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Does Oil Production Increase Corruption Perception in Oil Rich Economies?

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ABSTRACT

Oil rich economies continue to be ranked poorly on Transparency International's Corruption Perception Index(CPI). Attempt is made in this study to establish that oil production increases the probability of being ranked poorly on CPI. Using binary choice logistic regression model, this study tested the hypothesis that the higher the volume of oil produce in barrel per day, the higher the probability of scoring high in corruption perception index. It was found that oil production volume was not a major cause of high corruption perception in oil rich economies. The results suggest that high corruption perception is explained by institutions as measured by index of economic freedom including gross domestic product per capita and oil rents share in gross domestic product.

Key words:
Corruption, Corruption perception index, Oil production, Oil rents, Logistic regression
JEL Classification: C35, D73, Q3

1.0 INTRODUCTION

The issue of corruption in oil rich economies is constantly being discussed at policy circles with the intention to finding a way of dealing with the problem because of undesirable social outcomes it is capable of generating. Prior to the 80s, resource wealth was seen as a big push for economic growth and development. But, the growth disaster in oil rich economies has attracted attention into investigation of the cause of their stunted growth. Sachs and Warner (1995) conclude that natural resource wealth among other growth determining factors impact negatively on economic growth. Vicente (2010) posits that a better understanding of the relation between natural resources and corruption may represent an important step to comprehend the fundamentals of economic development.

Due to the volume of windfall that flows into the oil rich economies, the economic and social outcomes fall short of expectation of what can be achieved with the huge income. The discovery of oil resources, most times, is accompanied by wastefulness of public funds, weakness of institutional quality and erosion of democratic tenets. This occurs on account of sharp practices of the people at the helms of affairs in resource rich states. This may have informed the labelling of corruption as '*AIDs* of governance' since corruption in itself is just like one of many deadly human diseases. However, natural resources need not be a curse if institutions are good and stable enough to discourage corruption (Alayli, 2005).

Oil rents impact negatively on institutions. But, institutions determine economic policies including the success or otherwise of these policies because the design, implementation and monitoring are anchored on institutions. In other words, institutions are key factors in economic development. Where institutions succumb to the pressure of oil rents and consequently rendered incapable of checking corruption, economic progress cannot but be halted. It is in view of this that we undertake this study to determine if oil production increases the corruption perception of oil rich economies as Transparency International(TI) continually rank many of these countries poorly. The oil rich economies are experiencing increases in corruption level in their economies which has become endemic with flows of oil money.

The approach in this study is different from methods adopted in most earlier studies with focus on establishing the transmission channels of the resource curse on economic growth. The study adopts a binary choice logistic regression model which enables us to examine the impact of the oil production on probability of scoring high on corruption perception index(CPI). This particular study is a major improvement over Riveras(2007) which investigates whether oil exports increases the probability of a nation scoring high on corruption perception index. The study is organised into five sections with section one being the introduction. Section two discusses oil resources, corruption and the economy. The data and methodology of the study including estimation procedure are explained in section three. In section four, the results of the study are presented and analysed. The study is concluded in section five.

2.0 OIL RESOURCES, CORRUPTION AND THE ECONOMY: A LITERATURE SURVEY

Recent findings have pointed to the existence of natural resource endowment in resource rich countries as the cause of their growth disaster with exception of a few(Sachs and Warner, 1995; Sala–i–Martin and Subramanian, 2003; Rosser, 2006). Natural resource endowment promotes rent seeking activities in resource rich economies and harms institutions that are germane to economic growth(Harford and Klein, 2005; Mehlum, Moene and Torvik, 2006). Institutions are known to impact positively on economic growth. However, natural resource has a negative implication on institutional growth(Tornell and Lane, 1999; Bulte, Damania and Deacon, 2005). Through bribery and corruption, resource rich economies' legal system and institutions are whittled down. This is sometimes a deliberate effort of the corrupt ruling class because strong legal system and institutions are bound to reduce their corrupt tendencies and lessen their grip on the economy.

Resource endowment works against institutions that are critical to free society. Where the state could not enforce the laws and property rights that provide the minimum underpinnings of market economy and thus lost respect, this disrespect will summarily leads to disloyalty and thievery among public officials (Bardhan, 1997). Nations that depend heavily on oil resources are known to have worst form of press freedom with high corruption index (Besly and Burgess, 2002). This will not in any way support economic growth and development (Frankel, 2010). Alayli(2005) argues that remedying institutional failure requires changes of law and practice but does not require huge resource investment. He maintains further that the most interesting aspect of the resource curse is not that natural resource wealth on average reduces growth, but that the economic and political outcome is so different in different resource abundant countries. To understand the resource curse one needs to study how economic factors shape institutions and institutions shape economic factors(Aslaksen, n.d.).

The negative effects of corruption work through government(Mehlum, Moene and Torvik, 2006; Shaxson, 2007; Aslaksen, n.d.). Resource-dependent economy is usually organised in such a way that the state assumes the role of intermediary between the people and the extractive industry. The rents from the state natural resources become what everybody struggles to get such that attention is not given to other income generating activities. In other words, the effectiveness of government and the sustenance of democratic structures are tied to the degree of importance of rents in the economy, and this keeps the executive office stable(Omgba, 2009).

Ross (2001) identifies three underlying mechanisms: the rentier effect, the repression effect, and the modernisation effect. The rentier effect implies that government uses resources from oil rents and implementation of tax laws to avoid being held accountable by its citizens. The repression effect describes how resource rich states could use resources at their disposal to permanently ward off opposition, while the modernisation effect explains how government makes non-provision of certain basic services like education, power supply, good healthcare facilities and

others that could promote modernisation and development instruments of bringing people under the control of the state. Citizens of resource rich states lack knowledge of the working of the state which reflects in lack of competencies of the bureaucrats and the policies they sometimes implement. This explains why corruption among the ruling elite is prevalent and how the people help to sustain it(Bhattacharyya and Hodler, 2010).

Unlike resource-rich state, the most important asset of resource-poor state is the people. They generate wealth for the state and they are vigilant on the government activities and help shape public policies(Ross, 2004; Manzano and Rigobon, 2001). The loss of social accord between the ruler and the ruled through non–imposition of tax levies on citizens makes them less interested in the state affairs and this further helps the growth and sustenance of unaccountable government(Rosser, 2006). This equally affects the quality of governance, property rights and institutions and by extension the degree of corruption in the system(Tanzi, 1998).

Resources factionalise society particularly when it is lootable. The flow of rents from extractive industries destroys social cohesion and breeds lack of trust(Lujala, Gleditsch and Gilmore, 2005; Fearon, 2005; Collier and Hoeffler, 2002 and Leite and Weidmann, 1999). In an attempt to outdo one another, each group uses a lot of corrupt means to achieve their ends. Lack of trust also prevents implementation of policies and programs that could curb corruption. Government's actions are interpreted along the ethnic divisions. Public services employees are sometimes employed based on loyalty or ethnic affiliation. Reforms and regulations that are relevant to economic growth are almost impossible to implement(Auty and Gelb, 2000). Davis and Tilton (2005) argue that political control of rents, moreover, makes it worthwhile for individuals and organisations to devote considerable effort and resources to appropriating a larger share of the rents. They posit further that such rent–seeking activities are unproductive; they are devoted to increasing the share of existing economic pie that a particular group enjoys rather than to increasing the pie itself. Ruth(2002) concludes that the energy sector is a prime target for, and source of corruption. Vicente(2010) confirms the negative impact of oil resources on corruption in the case of Sao Tome and Principe. This case provides evidence that corruption soars with the discovery of oil resources.

According to Shaxson's(2007) explanation of the queue theory, a queue involves physical order and mental order. Where the disruption of the queue only involves the physical order, this can be restored if the belief about the queue is sacrosanct. However, where the disruption of the queue affects the mental order, it may be difficult to restore the order as the confidence of the people in the order would have been eroded. This creates disorderliness. The corruption of a few elements in a state causes a scramble for a share of the cake through corrupt means. The marginal benefit of not being corrupt in society where corruption is prevalent is very low(Bardhan, 1997; Aidt, 2003). Therefore, there is an incentive for everybody to be corrupt since there is loss of trust and confidence in the system. However, the anti–corruption campaign only implies a decrease in corruption during the campaign and has no effect thereafter(Tirole, 1996). This establishes a reputation of corruption for

such society. Under a collective reputation model with an overlapping generation framework, there may not be any incentive to be honest on the part of the younger generation due to the bad reputation of their elders(Tirole, 1996).

Corruption creates a highly skewed income distribution in favour of the ruling class. This creates problem of widespread poverty with debilitating effects on human capital development(Ross, 2001 and Sandholtz and Koetzle, 2000). Human capital is more likely to remain undeveloped in resource rich economy(Svensson, 2005). But growth is dependent on human capital through education as well as on–the–job trainings. This problem is compounded with little investment in health infrastructures that could improve the productivities of labour. Corruption actually shifts resources from sectors that impact on people's life(Mauro, 1996). Brunnschweiler(2008), however, argues against the view that natural resource endowment weakens institutional quality. Riveras(2007) also concludes that there is no causal relationship between a country export of oil resources and the corruption perception in a study involving a number of oil exporting countries.

3.0 DATA AND METHODOLOGY

3.1 Models and Data

In this study, our focus is to investigate whether intensive production of oil has contributed to the high corruption perception in the oil rich economies. We use the binary choice logistic regression model in estimating impact of oil production on the probability of oil producing countries scoring high on the corruption perception index(CPI). The method enables us to test the hypothesis that the greater the barrel of oil produced per day by a country, the higher the probability that the country scores high in the CPI. The reason for the choice of oil produced per day as against oil exports in Riveras(2007) is that the amount of oil produced per day in barrels gives a better dependence of an economy on oil as not all oil producers are net exporters. This study tests two models. The models with variables that are used in estimating it are described below.

Model 1:

Model 2:

The data for the study are cross-sectional data on seventy two (72) oil producing nations(see appendix A for list of the countries). The nations selected for this study are based on availability of data as there are many oil producing nations that are not included. The data are for the year 2011 on each variable employed in the models[1]. In

[1] Where there are no data for year 2011, the most current year data are used.

the first model, transformed CPI is the explained variable while index of economic freedom(INEF), gross domestic product per capita(PGDP) in purchasing power parity value, unemployment rates(UNEP) and oil rents as a share of gross domestic products(OGDP) are predictors; the second model retains all the variables in the first model with the addition of oil production in barrels per day(OILP) to the predictors.

3.1.1 Corruption Perception Index

The index of measuring corruption in a country by the TI is called CPI. TI has taken up the responsibility of ranking countries according to their perceived level of corruption annually since 1995 after its establishment in 1993. TI is more concerned about public sector corruption. So the index of corruption generates by TI is based on public sector corruption. Of course, this form of corruption has a far reaching implication on the welfare of the people and it breeds and nurtures other forms of corruption. The surveys and assessments used to compile the index include questions relating to the bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and questions that probe the strength and effectiveness of public-sector anti-corruption efforts.

It is noteworthy that the index is based on perception because corruption is basically about illegal activities which most times go undetected, unreported and un-investigated. Based on this view, the detection and subsequent report of the act of corruption which would lead to investigation and prosecution and ultimately punishment of offenders are basically what CPI captures. It, in other words, reports the effectiveness of the measures taken to stem corruption in public life. The index ranges between 0 and 10; a score of 10 signifies that the country that received such score is very clean in term of corruption, such a country has zero tolerance for corruption while a score of 0 implies there is worst form of corruption in a state and the state is said to be highly corrupt. The higher the score, the better the ranking while a lower score yields poor rank. The CPI is transformed into dichotomous variable in this model. The index score below 5 is coded as 0 because this falls below the average score while the index score above 5 is coded 1 as this is considered a better score. In other words, 0 as coded implies the state is corrupt while 1 implies less corruption and that the state is clean.

3.1.2 Gross Domestic Product per Capita

The Gross Domestic Product (GDP) of a country represents the size of its economy. It simply represents the monetary value of economic activities in an economy. It is an indicator of production, investment and consumption as well as stock of capital. When it is measured per capita, it becomes an indicator of standard of living within a geopolitical entity. According to Riveras(2007, p. 4), the standard of living refers to the condition in which the inhabitant of that country live, the level of services and quality of good they can enjoy and are available; but also the way these are distributed for the population. In resource rich economies, the GDP is very high compared to the resource poor economies. This may impact positively on the living standard of the people. The GDP figure allows for comparism among countries particularly when it is expressed in purchasing power parity(PPP) standard. Though the GDP figure has been

criticised on a number of grounds for inadequacy in representing the economic activities that comprise it and for not revealing the actual quality of life, this does not still render this important economic variable useless. Riveras(2007, p.5) argues that in looking for variables that could predict increases in CPI the GDP component is one that should be considered.

3.1.3 Index of Economic Freedom

Index of economic freedom is published by the Heritage Foundation in partnership with the Wall Street Journal since 1995. Countries are ranked based on 10 economic freedoms grouped into four categories/pillars. These pillars are rule of law, limited government, regulatory efficiency and open market. Each of the 10 economic freedoms within the four pillars is scored on a scale of 0 to 100. A simple average of all the 10 economic freedoms produces the economic freedom index for a nation. This index represents the quality of state institutions in promoting efficiency and economic progress. The issue of economic freedom is central to corruption prevention and control.

3.1.4 Unemployment Rate

The unemployment rate is expressed in percentage, and it is the percentage of people in the civilian labour force who are without jobs and are actively seeking jobs(Tucker 2011, p.438). According to Mahabir(1996, p.86), a rising unemployment rate suggests a lowering of the country's aggregate output and contraction of the tax base of the state. This is a manifestation of inefficiency in government, most times, as a result of corruption and the problem could at the same time fuel corruption because those economic agents that are not able to meet their needs would find a way of doing so by circumventing rules/laws which is nothing but corruption. It brings along with itself a host of socioeconomic problems. It therefore becomes necessary to seek the relationship between unemployment and corruption perception.

3.1.5 Oil Production in barrels per day

Oil still remains the major driver of world economy. The high demand for this essential commodity generates huge income to the oil rich countries; it, thus, encourages its intensive and continuous production. Most oil exporters build up their reserves from windfall from the sales of their increased production whenever there is a surge in international price of the commodity while the oil importers deplete their reserves. This does not just present fiscal challenge to the global economy, it has also great monetary implication. The windfall from oil supply to the global market has far-reaching implications on the economic structures of oil exporters and use of the windfall including corruption perception. That countries such as Angola, Nigeria, Russia and Venezuela with vast oil resources are suffering from their possession of oil is not in doubt given their enormous socioeconomic contradictions. Oil industry reeks of corruption. This justifies the inclusion of oil production in barrels per day in our model. We seek to know what impact oil production has on CPI.

3.1.6 Oil Rents as a share of GDP

According to the World Bank, oil rents are the difference between the value of crude oil production at world prices and total costs of production. The higher the rents from oil, the more rent seeking activities are promoted against productive ventures. This distorts right allocation of talents in many oil producing countries particularly where there is weak institutional quality before the discovery of oil. When government activities are funded from rents rather than taxation, political class are encouraged to behave in a manner that weakens institutions, and corruption rises. This variable is included in our model to test whether oil rents increases corruption perception of oil producing nations.

3.2 Method of Estimation

Maximum Likelihood Method helps in eliminating problems associated with Ordinary Least Square when used to estimate categorical variables. The binary choice model estimation uses quadratic hill–climbing as estimation algorithm and the standard errors are estimated using quasi-maximum likelihood(Huber/White) in *Eviews* version 6. The logistic model is expressed as follows:

If we take the antilog of equation (1), then we would be able to derive the equation for the prediction of probability of the outcome of interest which is shown below.

where π is the probability of interest, α is the Y intercept, β is the regression coefficient, and e = 2.71828 is the base of the system of natural logarithms. X in this model can be categorical or continuous; however, Y must be a categorical variable. The above is a two variables case. It can be easily extended to the case of a multiple independent variables. The logarithmic transformation linearises the model.

The direction of the effect of a change in X depends only on the sign of the coefficient β. Positive values of β imply that increasing X will increase the probability of the response variable; negative values imply the opposite. The null hypothesis of this model is that all βs equal zero. According to Peng, Lee and Ingersoll(2002 p.5), non-acceptance of null hypothesis implies that at least one β does not equal zero in the population, which means that the logistic regression equation predicts the probability of the outcome better than the mean of the dependent variable Y. One advantage of this method is that the logistic regression does not require normally distributed regressors. It also does not require linearity of the regressors as well as continuity. As an advantage over discriminant analysis, it does not require multivariate normality with equal variances and co–variances.

One feature of the binary model is that the coefficients of the estimated model cannot be interpreted as the marginal effect on the regressors. The marginal effect of on the conditional probability is given by:

=

where is the density function corresponding to . is weighted by a factor that depends on the values of all of the regressors in . The direction of the effect of a change in depends only on the sign of the coefficient. It should be noted that positive value of implies that as increases, this increases the probability of the response variables. However, negative values of implies that as increases, this lowers the probability of the response variables. The marginal effect of all the regressors in each model will be computed.

4.0 PRESENTATION AND ANALYSIS OF RESULTS

Table 1: Logistic Regression Results

Variables	Model 1 Dependent variable - CPI		Model 2 Dependent variable – CPI	
	Coefficient	Marginal effects	Coefficient	Marginal effects
Constant	-31.57488**	-	-31.06682**	-
INEF	(-2.413220)		(-2.423246)	
PGDP	0.363281**	0.002382	0.356813**	0.001806
UNEP	(2.292658)		(2.308103)	
OGDP	0.000277*	1.82E-06	0.000281*	1.42E-06
OILP	(2.873875)		(2.866744)	
RLL	-0.023791	-0.000156	-0.035965	-0.000182
LR	(-0.305155)		(-0.437079)	
Prob (LR)	-0.122882*	-0.000806	-0.107936*	-0.000546
McFadden R^2	(-3.534917)		(-3.575471)	
H-L Statistic			-4.13E-07	-2.09E-09
Prob χ^2 (70)			(-1.031597)	
Observation	-42.54064		-42.54064	
	70.82691		70.88946	
	0.000000		0.000000	
	0.832462		0.833197	
	26.1668		26.0306	
	1.0000		1.0000	
	72		72	

Key: Figures in parentheses are t–statistic. 1% and 5% level of significance are identified with a star(*) and two stars(**) respectively. RLL means restricted log likelihood.

Source: Author's computation

In model 1, three variables apart from the constant term are significant. In this model, unemployment with a t-statistic of -0.3052 is not significant at 5percent level. This implies the variable does not impact CPI. But, index of economic freedom with t–

statistic of 2.2927 is significant at 5 percent level. The variable has expected positive sign. It implies that the higher the Index of Economic Freedom, the higher the probability that a nation will score high in CPI. Also, gross domestic product per capita has a positive association with CPI. The variable has a coefficient of 0.0002 with t–statistic of 2.8739 at 5 percent significant level. It implies that the higher the gross domestic product per capita, the higher the probability that a nation will do well on CPI ranking. Another variable in the model, oil rent share in gross domestic product (OGDP) has, as expected, a negative sign. The variable is statistically significant at 5percent level. This means that the higher the share of oil rent in the GDP, the lower the probability that a nation will score high on CPI. The degree to which a nation depends on natural resource endowment determines the structures of such economy(Gylfason, 2001) and to a large extent determines the level of corruption in the economy. Countries with high oil rents as a proportion of GDP are known to have corrupt civil service and government.

With restricted log likelihood (RLL) of -42.54064 which is the maximum likelihood value when all the slope coefficient of the model is restricted to zero, the model shows a good fit when all the predictors are added to the model with likelihood ratio (LR) in excess of 70 and its p-value of 0.00000. This is confirmed with McFadden R^2 in excess of 83 percent. The Wald test result on whether the all the slope coefficients for model 1 are equal to zero is rejected with F-statistic of 4.291136 and a p-value of 0.0038. Also, redundancy test for the model yields a log likelihood ratio of 70.82691 with a p-value of 0.0000. The H-L statistic of 26.1668 with p–value of 1 is not significant which implies the non-rejection of null hypothesis that there is no difference between expected and predicted values. Thus, the model fits the data.

In model 2, we added a new variable. The variable OILP, oil production in barrel per day adds little improvement to the model's fit. Though, this variable is individually not statistically significant with t–statistic of -1.0316 at 5 percent significant level. It implies there is no relationship between oil production in barrel per day(OILP) and corruption perception index. This could be so if an oil rich economy could diversify and reduce the share of oil rents in its GDP. This supports our position that not all oil producers are net exporters. The activities in oil industry may just be barely enough to support production activities in the domestic economy which may account for low rents in the share of GDP. Under model 2, the performance of unemployment remains insignificant just like in model 1, showing no relationship with CPI. However, index of economic freedom and gross domestic product per capita are significant. They maintain a positive relationship with CPI in model 2 as in model 1. The higher these variables the higher is the probability of scoring high on corruption perception. The coefficients are significantly different from 0 at 5 percent level of significant. While oil rents as a share of GDP maintains a negative relationship with corruption perception.

Model 2 shows a relatively better fit than model 1. The LR statistic is in excess of 70 and the McFadden R^2 is in excess of 80 percent which confirms a good fit of the model. For model 2, The Wald test result on whether all the slope coefficients are equal to zero is rejected with F-statistic of 3.625960 and a p-value of

0.0059. A redundancy test for the model yields a log likelihood ratio of 70.88946 with a p-value of 0.0000. The H–L statistic remains around 26 with p-value of 1. This result is not significant which implies non-rejection of null hypothesis that there is no difference between expected and predicted values.

We estimate the marginal effect of the regressors. But, we only discuss the marginal effect for regressors that are statistically significant in the models on corruption perception(see table 1 above for the computed marginal effect). For model 1, the marginal effect of index of economic freedom on CPI is 0.002382. In model 2, the marginal effect of index of economic freedom on CPI is 0.001806. The implication of this is that for a percentage point increase in index of economic freedom, the probability of scoring high on corruption perception index increases by 0.23 percent and 0.18 percent for model 1 and model 2 respectively. The marginal effect of gross domestic product per capita on CPI is 0.0000018 in model 1 and 0.0000014 in model 2. This implies that a dollar increase in gross domestic product per capita will increase the probability of scoring high on corruption perception index by 0.00018 percent in model 1 and 0.00014 in model 2. For oil rents as share of GDP, the marginal effect on CPI is -0.000806 and -0.000546 for model 1 and model 2 respectively. This means that a percentage point increase in the share of oil rents in gross domestic product lowers the probability of scoring high in corruption perception index by -0.08 percent in model 1 and -0.05 in model 2.

Index of economic freedom shows a positive impact on CPI. This is justifiable on account that the index is a composite of many institutional measurement variables. A better institution will prevent a rise in corruption level in a society and help in bringing about a prosperous and just society. This points to the fact that the negative influence of oil rents works through the state institutions. Mehlum, Moene and Torvik (2006 p.3) observe that natural resources put the institutional arrangement to a test, so that the resource curse only appears in countries with inferior institutions. They argue further that the quality of institutions determines whether countries avoid resource curse or not (*Ibid,* p.16).

Looking at the marginal effect of gross domestic product per capita on CPI, the effect is negligible and reasonable because a high gross domestic product per capita that is not equally distributed among the population points to the fact that some are getting more than their fair share of the societal wealth which underscores the existence of endemic corruption and may not have positive impact on CPI ranking. Corruption lowers output and prevents societal resources from being share in an equitable manner. This accounts for why there are high outputs in countries with high income per head that is almost equally distributed. For oil rents as a share of GDP, the probability of being ranked poorly rises with increase in the share of oil rents in gross domestic product. Arezki and Brukner(2011) submit that increase in oil rents significantly increase corruption. Oil rents promote high level of rent seeking activities. Rents are known to have destructive effects on the economy by reducing engagement and participation in productive ventures. Not only that lobby with its grave implications will become the other of the day in a society prone to corrupt

practices but also create an environment where talents are channel into destructive activities.

5.0 CONCLUSION

In the literature, studies on the impact of oil resources on the level of corruption of oil producing countries have been mixed. While some scholars have argued that oil resources have direct impact on corruption, others have argued against this. In this study, econometric test to find out if the volume of oil production in barrel per day increases the probability of oil producing countries being ranked poorly on CPI points out that the volume of oil production in barrel per day have no impact on corruption perception but index of economic freedom, gross domestic product per capita and oil rents as a share gross domestic product impact their corruption ranking.

It is not that the possession of the valuable oil resource is bad in itself, but the curse of this resource arises where the rents are high in relation to GDP. It sets the stage for destruction of institutions and highly skewed income sharing which further fuel and sustain corruption. The enormity of the burden of rents is most times burdensome for institutions especially in societies where institutions are still at infancy before the discovery of the natural resource. Shaxson (2007) asserts that mineral dependent states are more corrupt because the large tides of oil money are too much for institutions to absorb. According to Gray and Kaufmman (1998), once corruption becomes systemic, the likelihood of detection and punishment decreases, and incentives are created for corruption to further increase. Therefore, efforts should be made at cleaning up and strengthening institutions and diversify the economy in order that the share of rents in the productivity of the economy will be trimmed down in order to reduce corruption.

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Appendix A:

Americas: Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Cuba, Ecuador, Guatemala, Mexico, Peru, Trinidad & Tobago, United State and Venezuela. **Asia & Pacific**: Australia, Azerbaijan, China, India, Indonesia, Japan, Kazakhstan, Malaysia, New Zealand, Pakistan, Philippine, Russia, South Korea, Thailand, Turkmenistan and Vietnam. **Europe**: Austria, Belarus, Bulgaria, Croatia, Czech Republic, Denmark, France, Georgia, Germany, Greece, Hungary, Italy, Lithuania, Netherlands, Norway, Poland, Romania, Slovakia, Spain, Turkey, Ukraine and United Kingdom. **North Africa & Middle East**: Algeria, Bahrain, Egypt, Iran, Israel, Kuwait, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, UAE and Yemen. **Sub-Sahara Africa**: Cameroon, Equatorial Guinea, Gabon, Nigeria and South Africa.