EMPIRICAL ANALYSIS OF RESOURCE CURSE IN NIGERIA

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ABSTRACT

This paper investigates the existence of resource curse in Nigeria and examines various challenges that caused it. Some of the issues are economical while others are political such as: high level of corruption, poor level of science and technology policy implementation and infrastructural development, volatilities of price in the oil market, Dutch disease through overreliance on oil revenue, insufficient investment in education, weakly institutionalised states and lack of transparency among others. Some of the factors that are suggested to correct these issues centred round economic development principles such as: economic diversification, technology management, transparency and accountability like Extractive Industries Transparency Iniatives (EITI), natural resource funds, investments in education, domestic private ownerships, public involvement and strong institutions among others. Purposive sampling technique was adopted by distributing questionnaires across the key sectors of the economy and few people were also interviewed. The result of the regressions showed that corruption/weak institution, poor level of technology and Dutch Disease have direct and significant impact on the resource curse in Nigeria while volatility of crude oil price does not have a significant impact on resource curse in Nigeria. However, this paper concluded that most of the solutions suggested in combating resource curse would not be realistic if corruption and weak institutional frameworks as well as poor technological development continue to dominate Nigeria system.

Keywords: *Resource, curse, transparency, weak, technology, institutions, Nigeria*

1   INTRODUCTION

Nigeria is the largest producer of oil in Africa and among the ten largest producers of both crude oil and gas in the world[1]. Nigerian economy is heavily dependent on oil and gas sector as it accounts for 95% of the export revenue and 76% of government revenue, yet most Nigerians are living below the poverty line[2] despite the potential to build the prosperous economy. There is declining level of capacity utilisation in the real sector and the government efforts to improve the contributions from the non oil sector to national income have not yet produced a significant results[3]. Nigeria has engaged in substantial oil and gas production over 50 years and the current oil reserve is estimated to about 35 billion barrels while her proved recoverable natural gas reserve is put at 187 trillion cubic feet, but all these have not resulted into a sustainable economic development in the country. Rather, Nigeria moves from the 50 richest countries in the world in the 1970s to among the top poorest in the world in the current dispensation[4]. There is therefore need to appraise resource curse in the context of Nigeria and the probable solutions which can move the nation forward. The paper is divided into six sections. Section 2 review the literatures on resource curse, section 3 and 4 focus on challenges and probable solutions, section 5 is on the field survey conducted while section 6 concludes the paper

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[1] CIA-The World Factsheet, 2010

[2] Using a rate of US$1 per day

[3] Onyeukwu A.J 2006

[4] UN, 2010, Human Development Report

2   EMPIRICAL LITERATURES

According to Humphreys et al (2007), resource curse is characterised by countries with large endowments of natural resources such as oil and gas but often perform worse economically and politically than countries with fewer resources. Evidence of this can be seen in some resource-rich countries like Nigeria, Sudan, Congo, Angola etc. which are suffering from different civil, political and economic problems while countries like Hong Kong, Taiwan, Singapore achieved their rapid economic growth without large natural resource reserves but rather through a boomed exportation of manufactured goods. Various studies such as Sachs and Warner (2001), Gylfason (2001) and so many others have shown that there is a correlation between abundant mineral resources and a negative economic and political outcome. Weinthal and Luoug (2006) stated that the more intense a country's reliance on mineral exports (measured as a percentage of GDP) the more slowly its economy grew. Based on their survey, GDP per capita in mineral-rich countries increased by 1.7% while that of mineral-poor countries increased by 2.5-3.5% between 1960 to 1990; Gylfason (2001) also observed that from 1965 to 1998 gross national product per capita in OPEC countries decreased on average by 1.3 percent while there was a per capita growth by an average of 2.2% in the rest of the developing world. Collier and Hoffler (2002) have shown that natural resources considerably increase the chances of civil conflict in a country and their estimates showed that natural resources has a strong and non-linear effect on conflict. They therefore suggest that natural resources play a great role in affecting institutional quality. Also, Isham et al (2003) tested and concluded that natural resources affect economic growth through its adverse effect on economic institutions.

3   CHALLENGES OF RESOURCE CURSE IN NIGERIA

The level of corruption and poor governance prevailing in the Nigerian system still remain high, albeit there are so many efforts by Economic and Financial Crime Commission (EFCC), Independent Corrupt Practices and related offences Commission (ICPC), Transparency International, World Bank and many other organisations to reduce it. Nigeria was ranked in the bottom of the list among some other oil rich countries using Transparency International Corruption Perception Index and World Bank Research Indicators. Poverty rate increased from 36% in 1970 to approximately 70% in 2000 which ranked Nigeria then the 15th and presently the 28th poorest nation in the world despite its vast resource wealth (UN, 2010). Smith (2004) therefore showed that mineral wealth is highly correlated with high levels of corruption and poor governance. Nigeria is among the countries in the world with the widest gap between the rich and the poor with Gini index[5] of 50.6 compared with countries such as India (37.8), Jamaica (37.9) and Rwanda (28.9)[6].

Nigeria is also faced with the challenge of Dutch Disease which arises when productivity and exports shift from non-resource traded sector to the resource traded sector as a result of discovery of large stores of mineral resources such as oil and gas or a general increase in their price. Many literatures such as Humphreys (2007), Sovacool (2010) and lots of others confirmed Dutch Disease as one of the main issue of resource curse. Wind fall from oil leads to currency appreciation which makes locally manufactured goods dearer and imports cheaper resulting to crowding out of other economic sectors. Productivity shifted from agricultural and technological driven economy to crude oil in Nigeria which reduced economic diversity. The decline in technology, manufacturing and agricultural sectors retards economic growth by decreasing demand and supply of labour in that sectors.

National revenue derived from oil in Nigeria is highly volatile as it depends on the global oil price. This is also known as "boom and bust" cycles. Fluctuations in the market price or resource stock affect the government revenue which indirectly affects the entire economy since the national budget is usually plan against the oil revenue. The frequent upward or downward adjustments of fiscal expenditures are costly because it tends to discourage private investment and at the same time impede public goods provision (Smith 2004). Moreover, government tends to borrow huge sum of debt during bust to support its budget deficit believing that windfall from oil during boom will easily repay the debts. This was what happened in the early 1980s when Nigeria's debt rose as a result of huge borrowing- which was largely to offset collapse in oil prices- and the borrowing was not linked to future growth[7].

Weak and unaccountable institutions as well as insufficient investment in education are very paramount in resource-rich countries. Weinthal and Luong (2006) asserted that the main political consequence of relying on

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[5] The Gini index measures the extent to which the distribution of income (or in some cases consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of zero represents perfect equality while an index of 100 points to a perfect inequality
[6] Otive Igbuzor: Review of Nigeria Millennium Development Goals 2005 report (presented at the MDG/GCAP Nigeria Planning Meeting, held in Abuja on the 9th March 2006.
[7] Onyeukwu A.J, 2006

external rents is weakly institutionalized states. The windfall from external source of revenue makes it easy for government to finance state expenditure and this provides no incentives for government to build strong institutions. This impairs a viable tax system as government becomes rent seeker because it does not extract revenue from domestic sources. This therefore creates a weak linkage between the citizens and the government and affords the rulers to engage in unaccountable discretionary spending. A good example of such spending is Ajaokuta steel mill that Nigeria built in the 1970s to appease the Yoruba region which gulped over US$3.0 billion and yet was not able to produce any commercial ton of steel. Moreover, various studies have shown that investment in education suffers in resource-rich countries. Gylfason (2001) confirmed that when countries start relying on natural resource wealth, they seem to forget the need for a diversified and skilled labour force that can support other productive sectors during busts or when the resource stocks fully depleted. As a result, the share of GDP spent on education falls and this will have a long run effects on the economy when the government decide to diversify in the future.

Despite all the aforementioned issues related to resource curse, the probable **solutions** will be discussed as follows.

4　PROBABLE SOLUTIONS TO RESOURCE CURSE IN NIGERIA

There is a need to diversify the economy away from oil based to other sectors such as science and technology, manufacturing among others; and this will prevent Dutch Disease by preserving other sectors from being crowded out by the oil sector. There had been so many efforts worldwide to prevent Dutch Disease in terms of the policy prescriptions by International Organizations such as the United Nations Conference on Trade and Development, the United Nations Economic Commission, World Bank and IMF which encouraged most resource-rich countries to make considerable investments in developing other economic sectors during 1960s and early 1980s. Asian Tigers such as South Korea, Singapore and Taiwan have adopted some of these strategies to improve their science and technology sector which have eventually led to economic growth and development of their nations. A clear evidence of this is their R&D expenditure as a percentage of GDP in 2009 which stood as follows: South Korea (3.0%), Singapore (2.4%), and Taiwan (2.4%), while that of Nigeria for the same year was 0.2%.

By this, local currency was not allowed to appreciate to the extent that would reduce the performance of non-booming sectors. However, most of the state-led investment and industrialization strategies adopted by Nigeria were not objective and efficient and hence contributed to stagnant growth rates in the economy. Nigeria government therefore must concentrate on the improvement of her science and technology in order to have multiplier effect on other sectors of the economy. Thus, the current initiative to move R&D expenditure as a percentage of GDP to 1% as enshrined in the reviewed National Science, Technology and Innovation policy, presently before the Federal Executive Council for ratification, should be lauded (Siyanbola, 2011).

The combinations of sound fiscal and monetary policies militate against the resource curse. Smith (2004) asserted that in order to prevent the appreciation of real exchange rate, mineral-rich countries are urged to accumulate income-producing foreign assets so as to stabilise the local economy from the inflow generated by the mineral sector. The process of accumulating budget surpluses and avoidance of large scale foreign debt enable the mineral-rich countries to smooth out expenditures during boom periods and prevents borrowing during cycles of busts. These combined policies help to protect the domestic economy from the volatility of commodity revenue and generate budget stability. Botswana is a good example of a country that adopted sound macroeconomic policies and spends its windfalls wisely to fight against the Dutch Disease. Owing to its fiscal discipline, Botswana was able to avoid wasteful spending during boom periods and borrowing during busts, and this raised its GDP rapidly from the 25th poorest countries in 1966 to an upper-middle income country within 30 years. There must be an autonomous technocracy committed to long-term developmental goals in order to achieve the sound macroeconomic policies.

According to Intergenerational equity and allocation of natural resources theory of Hartwick (1977) and Solow (1986) which implies that as natural resource of a country is being depleted, rent received should be invested in order to maintain a constant consumption stream in the future. This theory suggested that all profits from exhaustible resources must be invested in reproducible capital such as machines. They believed that by doing this, current generations will not be able to short change the future generations by over consuming the proceeds from the mineral resources. Moreover, this must have solved the problem of volatilities and Dutch Disease issues. However, it is not realistic in real world that government will invest all revenues from mineral resource without spending some part of them to meet current expenditures, and this theory also assume that labour and technology are constant which actually not in the real world. This then gave rise to the creation of Natural

Resource Funds (NRFs). This Fund consists of Stabilisation and Savings Funds. Stabilisation Funds aim to reduce the effect of resource price volatility on the economy and improve budget predictability by stabilising spending patterns (Nathan and Wanchekon 2004). This reduce overspending when prices are high and borrowing when prices are low by placing the excess revenue into stabilisation funds when price is high and taking out revenue from the funds to make up for budgetary shortfalls when price is low. On the other hand, Savings funds ensure that a proportion of the wealth will be available for future generations even after the natural resources have been fully exhausted. Savings fund seems like a modified version of intergenerational equity of Solow and Hartwick. Kemp (2009) supported the establishment of an Oil fund such that future generations also benefit from the income of non-renewable resource and only permanent income from the fund are available for regular budget purposes. Governments is expected to use these funds to provide a widespread educational system, investment in transportation and other infrastructure, investment in Agriculture and other productive activities. Examples of such funds include Alaska permanent Fund, State Petroleum Fund in Norway, Venezuela's Stabilisation Investment Fund, Kuwait Reserve Funds among others. Some funds have been very successful like that of Alaska, Norway etc because of high levels of public involvement in the decision-making process, while other funds like that of Kuwait and many developing countries are still characterised with high level of non-transparency, non-public involvement which is still due to weak institutional frameworks.

Lastly, Public involvement, private domestic investment, transparency and accountability are the major factors which address both the economic and the political institutional frameworks of the resource-rich countries. For any resource-rich countries to grow there must be transparency and accountability which is achieved by public involvement in the management of revenues in order to address the consequences of reliance on external rents. International Non-governmental Organisations (INGOs), World bank, IMF and recently Extractive Industry Transparency Initiatives (EITI) have urged governments in mineral-rich countries to disclose all their transactions with foreign extractive firms (e.g. Multinational oil companies) and that foreign extractive firms should also publish whatever they pay to the host governments. In accordance with the principle of EITI, Nigeria Extractive Industry Transparency Initiative (NEITI) was set up by the government which composed of government representatives, private sector, media, civil society representatives etc in order to ensure prudency, transparency and accountability in Nigeria. This will serve as a catalyst for growth and development if fully institutionalised into the oil, gas and mining sector while ensuring independence from political influence.

Many literatures such as Weinthal and Luong (2006) also support private domestic ownership by taking resource rents out of the state's direct control because this will foster the condition under which the governments have an incentive to build a strong fiscal and regulatory institutions that will extract revenue from private owners and generate other sources of revenue outside the natural resource sector. However, Humphreys et al (2007) argued that privatisation could only work where governmental institutions are already being strengthened such as sound legal and tax administration, good corporate governance structure as well as sound financial institutions among others.

5 FIELD SURVEY AND METHODOLOGY

A cross-section survey of 50 respondents was conducted across various groups which consist of civil servants, educationists, oil & gas workers, researchers and politicians that came from all states in Nigeria. The technique was based on purposive sampling and questionnaire was distributed among the key people in aforementioned sectors. Few people were also interviewed to examine their opinions on resource curse in Nigeria. The questionnaires were distributed in Lagos, Abuja and Portharcourt to capture the geo-political zones of the country and approximately 45 respondents completed the questionnaires in September 2011. The dependent and the independent variables required five-point Likert-style responses ranging from "Strongly agree" to "Strongly disagree" The data from the questionnaires were analysed using SPSS for Windows (Version 17.0) for accurate analysis. Analysis included regression analysis, and analysis of variance (ANOVA).

6 DISCUSSION OF RESULTS

This study adopts multiple linear regressions in determining those factors that contribute to resource curse in Nigeria. Poor economic growth due to poor management of natural resource was used as a proxy for Resource

curse and this serves as a dependent variable. The independent variables are corruption/weak institutions, Dutch Disease, Poor level of technology and volatility of crude oil price. The model is constructed as shown below:

$$RCOS = \beta o + \beta_1 CWI + \beta_2 DDS + \beta_3 PTEC + \beta_4 VCOP + ut$$

Where

RCOS= Mismanagement of resources (proxy for Resource curse)

CWI = Corruption and Weak institutions

DDS = Dutch Disease

PTEC= Poor level of Technology

VCOP= Volatility of Crude Oil Price

β_t = Intercept and Coefficient of the variables

The model explains the contribution of each of the independent variables to the dependent variable. The result of the regression analysis is shown in the table below.

Table 1: Regression Results of the Relative Contribution of Corruption/ weak institutions, Dutch Disease, Poor level of Technology and Volatility of Crude oil price to Resource Curse in Nigeria.

Sample size	45	
Dependent variable	RCOS	
	Model	
Independent Variables	Standard β Coefficient	P-Value
Intercept	0.883	0.109
CWI	0.418	0.001
DDS	0.269	0.025
PTEC	0.308	0.014
VCOP	-0.098	0.373
Coefficient of Determination	$R^2 = 0.580$, Durbin Watson= 2.032	
ANOVA	F= 13.823, P-value =0.0005	

Level of significance $p < 0.05$

Extracted from SPSS 17.0 Version

The result shows that the model is significant($p < 0.05$) and there is a strong relationship between the dependent and independent variables as can be seen from the P-value of the F-statistic. The proportion of variation of the resource curse explained by the model is 58% as shown by the R^2 in the table above. The independent variables when compared on an individual basis show that Corruption/ Weak institutions, Dutch Disease, poor level of technology contribute directly to the mismanagement of resources while volatility of crude oil price does not contribute to it. Also, the probability values of CWI, DDS and PTEC depict that each of them have significant effect on resource curse using 5% level of significance, albeit VCOP was not significant based on the survey conducted.

It can also be deduced from the coefficient of the independent variables in the table 1 above that Corruption/weak institutions and Poor level of Technology in various sectors are the main challenges of resource curse in Nigeria[8].

The proposed solutions from the survey are shown below.

Fig 1: Proposed solutions to resource curse in Nigeria based on field survey conducted in September 2011
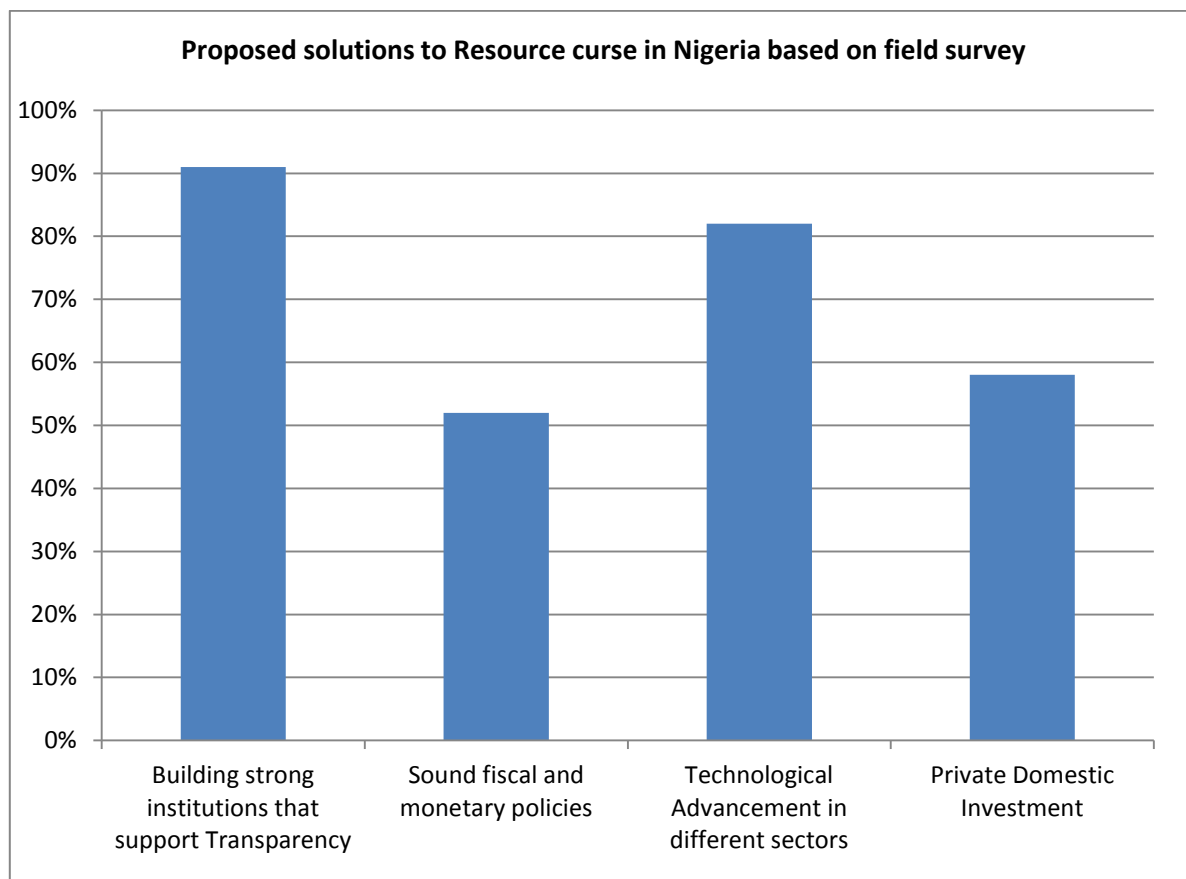

Fig. 1 shows that 91% of the respondents which was the largest supported that Building strong institutions such as sound regulatory, fiscal, political and supervisory institutions among others will solve the resource curse issue in Nigeria. 82% of the respondents agreed that Technological advancement in different sectors will improve all other sectors outside the resource sectors and will eventually led to economic development. It is not surprising that the interview conducted also skewed towards building strong institutions and improved technologies.

7   CONCLUDING REMARK
This paper has been able to establish and highlight various issues relating to resource curse in Nigeria such as Dutch Disease, poor technological advancement, volatilities of oil price, high level of corruption, authoritarian regimes/poor democracies, high level of indebtedness, poor investment in education, weak and unaccountable institutions among others. Some solutions which could help in mitigating against resource curse are also examined such as economic diversification, sound fiscal and monetary policies, establishment of various Natural Resource Funds, Direct distribution to the citizens, Public involvement, good governance, domestic privatisation, transparency and strong accountable institutions. However, this paper concludes that weak institutions and poor technology are the greatest impediments to escaping resource curse as shown by the regression results. This accounted for why most of the solutions propose seem not working in developing countries like Nigeria and Angola. Therefore, there must be strong and transparent institutions on ground in Nigeria before some of the solutions will function well like those in Norway, Canada and other developed countries.

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[8] The coefficients of CWI and PTEC are 0.418 and 0.308 which are more than others

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