil society (dcivlib), and variables Human Development Index (HDI). In this study, the authors argue that if the salaries of government officials increase, there is a tendency for corruption to decrease, so that the potential revenue of the population may increases. Then, the growth rate of real GDP per capita could be reduce corruption in other words the expected magnitude from regression results are negative. Some of the data, namely the GDP data and the government effectiveness index, we got from the publication of the World Bank and Asian Development Bank website. Data on political freedom and freedom of civil society are obtained from the Freedom House website, while human development index data is obtained from the UNICEF website.

## 2.2 Empirical Model

The empirical model refers to the study of Kamal et al (2018). The author made a few modifications because it adjusts the availability of data and there may be other limitations in this paper. The empirical model is presented in equation (1), as follows

$$\text{corruption}_{it} = \alpha_o + \beta_1 \text{econref}_{it} + \beta_2 \text{goveff}_{it} + \beta_3 \text{dpolright}_{it} + \beta_4 \text{dcivlib}_{it} + \beta_5 \text{grpdbkapita}_{it} + \beta_6 \text{hdi}_{it} + v_{it}$$
(1)

From equation (1), the subscript sign i is country and t is year. The dependent variable is corruption, represents the value of the level of corruption, while econref as the main independent variable is eco-

nomic reform. Control variables involved in the empirical model, namely goveff is an indicator of government effectiveness, dpolright and dcivlib are dummy variables where dpolright will be worth one for a country that at time t belongs to the category of countries that have freedom of political rights and the dcivlib variable will be worth one when countries which at the time were included in the category of freedom of civil rights. The grpdbkapita variable defined by the real per capita growth rate variable and the hdi represents the human development index. The hdi variable can also be an indication that when the value is low, there is a tendency for political freedom and civil society rights to decrease, in other words, reduced freedom of political rights and civil society rights.

## 2.3 Panel Data Approach

This paper uses panel data estimation techniques, with the literature stating that the pooling is defined through the process of pooling data between time (time series) and between individuals (cross section). The resulting data is called pooled data or longitudinal data or panel data. There are many benefits of using panel data, first, panel data can capture a limited number of observations, so the researchers can obtain larger observations for the advantage of estimating population parameters, which offers the advantage of a wide degree of freedom and reduces the potential for collinearity between independent variables. Second, for variables that are not included in the model (unobserved individual heterogeneity), panel data is able to accommodate the level of heterogeneity. Third, panel data enables individual characteristics to be calculated independently, whether for intertemporal data or inter-individual data. The researcher can estimates the individual features that represent the inter-time dynamics of each independent variable by applying both. Therefore, the analysis of the estimation results would be more detailed and involve aspects that could be closer to fact (Baltagi, 2005).

Owing to the presence of some disturbances, this can create problems when conducting analysis with panel data consisting of many individuals and involving multiple time periods. There are intertemporal disturbances, inter-individual disturbances (disturbances of the cross section) and disturbances from both of them. In a model involving inter-time disturbance and inter-individual disturbance, the general form of the econometric model is as follows (Judge et.al, 1988).

$$y_{it} = \beta_{1it} + \sum_{k=2}^{k} \beta_{kit} x_{kit} + u_{it} \quad \text{i=1,..N;t=1,...,T} \tag{2}$$

Where i represents the unit cross section, t is time, $y_{it}$ is the dependent variable, $x_{kit}$ is a non-stochastic explanatory variable, and $u_{it}$ is a disturbance term for each individual i and time t. The stochastic form $u_{it}$ is assumed to have a mean of zero, $E[u_{it}] = 0$, and a constant variance of $E[u_{it}^2] = \sigma_{it}^2$. Thus, the analysis of panel data seeks to accommodate the variations (heterogeneity) that arise as a consequence of each individual or the time difference. Researchers may use models that have different intercepts to reflect a condition of heterogeneity between individuals and over time. It assumes that the different intercept values derive from the influence of variables since they are not included in the regression equation's explanatory variables (it's defined as the omitted variable). The omitted variable is expressed in the equation above in the form of a disturbance term.

In panel data analysis, the concept of disturbance can be divided into two categories: first, the regression model with a component of one-way disturbance (The One-Way Error Component Regression Model), with a structure of disturbance forming ($u_{it}$), $u_{it} = \mu_i + v_{it}$. Where $\mu_i$ is an individual effect that is not included in the study item, $v_{it}$ represents the disturbance residue that has no association with the independent variable ($x_{it}$). The error term $\mu_i$ varies between individuals but it's constant over time (time invariant). Thus, $\mu_i$ reflects the discrepancy between individuals but it's not used as the independent variable in the regression estimation. While $v_{it}$ is a disturbance that varies between individuals or between times in the regression outcomes.

Second, the regression model with a component of two-way disturbance (The Two-Way Error Component Regression Model), with a structure of disturbance forming ($u_{it}$), $u_{it} = \mu_i + \lambda_i + v_{it}$. Where $\mu_i$ represents the individual effect which is not included in the study item, it varies between individuals and constant over time. Then, $\lambda_i$ is the unexplored time effect and $v_{it}$ represents the residual effect of the disturbance that has no relationship with the independent variable ($x_{it}$). Therefore, $\lambda_i$ does not vary be-

tween individuals (individual invariant) and takes into account the time effect not included in the regression.

This paper uses a static panel data approach with a general model as described in the previous paragraph. In this paper, the static panel data method is chosen because it does not have the lag of the dependent variable, where in the empirical model these variables are typically explanatory variables. In addition, the selection of the panel data model has three fundamental assumptions, first, individual time-invariant, the model with omitted variables that are different between cross-section units but constant over time, such as gender. Second, the individual-invariant period, the model between the observed periods with various omitted variables but does not see the difference between each unit cross-section, such as the interest rate. Third, the model with an omitted variable that varies between units of the cross section and time, for example the amount of sales (Wooldridge, 2013).

There are two hypotheses about the individual effect that will be confirmed, first, the random effect model, where $u_{it}$ is not associated with $x_{it}$. Second, the model of the fixed effect, where $u_{it}$ relates to $x_{it}$. In other words, the relevant difference between the two models does not lie in the fixed effect or not, but the basis of the difference between the two models emphasize to whether or not the effect is associated with the explanatory variable. Further details will be explained later.

Random Effect (Error Component Model). This model is applied when the unit cross section tends appears to have more population since it has many parameters, which would decrease the degrees of freedom when all parameters are used in the empirical estimation. However, this can be solved by assuming randomly on the individual effect ($\mu_i$) and time effect ($\lambda_i$) were not studied. These two effects in this model have no relationship with v it, and all components of the disturbance term ($\mu_i, \lambda_i, v_{it}$) have no relationship with the independent variable. This model is usually estimated using the Generalized Least Square (GLS) technique. Moreover, this model is also called the Estimation of Variance Variable Models in some literature. The model has the same slope but different intercept both between individuals and time and it has the same mean of each intercept.

Fixed Effect Model. This model is also called the Least Squares Dummy Variable (LSDV). To explain the impact of omitted variables that have a particular relationship with the individual effect, this model uses dummy variables. This model have a fixed time effect (time-invariant), and the fixed individual effects (individual-invariant) are possible. The individual effect ($\mu_i$) or time effect ($\lambda_i$) is considered to be a fixed parameter in the fixed effects model, while v it has no relationship with the independent variable. The fixed effect model estimator may have a BLUE estimator during the disturbance satisfies the standard classical regression assumptions. The literature notes that if it's presumed that $u_{it}$ is associated with independent variables, the best and unbiased estimation results will be obtained by estimating with a fixed effects model. While it's evaluated using a model of random effects, the outcomes of the estimation would be biased. Therefore, to support the use of fixed-effect models, the Hausman test can applied.

The Hausman test is intended to demonstrate that the covariance differential of the effective and inefficient estimators are exist or not. The test would be asymptotically distributed as $X^2$ at a certain degree of freedom, with the null hypothesis indicating that the estimator of random effects is correct. If the value of H is greater than $X^2$, then Ho is rejected so that the model of fixed effects is selected, i.e. the model of fixed effects is more suitable.


## 3. RESULTS AND DISCUSSION

This paper will start with descriptive statistics for each variable, presented in Table 1. Corruption variable as the dependent variable has a negative value compared to other variables. If this value tends to be low, it shows that the authority of the public has not been optimally fulfilled, in other words the higher the behavior of corruption in a country. The economic reform variable indicated by the econref variable, the higher the value indicates the better the economic reforms that have been carried out by a country.

**Table 1.** Descriptive Statistics

| Variable | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|
| corruption | -0.092 | 0.502 | -1.176 | 0.624 |
| econref | 64.213 | 5.823 | 51.900 | 74.300 |
| goveff | 0.497 | 0.576 | -0.705 | 1.267 |
| dpolright | 0.579 | 0.497 | 0.000 | 1.000 |
| dcivlib | 0.461 | 0.502 | 0.000 | 1.000 |
| grpdbkapita | 3.059 | 3.613 | -14.347 | 8.017 |
| hdi | 0.742 | 0.087 | 0.577 | 0.903 |

From the variation for all variables involved in the model, there are four variables that have a lower mean value than the value of the variation, the four variables are government effectiveness (goveff), dummy variables for political freedom (dpolright), dummy variables for civil freedom (dcivlib), and growth in gross domestic product per capita (grpdbkapita). The higher variation of these four variables can be caused because there is a value in one country better than the other. In addition, the variable that gets a negative value as a result of the poor achievement of the country concerned with the aspect being assessed. For the growth in GDP per capita variable, the higher of the growth in GDP per capita shows an increase in people's income in a country, this condition is expected to reduce the corrupt behavior of each economic agent involved. The human development index variable (HDI) shows good achievements because there are efforts to increase the achievement of HDI indicators by each country.

Based on Table 2, the appropriate panel data method approach in this study is the fixed effect model. The test procedure related to collecting the least squares model and the fixed effects model, shown by the Redundant Test, concludes that rejecting the null hypothesis or not rejecting the alternative hypothesis, in other words the chosen model is the fixed effect model. Furthermore, the Hausman test provides conclusions that reject Ho or do not reject alternative hypotheses, in other words the model chosen has a fixed effect model. The authors also present the empirical findings for each model in this section by using numerous control variables, the purpose of which is to see consistency and robustness between the main variables in this study.

**Tabel 2.** The Regression Results

| Dependent Corruption | Pooled | | | Fixed | | | Random | | |
|---|---|---|---|---|---|---|---|---|---|
| Independent | Coef. | St.Error | Sign | Coef. | St.Error | Sign | Coef. | St.Error | Sign |
| econref | 0.019 | 0.007 | *** | 0.011 | 0.006 | * | 0.019 | 0.005 | *** |
| goveff | 0.662 | 0.073 | *** | 0.376 | 0.142 | *** | 0.662 | 0.070 | *** |
| dpolright | 0.125 | 0.067 | * | 0.115 | 0.089 | | 0.125 | 0.074 | * |
| dcivlib | 0.040 | 0.061 | | 0.024 | 0.068 | | 0.040 | 0.070 | |
| drpdbkapita | -0.002 | 0.009 | | 0.002 | 0.005 | | -0.002 | 0.005 | |
| ddi | 0.241 | 0.524 | | -0.273 | 0.706 | | 0.241 | 0.465 | |
| cons. | -1.894 | 0.369 | * | -0.883 | 0.539 | * | -1.894 | 0.353 | *** |
| Num of Obs | 76 | | | 76 | | | 76 | | |
| F – Stat | 153.320 | | | 3.860 | | | 664.290 | | |
| Prob F - Stat | 0.000 | | | 0.002 | | | 0.000 | | |
| R – Squared | 0.906 | | | 0.895 | | | 0.906 | | |
| Redundant Test : F-test (6.50); Prob (0.000) | | | | | Hausman Test : Chi-sq (34.93); Prob. (0.000) | | | | |
| Notes: ***p<0.01; **p<0.05; *p<0.10 | | | | | | | | | |

Regression results on empirical models provide findings that economic reforms have a positive sign and have a significant effect on corruption. This does not only occur in the common model (the pooled model), but also in the fixed effects model and the random effects model. The findings of this paper support the argument built by several literatures where economic development should reduce corruption, this argument is based on an increase in wages making rent seeking costs higher, this causes the desire to behave in corruption tends to be reduced (Dzumashev, 2014). On the other hand, this empirical finding supports the opinion that there is a link between democracy and economic reforms that can increase the level of democratization of a country to strengthen economic reform efforts so that this causes corruption to be reduced (Kamal et al, 2018).

The findings of this paper do not support supporting mainstream claims, because economic reforms should be able to encourage people and state entities not to commit corruption, even though this argument only applies to a small extent. From the results of empirical testing, the countries involved include large countries and most have a diversity of both ethnicity, culture, ethnicity, language, and religion (Serra, 2006). Of course, this argument becomes irrelevant, as conveyed by Khan (2011) argues that economic reforms encourage the emergence of the division of government authority, in this case the division of authority of the central and regional governments, where the division of authority has the potential to become more and more so it tends to become uncontrolled for longer will enlarge so that it has the potential to cause corruption.

Here, there are other opinions related to diversity as mentioned above, Easterly and Levine (1997) state that diversity has the potential and tendency for interest group polarization because there are indications of the behavior of each group to seek profits through a "kick back" resulting in a tendency to decrease the quality of the supply of goods public as a consequence of inter-group agreement, as a result the achievement of long-term high growth and maintained becomes difficult to achieve. In other words, we can state that there is potential for increased corruption as a result of the emergence of diversity because it is not easy to control the interests of groups that tend to be different and heterogeneous.

**Table 3**. The Regression Result for Pooled Model

| Dependent | Pooled Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Corruption | Model 1 | | | Model 2 | | | Model 3 | | |
| Independent | Coef. | Std.Err | Sign | Coef. | Std.Err | Sign | Coef. | Std.Err | Sign |
| econref | 0.067 | 0.006 | *** | 0.020 | 0.005 | *** | 0.030 | 0.007 | *** |
| goveff | | | | 0.685 | 0.046 | *** | | | |
| dpolright | | | | 0.134 | 0.070 | * | | | |
| dcivlib | | | | 0.040 | 0.069 | | | | |
| grpdbkapita | | | | | | | 0.005 | 0.008 | |
| hdi | | | | | | | 3.433 | 0.472 | *** |
| cons. | -4.369 | 0.411 | *** | -1.817 | 0.280 | *** | -4.578 | 0.315 | *** |
| Num of Obs | 76 | | | 76 | | | 76 | | |
| F - Stat | 108.980 | | | 169.870 | | | 83.470 | | |
| Prob F - Stat | 0.000 | | | 0.000 | | | 0.000 | | |
| R - Squared | 0.596 | | | 0.905 | | | 0.777 | | |
| Notes: ***p<0.01; **p<0.05; *p<0.10 | | | | | | | | | |

The control variable provides consistent findings in terms of the direction of their relationship to corruption based on the pooled model (Table 3), fixed effect model (Table 4), and random effect model (Table 5). These variables are the index of government efficiency, the political freedom dummy, and the civil freedom dummy. Both of these variables support the hypothesis of the effectiveness of government and the increasing authority of the community to be able to use political rights and the rights of civil society to

become important policy instruments in fighting corruption (La Porta et al., 1999). The government efficiency index as a representation of each effective strategy for the active role of the public sector can reduce the opportunity for corruption by limiting the authority of discretion by the government as the power of policy (Best and Burke, 2017). Some several policies often succeeded in inhibiting the potential for corruption such as limiting the authority of foreign trade activities, reducing to eliminate potential barriers to entry for industry players, and privatizing companies owned by the state so as to create competition. In addition, the government's desire to reduce intervention and limit the role of both direct and indirect can also be done by making regulations that support and play an active role to reduce the opportunity for renters to emerge (Estache et al, 2009; Kamal et al, 2018). It was supported by Emerson (2006), who tries to see the relationship between corruption and competition. The findings show a negative relationship between the two variables, where the higher the corruption, the lower the competition.

Table 4. The Regression Result for Fixed Effect Model

| Dependent | Fixed Effect Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Corruption | Model 1 | | | Model 2 | | | Model 3 | | |
| Independent | Coef. | Std.Err | Sign | Coef. | Std.Err | Sign | Coef. | Std.Err | Sign |
| econref | 0.004 | 0.006 | | 0.010 | 0.006 | * | 0.005 | 0.006 | |
| goveff | | | | 0.343 | 0.099 | ** | | | |
| dpolright | | | | 0.130 | 0.082 | | | | |
| dcivlib | | | | 0.025 | 0.067 | | | | |
| grpdbkapita | | | | | | | 0.006 | 0.005 | |
| hdi | | | | | | | 0.520 | 0.542 | |
| cons. | -0.330 | 0.399 | | -1.817 | 0.280 | *** | -0.827 | 0.559 | |
| Num of Obs | 76 | | | 76 | | | 76 | | |
| F - Stat | 0.360 | | | 5.900 | | | 1.020 | | |
| Prob F - Stat | 0.553 | | | 0.000 | | | 0.389 | | |
| R - Squared | 0.596 | | | 0.889 | | | 0.727 | | |
| Notes: ***p<0.01; **p<0.05; *p<0.10 | | | | | | | | | |

Table 5. The Regression Result for Random Effect Model

| Dependent | Random Effect Model | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Corruption | Model 1 | | | Model 2 | | | Model 3 | | |
| Independent | Coef. | Std.Err | Sign | Coef. | Std.Err | Sign | Coef. | Std.Err | Sign |
| econref | 0.009 | 0.006 | | 0.020 | 0.005 | *** | 0.030 | 0.007 | *** |
| goveff | | | | 0.685 | 0.046 | *** | | | |
| dpolright | | | | 0.134 | 0.070 | * | | | |
| dcivlib | | | | 0.040 | 0.069 | | | | |
| grpdbkapita | | | | | | | 0.005 | 0.008 | |
| hdi | | | | | | | 3.433 | 0.472 | *** |
| cons. | -0.673 | 0.433 | | -1.817 | 0.280 | *** | -4.578 | 0.315 | *** |
| Num of Obs | 76 | | | 76 | | | 76 | | |
| F - Stat | 1.970 | | | 679.470 | | | 250.400 | | |
| Prob F - Stat | 0.160 | | | 0.000 | | | 0.000 | | |
| R - Squared | 0.956 | | | 0.905 | | | 0.777 | | |
| Notes: ***p<0.01; **p<0.05; *p<0.10 | | | | | | | | | |

The human development index variable which is negative in the fixed model cannot be separated from the characteristics of the countries that are the object of study, especially Indonesia and Malaysia as well as Thailand and South Korea, where the first two countries have high diversity in terms of culture, language and ethnicity (Haggard, 2000). Of course, this sets a precedent for policy holders that diversity has the potential for corruption when government authorities do not have enough power to control and regulate the interests of existing groups.

Next, based on arguments built from previous empirical studies, the findings of this study provide evidence that the more mature level of democracy in a country tends to reduce opportunities for corruption, although the maturity of democracy requires time because it is not easy for a country undergoing a democratic transition to carry out economic reforms at the same time. But this condition can also occur in certain countries, such as when the country has already established its democracy (De Haan and Sturm, 2003). In addition, some previous studies also argued that economic liberalization in the initial period of economic reform has the potential to increase corruption, because of a democratic tradition that is better and more stable it will take time to see the effectiveness of democracy will have an impact on reducing corruption (Fisman and Gatti, 2002).

## CONCLUSION

The paper findings give the result that the need for government effectiveness such as improving the performance of government services, policy making, firmness in implementing regulations, and the trust of the community. In addition, there is a serious commitment from the government to provide good public services, a commitment to tackle corruption, and guarantee corruption reduction. Second, improving democratic practices, such as political freedom and civil rights so as to ensure an increase in public rights so that they can become instruments to fight corruption.

Finally, the economic reforms are expected to be able to have a significant influence and to have an impact reducing corruption, so it needs the full support of the community and stakeholders. Overall, success in reducing corruption requires multidimensional channels such as the involvement of social, cultural, religious, institutional and legal aspects; not only economic aspects. The future studies need to recognize it, in this paper, some of these have become the limitations. Last, another crucial thing such as the efforts of each country's government and those in power to enforce good governance can be regularly practiced so that it becomes a driving force to eradicate corruption.

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