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Democracy and Corruption Causality in Indonesia

Azwar Iskandar[1], Achmat Subekan[2]
[1,2]*Financial Education and Training Agency, Ministry of Finance, Indonesia*
azwar.iskandar@gmail.com

Abstract

The objective of this study is to analyze the causality between democracy and corruption in Indonesia for the period of 1995 to 2017. This study perform a multivariate cointegration test with government expenditure as a control variable and cross-check this long-run relationship with an Autoregressive Distributed Lag (ARDL) model approach to cointegration beside multivariate approach proposed by Johansen & Juselius. The results show that there is cointegration among the variables specified in the model of corruption equation when government expenditure is taken into account. Indeed, for corruption and democracy to move together in the long run, they need to be associated with government expenditure. The tests for Granger Causality conducted show a long-run causality running from democracy and government expenditure to corruption. In other word, the democracy and government expenditure Granger cause corruption and not the reverse. In short-run, there is neutrality causation between democracy and corruption.

Keywords
democracy; corruption; causality; ARDL; granger

I. Introduction

Indonesia has entered a highly volatile political period, beginning with regional elections this year through to national legislative and presidential elections in 2019. As more than 150 million Indonesians prepared to go to the polls to elect new governors, district heads and mayors on June 27, voters were confronted by that classic thorn in the side of anti-graft crusaders— money politics. The guardians of society — religious leaders and anti-corruption bodies among others — have often encouraged people to be smart and denounce crooked politicians who offer shortcut deals that endanger democracy.

A few months ago, Indonesia's Corruption Eradication Commission (Komisi Pemberantasan Korupsi) shocked the nation with an announcement that 18 governors and 75 mayors and district chiefs were under investigation for alleged corruption and bribery. Some were arrested, while probes into others are ongoing. Governor Zumi Zola of Jambi and Gatot Pujo Nugroho of North Sumatra were detained for alleged bribery related to provincial budgets. Indonesia Corruption Watch recorded more than 200 cases between 2010-2017 in which regional leaders were suspected of various forms of graft ranging from bribery and budget manipulation, and corruption related to the procurement of goods and services. This shows that local politicians are highly vulnerable to corruption and it is highly likely some of those those elected in this year's local election — 17 governors, 39 mayors and 115 district heads — will not go untainted during their terms.

In the global view, the current of Corruption Perceptions Index (CPI) reveals that the continued failure of most countries to significantly control corruption is contributing to a

crisis in democracy around the world. The index, which ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and business people, uses a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. More than two-thirds of countries score below 50 on this year's CPI, with an average score of just 43 (Transparency International, 2019).

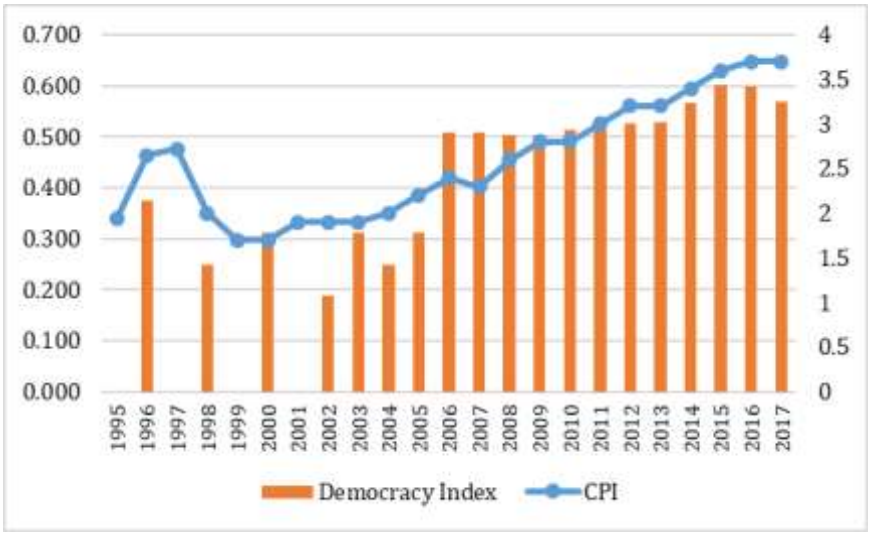

Figure 1. Democracy and CPI of Indonesia for Period of 1995 to 2017
Source: the Economist Intelligence Unit (EIU) and Transparency International

This paper focuses on the experience of Indonesia on combating corruption as its political system became democratic. Since began its transition from authoritarian regime under Soeharto in May 1998, Indonesia until recently still struggling to curb political forces (Ansari, 2019), corruption, collusion, and nepotism. Although it was widely lauded as one of the most success story, democratization in Indonesia did not necessarily followed by reduction in corruption. In fact, corruption in political system post-authoritarian became rampant, widespread across the country, and some what more chaotic. Several studies have considered the relationships of democracy and corruption as mentioned above. However, a problem with most existing studies that have tested for a correlation between democracy and corruption, is that they fail to adequately address the issue of causation. And this limitation of previous research is important given that the causation relation is in dispute. So, this study fills this gap in the literature by contributing to the understanding of the causality between democracy and corruption especially at low levels of economic development like Indonesia which the study of that in Indonesia context is still very rare found.

The objective of this study is to analyze the causality between democracy and corruption. More specifically, this paper also attends to investigate the existence of a long-run relationship between them. To this end, this study first perform a multivariate cointegration test with government expenditure as a control variable on the country dataset running from 1995 to 2017 and cross-check this long-run relationship with an autoregressive distributed lag (ARDL) model approach to cointegration.

In this context, government policy as the responsiveness of public services regarding aspects of the formulation and implementation of public policies and the process of public management (Halik et al., 2020), and more specifically government expenditure is a major issue in economics and politics. A number of studies on this subject have shown that the political system in every country plays an important role in the size, scope and composition

of spending programmes and making decisions (Afridzal et. al., 2019). According to many authors, government spending has an impact on democratization.

For example, Acemoglu and Robinson (2000) use a political economy model of an autocracy were social unrest due to economic inequality can lead to the toppling of politico-economic elites and pave the way for the consolidation of democracy. They argue that concessions by the ruling elite, in the form of increased voting rights and increased government spending, can, in fact, lead to full-scale democratization because the poor can view these concessions as a sign of weakness; consequently the lower classes choose to revolt since they perceive the government as weak and establish a democratic regime.

Government expenditure also has correlation on corruption rate. Mauro (1996; 1997; 1998) shows that government spending on education as a ratio to GDP is negatively and significantly correlated with corruption index. It means that high corruption level causes expenditure on education to decrease (the more corruption, the less spent on education). Similarly, his analysis indicates that other components of expenditure, most importantly, transfer payments, social insurance and welfare payments are also negatively and significantly associated with the corruption index.

On the other side, Delavallede (2006), argues that public corruption distorts the structure of public spending by reducing social expenditure, as education, health and social protection. She finds a negative and significant relationship between corruption and education, health and social insurance expenditures. On the other side, Gupta, Mello and Saharan (2000), suggest that corruption is associated with higher military spending as a share of both GDP and total government spending.

Next, this study use the Granger causality test within a vector error correction model (VECM) and estimate three different models using a non-linear specification: Ordinary Least Squares (OLS) estimation, Fully Modified OLS (FM-OLS) and Dynamic Ordinary Least Squares (DOLS). The findings of this study will be necessary to be able to get a clear picture of the extent of the problem of democracy and corruption in Indonesia and shall analyze and determine the connection or contribution of democracy to the problem of increasing or decreasing the corruption rate in Indonesia. The findings shall also be useful to policy makers and the general public not only for the purpose of creating awareness of the adverse effects of democracy and corruption but also to utilise the data in policy formulation and implementation.

II. Review of Literatures

Corruption refers to “the misuse of public power, office or authority for private benefit-through bribery, extortion, influence peddling, nepotism, fraud, speed money or embezzlement” (Rose-Ackerman, 2008; Transparency International, 2016). Corruption is standardly defined as the abuse of public office for private gain, or the abuse of entrusted power for private gain. Various measures of corruption levels at the country level exist, from subjective perceptions indices to more objective experiential measures, and the pros and cons of these indices have been extensively explored elsewhere (Svensson, 2005; Treisman, 2007). Democracy is defined “minimally as a political system in which free and fair elections inclusive of all social groups are held regularly and basic civil and political liberties are respected” (Lipset, 1998).

One of the most challenging tasks for new democracies is to eradicate corruption. It is widely known that corruption potentially harms the process of democratic consolidation. Research on the causes, consequences and combat strategies of corruption are manifold and very revealing. From theoretical perspective, there are several reasons why democracy might

expected to reduces corruption (Johnston, 1996; Rose–Ackerman, 1999). At the structural and institutional level, democracy restrains the behavior of the elite by holding them accountable for their actions. This includes, (1) elections—a critical tool of vertical accountability which public to control politician (2) basic freedoms—which allow citizens, the press, and autonomous social organizations to collect and expose information independently, to lobby for policy changes and to engage in open public debate; and (3) mechanisms of horizontal accountability whereby government monitors itself—checks and balances across the various branches of government may similarly constrain the ability of officials to deviate from impartial practices. However, there are other theories that questioning the effectiveness of democracy on reducing corruption. According to Rose-Ackerman (1999), more competitive elections may make political parties and candidates vulnerable to pressure from funders.

Previous studies indicate that well established democracies show lower levels of corruption than authoritarian regimes or young democracies (Fjelde, H., & Hegre, H., 2014; Kalenborn, C., & Lessmann, C., 2013; Mohtadi, H., & Roe, T. L., 2003; Treisman, D., 2000). At the same time, high levels of corruption undermine democracy. By diverting rare resources from disadvantaged people, it damages the rule of law, social justice and lowers the trust of citizens in political institutions and processes (Holmes, L., 2006; Jong-sung, Y., & Khagram, S., 2005). Study by Triesman (2000) shows that most emerging democracies are average no less corrupt than autocracies. Only those countries with 40 or more consecutive democracy are significantly less corrupt than authoritarian regime. In fact, it is likely difficult to find successful anti-corruption reform among new democratic countries. In 2018, Indonesia was rank of 11th of 27 countries of Asia and Australasia region (The Economist, 2019). At the same time, Indonesia also was rank of 15th of 30 countries of Asia and The Pacific (Transparency, 2019) . This phenomenon shows that increasing in democracy does not guarantee the state's efforts in curbing corruption became successful.

Generally, there is expectation that corruption is lower after democratization. In fact, fighting against corruption does not solely relate to democracy. Singapore and Hongkong usually cited as examples of autocracies that were successful in reducing corruption. Even though political rights in both countries are relatively low, it is believed that their success is determined by their strong institutions (political, economical, and legal). As a result, most of their anti-corruption campaign and strategies are effective to control the country's level of corruption. In addition, these two countries also indicate that effectiveness of controlling corruption does not necessarily related to regime types. Through examination of Indonesia cases, this paper argues that democratization, by itself, is necessarily effective to reduce corruption. It's effectiveness, however, determined by the strength level of state institutions. In a country where institutions are strong enough, democratization will effective to minimize corruption, whereas in a country with weak institutions, democratization will not significantly contribute to reduce corruption.

The reciprocal democracy-corruption nexus has already been analyzed in several studies and is nowadays well-established (Kolstad, I., &Wiig, A., 2016; Kubbe, I., 2015; Montinola, G. R., & Jackman, R. W., 2002; Olteanu, T., 2012; Rock, M. T., 2009; Sung, H.-E., 2004; Warren, M. E., 2004). Previous research shows that democracy does not guarantee clean and transparent governance at all and democratic systems are still fighting against corruption (Ferrin, M., 2016; McMann, K. M., et al., 2017; Seldadyo, H., & De Haan, J., 2011; Shen, C., 2005; Uslaner, E. M., & Rothstein, B., 2016), even in countries that are often seen as almost free of corruption. Yet, frequent scandals like in the United Kingdom, Iceland, United States or Spain illustrate that corruption is a serious problem in nearly every state in the world (e.g. Gamir, A. F., 2015).

III. Research Methods

3.1 Data and Variables

This study use data on democracy, corruption and government expenditure for Indonesia in the period of 1995–2017. Democracy (DEM) proxied by the EIU's index of democracy, corruption (COR) proxied by Corruption Perception Index (CPI), and Government Spending (GOV) proxied by general government final consumption expenditure. The study has converted the data series into log-linear (Ln) for consistent and reliable results. The log-linear specification provides better results because the conversion of the series into logarithm reduces the sharpness in time series data (Ur Rehman & Shahbaz, 2014). The study use annual frequency data from the Economist Intelligence Unit (EIU), The Global Economy and World Bank's World Development Indicators (WDI), and Transparency International.

3.2 Unit Root Test

This study first tested the unit root of all the variables using both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. After checking for the unit root, this study can then employ either the Johansen & Juselius (1990) or the Engle Granger cointegration test if the series of each variable is integrated of the same order. If the study finds that the variables used in this study are not all integrated of the same order and hence, the researcher will employ the ARDL approach to test for cointegration as Johansen method for testing for cointegration requires the variables to be integrated of the same order. Otherwise the predictive power of the models tested would be affected.

3.3 Cointegration Test

After determining the order of integration, the concept of cointegration is used to examine the existence of a cointegrating relationship among the variables. Series that are cointegrated move together in the long run at the same rate, that is to say they obey an equilibrium relationship in the long run. Thus, cointegration analysis will tell us whether the corruption is possible with or without democracy. Cointegration can be investigated using a multivariate approach proposed by Johansen & Juselius (1990) or the ARDL bounds test. This study cross-checks the cointegration by both approaches.

The ARDL approach as developed by Pesaran, J. Smith, & Shin (2001) overcome these problems as ARDL can be applied irrespective of whether the variables are I(0) and/or I(1). More importantly, Johansen approach is not suitable for studying cointegration for small sample time series as in this study. ARDL on the other hand provides robust results even in small samples (Pesaran & Shin, 1999) and this is advantageous as data is only available for annual data and the period available are also limited for many emerging economies like Indonesia. Another benefit of ARDL is that it allows the optimal lag lengths for the variables to differ, while the Johansen approach requires that all variables in the model to have the same number of lags. For this study, AIC (Akaike Information Criterion) has been used to determine the optimal lag lengths for the ARDL model. Eventhough using Schwarz Bayesian Criterion (SBC) provided smaller standard errors for some of our models tested under the ARDL, the researcher found that in some models, SBC ran the models with ARDL (0,0,0,0) such that no ECM statistical output was produced. This is due to the SBC's method of choosing the minimum lag possible and accordingly, the researcher finds that AIC is more suitable for our study.

The first step in ARDL is to empirically investigate the existence of long run relationship between the variables. The calculated F-statistic is then compared against the

upper and lower critical bound provided by Pesaran, J. Smith, & Shin (2001) which correspond to the assumptions that the variables are I(0) and I(1) respectively. If the calculated F-statistics exceeds the upper critical bound (UCB), then the series are cointegrated; if it is below the lower critical bound (LCB), there is no cointegration. If the calculated F-statistics is between the UCB and the LCB, then decision about cointegration is inconclusive and knowledge of the cointegration rank of the forcing variables is required to continue further.

The ARDL cointegration test is testing the following hypotheses:

H_0 : $\delta 1 = \delta 2 = \delta 3 = \delta 4 = 0$ i.e there is no long run relationship between the variables,
H_a : $\delta 1 \neq \delta 2 \neq \delta 3 \neq \delta 4 \neq 0$ i.e there is cointegration or long run relationship between the variables.

In the second step, once cointegration between the variables has been established, the long run coefficients and the error correction term (ECT) can be estimated. The ARDL cointegration procedure allows cointegrating relationship to be estimated by OLS once the lag order is selected. The model can be specified as follows :

$$\Delta DEM_t = \beta_0 + \sum_{j=1}^{p} \beta_{1j} \Delta DEM_{t-j} + \sum_{j=0}^{p} \beta_{2j} \Delta COR_{t-j} + \sum_{j=0}^{p} \beta_{3j} \Delta GOV_{t-j} + \alpha_1 DEM_{t-1} + \alpha_2 COR_{t-1} + \alpha_3 GOV_{t-1} + \varepsilon_{1t} \quad (1)$$

$$\Delta COR_t = \beta_0 + \sum_{j=0}^{p} \beta_{1j} \Delta DEM_{t-j} + \sum_{j=1}^{p} \beta_{2j} \Delta COR_{t-j} + \sum_{j=0}^{p} \beta_{3j} \Delta GOV_{t-j} + \alpha_1 DEM_{t-1} + \alpha_2 COR_{t-1} + \alpha_3 GOV_{t-1} + \varepsilon_{2t} \quad (2)$$

$$\Delta GOV_t = \beta_0 + \sum_{j=0}^{p} \beta_{1j} \Delta DEM_{t-j} + \sum_{j=0}^{p} \beta_{2j} \Delta COR_{t-j} + \sum_{j=1}^{p} \beta_{3j} \Delta GOV_{t-j} + \alpha_1 DEM_{t-1} + \alpha_2 COR_{t-1} + \alpha_3 GOV_{t-1} + \varepsilon_{3t} \quad (3)$$

Where Δ is the first difference operator. The residuals ε_{it} are assumed to be normally distributed and white noise.

3.4 Granger Causality Test

The causal relationship between the three variables is investigated through the granger causality framework. According to the concept of Granger causality, 'X causes Y' if and only if the past values of X help to predict the changes of Y. In the same way, 'Y causes X' if and only if the past values of Y help to predict the changes of X. Indeed, if a set of variables are cointegrated, there must be short run and long run causality but it cannot be captured by the standard first difference VAR model (Granger, 1969). In this case, we implement the Granger causality test with the vector error correction model (VECM) framework as follows:

$$\Delta DEM_t = \beta_0 + \sum_{j=1}^{p} \beta_{1j} \Delta DEM_{t-j} + \sum_{j=0}^{p} \beta_{2j} \Delta COR_{t-j} + \sum_{j=0}^{p} \beta_{3j} \Delta GOV_{t-j} + \lambda_1 ECT_{t-1} + \mu_{1t} \quad (4)$$

$$\Delta COR_t = \beta_0 + \sum_{j=0}^{p} \beta_{1j}\, \Delta DEM_{t-j} + \sum_{j=1}^{p} \beta_{2j}\, \Delta COR_{t-j} + \sum_{j=0}^{p} \beta_{3j}\, \Delta GOV_{t-j} + \lambda_2 ECT_{t-1} + \mu_{2t} \quad (5)$$

$$\Delta GOV_t = \beta_0 + \sum_{j=0}^{p} \beta_{1j}\, \Delta DEM_{t-j} + \sum_{j=0}^{p} \beta_{2j}\, \Delta COR_{t-j} + \sum_{j=1}^{p} \beta_{3j}\, \Delta GOV_{t-j} + \lambda_3 ECT_{t-1} + \mu_{3t} \quad (6)$$

The long-run causality is indicated by negatively significant coefficients for the lagged error correction term (ECT_{t-1}) while the short-run causality is examined on the basis of likelihood ratio (LR) statistics for testing the joint significance of the lagged dynamic terms.

IV. Discussion

The unit root test provides guidance to ascertain whether ARDL is applicable or not because it is only applicable to the analysis of variables that are integrated of order zero [I(0)] or order one [I(1)], but not applicable when higher order of integration such as I(2) variable is involved. Testing the stationarity of the variables is important to avoid spurious regression. Thus, the Augmented Dickey-Fuller (ADF) of Dickey & A Fuller (1981) and Phillips-Perron (PP) test by Phillips & Perron (1986) technique were used to investigate the stationarity of the variables. The ADF and PP test results are showed in Table 1.

Table 1. Results of the ADF and PP test

	Level			
	ADF Test		PP Test	
Variables	t-statistic	Prob.*	t-statistic	Prob.*
DEM	-1.55	0.77	-1.28	0.86
COR	-5.20	0.00*	-4.00	0.03**
GOV	-3.49	0.06***	-3.46	0.06***
	1st Difference			
DEM	-5.11	0.00*	-5.11	0.00*
COR	-1.43	0.79	-10.40	0.00*
GOV	-5.27	0.00*	-9.0	0.00*

Source : Author's Calculation

The null hypothesis of the unit root problem is rejected at the first difference. The table shows that variables used in this study are not all integrated of the same order, hence this study may employ the ARDL approach to test for cointegration.

After having confirmed the stationarity of the variables, the next step of the analysis was to test for cointegration among the variables.

Firstly, cointegration is investigated using a multivariate approach Johansen & Juselius (1990). The results are reported in Table 2 followed by their interpretation.

Table 2. Results of the Johansen-Juselius Rank Test for Cointegration

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value 5%	Prob.**
Bivariate cointegration rank test on Democracy and Corruption				
None	0.955584	40.52134	15.49471	0.0000
At most 1	0.002870	0.037361	3.841466	0.8467
Multivariate cointegration rank test on Democracy, Corruption and Government Expenditure				
None	0.918049	43.57786	29.79707	0.0007
At most 1	0.423625	11.05660	15.49471	0.2080
At most 2	0.258820	3.893650	3.841466	0.0485**

Source: Author's Calculation

This observe from the bivariate cointegration rank test that the null hypothesis can not be rejected as the trace statistic (0.03) is less than the critical values at 5 % probability levels. This study therefore conclude that democracy and corruption are not cointegrated, that is they do not move together in the long run. This fundamental result reveals for Indonesia that a democratic system alone does not ensure positive impact of corruption rate. Thus, the political system alone like democracy cannot determine the country's corruption rate.

The study move to a multivariate cointegration rank test with the control variable GOV, which represent general government final consumption expenditure. When controlled by the government expenditure variable, the result shows that the null hypothesis of a unique cointegrating relation can be rejected. From these above results, we can conclude that for democracy and corruption to move together in the long run, they need to be associated with government spending. Although, democracy alone does not move together with corruption in the long run, it does so when one considers government expenditure as a third variable in the analysis.

Secondly, the study cross-checks the cointegration test by using the ARDL approach. ARDL bounds testing approach is employed to test for the existence of long run relationship. However, in order to do this, it is important to identify an appropriate lag length to calculate the F-statistics. The ARDL model is sensitive to the lag order. In addition, optimum lag order would be helpful in reliable and consistent result in the analysis. Thus, the Akaike Information Criterion (AIC) is considered to obtain the optimum lag length. The choice of this criterion is based on the stricter penalties imposed by AIC. This AIC provides better and consistent results compared to other lag length criteria (Uddin, Shahbaz, Arouri, & Teulon, 2014). Based on the lag selection criteria test, the AIC maximum lag length was selected and employed in the estimation of ARDL model (1,0,0).

Table 3. Model Selection Criteria

Model	LogL	AIC*	BIC	HQ	Adj. R-sq	Specification
4	11.963	-1.137	-0.955	-1.154	0.796	ARDL(1, 0, 0)
3	12.221	-1.031	-0.803	-1.052	0.782	ARDL(1, 0, 1)
2	12.045	-1.006	-0.778	-1.027	0.776	ARDL(1, 1, 0)
1	12.241	-0.891	-0.617	-0.916	0.755	ARDL(1, 1, 1)

Source : Author's Calculation

The results are reported in Table 4. The computed F-statistic test is compared with upper and lower critical bounds generated by Pesaran et al. (2001) to test for the existence of cointegration. The null hypothesis is $H_0 : \lambda_j = 0$, (where j = 1, 2, …, 5) in equation. This

implies no long run relationship among the variables, against the alternative hypothesis, H_1 : $\lambda_j \neq 0$, implying the existence of long run relationship among the variables. The results in Table 4 showed that the computed F-statistic (4.304)in Model 1 is greater than the upper bound (4.1) at 10% level of significance with unrestricted intercept and no trend (Upper bound is 4.1 and Lower bound is 3.1). This implies that there is evidence to reject the null hypothesis of no long run relationship among the variables. Hence, the alternative hypothesis is accepted that there is long run equilibrium relationship among corruption, democracy and government expenditure.

Table 4. Bounds Test Results

Model 1 **Dependent Variable : COR** **COR = *f*(DEM,GOV)**		
F-statistic Test	Value	k
	4.304808***	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
1%	5.15	6.36
Conclusion : Cointegration		

Model 2 Dependent Variable : DEM DEM= f(COR,GOV)		
F-statistic	Value	k
Test	1.976499	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
1%	5.15	6.36
Conclusion : No Cointegration		

Source: Author's Calculation

In developing countries like Indonesia, political stability and democracy are a necessary condition to undertake long-run investments such as education, health and infrastructure, which support economic and social development. With five-year terms that prevail in most of developing countries, the party in power is often not confronted with sufficient incentives to promote long-term investments, although they are necessary for a sustainable economic growth. The party in power prefers short run investments as they can bring result very quick to support their reelection. Since a long-run relationship exists between the series [Model 1 : COR = *f*(DEM,GOV)], the study provides estimates of the long-run coefficients using a nonlinear specification. The study does so since the effect of democracy is not necessarily constant for every level of corruption.

The study run three different models of cointegrating using Ordinary Least Squares (OLS), Fully Modified Ordinary Least Squares (FM-OLS) and Dynamic Ordinary Least

Squares (DOLS). The two last methods, respectively, are used to provide robust results in small sample sizes and they account the endogeneity, autocorrelation and heteroscedasticity problems. The results are reported in the Table 5.

As can be seen, variables are highly significant at the 1% and 10% level and have the expected signs. All the three approaches provide relatively similar results demonstrating the robustness of the results.

The results show that the non-linearity in the democracy variable reveals the existence of a minimum level of DEM required ensuring the transition to corruption. Indeed, at a low level, a democracy has a negative effect on corruption. The results indicate that political stability associated with democracy will result in corruption index. The instrument variable regression results show a significantly negative effect of democracy on corruption. In other words, the results suggest that democracy reduces corruption.

From a theoretical perspective, there are several reasons why we might expect democracy to reduce corruption. Elections increase the probability that corrupt officials will be exposed and punished, as the opposition has an incentive to uncover corrupt activities by the incumbent, and voters have an interest in not re-electing politicians that favour their own private interests over those of the electorate. Moreover, competitive elections likely drive down the private rents that can be appropriated by officials, since offers of favourable treatment for special interests can be undercut by the opposition (Myerson, 1993; Ades and Tella 1999). Democracy can also entail a more open system of government, which means that private information on how the system works will become less prevalent, and information rents will go down. Effective checks and balances within government may similarly constrain the ability of officials to deviate from impartial practices. In other words, knowing someone in power becomes less valuable. Furthermore, democracy may affect the normative perceptions of corruption in a society, making corrupt activities less appealing as they carry a greater stigma, and possibly also affecting the type of individuals attracted to public office. In sum, democracy may reduce corruption by reducing private benefits of corrupt actions and increasing expected costs.

The existence of cointegrating relationship among democracy, corruption, and government expenditure suggests that there must be Granger Causality in at least one direction, but it is does not indicate the direction of causality. The results of the tests for the short-run and long-run causality within ECM framework are reported in Table 6.

Table 5. Cointegration Regression Estimation (Long Run)

Ordinary Least Squares (OLS)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEM	-4.125367	0.903870	-4.564113	0.0004*
GOV	-0.062402	0.059212	-1.053865	0.3086
C	10.13314	4.172179	2.428741	0.0282**
R-squared	0.692321	Mean dependent var	-0.880000	
Adjusted R-squared	0.651297	S.D. dependent var	0.353370	
S.E. of regression	0.208669	Akaike info criterion	-0.145124	
Sum squared resid	0.653141	Schwarz criterion	0.003272	
Log likelihood	4.306113	Hannan-Quinn criter.	-0.124662	
F-statistic	16.87606	Durbin-Watson stat	0.858534	

Prob(F-statistic)	0.000145			
Fully Modified Ordinary Least Squares (FM-OLS)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEM	-3.785388	1.063252	-3.560200	0.0028*
GOV	-0.031090	0.069653	-0.446349	0.6617
C	8.033344	4.907867	1.636830	0.1225
R-squared	0.682023	Mean dependent var	-0.880000	
Adjusted R-squared	0.639626	S.D. dependent var	0.353370	
S.E. of regression	0.212132	Sum squared resid	0.675002	
Long-run variance	0.060253			
Dynamic Least Squares (DOLS)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEM	-6.972459	1.819445	-3.832191	0.0064*
GOV	-0.290806	0.137572	-2.113845	0.0724***
C	26.01083	9.514092	2.733926	0.0292**
R-squared	0.864669	Mean dependent var	-0.896875	
Adjusted R-squared	0.710004	S.D. dependent var	0.362523	
S.E. of regression	0.195223	Sum squared resid	0.266785	
Long-run variance	0.037426			

Table 6. Granger Causality Results form ECM Framework

Dependent Variable	**Source of Causation**			
	Short Run			**Long Run (form ECT_{t-1})**
	ΔCOR	**ΔDEM**	ΔGOV	
	[significance]			
ΔCOR	-	1.702 [0.216]	0.359 [0.561]	-0.672 [0.016]**
ΔDEM	0.372 [0.553]	-	6.038 [0.024]*	-0.020 [0.558]
ΔGOV	2.407 [0.149]	0.934 [0.346]	-	-0.121 [0.949]

Source: Author's Calculation

Beginning with the results in short-run, there is neutrality between corruption and democracy. In the long-run, there is a causality running from democracy and government spending to corruption as the estimated coefficient of the lagged error-correction term is negative and statistically significant in the corruption equation. This is quite a fundamental result since it tells us clearly that it is the democracy that influences corruption and not the reverse.

V. Conclusion

The objective of this paper is to investigate the causal relationship between democracy and corruption in Indonesia. To this end, this study first performs a multivariate cointegration test with government expenditure as a control variable on the country dataset. The study implemented Johansen and Juselius as well as ARDL models to cointegration to investigate the existence of a long run relation among the series. Then, Granger causality within a VECM is used to test the direction of causality between the variables in short-run and long-run. The results from the above analysis conclude several points. First, the results show that there is cointegration among the variables specified in the model of corruption equation when government expenditure is taken into account. Indeed, for corruption and democracy to move together in the long run, they need to be associated with government expenditure. The long-run relationship between corruption and democracy is nonlinear revealing the existence of a minimum level of democracy index required to negatively impact corruption rate.

The results show that the non-linearity in the democracy variable reveals the existence of a minimum level of DEM required ensuring the transition to corruption. Indeed, democracy has a negative effect on corruption. In other words, the results suggest that democracy reduces corruption. From a policy point of view, this means that developing democratic institutions should be part of strategies to reduce corruption. Second, the tests for Granger Causality conducted show that there is a long-run causality running from democracy and government spending to corruption. In other word, the democracy and expenditure of government Granger cause corruption. It is the democracy condition that influences corruption and not the reverse. In short-run, there is neutrality causation between democracy and corruption.

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