

**PETROLEUM RESOURCE, INSTITUTIONS, AND ECONOMIC GROWTH
IN NIGERIA**

Frances N Obafemi, Uchechi R Ogbuagu and Emmanuel Nathan

Abstract

Empirically, the importance of natural resource abundance on economic growth in natural-resource-rich countries has not been in doubt. In this paper, we investigate this role in the context of petroleum resource abundance, institutional quality and economic growth in Nigeria. Share of oil exports to GDP as a measure of petroleum resource abundance and institutional quality were examined using time series data and error correction econometric technique. Findings show that petroleum sector in Nigeria need to be encouraged to play the leading role in the economic growth and development process by improving on the performance of institutions through less corrupt activities, effective governance and sound contract enforcement in order to have a sizeable positive effect on economic growth. Macroeconomic indicators like openness and inflation play crucial role to ensure regular and significant impact of petroleum resources on economic growth in Nigeria. The paper concluded that, an abundance of petroleum resources may in fact be much less of a curse and more of a boom for economic performance than often believed if quality institutions are in place. The petroleum sector remains very strategic to the sustenance of rapid economic growth and development in Nigeria.

Key word: resource curse, petroleum, institution, economic growth, error correction, Nigeria.

JEL Classification: Q32, Q33, Q34.

Citation: Frances N Obafemi, Uchechi R Ogbuagu, Emmanuel Nathan, "Petroleum resource, institutions, and economic growth in Nigeria", (2013), Journal of Business & Management (COES&RJ-JBM), Vol.1, No.3, pp.154-165.

1.Introduction

Petroleum resources remain in high demand world over. This is because of their dominant role as a source of energy and therefore a catalyst to economic activities. Energy is a major driver of economic activities in developed and developing countries. Natural gas provides about 50 percent of the energy required in the world (Igbatayo; 2004). Petroleum resources are prime sources of revenue to many developing countries like Nigeria. Undoubtedly oil is a major commodity in the global market and has changed the economic structures of the producers especially those in the developing world. However, its effect has been mixed. While it has promoted and accelerated development in some, it has introduced some difficulties in some, leaving them with more complex problems and bringing in very little benefits.

Undoubtedly a mix of monetary and fiscal tools is needed to guide other new investment towards economic prosperity especially for countries with human and natural resource endowment. However, experience has shown that some countries with abundant natural and human resources suffer poor growth and perform economically below average. Hence, economists have questioned the relationship between natural resource endowment and economic development and growth. While some opine that natural resource endowment promotes economic growth and development, studies have found that countries endowed with abundance of natural resource present evidence of slow and perhaps negative economic growth. Sach and warner (1997), Gylfason(2001), Kronenberg (2004), Sala-i-Martin and Subramanian (2003), in cross country studies found that countries that are dependent on natural resources end up as development failures. On the contrary, however, Guajardo (2008) found that endowment of coal in Chile has a positive effect on the economy. He attributed this success to strong institutional and positive political environments.

In the same vein, there are contentions regarding the relationships between natural resources and quality of institutions. Some studies maintain that abundance of natural resources cause the quality of institutions to decay and progress towards poor economic performance (Barro 1999; Sala-i Martin and Subramanian, 2003; Ross 2001; Isham et al, 2005; Collier and Hoffer ,2008).

On the other hand, Arezki and Van der ploeg,(2007)are of the opinion that natural resources do not affect quality of institutions and that institutions do not have direct impact on economic growth. Mehlum et al (2006) and Boschini et al (2003) however, assert that there is a positive relationship between quality of institutions and economic growth.

These conflicting findings are quite disturbing, given that Nigeria's economy has been dependent on petroleum resource endowment since 1970. According to UMU (2000) Nigeria's economy has declined from being a middle income country (amongst the fifty richest countries) to one of the 30 poorest countries in the world. Available statistics show that between 1970 and 1999, the Nigerian petroleum industry generated about \$231 billion in rents, or \$1900 for every man, woman, and child. Yet from 1970 to 1999 Nigeria's real income per capita fell from \$264 to \$250 a year. Why has Nigeria's remarkable oil wealth done so little to raise incomes and alleviate poverty? It is against this backdrop that we embarked on this study to investigate the relationship or linkage between petroleum resources abundance, institutions, and economic growth in Nigeria.

2.Literature Review and Theoretical Framework

Using data from 1965 to 1990 across 77 Countries, among the variables Sachs and Warner (1997) tested for the determinants of growth natural resources (measured as ratio of natural resource exports to GDP, where exports of natural resources are the sum of exports of primary agriculture, fuels, and minerals); institutions (measured as an un-weighted average of five indexes: rule of law, bureaucratic quality, corruption in government, risk of expropriation and government repudiation of contract); the log of real GDP per economically active population; trade openness; interaction between trade and income; log of life expectancy and its square; government saving rate; inflation rate; ethno linguistic fractionalization; growth of the economically active population; and a number of geographic indicators, including a landlocked dummy variable. Their results showed that natural resources impacted negatively economic growth. They attributed this result to higher incentives for rent seeking and Dutch Disease. The results further showed that weak institutions, poor economic policies and lack of openness to international markets retain economic growth. An extension of their results suggested that with good societies control over trade policy and quality of institutions exhibit significant growth.

Boschini et al. (2003) used data for 80 nations from 1975 to 1998, and tested models with different measures of natural resources such as value of primary exports; value of exports of ores, metals, and fuels; value of mineral production excluding fuels; and value of production of gold, silver and diamonds all as a percentage of GNP or GDP. The findings are that abundance of natural resources have a negative impact on economic growth while institutional quality positively affects growth. However, an interaction effect between natural resources and institutional quality was positive and significant, implying that good institutions can turn natural resources into a blessing. The results also showed that gold, silver, and diamonds have a stronger negative impact on economic growth. The results did not change significantly, even when a two-stage, least squares model was adopted to account for the potentially endogenous nature of institutions using latitude as an exogenous instrument.

Similarly, Mehlum et al. (2006) used only developing nations with 1984 data on property rights, rule of law index, risk of expropriation in repudiation of contracts and combined polity score as different measures of institutional quality from those of earlier studies. The results did not change significantly. Leite and Weidmann (1999) using cross-sectional data from 1970 to 1990 for 72 nations observed that rent-seeking measure by level of corruption, causes natural resources to impact negatively on economic growth.

Papyrakis and Gerlagh (2004) empirically examined the direct and indirect effects of natural resource abundance on economic growth as well as the channels of transmission. They found that there is a direct negative impact of natural resource abundance on growth which eases out as control variable such as level of corruption is reduced and as investment and trade openness increases.

Brunnschweiler and Bulte (2006) argued that there is a difference between resource dependence and resource abundance and proceeded to measure resource dependence and resource abundance and economic growth. First, they investigated the impact of resource abundance as the log of per capita and log of subsoil assets per capita and resource dependence as natural resource exports as a percentage of GDP and mineral exports as a percentage of GDP. Then they examined the impact of resource abundance, “durable” institutions, as well as “changeable” institutions (rule of law and quality of bureaucracy) and trade openness on resource dependence. Their results indicate that, Resource *abundance* positively impacts on the quality of institutions; whereas resource dependence does not. Resource abundance, openness, and type of regime were found to have a positive impact on

the resource dependence, while quality of institutions has a *negative* impact on resource dependence. Lastly, resource dependence has no direct impact on economic growth whereas resource abundance has a positive impact.

In sum, the importance of institutional quality and the resource curse hypothesis to economic development though often stressed as important potential causes of poor growth (Mauro, 1995; Hall and Jones, 1999; Sachs and Warner, 1995a; Papyrakis and Gerlagh, 2004) are in the least verified. Moreover, most of the studies established and reviewed are cross-country studies relating to natural resources as a whole. These studies did not focus on Nigeria and the link between institutions, petroleum resources and economic growth. Hence, this study became pertinent in modeling the linkage between petroleum resources, institutional quality and economic growth in Nigeria.

The study is based on the resource curse theory which maintains that countries with high natural resource endowment experience lower economic growth rates than countries that are less fortunate with endowed natural resources. This apparent paradox negates rational expectations that endowment with natural resources provides potentials and initial sources of development, in that it is an immediate source of foreign exchange, attracts foreign capital and skills as well as provides increased availability of both raw materials for local manufactures and market for manufactured products. However, according to Auty, (2001); the experiences of countries like Russia and Venezuela which are rich in natural resources show that their economic growth rate was lower than those of other countries without resource fortunes.

In their empirical resource curse hypothesis model, Sachs and Warner (1995) posited that historically; “the abundance of natural resources is one of the most evident causes of low economic performances”. Countries that base their economies on natural resources tend to be examples of development failures. In contrast, countries such as Japan, Hong Kong, Korea and Ireland experienced high economic growth rates although they had relatively lower endowments of natural resources. A third category includes countries with relatively higher dependence on primary resources and good growth performance as is the case of Norway and Botswana.

Mikesell, (1997) had adduced that observed slow growth in the face of resource endowments in some countries is attributable to trade volatility in primary commodity exports. Nonetheless, in the body of empirical literature; there is no evidence of strong link between trade volatility and per capita growth. In point of fact, there are five transmission channels identified in the resource curse theory. They are: the effect of Dutch disease, misallocation of revenues from resource exploitation, the rent- seeking behavior, quality of institutions and the role of human capital (Sachs and Warner; 1999, and Sala-i-Martin and Subramanian; 2003).

This study is investigating the quality of institutions channel and looks at the relationship between institutional quality and the ability to exploit natural resources. The importance of institutional quality in economic development has been emphasised in the works of; Knack and Keefer, (1995); Mauro, (1995); Hall and Jones, (1999); La Porta et al, (2001). However, while institutional channel of resource curse hypothesis is accepted as an important potential cause of the curse; it is yet to be established empirically. The practice has been to use corruption as a control for institutional quality (Sachs and Warner, 1995a; Papyrakis and Gerlagh, 2004). Nonetheless, Bulte et al (2005) has posited that natural resource abundance, especially mineral resources, have direct impact on several measures of human development, and a negative indirect effect through two measures of institutional quality. Mehlum et al (2006) observed that the interaction of natural resource abundance with high-quality

institutions produce positive growth effect even as the direct negative growth effect of resource wealth seems to persist.

The above observations notwithstanding, there is a consensus of opinion among economists that the existence of abundant natural resources; especially mineral resources leads to corruption and rent-seeking behavior. This according to Auty, (2001); Leite and Weidmann,(1999) and Isham et al, (2005) reduces the quality of government which in turn affects economic performance negatively. The political economy model of Robinson et al (2006) showed that the impact of a “resource boom” critically depends on the quality of political institutions, and in particular, the degree of political patronage in the public sector. In the opinions of Collier and Hoeffler (2005), countries with bad quality institutions are more likely to suffer from resource abundance as this may lead to considerable increase in violent civil conflict. Empirically, rent- seeking due to natural resources abundance is non-linear to income and the total value of resources in a country. Ross (2001) in a cross-country study found that the negative resource effects of mineral abundance on institutions decline with increasing income and with increase in past mineral exports. In the words of Sal-i-Martin and Subramanian (2003); “oil corrupts and excess oil corrupts more than excessively”. Sal-i-Martin and Subramanian (2003) emphasised that the natural resource curse holds for mineral resources particularly oil abundance, and not agricultural products and food.

In a different vein and in countries with low levels of savings, Atkinson and Hamilton (2003) opined that natural resource abundance may have negative effects on development if on account of weak institutions resource profits are spent on government consumption rather than investment. Stijns (2005) concludes that “learning processes” are critical in determining the direction of influence of resource wealth on growth. On the other hand, Acemoglu et al (2001) questions the natural resource curse hypothesis and maintains that institutional quality alone can explain a large amount of the cross-country differences in economic development.

3.Data Source and Measurement

The relationship between petroleum resources, institutions, and economic growth in Nigeria was investigated using time series data for 41years, from 1970 to 2011. Petroleum resource was proxied by share of petroleum resource exports in GDP for 41 years (1970-2011). Data on Contract Intensive Money (CIM), Openness (OPEN), Inflation (INFLA) and per capita GDP were obtained from CBN Annual Reports and Statistical Bulletin, the data on Corruption (COR) was from Transparency International Agency Annual publication, Wikipedia, 2011 while the data on Government Effectiveness (GOVEFF) came from CIA, World Factbook 2011.

Institutional quality variable is proxied by three indices; contract intensive money (CIM), government effectiveness (GOVEFF) and corruption (COR). Contract intensive money (CIM) index, according to Clague et al (1995) and Boschini et al (2003) measures the extent to which property rights are protected and contracts enforcement. The variable is used as a measure of institution because it follows that the more quality the institutions are in a system, the greater will be the degree of property rights protection and contract enforcement. Contract intensive money index ranges from 0-1. A higher score means high degree of property rights protection and contract enforcement. Formula for computing CIM is as stated below:

$$CIM = (M_2 - C_0) / M_2$$

Where, M_2 = broad money supply and C_0 = currency in circulation.

Corruption index (CI) measures the degree to which corruption is perceived to exist among public officials and politicians (TICPI, 1995). According to Sachs and Warner, (1995a); Papyrakis and Gerlagh, (2004), institutional quality is often simply controlled for by using a measure of corruption. Transparency international corruption perception index ranges from 0-

10. A higher score means less (perceived) corruption. Government effectiveness (GOVEFF) index measures the manner in which power is exercised in the management of a country's economic and social resources for development, as well as the quality of policy formulation, and the credibility of the government commitment to such policies. The index ranges from - 2.5 (weak) to 2.5 (strong) government performance. Economic control variable (z); covers trade openness, and inflation. Data for openness (OPEN) was computed as the total value of exports and imports divided by GDP in a year for 41 years, from 1970 to 2011.

4.Model Specification

Following the literature and empirical works on the subject, the relationship between petroleum resources, institutional quality and economic growth in Nigeria can be specified as follows:

$$PCGDPR = f(OEXG, INST, Z, U) \text{-----(1)}$$

Where;

PCGDPR =per capita GDP growth rate

OEXG = petroleum resource abundance (proxied by share of oil exports to GDP).

INST=institutional equality (proxied by CIM, GOVEFF and COR).

Z =economic control variable (proxied by OPEN and INFLA)

U =Stochastic error term.

Thus, equation (1) can be rewritten as;

$$PCGDPR = f(OEXG, OPEN,INFLA, CIM, GOVEFF,COR, ,U) \text{-----(2)}$$

Assuming a linear relationship, equation (2) can therefore be written as:

$$PCGDPR_t = a_0 + a_1 OEXG_t + a_2 OPEN_t + a_3 INFLA_t + a_4 CIM_t + a_5 GOVEFF_t + a_6 COR_t + U \text{--- (3)}$$

Where,

$a_1, a_2 \text{--- } a_6$ are the coefficient of the model estimates

The apriori expectation is that. $a_1 > 0, a_2 > 0, a_3 > 0, a_4 < 0, a_5 > 0, a_6 < 0$.

The time series properties of the variables including cointegration are investigated and the error correction method is used to estimate the model.

Results

Table 1: Unit Root Tests

VARIABLE	ADF		Phillips-Perron	
	VALUE	DECISION	VALUE	DECISION
PCGDP	-3.3416*	I(0)	-5.2381*	I(0)
CIM	-3.6082*	I(1)	-4.4650*	I(1)
COR	-5.4685*	I(1)	-5.6096*	I(1)
OEXG	-6.3443*	I(1)	-2.7148**	I(0)
GOVEFF	-5.0828*	I(1)	-5.5769*	I(1)
INFLA	-3.5249*	I(0)	-3.2354*	I(0)
OPEN	4.4643*	I(0)	6.9166*	I(0)
EXR	3.8837*	I(1)	-5.8864*	I(1)

Compiled by author: ADF 5% critical value=-2.9378

Phillips-Perron 5% and 10% critical values = -2.9358 and -2.6059 respectively.

*and ** = statistical significance at 5% and 10% levels respectively.

From Table 1, the variables are PCGDP, OEXG, INFLA and OPEN are stationary, I(0) while CIM, COR, GOVEFF and EXR are integrated of 1, I(1). The Johenson cointegrated test

indicated that the variables are cointegrated, hence an error correction model exists between the variables. The result of the model estimation is presented in Tables 2 and 3 below.

**Table 2: Over-parameterized Error Correction Estimate
Impact Of Petroleum Resources and Institution on Economic Growth**

Dependent Variable: D(PCGDPR)

Method: Least Squares

Date: 02/09/13 Time: 02:20

Sample(adjusted): 1972 2010

Included observations: 39 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(PCGDP(-1)))	-0.244897	0.211914	-1.155645	0.2602
D(OEXG)	0.020462	0.005102	4.010231	0.0006
D(OEXG(-1))	0.005224	0.006124	0.853049	0.4028
D(CIM)	-1.890816	1.702096	-1.110875	0.2786
D(CIM(-1))	0.653455	1.625224	0.402071	0.6915
D(COR)	0.329023	0.223424	1.472640	0.1550
D(COR(-1))	-0.095565	0.194914	-0.490292	0.6288
D(GOVEFF)	-0.186176	1.195692	-0.155706	0.8777
D(GOVEFF(-1))	-2.020498	1.229857	-1.642872	0.1146
D(OPEN)	-0.000629	0.005520	-0.113872	0.9104
D(OPEN(-1))	0.062744	0.012095	5.187690	0.0000
D(INFLA)	0.004783	0.001931	2.477346	0.0214
D(INFLA(-1))	0.005784	0.002717	2.129241	0.0447
D(EXR)	0.002332	0.003774	0.617843	0.5430
D(EXR(-1))	0.005118	0.003557	1.438964	0.1642
ECM(-1)	-0.57E-06	3.64E-07	-4.303337	0.0003
C	0.105818	0.057774	1.831577	0.0806
R-squared	0.947527	Mean dependent var		0.182315
Adjusted R-squared	0.909365	S.D. dependent var		0.545263
S.E. of regression	0.164155	Akaike info criterion		-0.476734
Sum squared resid	0.592832	Schwarz criterion		0.248408
Log likelihood	26.29631	F-statistic		24.82898
Durbin-Watson stat	2.138452	Prob(F-statistic)		0.000000

Source: Authors' Computation with EVIEWS.

Note: *, ** and *** means significance at 1%, 5% and 10% respectively

**Table 3: Parsimonious Error Correction Estimate
Impact of Petroleum Resources and Institution on Economic Growth**

Dependent Variable: D(LOG(PCGDP))

Method: Least Squares

Date: 02/09/13 Time: 02:13

Sample(adjusted): 1972 2010

Included observations: 39 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OEXG)	0.015081	0.011222	1.343878	0.0969
D(OEXG(-1))	-0.000363	0.007636	-0.047531	0.9624
D(CIM)	1.612994	2.681259	0.601581	0.5521
D(COR(-1))	-0.339975	0.115612	-2.940654	0.0013
D(GOVEFF)	4.764043	1.027560	4.636266	0.0001
D(GOVEFF(-1))	0.882578	1.626580	0.542598	0.5916
D(OPEN)	-0.012267	0.010393	-1.180329	0.2475
D(INFLA)	0.004490	0.003781	1.187314	0.2447
ECM(-1)	-0.34E-06	3.49E-07	-3.828027	0.0006
C	0.150028	0.057621	2.603714	0.0144
R-squared	0.720979	Mean dependent var		0.182315
Adjusted R-squared	0.634386	S.D. dependent var		0.545263
S.E. of regression	0.329699	Akaike info criterion		0.835282
Sum squared resid	3.152342	Schwarz criterion		1.261836
Log likelihood	-6.287990	F-statistic		8.326087
Durbin-Watson stat	1.940274	Prob(F-statistic)		0.000005

Source: Authors' Computation with EVIEWS.

Note: *, ** and *** means significance at 1%, 5% and 10% respectively

The over-parameterized result in Table1 shows that the coefficient of the error correction term ECM (-1) is -0.0000057 and t-statistic value of -4.303337 is both statistically significant and negative. This indicates an almost zero adjustment of past deviations or disequilibrium of the previous year in the current period. The adjusted R^2 of the model estimation shows that approximately 95 percent of the variation in per capita GDP growth rate (PCGDPR) is explained by the combined effects of petroleum resource abundance (OEXG), government effectiveness (GOVEFF), corruption (COR), contract intensive money (CIM), trade openness (OPEN) and inflation (INFLA). Since this is the over-parameterized model we do not discuss it further.

Table 3 presents the parsimonious result derived from that of Table 2. Again the ECM (-1) is properly signed with a t-statistic value of -3.828027 that is statistically significant at 1% level. The R^2 value 0.7 indicates that approximately 72 percent of the variation in per capita GDP growth rate (PCGDP) is explained by the combined effects of petroleum resource abundance (OEXG), government effectiveness (GOVEFF), corruption (COR), contract intensive money (CIM), trade openness (OPEN) and inflation (INFLA). The F-statistic value of 8.326087 confirms that at 1 percent level, the overall regression is significant. The Durbin Watson statistic value of 1.940274 is very close to 2 indicating absence of serial correlation in the model.

Furthermore, the result revealed that institution proxied by; government effectiveness (GOVEFF) and corruption (COR) are statistically significant at 1% level. However, contract

intensive money (CIM) statistically significant. Whereas GOVEFF and CIM have positive impact, corruption impacts negatively on economic growth rate in Nigeria. The coefficient of -0.339975 implies that a 1 percent rise in corruption will bring about 0.34 percent decrease in the growth of Nigeria economy that largely depends on petroleum resources. This result depicts the disadvantaged position of Nigeria's economy in the light of visible corrupt practices. CIM and GOVEFF came out with expected positive signs and coefficient of 4.764043 for GOVEFF implies that a 1 percent increase in government effectiveness will result to 4.76% increase in growth of Nigeria economy. Thus, improved contract intensive money (CIM) and Government effectiveness (GOEFF) enhance economic growth in Nigeria. The results also show that the coefficient of petroleum resource abundance (OEXG) was 0.015081, the estimated t-statistic value; 1.343878 is significant at 10%. This denotes that petroleum resource abundance, (OEXG) impacts positively and significantly on economic growth (PCGDP). It indicates that one percent increase in petroleum resources exports will improve the rate of economic growth by 0.02 percent.

The results in Table 2 further revealed that the coefficient and the t-statistic values of inflation (INFLA) are 0.00449 and 1.187314 respectively. This result is not statistically significant. The coefficient and the t-statistic values of openness (OPEN) are 0.010393 and -1.180329 respectively. The figures indicate that openness of the economy impacted negatively on the rate of economic growth (PCGDP). This result is not statistically significant.

5. Recommendations and Conclusion

The economy of Nigeria is dependent on petroleum resources and quality institutions are expected to enhance the impact of petroleum resources on the economy. Given that the ratio of oil exports to GDP (OEXG), government effectiveness (GOVEFF) contract intensive money (CIM) and inflation (INFLA) are positive confirms that Nigeria is petroleum resource dependent and that improved institutions like government effectiveness and contract intensive money will make the dependency a blessing rather than a curse. Similarly, the result indicates that low rate of corruption (COR) and reduced openness will promote growth. Thus, we recommend improved performance of institutions in Nigeria through less corrupt activities, intensified effective governance and sound contract enforcement to ensure sizeable positive economic growth. Similarly, we recommend that macroeconomic indicators like openness and inflation be used as tools to control and fine tune impact of petroleum resource abundance on economic growth of Nigeria. Proactive inflation and openness policies should be introduced based on prevailing situations to ensure improved positive impact of petroleum resource abundance on economic growth in Nigeria.

In sum, the findings in this paper suggest that the petroleum sector in Nigeria need to be encouraged to play the leading role in the economic growth and development process. The paper therefore concludes that an abundance of petroleum resource may in fact be much less of a curse and more of a boom for economic performance than often believed if quality institutions are put in place. The petroleum sector remains very strategic to the sustenance of rapid economic growth and development in Nigeria.

6. References

Acemoglu, Daron, Simon, and James, R., (2001). The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review* 91, 5: 1369–1401.

Acemoglu, Daron, Simon Johnson and James A. Robinson (2003). "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth". *Journal of Monetary Economics* 50: 49-123.

Arezki, R. and F. van der Ploeg (2007). *Can the Natural Resource Curse Be Turned into a Blessing? The Role of Trade Policies and Institutions*. EUI Working Paper ECO 2007/35. Department of Economics, European University Institute.

Atkinson, G., & Hamilton K., (2003). “Savings, Growth and the Resource Curse Hypothesis” *World Development*, 31(11), 1793-1807.

Auty, M. R. (2001). Introduction and Overview. In R. M. Auty, ed., *Resource Abundance and Economic Development* (Oxford University Press): 1–16.

Barro, J. R. (1999). Determinants of Democracy. *Journal of Political Economy* 107, 6: S158–83.

Boschini, D. A, J. Petterson, and J. Roine (2003). *Resource Curse or Not: A Question of Appropriability*. SSE/EFI Working Paper Series in Economics and Finance, No. 534. Stockholm University.

Bulte, E.; Damania, R and Deacon, R (2005). *Resource intensity, institutions and development*. *World Development*, 33: 1029-1044.

Brunnschweiler, N. Crista, and Erwin H. Bulte (December 2006). *The Resource Curse Revisited and Revisited: A Tale of Paradoxes and Red Herrings*. Economics Working Paper Series, no. 06/61. Swiss Federal Institute of Technology Zurich.

Caselli, F. and Michaels, G., (2009), ‘Do Oil Windfalls Improve Living Standards? Evidence from Brazil’, OxCarre Research Paper 28, University of Oxford.

Central Bank of Nigeria (CBN) (1998): *The Changing Structure of the Nigerian Economy and Implications for Development Research* Washington, D.C. Department, Abuja pp.102-105.

Central Bank of Nigeria (2000), *The Changing Structure of the Nigerian Economy* (2000).

CIA (2008): *CIA World Factbook: Nigeria*. Available at www.cia.gov/library/publications/the_world_factbook/print/ni/html.

CIA (2011): *CIA World Factbook: Nigeria*. Available at www.cia.gov/library/publications/the_world_factbook/print/ni/html.

Clague, C., Keefer, P., Knack, S. and Olson, M. (1999). “Contract Intensive Money: Contract Enforcement, Property Rights, and Economic Performance”. *Journal of Economic Growth*, 4 (2): 185-211.

Collier, Paul, and Anke Hoeffler (2008). Resource Rents, Governance, and Conflict. *Journal of Conflict Resolution* 49: 625–33.

Guajardo, J. C., (2008), ‘Mineral Rents and Social Development in Chile’, paper prepared for the UNRISD project on Social Policy in Mineral-Rich Countries.

Gylfason, Thorvaldur (2001). Natural Resources, Education, and Economic Development. *European Economic Review* 45: 847–59.

Hall, Robert, and Chad I. Jones (1999). Why Do Some Countries Produce So Much More Output per Worker than Others? *Quarterly Journal of Economics* 114, 1: 83–116.

Hinojosa, L. et al., (2008), 'Social Policy and State Revenues in Mineral-Rich Contexts', Paper commissioned for UNRISD project on Social Policy in Mineral-rich Countries, Geneva.

Igbatayo S., (2004). Nigeria Petroleum industry and Export Orientation. A paper presented at the Society of Petroleum Engineers program, Abuja, Nigeria pp.18-23.

Isham, Jonathan, Micheal Woolcock, Lant Pritchett, and Gwen Busby (2005). The Varieties of Resource Experience: Natural Resource Export Structures and the Political Economy of Economic Growth. *World Bank Economic Review* 19, 2: 141–74.

Knack, Stephen and Philip Keefer (1995). “Institutions and Economic Performance: Cross Country Tests Using Alternative Institutional Measures”. *Economics and Politics* 7 (3): 207-227.

Kronenberg, Tobias (2004). The Curse of Natural Resources in the Transition Economies. *Economics of Transition* 12, 3: 399–426.

Leite, Carlos, and Jens Weidmann (1999). *Does Mother Nature Corrupt? Natural Resources, Corruption, and Economic Growth*. IMF Working Paper No. WP/99/85. International Monetary Fund.

Mauro, Paolo (1995). Corruption and Growth. *Quarterly Journal of Economics* 110, 3 (August): 681–712. *46 / Institutions, economic growth, and the “curse” of natural resources Fraser Institute / www.fraseramerica.org*.

Mehlum, Halvor, Karl Moene, and Ragnar Torvik (2006). Institutions and the Resource Curse. *Economic Journal* 116 (January): 1–20.

Mikesell, F. R. (1997). Explaining the Resource Curse, with Special Reference to Mineral-Exporting Countries. *Resource Policy* 23, 4: 191–99.

Papayrakis, Elissaios, and Reyer Gerlagh (2004). The Resource Curse Hypothesis and Its Transmission Channels. *Journal of Comparative Economics* 32: 181–93.

Robinson, et al. (2006). Political foundations of the resource curse. *Journal of Development Economics* 79, 447-468.

Ross, L. Michael (2001). Does Oil Hinder Democracy? *World Politics* 53 (April): 325–61.

Sachs, D. Jeffrey, and Andrew M. Warner (1995). *Natural Resource Abundance and Economic Growth*. NBER Working Paper No. 5398. National Bureau of Economic Research.

Sachs, D. J. & A. M. Warner (1997). Sources of Slow Growth in African Economies. *Journal of African Economies* 6, 3: 335–76. *Institutions, economic growth, and the “curse” of natural resources / 47 www.fraseramerica.org / Fraser Institute*

Sala-i-Martin, Xavier, and Arvind Subramanian (2003). *Addressing the Natural Resource Curse: An Illustration from Nigeria*. IMF Working Paper No. WP/03. International Monetary Fund.

Stijns, J. C., (2006). "Natural Resources Abundance and Human Capital Accumulation" *World Development*, 34, 1060-1083.

Transparency International (2011). Corruption Perceptions Index. http://www.transparency.org/policy_research/surveys_indices/cpi/2011.

Tsalik, S., 2003. 'Natural Resource Funds: Case Studies in Success and Failure', Chapter 2 in Caspian Oil Windfalls: Who Will Benefit?, Caspian Revenue Watch.

UNDP (2000). Human Development Report. Nigeria 2000/2001 Millenium Ed., Lagos, Nigeria. pp.64-67.

United Nations Economic Committee for Africa (UNECA) (2005). Economic Prospects for African Countries. Addis Ababa pp.5-7.

World Bank (2000). Attacking Poverty. World Development Report. 2000/2001. Washington D.C pp.14-16

About the Author(s)

Frances N Obafemi (Ph.D) and Uchechi R Ogbuagu (Ph.D) are Senior Lecturers in the Department of Economics, University of Calabar, Calabar, Nigeria; while Emmanuel Nathan is a Ph.D student in the same Department. All correspondence to; francesobafemi@yahoo.co.uk, +234 803 743 6169.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX