

# The Role of Natural Resources on Moderating the Relationship between Fiscal Decentralization and Corruption: Evidence from Indonesia

**Akhmad Samsul Ulum<sup>1\*</sup>, Abdul Rohman<sup>2</sup>, Puji Harto<sup>2</sup>, Dwi Ratmono<sup>2</sup>, Imam Ghozali<sup>2</sup>**

<sup>1</sup>Ph.D Student at the Faculty of Economics and Business, Diponegoro University, Semarang, Indonesia. Lecturer at Faculty of Economics, Pekalongan University, Indonesia, <sup>2</sup>Departement of Accounting, Faculty of Economics and Business, Diponegoro University, Semarang, Indonesia. \*Email: [ulumcentre@gmail.com](mailto:ulumcentre@gmail.com)

**Received:** 14 September 2018

**Accepted:** 26 November 2018

**DOI:** <https://doi.org/10.32479/ijeeep.7252>

## ABSTRACT

This study aims to provide empirical evidences about the influence of fiscal decentralization on the level of corruption in regional governments of district and city in Indonesia and the role of natural resources in that influence. Panel data is used in this study with the observation period from 2008 to 2014 and 514 population from regency and city governments. As many as 433 observations from the final sample was taken based on the purposive sampling method. meanwhile, the hypothesis testing using partial least squares (PLS) structural equation modeling with WarpPLS. The results of the study found out that fiscal decentralization will increase the incidence of corruption in the district and city of regional governments. The second finding is that natural resources will increase the incidence of corruption when the regional autonomy system and fiscal decentralization are applied to local governments.

**Keywords:** Fiscal Decentralization, Corruption, Natural Resources

**JEL Classifications:** E62, Q34

## 1. INTRODUCTION

The regional autonomy and fiscal decentralization have legally begun since the issuance of Law No. 22 of 1999 concerning Regional Government and Law No. 25 of 1999 concerning Financial Balance between the Central and Regional Governments (Kuncoro, 2014). Those two laws have so far undergone several changes. Regional governments of district and City have become the appropriate level where the delegation of power and resources will be submitted. The power, authority and responsibilities of the District and City governments are substantive and extensive, and the decentralization policy will be very radical, the big bang reforms occurred in the governance structure (Ma and Hofman, 2000).

Rondinelli (1998) stated that the purpose of decentralization is to improve the abilities of regional government in providing public

good and services, to improve the efficiency and effectiveness of economic establishment within the region. According to Law No. 22 of 1999, the decentralization is expected to be able to improve the services and welfare for better society, the development of democratic life, justice, and equality, and the maintenance of harmonious relations between the central and regional as well as between regions in order to maintain the integrity of Republic of Indonesia (Republik Indonesia, 1999).

In fact, the implementation of regional autonomy and fiscal decentralization in Indonesia according to Haboddin and Rahman (2013) after 14 years of implementation has arisen many problems in local governments (LGs), one of which is the occurrence of decentralization of corruption. According to Deputy for Internal Supervision and Complaints of Komisi Pemberantasan Korupsi (Corruption Eradication Commission; KPK), that in mid-2016

there were 343 regents/mayors and 18 governors caught in corruption (Firmansyah, 2016). Therefore, there has been a phenomenon gap between expectations and realization of the implementation of fiscal decentralization in Indonesia.

Empirical studies of the influence of fiscal decentralization on corruption that have been carried out have various evidence. Research that provides evidence that fiscal decentralization will reduce the incidence of corruption were carried out by Fisman and Gatti (2002a), Fan et al. (2009), Ivanyina and Shah (2010), Lessmann and Markwardt (2010), (Goel and Nelson, 2010b), Goel and Nelson (2011), Dong and Torgler (2013), Albornoz and Cabrales (2013), Gurgur and Shah (2014). In the other hand, the research that provides evidence that fiscal decentralization will increase the incidence of corruption were carried out by Triesman (2000), Fisman and Gatti (2002b), Rinaldi et al. (2007), Lessmann and Markwardt (2010), Goel and Nelson (2011), Suprayitno (2011), Saputra (2012), Albornoz and Cabrales (2013). Other empirical research proves that fiscal decentralization does not affect corruption, such as the results of research carried out by Lecuna (2012), Hartanto and Probodono (2013), (Gurgur and Shah, 2014). Based on those findings, it turns out that the influence of fiscal decentralization on corruption has varied results (positive, negative, and not influential) so that it is suspected that there are other factors that may influence the relationship. Baron and Kenny (1986) state that if the relationship between dependent and independent variables is weak or inconsistent, then there may be a moderator variable that affects the relationship.

This research offers an approach to fill out the phenomenon of gap and research gap, which is to re-examine the relationship between fiscal decentralization and corruption and to make natural resources as a moderating variable of the relationship between fiscal decentralization and corruption. Another new thing from this research is to synthesize the measurement of fiscal decentralization from previous studies that are adjusted to the fiscal decentralization regulations that apply in Indonesia.

The results of this study show evidence that the incidence of corruption is increasing along with fiscal decentralization implementation. The second finding of this study is that natural resources will strengthen the occurrence of corruption when regional governments of district or city implement a system of regional autonomy and fiscal decentralization. This study contributes to the application of agency theory to the public sector, especially to regional governments that apply the fiscal decentralization system in managing regional finances. The results of this study can be used by the executive and legislative at both the central and regional levels to evaluate the weaknesses of the regulation and application of state financial management and management of mining business permits and forest use because it is empirically proven in increasing the incidence of corruption in LGs.

This paper consists of six parts. The second section provides a review of the literature and the development of hypotheses. The third section explains the research methodology, the fourth section presents the results of the research and then discusses it, and the

fifth section contains conclusions. The last section is about the limitations of the research and the future research.

## 2. LITERATURE REVIEW

### 2.1. The Influence of Fiscal Decentralization on Corruption

District and city of regional governments have become the right level for decentralization where delegation of power and resources will be submitted (Kuncoro, 2014). In terms of the agency theory framework, the regional government of district or city is essentially a nexus for a series of contractual relationships between individuals (Jensen and Meckling, 1976). The contractual relationship becomes a reference for the behavior of the actors involved in the agency relationship. In the government sector, legislation and derivative regulations related to fiscal decentralization, implicitly or explicitly are a form of contract between principal and agent (Halim and Abdullah, 2006).

The regional head and officials of the regional apparatus as executives act as agents are obliged to submit and obey to follow certain regulations in carrying out the functions of government. Dewan Perwakilan Rakyat Daerah (The regional people's representative assembly; DPRD) acts as a principal which representing the people, will be guided by these regulations in assessing, evaluating and supervising the implementation of contracts by agents. If both parties in the agency relationship maximizing the utility, then there are strong reasons to believe that agents will not always act in the best interests of the principal (Jensen and Meckling, 1976). Halim and Abdullah (2006) stated that theorists hold to the proposition that agents behave opportunistically toward the principals; the attitude of agent opportunism occurs because of information asymmetry.

Executives have more information because they are bureaucratic and government administration actors. These are the ones who determine policy choices and priorities in the development of a region through a Kebijakan Umum Anggaran (General Budget Policy; KUA) as well as Prioritas dan Plafon Anggaran (Regional Priorities and Ceiling; PPA) which form the basis for the drafting of the Rencana Anggaran Pendapatan dan Belanja Daerah (Regional Budget and Expenditure Plan; RAPBD) (Republik Indonesia, 2004). (Halim and Abdullah, 2006) provides an example of opportunistic behavior in proposing and determining Anggaran Pendapatan dan Belanja Daerah (Regional Revenue and Expenditure Budget; APBD) for executives is proposing activities that are not become a priority, proposing lucrative opportunities (opportunities to get big personal benefits), enlarge the budget for activities that are difficult to measure the results, allocate unimportant expenditure components in an activity. These examples are agent opportunism behavior, hereinafter referred to as corruption behavior.

This behavior is also supported by the political system in Indonesia, because in the regional head elections there is a very high political cost to become a regional head (regent and mayor), so a large cost recovery is needed. Prud'home (1995) argues that corruption will increase with decentralization for a number of

reasons, i.e., The influence of interest groups at the local level, wider discretion of government employees, and the length of time these employees occupy their positions in one place making them easier in build unethical relationships.

Some researchers who argue that fiscal decentralization will increase the incidence of corruption are i.e. Triesman (2000), Fisman and Gatti (2002b), Rinaldi et al. (2007), Lessmann and Markwardt (2010), Goel and Nelson (2011), Suprayitno (2011), Saputra (2012), Alborno and Cabrales (2013).

Based on the study of agency theory, and research findings regarding the effect of decentralization on corruption, the following hypothesis can be derived as:

Hypothesis 1: Fiscal decentralization has a positive effect on the incidence of corruption in regional governments of district and city in Indonesia.

## 2.2. The Role of Natural Resources on the Relationship between Fiscal Decentralization and Corruption

Indonesia is a country which rich in natural resources, especially minerals, coals and forests. Various efforts have been made to utilize the wealth of natural resources through mining and forest utilization. Mining business according to Law No. 4 of 2009 is an activity of mineral or coal cultivation which includes stages of general investigation, exploration, feasibility studies, construction, mining, processing and refining, transportation and sales, and post-mining activities (Republik Indonesia, 2009). Forest utilization is an activity to utilize forest areas, utilize environmental services, utilize timber and non-timber forest products and collect timber and non-timber forest products optimally and fairly for the welfare of the community while maintaining their sustainability (Republik Indonesia, 2007).

Mining business activities and forest utilization in Indonesia are subject to the regulations governing them; therefore they must obtain permission from the authorities. Izin Usaha Pertambangan (Mining License; IUP) consists of Exploration IUP, Izin Pertambangan Rakyat (Public Mining License; IPR), and Izin Usaha Pertambangan Khusus (Specific Mining License; IUPK) (Republik Indonesia, 2009). Licensing of forest utilization business includes Izin Usaha Pemanfaatan Kawasan (Area Utilization License; IUPK), Izin Usaha Pemanfaatan Jasa Lingkungan (License for Utilizing Environmental Services; IUPJL), Izin Usaha Pemanfaatan Hasil Hutan Kayu (License for Timber Forest Product Utilization; IUPHHK), Izin Usaha Pemanfaatan Hasil Hutan Bukan Kayu (License of Non-Wood Forest Product Utilization; IUPHHBK), Izin Pemungutan Hasil Hutan Kayu (License for Collection of Timber Forest Products; IPHHK), and Izin Pemanfaatan Hasil Hutan Bukan Kayu (License for Non-Timber Forest Product Utilization; IPHHBK) (Republik Indonesia, 2007).

In the era of regional autonomy (fiscal decentralization) came into force in Indonesia, the authority to grant mining permits and forest utilization are decentralized to the level of district or city of regional governments. The authority of the regent or mayor is

so large and massive because it is protected by regulations, both laws and government regulations (Republik Indonesia, 2001; 2002; 2007; 2009). According to Peraturan Pemerintah (Government Regulation; PP) No. 34 of 2002 Article 37, 38, 39, 40 and No. 6 of 2007 articles 60, 61, 63, 64 and 65 forest utilization permits are under the authority of regents or mayors. According to PP No. 75 of 2001 article 1 that any mining business can be carried out if it has first obtained a Mining Authority granted by the regent or mayor if the Mining Authority area is located in the Regency or City area and or in the sea area up to 4 nautical miles. According to Law No. 4 of 2009 article 37 that IUP are given by regents or mayors if they are in one regency or city, and in article 67 that IPR are given by regents or mayors, and in article 74 that IUPK given by the minister.

Mining and forest commodity is spread throughout Indonesia, covering Sumatra, Kalimantan, Java, Sulawesi, Maluku, Bali, Nusa Tenggara and Irian Jaya (Papua). The abundance of natural resources in Indonesia has become a magnet for rent seeker, who collaborate with state officials (executives) in the region to conduct collusion and corruption in natural resources massively. It is already become a common knowledge that the political cost of regional head elections in Indonesia is very high, even it is logically impossible to be returned by the normal salary of the regent or mayor during his tenure. Therefore, the cost recovery of political costs will be acquired from various possible alternatives. One of them is through rent seeking for natural resources. Data from Indonesia Corruption Watch (ICW) which conducted investigations and research in six provinces in Indonesia found potential state losses of up to Rp 200 trillion (Samosir, 2014).

Agency theory can be used to explain rent-seeking behavior of this abundance of natural resources. There is information asymmetry: agents have more information about actual performance, motivation, and real goals, potentially creating moral hazard (Jensen and Meckling, 1976). Therefore, the abundance of natural resources will motivate regional heads or executives (as agents) to collaborate with actors in the field of natural resources (mining and forestry) to act opportunistically to maximize their utility (advantages). This behavior of executive opportunism can be reflected in corrupt behavior in granting permits to corporations in natural resources, the involvement of agents both directly and indirectly through their families and partners in the natural resource business.

Authority in granting mining business licenses and forest utilization is a discretionary power for executives. Klitgaard (1998) states that corruption will increase when power monopolies, discretionary power, and lack of accountability are occur. Aidt (2003) also stated that the emergence of corruption was due to three things, i.e., discretionary power, economic rent, and weak institutions.

The abundance of natural resources can be a curse of economic and social development rather than blessings, it is the findings that have been very well known in the research literature on natural resources (Busse and Gröning, 2011). Therefore, natural resource abundance will actually supports corruption, which then will reduces

economic performance. The issue of corruption may be quite relevant in the context of abundance of natural resources, because natural resource exploration is very high rent-seeking activities that can trigger corrupt behavior (Leite and Weidmann, 1999).

The research results of Busse and Gröning (2011) shows that the higher the export of resources causes the greater corruption for samples of developed and developing countries. Research conducted by Bhattacharyya and Hodler (2010) shows that the negative relationship between resource rent and corruption index can occur in non-democratic countries, but not in democratic countries. Likewise, Leite and Weidmann (1999) study found out that capital intensive natural resource industries (Fuel and Ores) tend to produce higher levels of corruption. The labor intensive natural resource industry (Agriculture and Food) tends to produce lower levels of corruption. Most of research above is at the cross-country level, but there are also studies conducted at the country level, for example, in province of China. A research conducted by Zhan (2015) shows that natural resources have a significant positive effect on increasing corruption in China's Province.

The results of research findings at both country-level and within countries, real facts in the field and arguments using agency theory indicate that the abundance of natural resources will play a positive role in increasing corruption when there is decentralization of authority in decision making. Therefore, this research hypothesis is stated as follow:

Hypothesis 2: Natural resources will increase the incidence of corruption when the district or city regional governments in Indonesia apply the regional autonomy system (fiscal decentralization).

Based on the literature review and development of hypotheses, an empirical research model can be made as shown in Figure 1.

### 3. METHODOLOGY

#### 3.1. Data Samples

The population of this study were 514 regency and city governments throughout Indonesia. Sampling was conducted purposively (purposive sampling) in the observation period between 2008 and 2014 and obtained a final sample as many as 433 observations consisting of 299 district governments and 134 cities. Observation data every year is found to be unbalanced.

The data source in this study is a secondary data panel of district and city regional government financial reports in Indonesia, obtained from the official website of the Direktorat Jenderal Perimbangan Keuangan Kementerian Keuangan (Directorate

General of Financial Balance of the Ministry of Finance) ([www.djpk.kemenkeu.go.id](http://www.djpk.kemenkeu.go.id)) and the Kementrian Dalam Negeri (Ministry of Internal Affairs) ([www.kemendagri.go.id](http://www.kemendagri.go.id)). Natural resource data is obtained from the Badan Pusat Statistik (Central Statistics Agency) ([www.bps.go.id](http://www.bps.go.id)). Data on corruption are obtained from a special directory of corruption of Mahkamah Agung (Supreme Court) ([www.mahkamahagung.go.id](http://www.mahkamahagung.go.id))

#### 3.2. Technical Analysis and Variable Measurement

This research uses partial least squares (PLS) - structural equation modeling (SEM) technique with WarpPLS 5.0 application. PLS-SEM is uses as an analytical tool because all the variables in this study are using formative indicators, and the data of all variables are not normal.

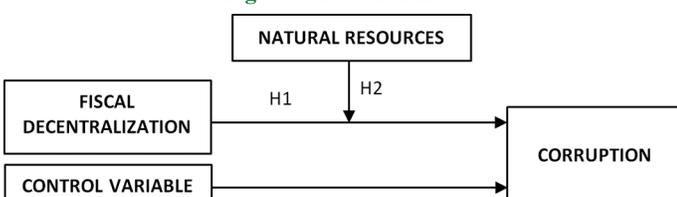
In literarture, there are several ways to measure decentralization, it can be based on income, expenditure, population, and area. This study synthesizes measurements of decentralization based on expenditure, population and area that have been carried out by several researchers in several previous studies(Dong and Torgler, 2013; Fisman and Gatti, 2002a; Goel and Nelson, 2011; Lecuna, 2012; Lessmann and Markwardt, 2010; Zhang and Zou, 1998; Zulyanto, 2010).Measurements from various researchers were adjusted based on the regulation of fiscal decentralization in Indonesia, namely: Law No. 32 of 2004, Law No. 33 of 2004, PP No. 55 of 2005, and PP No. 58 of 2005. Modified fiscal decentralization formulas are: 1). FDORI; Expenditures - Dana Alokasi Khusus (Special Allocation Fund; DAK) of District or City of regional government. 2) FDPOP; Expenditures - DAK of District or City governments divided by the population of Regency or City governance. 3). FDAREA; Expenditures - DAK District or City of regional governments are divided by area within a square kilometres (km<sup>2</sup>) of a Regency or City of regional government.

Corruption (CORP) is defined in Law No. 31 of 1999 juncto Law No. 20 of 2001 concerning Eradication of Corruption in Articles 2, 3, 5, 6, 7, 8, 9, 10, 11 and 12. An act of corruption covers 30 forms of corruption according to the articles relating to: 1. State Finance Losses, 2. Bribery, 3. Evasion in office, 4. Extortion, 5. Deception, 6. Conflict of Interest in Procurement, 7. Gratification. The measurement of corruption follows real measurements made by Fisman and Gatti (2002b); Liu and Lin (2012); Rini and Damiyati (2017).

Natural resources (Gross Regional Domestic Product of Natural Resources; GRDP-NR) in this study are measured by the total value of Produk Domestik Regional Bruto (agricultural sector, forestry and fisheries sector, and mining and quarrying sector) of a Regency or City. This measurement of natural resources follows Bhattacharyya and Hodler (2010); Dong and Torgler (2013); Zhan (2015).

The control variable in this study is the LG measured by a dummy variable which are district = 1 and city = 0 and the area (AREA) is measured in a square kilometer of a district or city government.

Figure 1: Research model



## 4. EMPIRICAL RESULTS

### 4.1. Data Discription

Tabel 1 shows the descriptive statistics. Based on Table 1, it can be seen some descriptive statistical data which includes corruption, fiscal decentralization, Gross Regional Domestic Product-Natural Resources (in Rupiah), population, and area (in Km<sup>2</sup>) to district and city of regional governments in Indonesia. The maximum value of corruption (CORP) that occurred was Rp532,503,704,250; minimum value of Rp2,300,000; in average Rp8,942,290,548; and with a standard deviation of Rp42,112,523,646. Fiscal decentralization original (FD-ORI) with a maximum value of Rp5,687,523,797,054; minimum value of Rp 279,930,950,341; average value of Rp1,109,861,531,276; and with a standard deviation of Rp761,198,482,530.

Fiscal decentralization per area (FDAREA) with the maximum value is Rp65,414,649,313; minimum value of Rp20,469,431; average value of Rp3,379,119,332; and with a standard deviation value of Rp6,519,373,245. Fiscal decentralization per population (FDPOP) with a maximum value of Rp30,036,673; minimum value of Rp652,767; average value of Rp 2,409,281; and with a standard deviation value of Rp2,613,913. Gross Regional Domestic Product-Natural Resources (GRDP-NR) has a maximum value of Rp136,968,580,000,000; minimum value of Rp38,540,000,000; the average value is Rp4,642,163,556,582; and with a standard deviation value of Rp11,699,394,343,862. The maximum population is 3,757,864 people; minimum population is 30,147 people; an average of 742,215 people; and a standard deviation of 709,508 people. Maximum area of 44,071 Km<sup>2</sup>; minimum 16 Km<sup>2</sup>; an average of 2,729 Km<sup>2</sup>; and a standard deviation of 5,028 Km<sup>2</sup>.

### 4.2. The Results of PLS-SEM Analysis

According to Latan and Ghozali (2016) in SEM-PLS analysis there are six stages, i.e. conceptualization of the model, determining the method of analysis algorithm for the outer model and inner model, determining the resampling method, drawing a path diagram of the model to be estimated, evaluating the measurement model (measurement model or outer model) and structural model

evaluation (structural model or inner model), and report the results of the analysis.

In the stage of conceptualization of the model, the variables of this study are: corruption, fiscal decentralization, and natural resource; all using observed variables and variable indicators, in this study using formative indicators. In the stage of determining the algorithm analysis method, this study uses the PLS regression option for the outer model algorithm, besides as a default it also has the advantage of being able to handle the data that has co-linearity problems. Natural resource is a moderating variable so that the relationship is non-linear; therefore the usage of WARP3 software is the choice of the inner model algorithm. Stable is an option at the stage of determining the resampling method, because it can generate a standard error with a small value that is relatively the same as a fair result for small and large samples and with non-normal conditions (Latan and Ghozali, 2016). The following figure is a path diagram of the research model.

### 4.3. Evaluation of Measurement Models

This study uses all observed variables; a variables which quantitative values can be measured directly and variable indicators in this study using formative indicators. According to Joseph et al. (2014) for formative constructs, evaluation of the measurement model can be seen from the feasibility of the formative indicator by looking at the significance value of weight and co-linearity (by looking at the VIF value). The result of data processing using WarpPLS shows that weight significance of all indicators of formative variables <0.05 and co-linearity of all formative indicators shows VIF value <3.3. Therefore, the significance of weight and the VIF value of all indicators used in this study at the evaluation stage of the measurement model have fulfilled rule of thumb required (Joseph et al., 2014).

### 4.4. Evaluation of Structural Models

The first stage in structural model evaluation is to evaluate whether a research model meets the criteria of goodness of fit. There are six fit model indicators used in this study: Average path coefficient (APC), average R-square (ARS) dan average variance inflation

**Table 1: Descriptive statistics**

Variables	Maximum	Minimum	Mean	Standard deviation
Corruption (CORP)	5,3250E+11	2300000	8942290548	42112523646
Fiscal decentralization original (FD-ORI)	5,68752E+12	2,799E+11	1,10986E+12	7,61198E+11
Fiscal decentralization per area (FDAREA)	65414649313	20469431	3379119332	6519373245
Fiscal decentralization per population (FDPOP)	30036672,67	652767,38	2409280,587	2613912,771
Gross regional domestic product product-natural resources (GRDP-NR)	1,36969E+14	3,854E+10	4,64216E+12	1,16994E+13
Population	3757864	30147	742214,6582	709508,0033
Area	44071	16,06	2728,989515	5028,394462

**Table 2: Model fit and quality indices**

Model fit and quality indices	Value	Sign.	Rule of thumb	Notes
APC	0.156	P<0.001	P<0.05	Satisfy
Average R-squared (ARS)	0.128	P<0.001	P<0.05	Satisfy
Average adjusted R-squared (AARS)	0.120	P<0.001	P<0.05	Satisfy
Average block VIF (AVIF)	1.655		Ideally<3.3	Satisfy
Average full collinearity VIF (AFVIF)	1.981		Ideally<3.3	Satisfy
Tenenhaus GoF (GoF)	0.326		Small>0.1; medium>0.25; large>0.36	Medium

APC: Average path coefficient

factor (AVIF), Average adjusted R-squared (AARS), Average full collinearity VIF (AFVIF), dan Tenenhaus GoF (GoF). Kock (2015), The criterion to meet the goodness of fit of the first model is the  $\rho$ -value for APC, ARS and AARS must be significant at 0.05 level ( $\rho$ -value < 5). The second criterion is that the AVIF and AFVIF value are not more than 3.3 (AVIF and AFVIF < 3.3). The third criterion is the GoF value: small  $\geq 0.1$ , medium  $\geq 0.25$ , large  $\geq 0.36$ . Table 2 presents the goodness of fit for the research model.

In Table 2, it can be seen that all fit models are met, therefore it can be concluded that this research model is fit. The size of the fit model is: APC = 0.156, ARS = 0.128, and AARS = 0.120; all significant ( $P < 0.001$ ). AVIF value = 1.655 and AFVIF value = 1.981, which is lower than 3.3 as the minimum criteria limit, therefore the research model has no vertical collinearity problem (collinearity between exogenous/predictor variables) and lateral collinearity (colinearity between exogenous/predictor and endogenous variables/criterion). The criteria for GoF value = 0.326 means that the predictive power of the model includes the medium category because the value is > 0.25.

The next stage in the structural model evaluation is to look at the R-squared coefficients, the Q-squared coefficients value, and the effect size for the path coefficients as shown in Table 3.

In Table 3, it can be seen that the Q-squared value of 0.203 > 0 indicates that the model has predictive relevance. The coefficient of R-Square determination is 0.128 which indicating that 12.8% variation of endogenous variables (corruption) can be explained by exogenous variables (fiscal decentralization; FD), moderation of natural resources with fiscal decentralization (NR\*FD), LG and AREA while the remaining 87.2% is explained by other variables outside the model. Effect size explains the individual contribution of each exogenous variable to the endogenous variable R-Squared value. The effect size value of FD at 11.6% means that the absolute value of individual contributions of fiscal decentralization variables to the R-Squared value of corruption variables includes the medium from the practical point of view. The effect size value of NR\*FD of 1% means that the absolute value of individual contributions of natural resource moderation

variables to the R-Squared value of corruption variables is very weak from the practical point of view.

The last structural model evaluation is to look at the path coefficients and P-value values. Table 4 is an evaluation of the results of the structural model measurement:

In Table 4, it can be seen that the path coefficient of the fiscal decentralization variable (FD) is 0.303 and is significant with  $P < 0.001$  and the path coefficient of the moderating variable which is the interaction of natural resources with fiscal decentralization (NR\*FD) is 0.077 and significant with  $P = 0.035$ . The path coefficient of the regional government control variable (LG) is -0.160 and is significant with  $P < 0.001$ . The path coefficient of the area control variable (AREA) is 0.086 and is significant with a  $P = 0.021$

### 5. RESULTS AND DISCUSSION

Hypothesis 1 stated that fiscal decentralization has a positive effect on the corruption of district and city regional governments in Indonesia. Based on WarpPLS output as presented in Figure 2 and Table 4, it is found out that the path coefficient value FD→CORP is = 0.303 and significant with  $P < 0.001$ . Therefore, it can be concluded that fiscal decentralization has a positive effect on the corruption of district and city regional governments in Indonesia, therefore hypothesis 1 (H1) is accepted.

When the hypothesis 1 (H1) is accepted, it means that the incidence of corruption in district and city of regional governments in Indonesia is increasing along with fiscal decentralization. The test results of hypothesis 1 in this study are in line with the agency theory. Jensen and Meckling (1976) define agency relations as a contract whereby one or more parties (principals) ask another party (agent) to perform particular things for the interests of the principal by delegating some decision-making authority to the agent.

Regional governments of District and City are basically a nexus for a series of contractual relations between agents (executive) and principals (legislative). Regional heads and regional officials are agents who accept the delegation of decision-making authority from the legislature (the people) to perform several things: regulate government affairs for the benefit of the people of a Regency or

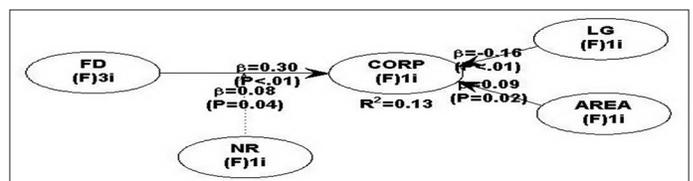
**Table 3: R-squared coefficients, Q-squared coefficients, and effect size**

R-square=0.128 Q-squared=0.203			
Effect size			
Variables	Path coefficients	Explanation	Rule of thumb
FD	0.116	Medium	>0.02
NR*FD	0.010	Very weak	weak>0.15
LG	0.048	Weak	medium>0.35
AREA	0.026	Weak	large

**Table 4: Path coefficients dan P-value**

Variables	Path coefficients	P-value	Rule of thumb	Notes
FD→CORP	0.303	<0.001	$P < 0.10$	Be accepted
NR*FD→CORP	0.077	0.035	$P < 0.05$	Be accepted
LG→CORP	-0.160	<0.001	$P < 0.01$	
AREA→CORP	0.086	0.021		

**Figure 2: Research result**



City according to their own initiative based on the aspirations of the people in the Republic of Indonesia system.

This delegation of authority is carried out based on the contractual relationship agreed upon, which enacted in the Constitution and the derivatives of the regulations below it up to the regional regulations concerning the APBD. This authority in the era of fiscal decentralization is very large, and can be seen from the regulations which governing it, for example Law No 32 of 2004, Law No 1 of 2004, Law No 33 of 2005, Law No 17 of 2003, Government Regulation No 55 and 58 of 2005, and Government Regulation No 71 of 2010.

Government affairs which become the authority of the Regency and City regional governments include: obligatory affairs; Regency or City-scale affairs, and optional affairs; governmental affairs that actually exist and have the potential to improve the welfare of the community in accordance with the conditions, peculiarities and superior potential of the region concerned (article 11, 14 and 15 of the Law No 32 of 2004).

The authority to regulate government affairs and funding sources provided is realized in the form of Rencana Kerja Pemerintahan Daerah (Regional Government Work Plans; RKPD) and APBD that are managed in the regional financial management system (article 23 of Law No 32 of 2004). The regent or mayor as the head of the region with the help of regional government officials is in control of the management of regional finances. The executive has the authority to organize the overall management of regional finances (article 156 Law No 32 of 2004 and article 1 of Government Regulation No 58 of 2005), starting from the entire planning activities to the implementation and reporting (accountability) stages.

The regional head then compiles the draft KUAAPBD (Article 34) and the draft PPAS is based on the RKPD. Based on the KUA and PPAS that have been discussed and agreed upon with the DPRD, it is then used to issue Pedoman Penyusunan Rencana Kerja dan Anggaran Satuan Kerja Perangkat Daerah (Guidelines for the Preparation of Work Plans and Budgets for Regional Device Work Units; PP RKA-SKPD) by the heads of SKPD (article 35). RKA-SKPD as intended, contains income plans, expenditures for each program and activity according to the function for the year planned, detailed up to details of objects of income, expenditure, and financing, and forward estimate for the following year (article 40).

The RKA for each SKPD that contains the expenditure plan reflects all programs and activities to carry out obligatory affairs and optional affairs at the Regency or City of regional government. Therefore, the Regency or City of regional government has the authority to determine the programs and activities used to carry out obligatory affairs and optional affairs reflected in the APBD. This is actually the essence of fiscal decentralization that is applied to District or City of regional governments in Indonesia.

Fiscal decentralization has given greater authority to LGs. Therefore, the power, authority, and responsibility of the District

and City governments are substantive and extensive, and the decentralization policy as described here will be very radical, resulting in a big bang reform of the government structure (Kuncoro, 2014). This enormous authority in the era of fiscal decentralization led to the emergence of high discretionary power and a power monopoly by the executive (regional heads and regional officials).

Strom (2000) stated that any delegation of authority carries the risk that the agent does not fully act in accordance with the interests of the principal. If the agent has interests and incentives that are not in line with the principal's interests, the delegation can cause agency problems which are referred to moral hazard. Experts hold on to propositions that agents behave opportunistically toward principals. Opportunism means that when cooperation between principals and agents is established, the principal will encounter loss, because agents prioritize their interests (agent self-interest) is likely to occur (Halim and Abdullah, 2006).

Corruption is an attitude of executive opportunism caused by information asymmetry, high discretionary power and monopoly of power by regional heads and officials of regional apparatus caused by enormous authority in regional financial management. The corruption in LG in Indonesia continues to increase from year to year, both from the number of cases that occur and the amount of state financial losses and in terms of the quality of criminal acts which carried out more systematically and in scope that enters all aspects of people's lives (Suradi, 2014).

The results of this study are in line with a number of previous empirical studies which stated that fiscal decentralization will increase corruption (Albornoz and Cabrales, 2013; Fisman and Gatti, 2002b; Goel and Nelson, 2011; Lessmann and Markwardt, 2010; Rinaldi et al., 2007; Saputra, 2012; Suprayitno, 2011; Triesman, 2000).

Hypothesis 2 (H2) stated that natural resources will increase the incidence of corruption when the district or city regional government in Indonesia implements the regional autonomy system (fiscal decentralization). Based on WarpPLS output as presented in Figure 2 and Table 4, it can be seen that the path coefficient value is  $NR*FD \rightarrow KORP = 0.077$  and significant with  $P = 0.035$ . Therefore, hypothesis 2 is accepted and means that natural resources positively moderate the relationship between fiscal decentralization and the incidence of corruption in the district or city of regional governments in Indonesia.

Indonesia is a country which rich in natural resources. It's wealth of minerals, mines, coal and forests extends extensively from the islands of Sumatra, Java, Kalimantan, Sulawesi and Papua. Before regional autonomy was implemented, the natural resource wealth was utilized more by the central government since the authority to grant permits was in the central government. Since regional autonomy and fiscal decentralization began, the authority to grant permits for mining and forest utilization is decentralized to the district and city governments. The authority of the executive (regent or mayor and regional officials) in granting the permit is very large because it is protected by regulations, both by the

constitution and government regulations (Republik Indonesia, 2001; 2002; 2007; 2009).

This delegation of authority causes LGs to have high discretionary power. Therefore, in the agency theory perspective, agency problems will emerge. Executives tend to behave opportunistically by utilizing the discretionary power they possess by doing collusion and corruption with mining and forestry business corporations. Corruption will emerge and increase if there is discretionary power (Aidt, 2003; Klitgaard, 1998). ICW which conducted investigations and research in six provinces in Indonesia found that there were potential state losses of up to 200 trillion Rupiahs (Samosir, 2014).

The results of this study support previous studies, for example: Leite and Weidmann (1999), Bhattacharyya and Hodler (2010), Busse and Gröning (2011), Dong and Torgler (2013), Zhan (2015). These studies have proven that the abundance of natural resources in the agency theory perspective will encourage agent to act opportunistically by carried out rent-seeking activities.

## 6. CONCLUSION

This study found two empirical evidences: first; fiscal decentralization that has been implemented since 2001 in Indonesia until today, has led to an increase in the incidence of corruption through the budget of the district and city of regional governments, second; abundant natural resources, especially forests, minerals and coal encourage mining and forestry business corporations to perform collusion and corruption with regional heads and regional officials who have the authority to grant permits. The authority to grant this permit is because the regency and city governments apply the regional autonomy system and fiscal decentralization. Therefore, natural resources that should be a blessing for the prosperity of the community turned out to be a disaster for LGs in Indonesia.

The results of this study support the implementation of agency theory in the government sector. District and City of regional governments is the *nexus* for a series of contractual relations between the executive as an agent with the legislature and the community as principals. Regulations relating to fiscal decentralization constitute a contract agreed between the agent and the principal. Information asymmetry cannot be avoided in any agency relationship; therefore executives tend to do moral hazard. The attitude of executive opportunism in the form of corruption is a reflection of moral hazard. Corruption is mostly carried out by regional heads and regional officials because they have authority in managing state finances ranging from planning, implementation, to accountability and authority in granting mining and forest utilization permits.

The low determination coefficient (around 13%) reflects the relatively small variability of the effect of exogenous variables on endogenous variables, therefore most of the influence of exogenous variables is explained by factors outside the research model. Therefore, in future studies, other factors that influence corruption such as political factors (e.g., the party who wins regional head

elections, legislative elections, Indonesia's democracy index), institutional control factors (e.g., the supreme audit institution), LG characteristics (e.g., number of assets, total population), human resources (e.g., human development index) and other factors.

The use of the size of fiscal decentralization in this study is based on the synthesis of various measurements of decentralization of previous studies that are adapted to the applicable regulations in Indonesia, so that the strength of measuring fiscal decentralization in this study has not been tested in other studies. In future studies it can be applied the synthesis of the results of the measurement of fiscal decentralization in this study to other countries with adjustments to the regulations within in the country.

## REFERENCES

- Aidt, T.S. (2003), Economic analysis of corruption: A survey. *The Economic Journal*, 113, 632-652.
- Albornoz, F., Cabrales, A. (2013), Decentralization, political competition and corruption. *Journal of Development Economics*, 105, 103-111.
- Baron, R.M., Kenny, D.A. (1986), The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Bhattacharyya, S., Hodler, R. (2010), Natural resources, democracy and corruption. *European Economic Review*, 54, 608-621.
- Busse, M., Gröning, S. (2011), *The Resource Curse Revisited: Governance and Natural Resources*. Hamburg: Hamburg Institute of International Economics (HWWI).
- Dong, B., Torgler, B. (2013), Causes of corruption: Evidence from China. *China Economic Review*, 26, 152-169.
- Fan, C.S., Lin, C., Treisman, D. (2009), Political decentralization and corruption: Evidence from around the world. *Journal of Public Economics*, 93, 14-34.
- Firmansyah. (2016), KPK: 18 Gubernur Dan 343 Bupati/Wali Kota Terjerat Korupsi. Available from: <https://www.regional.kompas.com/read/2016/08/03/12090731/kpk.18.gubernur.dan.343.bupati.wali.kota.terjerat.korupsi>. [Last accessed on 2018 May 18].
- Fisman, R., Gatti, R. (2002a), Decentralization and corruption: Evidence across countries. *Journal of Public Economics*, 83, 325-345.
- Fisman, R., Gatti, R. (2002b), Decentralization and corruption: Evidence from U.S. federal transfer programs. *Public Choice*, 113, 25-35.
- Goel, R.K., Nelson, M.A. (2010b), Causes of corruption: History, geography and government. *Journal of Policy Modeling*, 32, 433-447.
- Goel, R.K., Nelson, M.A. (2011), Government fragmentation versus fiscal decentralization and corruption. *Public Choice*, 148., 471-490.
- Gurgur, T., Shah, A. (2014), Localization and corruption: Panacea or pandoras box? *Annals of Economics and Finance*, 15-1, 109-136.
- Haboddin, M., Rahman, F. (2013), *Gurita Korupsi Pemerintah Daerah*. Yogyakarta: Kaukaba.
- Halim, A., Abdullah, S. (2006), Hubungan dan masalah keagenan di pemerintah daerah: Sebuah peluang penelitian anggaran dan akuntansi. *Jurnal Akuntansi dan Pemerintahan*, 2(1), 53-54.
- Hartanto, R., Probahudono, A.N. (2013), Desentralisasi Fiskal, Karakteristik Pemerintah Daerah dan Tingkat Korupsi Pemerintah Daerah Pada Tahun 2008 Dan 2010. Paper Presented at the Simposium Nasional Akuntansi XVI Manado, 25-28 September 2013, Manado Indonesia.
- Ivanyna, M., Shah, A. (2010), Decentralization (localization) and Corruption: New Cross-Country Evidence. World Bank.
- Jensen, M.C., Meckling, W.H. (1976), Theory of the firm: Managerial

- behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360.
- Joseph F, Hair, J., Hult, G.T.M., Ringle, C.M., Sarstedt, M. (2014), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. US: SAGE Publications, Inc.
- Klitgaard, R. (1998), International cooperation against corruption. *Finance and Development*, 35(1), 3-6.
- Kock, N. (2015), *WarpPLS 5.0 User Manual*. Available from: <http://www.scriptwarp.com>
- Kuncoro, M. (2014), *Otonomi Daerah Menuju Era Baru Pembangunan Daerah*. Jakarta: Erlangga.
- Latan, H., Ghozali, I. (2016), *Partial Least Squares: Konsep, Metode, dan Aplikasi Menggunakan WarpPLS 5.0*. Semarang: Badan Penerbit Universitas Diponegoro.
- Lecuna, A. (2012), Corruption and size decentralization. *Journal of Applied Economics*, 15(1), 139-168.
- Leite, C., Weidmann, J. (1999), Does Mother Nature Corrupt? Natural Resources, Corruption, and Economic Growth. IMF Working Paper.
- Lessmann, C., Markwardt, G. (2010), One size fits all? Decentralization, corruption, and the monitoring of bureaucrats. *World Development*, 38(4), 631-646.
- Liu, J., Lin, B. (2012), Government auditing and corruption control: Evidence from China's provincial panel data. *China Journal of Accounting Research*, 5, 163-186.
- Ma, J., Hofman, B. (2000), *Indonesia's Decentralization After Crisis*. From World Bank. Available from: <https://www.wdronline.worldbank.com/handle/10986/11424>.
- Prud'home, R. (1995), *The Dangers of Decentralization*. Washington, D.C.: World Bank.
- Republik Indonesia. (1999), Law Number 22 of 1999 concerning Regional Government. Jakarta.
- Republik Indonesia. (2001), Government Regulation Number 75 of 2001 Concerning Second Amendment to Government Regulation Number 32 of 1969 Concerning Implementation of Law Number 11 of 1967 concerning Basic Mining Conditions. Jakarta.
- Republik Indonesia. (2002), Government Regulation Number 34 of 2002 Concerning Forest Management and Preparation of Forest Management Plans. Jakarta: Forest Utilization and Forest Areas Utilization.
- Republik Indonesia. (2003), Law Number 17 of 2003 Concerning State Finance. Jakarta.
- Republik Indonesia. (2004a), Law Number 32 of 2004 Concerning Regional Government. Jakarta.
- Republik Indonesia. (2004b), Law Number 33 of 2004 Concerning Financial Balance between the Central and Regional Governments. Jakarta.
- Republik Indonesia. (2005a), Government Regulation Number 55 of 2005 Concerning Balancing Funds. Jakarta.
- Republik Indonesia. (2005b), Government Regulation Number 58 of 2005 Concerning Management of Regional Finance. Jakarta.
- Republik Indonesia. (2007), Government Regulation Number 6 of 2007 concerning Forest Management and Formulation of Forest Management Plans, and Forest Utilization. Jakarta.
- Republik Indonesia. (2009), Law Number 4 of 2009 Concerning Mineral and Coal Mining. Jakarta.
- Republik Indonesia. (2010), Government Regulation Number 71 of 2010 concerning Government Accounting Standards. Jakarta.
- Rinaldi, T., Purnomo, M., Damayanti, D. (2007), *Memerangi Korupsi di Indonesia Yang Terdesentralisasi: Studi Kasus Penanganan Korupsi Pemerintahan Daerah Justice for the Poor Program*, Social Development Unit, Bank Dunia.
- Rini, R., Damiyati, L. (2017), Analisis hasil audit pemerintahan dan tingkat korupsi pemerintahan provinsi di indonesia. *Jurnal Dinamika Akuntansi dan Bisnis*, 4(1), 73-90.
- Rondinelli, D. (1998), What and why. In: Litvack, J., Seddon, J, editors. *Decentralization Briefing Notes*. Washington, D.C: World Bank. p1-4.
- Samosir, H.A. (2014), *Ada 6 Tempat di Indonesia Punya Pola Korupsi Fantastis*. Available from: <http://www.cnnindonesia.com/nasional/20141211170251-12-17567/ada-6-tempat-di-indonesia-punya-pola-korupsi-fantastis>. [Last accessed on 2015 Oct 25].
- Saputra, B. (2012), Dampak desentralisasi fiskal terhadap korupsi di Indonesia. *Jurnal Borneo Administrator*, 8(3), 293-309.
- Strom, K. (2000), Delegation and accountability in parliamentary democracies. *European Journal of Political Research*, 37, 261-289.
- Suprayitno, S.E. (2011), *Desentralisasi Fiska dan Korupsi: Fakta dalam Otonomi Daerah di Indonesia* Yogyakarta: S2, Universitas Gadjah Mada.
- Suradi. (2014), *Pendidikan Anti Korupsi*. Yogyakarta: Gava Media.
- Triesman, D. (2000), The causes of corruption: A cross-national study. *Journal of Public Economics*, 76, 399-457.
- Zhan, J.V. (2015), Do natural resources breed corruption? Evidence from China. *Environmental and Resource Economics*, 61, 1-33.
- Zhang, T., Zou, H.F. (1998), Fiscal decentralization, public spending, and economic growth in China. *Journal of Public Economics*, 67, 221-240.
- Zulyanto, A. (2010), *Pengaruh Desentralisasi Fiskal Terhadap Pertumbuhan Ekonomi Provinsi Bengkulu*. Semarang: UNDIP.