

THE IMPACT OF OIL WEALTH ON ECONOMIC GROWTH OF A MONOCULTURAL ECONOMY-NIGERIA

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Abstract

This paper sets out to investigate the impact of Oil Wealth on economic growth of a mono-cultural economy-Nigeria from 1980 to 2012. The operational methodology adopted is the multiple regression analysis with the application of OLS econometric technique. The result derived shows that the manufacturing sector and interest rate contributed negatively to economic growth while the agricultural and oil sectors contributed positively to economic growth. However based on comparative analysis, the agricultural sector contributed more to GDP than the oil sector. This paper recommends that the Federal Government of Nigeria (FGN) should aggressively pursue the policy of revenue base diversification and massive investment as well as unalloyed commitment to the real sectors of agriculture, manufacturing, infrastructure, tourism and others as the key to protect the economy from imminent collapse. Secondly, another way out of the mono-economy is for the government to use petroleum resources to drive industrialization because it is through this that value can be added to various raw materials which will help stop importation of home made goods. Finally, government should boost investment in infrastructure, guarantee security of lives and property, support the proper functioning of the regulatory and other financial institutions required to make the economy function very well. These will no doubt cause the “hanging” economic growth in Nigeria to trickle down to the masses.

Keywords: Oil wealth, Rentier states, Dutch disease, liberal democracies, Resource curse, Shale oil, inclusive growth

INTRODUCTION

Before the advent of oil boom, each of the three regions of Nigeria in the early 1970s was unique for production of export cash commodities. The Northern part earned foreign exchange from the export of grandaunts while the Western Region depended on cocoa and rubber. The Eastern part was well known for production of palm oil and kernels. This however changed diametrically with the emergence of crude oil export in 1958 and the oil boom of the 70s. Oil proceeds (oil wealth) have consequently come to determine the rate and path of growth of the Nigerian economy. The sad reality today after 56 years of exploitation and exploration is that the ephemera resource is now of anxiety. It has suddenly crept into the nation's consciousness that the economy is on the precipice should it continue to hang on the depleting foreign exchange. In fact, experts say the economy would collapse and this would have grave implications for the country by 2020 when the nation's foreign partners would no longer have need for the sweet crude. The indices are real with the discovery of shale oil and gas oil in the United States of America. The US being a major destination for Nigeria's crude oil, the implication is that in the near future the Americans would halt importation of oil from Nigeria. Thus the nation's foreign earnings from oil export would drastically plummet, making the economy to be vulnerable as a result of the apparent feature to develop other sectors or even utilize the enormous wealth from oil to develop critical infrastructure. The global perception of Nigeria is that of a richly blessed oil producing nation but with a growing poverty index. The problem of low economic performance of Nigeria has to do mainly with the failure by government to utilize productively the financial windfall (oil wealth) from the export of crude oil to develop the key sectors of the economy. The oil boom of the 1970s led to the almost total neglect of non-oil tax revenues, expansion of the public sector, and deterioration in financial discipline and accountability.

Dependence on oil wealth in turn exposed Nigeria to oil price volatility which threw the country's public finance into disarray. Among the important empirical findings in development economics in the 20th century is that national resource abundant economies have tended to grow more slowly than economies without substantial resources (Sachs and Warner, 1995, Gravin and Huasmann 1988, Ross (2004), Lane and Cornell (1999). Although the availability of national resources does not necessarily imply a resource curse, on the average resource abundant countries lag behind countries with fewer resources. For instance, over the last four decades or there about, the Organization of Petroleum Exporting Countries (OPEC) as a whole experienced a negative rate of GDP per capita growth (Gylfason, 2001). Venezuela ranked among the ten wealthiest nations at the beginning of the 19th century, but today it is downgraded to the level of a developing country. Glyfason (2001) states that of 65 countries that can be classified as natural resource rich, only four managed to attain both long-term investment

exceeding 25 percent of GDP on average from 1970-1998, equal to that of various successful industrial countries lacking raw materials, and secondly per capita GDP growth exceeding 4 percent per year on average over the same period. These four countries are Botswana, Indonesia, Malaysia and Thailand. These three Asian countries achieved this success by diversifying their economies and by industrialization. Botswana, rich in diamonds, did not diversify its economy but achieved growth through prudent management of windfall from diamonds. In East Asia, the countries with few raw materials (Hong Kong, Singapore, South Korea and Taiwan) have done even better than the resource-rich ones like Indonesia, Malaysia and Thailand.

Irrespective of the huge oil wealth, the Nigerian economy has unfortunately been bedeviled by sustained underdevelopment evidenced by poor human development and economic indices including poor income distribution, militancy and vandalization of oil production and distribution facilities, endemic corruption, unemployment and relative poverty. Nwezeaku (2010) Bawa and Mohammed (2007) assert that Nigeria with all its oil wealth has performed poorly, with GDP per capita income today not higher than what it was at independence in 1960. This means that an average Nigerian today is not better off when compared to his/her pre-independence brother. Oil revenue which is supposed to be a source of finance for economic growth and development has turned out to be a bone of contention between many interest groups, precisely the government and oil and gas companies.

The Nigerian Petroleum sector has sustained the Nigerian economy for over 56 years. The short run forecast of the Nigerian oil sector by the IMF group in 2010 revealed that the sector will continue to perform robustly until 2030 when it is anticipated very strongly that current investments in alternative energy sources will have been fully commercialized to take good share of the world energy market from oil. This forecast by IMF has failed as America has discovered Shale oil and gas in commercial quintiles and for now has little need for Nigeria's sweet crude. However, the current investments in gas powered equipment around the world and the newly found market opportunities for gasoline has also opened another avenue of income for the sector such that Nigeria has been projected to be the second leading gas exporter after Russia. This is the main thrust of the Nigerian oil sector and that explains why there is strong emphasis on reduction in gas flaring by oil companies in Nigeria. This is expected to keep the Nigerian economy buoyant beyond the short but in the long run.

This paper investigates the importance of oil wealth to economic growth of a monocultural economy-Nigeria from 1980 to 2012., The specific objectives include among others the following, find out why Nigeria has sustained under developing anomalies despite the

oil wealth again to find out why the World Bank in 1989 classified Nigeria as a low-income country and poor enough to be eligible for concessional aid despite the oil wealth.

This paper is organized as follows. Section II reviews the related literature while section III discusses the methodology. Section IV discusses the results of the analysis and in section V the paper makes conclusion and recommendations.

LITERATURE REVIEW

Dominant theories of economic growth and development especially those associated with the staple theory of growth suggested that natural resource abundance (national income) when invested would help backward states to overcome their capital shortfalls and provide revenues for their governments to provide public goods to their citizens, hence poverty reduction. These theories have been challenged as recent researchers have established a link between resource abundance and socio-economic problems. Natural resource abundance has been associated with slow growth (Sachs and Warner, 1995), (Garvin and Hausmann, 1988), Ross (2004), (Lane and Tornel, 1999), Ross (1999, 2001). At the same time, there is an established link between resource motivated conflict and economic collapse (Collier, Elliot, Hoeffler, Reynal-Querol & Sambanis, 2003), Skaperdas (1992), Deiniger (2003).

Of all natural resources, oil has been found to have the highest risk of civil conflict because of the large rents it offers and the shocks to which the government and the national economy are exposed to (Collier and Hoeffler, 2005), Fearon and Laiton, 2005). According to Collier and Hoeffler (2002), 23.0 percent of states dependent on oil exports have experienced civil war in any five-year period, a figure that dwarfs the 0.6 percent for countries without natural resources.

Gravin and Hausmann (1996), Ramey (1995), Aizenren and Manon (1999) and Caballero (2000) in their works explained the resource curse which is the tendency of natural resource abundance or dependence to maintain growth and development. These authors focus their arguments on three major theses namely Dutch disease, volatility effects and rent-seeking effects. To them, the rent-seeking resource-dependence, especially oil, often lead to a vicious circle of development, whereby all actors public and private, domestic and foreign have overwhelming incentives to seek links with the state in order to share in the resource pie. This incentive for rent-seeking penalizes productive activities, distorts the entire economy and hinders economic growth. In a dynamic setting, this may produce a voracity effect.

To Hausmann and Rigobon (2003) the Dutch disease thesis asserts that an increase in resource-based revenues due to a boom leads to an appreciation in the local currency, increases the capacity of the country to import tradable and also enlarges the demand for other

goods and services, including non-tradable which must be produced locally. This forces a structural adjustment in the domestic economy as resources are diverted out of the non-resource tradable sector represented by manufacturing into the production of non-tradable. Thus typically, resource booms lead to the contraction of the non-resource (manufacturing) sector.

According to Yakub, (2008), Lad and Myinf (1996), the Nigerian economy has long exhibited one-sided growth pattern, a phenomenon traced to the lack of commitment on the part of administrative authorities to adequately redistribute the revenue from oil wealth to ensure balanced growth. Using Ordinary Least Square (OLS) regression method the authors found an inefficient appropriation of the proceeds from the crude oil sales to affect development of the other sectors of the economy thus having the oil sector to shoulder over 80% of the economic burdens of the country. The poor infrastructure and high level of inefficiency in the performance of the supervisory institutions in the country all give boost to the continued mono growth pattern exhibited by our economy. The lack of commitment by the successive governments to develop the other sectors has taken a toll on the human and infrastructural development of the country. In 2013, the United Nations Development index ranked Nigeria 153 out of 186 countries and noted that the per capita income is \$2,102 while life expectancy stands at 52.3years.

At independence in 1960, agriculture according to Adesina (2013) sustained the economy and Nigeria was food self-sufficient and well known for its global position in major agricultural commodities. The country accounted for over 40 percent of the global supply of shelled groundnuts and largest supplier of palm oil and the second largest global producer of cocoa.

Imokhuede (2013) in his paper on the role of financial institutions in a non-oil economy opined that lack of activities and partnership in agriculture stifled the willingness by banks to lend to the sector. To him, channeling deposits to the real sectors is usually impeded by either risk consciousness, lack of information or cultural and psychological realities. According to him, over-reliance on oil wealth by government has influenced the way financial institutions interact with the economy. He concluded by asserting that nations that rely on the exploitation of singular natural resource tend to embrace poverty. To him, oil does not account for a significant portion of our GDP because unfortunately, the Dutch disease was caught by Nigeria and since 1960, Nigeria has allowed oil to be exploited and the value added created from the process did not remain in Nigeria. Secondly, the resources generated from oil were not used as the Middle-East has done for massive natural infrastructural development and finally instead of oil to complement the “powerhouse” of the Nigerian economy at the time oil was produced, agriculture being one of them, oil suffocated the agricultural sector.

According to Okunronmu (2002) dependence on oil revenue (wealth) directly and indirectly creates problems for fiscal sustainability and economic management in Nigeria. This arises from the nature of oil receipts, for which the price and quantity variables are exogenously determined outside the control of the government. The annual budget normally assumes a price target per barrel of crude oil given the quantity of oil production, determined by OPEC quota for the country. According to him, during the oil boom years, there was benign neglect of agricultural production. Primary commodities suffer from the problem of produce preservation leading to rapid deterioration and quality loss. This has contributed to the continued dominance of the oil sector. Yakubu (2008) suggests that income from nation's national resources (petroleum) has a positive influence on economic growth and development.

It is evident from the opinions expressed in the foregoing literature that petroleum income can cause an increase or a decrease in economic growth and development of a nation, depending on the type of theory, policy and practical implementation the government in power adopts.

Beblawi and Luciani (1987) examine the proposition that oil rentier states have specific features that make them unlikely to become liberal democracies, where the rule of law prevails. Rentier states are generally understood to be economies that derive a large portion of their revenue from external rents. Such rents accrue directly to the state and its leaders. Rentier states tend to be autonomous because states with large natural resource endowments are more detached and less accountable.

According to Chandhry (1997) and Skocpol (1982) the experiences of Saudi Arabia and of Iran during the Pahlavi regime in dismembering tax bureaucracy are pointers to the persistence of authoritarian regime in most oil exporting Arab and other non-democratic oil exporting countries. Rentier states spend oil revenues on placating and repressing its population, and third, the social structure there leaves very little room for democratic oppositions.

The key question is, why would increases in oils rents influence political regimes and, hence economic performance? Economic institutions are crucial to rapid economic growth because they shape the incentives of key economic actors in society; in particular, they influence investments in physical, human capital, technology and the organization of production.

It has been documented that differences in economic institutions are the major source of cross – country differences in economic growth and prosperity. Economic institutions not only determine the aggregate economic growth potential of an economy, but also the distribution of resources in the future.

Acemoglu and Robinson (2004) opines that the prevailing economic institution is determined by political power, which is in turn determined by the prevailing political institutions and distribution of existing resources. Political institutions and the distribution of resources determine economic institutions and economic performance both directly and indirectly.

METHODOLOGY

This study used data covering 1980-2012 mainly secondary sources on the variables. The sources include Central Bank of Nigeria, (CBN) statistical bulletin and the Annual Reports. The choice of these secondary sources is based on their authenticity and reliability. The operational methodology adopted is the multiple regression analysis with the application of OLS econometric technique. The multiple regression frameworks will be such that GDP will be the dependent variable while Interest Rate, Oil Wealth, manufacturing sector contribution, and the Agricultural sector contribution will form the independent variables. The E-views econometric software will be used to estimate the parameters of the model. Statistical significance, a priori theoretical relationship was carried out and established.

Model Specification

For the purpose of this study, we specify the following regression model.

$$GDP = \alpha_0 + \alpha_1 IR + \alpha_2 OILR + \alpha_3 MANUF + \alpha_4 AGRIC + U_t$$

Where:

GDP = Gross Domestic Product

IR = Interest Rate

OILR = Oil Revenue

Manuf = Manufacturing Sector

Agric = Agricultural Sector

U_t = White noise error term

A priori Expectation: $\alpha_1 < 0$, $\alpha_2 > 0$, $\alpha_3 > 0$, $\alpha_4 > 0$

Econometric Diagnostic Tests

Unit Root Test

Macroeconomic time series data are generally characterized by stochastic trend which can be removed by differencing. Thus, we intend to adopt Augmented Dickey-Fuller (ADF) Technique to verify the unit root property of the series.

Error Correction Model (ECM)

We specify the following error correction models to establish the short-run dynamics

$$\Delta y_t = \theta_0 + \sum_{i=1}^m \theta_{1,i} \Delta y_{t-1} + \sum_{i=0}^m \theta_{2,i} \Delta x_{t-1} + \sum_{i=0}^m \theta_{2,i} \Delta x_{t-1} + \sum_{i=0}^m \theta_{3,i} \Delta z_{t-1} + \delta ECT_{t-1} + \varepsilon_t$$

$$\Delta X_t = \gamma_0 + \sum_{i=1}^n \gamma_{1,i} \Delta x_{t-1} + \sum_{i=1}^n \gamma_{2,i} \Delta y_{t-1} + \sum_{i=1}^n \gamma_{3,i} \Delta z_{t-1} + \vartheta ECT_{t-1} + U_t$$

Y = Gross Domestic Product

X_i = Interest Rate

Z = Manufacturing Sector

δ, ϑ = measures of speed of adjustment back to equilibrium after short-run disturbance.

Note: Following the same order of terms, oil sector and agricultural sector contributions enter the models.

Table 1 presents the Unit Root Result as conducted with the application of ADF Statistic at 5 percent Level of Significance.

Table 1. Unit Root Test Result

Variables	ADF Statistic Value	Critical Value	Order of Integration
IR	-5.495449	-2.9627	I(1)
MANUF	-3.449218	-1.9530	I(2)
OIL	-3.076478	-1.9530	I(1)
AGRIC	-2.193263	-1.9526	I(1)
RESIDUALS	-5.047935	-1.9521	I(0)
GDP	-2.205905	-1.9521	I(0)

The Results of Unit Root test as contained in the table above shows that IR, OIL, and AGRIC variables are stationary at first difference, MANUF is stationary at second difference, GDP and RESIDUALS are stationary at levels.

RESULTS AND FINDINGS

Based on the Multiple Regression Result (Table 2) with their levels of stationarity, the Error Correction Term of 1.33 shows that there exists an inverse relationship between IR and GDP. This entails that a 1 percent increase in interest rate (IR) will lead to a decrease in GDP by 208110.3. This result conforms to economic a priori expectation because an increase in interest rate discourages investments and thus lowers economic growth.

Table 2: Regression Results

Dependent Variable: GDP
Method: Least Squares
Date: 09/10/13 Time: 15:49
Sample(adjusted): 1982 2012
Included observations: 31 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	931526.4	1376022.	0.676971	0.5046
D(IR)	-208110.3	245127.9	-0.848986	0.4039
D(D(MANUF))	-181.5388	83.94255	-2.162655	0.0403
D(OIL)	1.947974	0.259024	7.520451	0.0000
D(AGRIC)	16.63950	2.031947	8.188944	0.0000
ECM(-1)	-1.336561	1.037895	-1.287761	0.2096
R-squared	0.732623	Mean dependent var		7457482.
Adjusted R-squared	0.679148	S.D. dependent var		10607702
S.E. of regression	6008609.	Akaike info criterion		34.22727
Sum squared resid	9.03E+14	Schwarz criterion		34.50482
Log likelihood	-524.5227	F-statistic		13.70019
Durbin-Watson stat	1.561382	Prob(F-statistic)		0.000002

The regression output also shows that a 1 percent increase in MANUF leads to a reduction in GDP by 181.5388. Thus this shows that the manufacturing sector contribution of -181.53 has been negative over the years. This is likely to be connected with high and fluctuating levels of exchange and interest rates in the economy. As expected the contribution of the oil sector to GDP was positive, as the coefficient of oil sector revenue which forms our variable of interest yielded a magnitude of 1.947974 which is not impressive.

This implies that the revenue generated from the oil sector is not efficiently channeled to effective growth generating projects (inefficient management of oil wealth) thereby depriving the populace the benefits accruing from the oil wealth. This is evident in the “hanging” economic growth Nigeria is currently experiencing. The agricultural sector (AGRIC) on the other hand has a positive relationship with GDP in Nigeria with a magnitude of 16.63950. This entails that GDP increases by 16.63950 with a 1 percent increase in agric-sector contribution. This result is thus expected because the agric-sector employs about 70% of the rural labour and thus sustains consumption which facilitated labour participation. However, it is worthy of note that all the variables excluding IR is significant in explaining the changes in GDP. This is judged on the basis of the t-statistic and the probability values.

The R^2 which yielded 0.732623 implies that 73.26% of total variation in GDP is explained by the regression equation while 26.74% is explained by variables not included in the model.

Coincidentally, the goodness of fit of the regression remained high after adjusting for the degrees of freedom as indicated by the adjusted R^2 (=0.67148 or 67.91%).

The F-statistic which measures the statistical significance of the entire regression plane is found to be statistically significant at the entire and joint force analysis. The Durbin – Watson result with a value of 1.561382 ≈ 2 is an evidence of no auto correction in the model.

Cointegration Test Result/ECM

The Engle-Granger cointegration test results confirm the existence of long-run relationship among the variables by the stationarity of the residuals at level form, as seen in the table 1 above. The ECM result shows that the short-run dynamics restores back to long-run equilibrium at 133.6561%. This shows that the speed of the adjustment to long-run equilibrium is fast.

CONCLUSION AND RECOMMENDATIONS

This paper has been able to investigate on the impact of oil wealth on economic growth in Nigeria ranging from 1980-2012. Flavour was added to the research through the inclusion of other sensitive and accompanying macroeconomic variables like manufacturing sector contribution, agricultural sector and interest rate. The avoidance of a spurious estimate was achieved through carrying out Unit Root tests with the application of Augmented Dickey Fuller. The result derived shows that the manufacturing sector and interest rate contributed negatively to economic growth while the agricultural and oil sectors contributed positively to economic growth. However based on comparative analysis, the agricultural sector contributed more to GDP than oil sector. Thus this paints a true picture of the Nigerian economy which portrays that the oil wealth of this country is not prudently managed hence does not trickle down to real sector growth and to the right projects. This then portrays Nigeria as a rentier state. With the continuing discovery of huge reserves of shale oil around the world, increasing oil theft in Nigeria and the improving technology for the refining of heavy crude, the current downward trend in our revenue from oil will likely be sustained at least in short and medium term. The increasing short falls in oil revenue in recent times, which has led to increased government borrowing in the current year is not likely to abate in the near future. OPEC as a body had for long advised Nigeria to diversify her economy so as to survive any tragedy from oil glut.

It is therefore the recommendation of this paper that the federal government should aggressively pursue the policy of revenue base diversification and massive employment-intensive investment as well as unalloyed commitment to the real sectors of agriculture, manufacturing, infrastructure, tourism and others as the key to protect the economy from imminent collapse.

Secondly, another way out of the mono-economy is for the government to use petroleum resource to drive industrialization because it is through this that value can be added to various raw materials which will help stop importation of home made goods. Again, government should boost investment in infrastructure, guarantee security of lives and property, support the proper functioning of the regulatory and other financial institutions required to make the economy function very well. Finally, government should be more prudent in management of oil wealth as this will help in achieving an inclusive growth (growth in productive employment and productivity) which will trickle down to the masses.

A number of challenges were encountered in the course of carrying out this study. Prominent among these was the difficulty in getting up to the date. Also time and other logistic problems were part of the constraints.

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APPENDICES

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP)

Method: Least Squares

Date: 09/10/13 Time: 15:10

Sample(adjusted): 1982 2012

Included observations: 31 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.384949	0.174508	-2.205905	0.0355
D(GDP(-1))	1.677432	0.981510	1.709033	0.0981
R-squared	0.147748	Mean dependent var		122811.2
Adjusted R-squared	0.118360	S.D. dependent var		6570676.
S.E. of regression	6169582.	Akaike info criterion		34.17050
Sum squared resid	1.10E+15	Schwarz criterion		34.26302
Log likelihood	-527.6428	Durbin-Watson stat		1.158442
ADF Test Statistic	-5.495449	1% Critical Value*		-3.6661
		5% Critical Value		-2.9627
		10% Critical Value		-2.6200

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(IR,2)

Method: Least Squares

Date: 09/10/13 Time: 15:12

Sample(adjusted): 1983 2012

Included observations: 30 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IR(-1))	-1.765213	0.321214	-5.495449	0.0000
D(IR(-1),2)	0.206920	0.187760	1.102048	0.2802
C	0.587362	0.758346	0.774530	0.4453
R-squared	0.744214	Mean dependent var		-0.040000
Adjusted R-squared	0.725267	S.D. dependent var		7.838998
S.E. of regression	4.108807	Akaike info criterion		5.758782
Sum squared resid	455.8219	Schwarz criterion		5.898902
Log likelihood	-83.38173	F-statistic		39.27859
Durbin-Watson stat	1.896656	Prob(F-statistic)		0.000000
ADF Test Statistic	-3.449218	1% Critical Value*		-2.6453
		5% Critical Value		-1.9530
		10% Critical Value		-1.6218

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MANUF,3)

Method: Least Squares

Date: 09/10/13 Time: 15:14

Sample(adjusted): 1984 2012

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MANUF(-1),2)	-1.658220	0.480752	-3.449218	0.0019
D(MANUF(-1),3)	0.105597	0.326144	0.323773	0.7486
R-squared	0.473975	Mean dependent var		-3303.427
Adjusted R-squared	0.454493	S.D. dependent var		29221.92
S.E. of regression	21582.86	Akaike info criterion		22.86366
Sum squared resid	1.26E+10	Schwarz criterion		22.95795
Log likelihood	-329.5231	Durbin-Watson stat		1.388749
ADF Test Statistic	-3.076478	1% Critical Value*		-2.6453
		5% Critical Value		-1.9530
		10% Critical Value		-1.6218

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(OIL,2)

Method: Least Squares

Date: 09/10/13 Time: 15:16

Sample(adjusted): 1984 2012

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OIL(-1))	-8.602050	2.796070	-3.076478	0.0049
D(OIL(-1),2)	9.644097	2.174748	4.434582	0.0001
D(OIL(-2),2)	9.673614	1.312963	7.367773	0.0000
R-squared	0.735256	Mean dependent var		3133672.
Adjusted R-squared	0.714891	S.D. dependent var		16392630
S.E. of regression	8752941.	Akaike info criterion		34.90537
Sum squared resid	1.99E+15	Schwarz criterion		35.04682
Log likelihood	-503.1279	Durbin-Watson stat		0.633167
ADF Test Statistic	-2.193263	1% Critical Value*		-2.6423
		5% Critical Value		-1.9526
		10% Critical Value		-1.6216

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(AGRIC,2)
 Method: Least Squares
 Sample(adjusted): 1983 2012
 Included observations: 30 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AGRIC(-1))	-1.543043	0.703538	-2.193263	0.0368
D(AGRIC(-1),2)	0.296698	1.100931	0.269498	0.7895
R-squared	0.137707	Mean dependent var	-379790.4	
Adjusted R-squared	0.106911	S.D. dependent var	2357809.	
S.E. of regression	2228209.	Akaike info criterion	32.13563	
Sum squared resid	1.39E+14	Schwarz criterion	32.22905	
Log likelihood	-480.0345	Durbin-Watson stat	1.179446	

Dependent Variable: GDP
 Method: Least Squares
 Sample: 1980 2012
 Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	574408.2	720487.3	0.797250	0.4323
TREND	34980.81	113481.3	0.308252	0.7603
IR	-46053.43	65039.56	-0.708083	0.4850
OIL	0.093607	0.053557	1.747791	0.0919
AGRIC	3.619676	0.512581	7.061672	0.0000
MANUF	-10.50491	11.79666	-0.890498	0.3811
R-squared	0.989818	Mean dependent var	7008460.	
Adjusted R-squared	0.987933	S.D. dependent var	10426572	
S.E. of regression	1145371.	Akaike info criterion	30.90332	
Sum squared resid	3.54E+13	Schwarz criterion	31.17541	
Log likelihood	-503.9048	F-statistic	524.9595	
Durbin-Watson stat	1.708556	Prob(F-statistic)	0.000000	

ADF Test Statistic	-5.047935	1% Critical Value*	-2.6395
		5% Critical Value	-1.9521
		10% Critical Value	-1.6214

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(RESID01)
 Method: Least Squares
 Sample(adjusted): 1982 2012
 Included observations: 31 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-1.157853	0.229372	-5.047935	0.0000
D(RESID01(-1))	0.355642	0.178270	1.994967	0.0555
R-squared	0.497025	Mean dependent var	1936.739	
Adjusted R-squared	0.479682	S.D. dependent var	1420284.	
S.E. of regression	1024495.	Akaike info criterion	30.57964	
Sum squared resid	3.04E+13	Schwarz criterion	30.67215	
Log likelihood	-471.9844	Durbin-Watson stat	2.113394	

DATASET ON GROSS DOMESTIC PRODUCT, INTEREST RATE, OIL REVENUE.,
MANUFACTURING SECTOR AND AGRICULTURAL SECTOR

YEAR	GDP	IR	OILREV	MANUF	AGRIC
1980	49632.32	7.500000	13632.30	2599.200	6501.800
1981	94325.02	7.750000	10680.50	31661.43	19529.82
1982	101011.2	10.25000	8003.200	36734.55	22556.32
1983	110064.0	10.00000	7201.200	42312.42	26436.86
1984	116272.2	12.50000	8840.600	38396.59	33777.24
1985	134585.6	9.250000	11223.70	47176.00	38244.54
1986	134603.3	10.50000	8368.500	47034.66	39933.07
1987	193126.2	17.50000	28208.60	54425.14	57579.54
1988	263294.5	16.50000	28435.40	81182.62	86584.60
1989	382261.5	26.80000	55016.80	87217.95	103060.2
1990	472648.8	25.50000	106626.5	107969.4	124674.5
1991	545672.4	20.01000	116858.1	123647.9	144703.5
1992	875342.5	29.80000	201383.9	144366.9	217419.6
1993	1089680.	18.32000	213778.8	165891.9	350047.1
1994	1399703.	21.00000	200710.2	219852.0	528951.8
1995	2907358.	20.18000	927565.3	295801.2	940304.9
1996	4032300.	19.74000	1286216.	350603.0	1275752.
1997	4189250.	13.54000	1212499.	382625.0	1445147.
1998	3989450.	18.29000	717786.5	395768.0	1600576.
1999	4679212.	21.32000	1169477.	426212.0	1704823.
2000	6713575.	17.98000	1920900.	468025.8	1801483.
2001	6895198.	18.29000	1839945.	535796.4	2410051.
2002	7795758.	24.85000	1649446.	507836.8	2847115.
2003	9913518.	20.71000	2993110.	465811.7	3231444.
2004	11411067	19.18000	4489472.	349316.3	3903759.
2005	14610881	17.95000	7140579.	408367.5	4752979.
2006	18564595	17.26000	7191086.	478524.1	5940237.
2007	20657318	16.94000	8110500.	520883.0	6757868.
2008	24296329	15.14000	9861834.	585573.0	7981397.
2009	24794239	18.99000	8105455.	612308.9	9186306.
2010	33984754	17.50000	11136168	643070.2	10310656
2011	37409861	18.67000	13742624	694814.2	11593434
2012	40544100	22.89000	14526757	761467.0	13413842

Source: Central Bank of Nigeria Statistical Bulletin

Note: All figures are in millions of Naira except interest rate.