Overview of the Performance of the Nigerian Oil and Gas Sector (1981-2014)

Chidi U. Ubani

Department of Economics,

Olabisi Onabanjo University,

Ago-Iwoye, Ogun State.

Adeniyi M. Yusuff

Department of Business Administration

College of Agriculture and Technology

Igboora, Nigeria

Email: niyiyusuff@yahoo.co.uk

Olusegun Adeteji Okutimiren

Department of Economics,

Olabisi Onabanjo University,

Ago-Iwoye, Nigeria.

Ekanem Edem Udo Udo

Department of Business Management,

University of Calabar,

Calabar- Nigeria

Email: edem.ekanem@yahoo.com

ABSTRACT

For the past three decades, oil has been a major source of revenue and energy for the Nigerian economy. Nigeria's huge oil revenue has not satisfactorily impacted on the living conditions on majority of Nigerians. The "paradox of plenty" lends support to the "resource curse" doctrine that abundant natural resource endowment makes a country poorly focused on growth and development. Against this background, this study evaluates the performance of oil sector of Nigeria. The required data was sourced from Central Bank of Nigeria Statistical Bulletin and the study started with test of stationarity of time series data using Augmented Dickey-Fuller test, while Johansen test for co-integration ascertains the long run relationship of the variables. Ordinary least square was used to analyze the data. The results show that investment and oil export has a positive relationship with output level of Gross Domestic Product. The R-squared result revealed that 95.2% of the total variation in economic growth is accounted for by changes in the explanatory variables. The study recommends that appropriate policies to address the issue of oil dependence in Nigeria should focus on diversification and industrialization to promote economic growth. Also, government should increase its expenditure on rural roads and electricity as this will accelerate the productive sectors as well as raise the standard of living of poor citizens in Nigeria.

1. Introduction

Oil is a major source of energy in Nigeria and the world in general. Oil being the mainstay of the Nigerian economy plays a vital role in shaping the economic and political destiny of the country. Although Nigeria's oil industry was founded at the beginning of the century, it was not until the end of the Nigeria civil war (1967-1970) that the oil industry began to play a prominent role in the economic life of the country (Odularu, 2008). Nigeria can be categorized as a country that is primarily rural, which depends on primary product exports (especially oil products). Since the attainment of independence in 1960 it has experienced ethnic, regional and religious tensions, magnified by the significant disparities in economic, educational and environmental development in the south and the north. These could be partly

attributed to the major discovery of oil in the country which affects and is affected by economic and social components (Odularu, 2008).

Given the fact that the oil sector is a very crucial sector in the Nigeria economy, there is the dire need for an appropriate and desirable production and export policy for the sector. In Nigeria, though crude oil has contributed largely to the economy, the revenue has not been properly used. Considering the fact that there are other sectors in the economy, the excess revenue made from the oil sector can be invested in them to diversify and also increase the total GDP of the economy (Odularu, 2008). Furthermore, and in so far as oil was the dominant source of government revenues, and given that the public sector was the driving force in the economy because it earned the bulk of oil rent, it was obvious that the large, albeit periodic, shocks from the world oil market would constitute a powerful destabilizing influence on government fiscal operations and economic planning and management. Oil export revenue instability exacerbated fiscal imbalances. This is largely because policy makers were more eager to engage in unsustainable increases in spending and borrowings to pursue ambitious and spurious development projects rather than make hard but rational development. In many cases, fiscal indiscipline was induced by the need to appease various and competing interest groups. The constraint imposed by the absorptive capacity of the economy was properly recognized. Thus, instead of exercising some moderation in public expenditure in boom years to ensure higher public sector saving for future investment, the easy option adopted was to engage in a very expensive expenditure spree which subsequently resulted in serious economic problems.

The emerging economic disequilibria is internal and has to do with the rapid and poorly managed expansion in public expenditures (including investment in the innumerable large loss-making public enterprises), a major factor in the emergence of large and excessive public sector fiscal burden when oil export boom disappeared. Equally important is the failure of policy makers to use fiscal, monetary, trade and exchange rate policies to ensure a more flexible and less costly macroeconomic adjustment, especially in the face of the two vicious external forces of oil and debt shocks. Against this background came the development in the middle of 1986 when the economy was faced with an acute foreign exchange shortage as oil export earnings collapse in the wake of the 67 per cent fall in the price of oil in the world market within six months. With little degree of financial freedom for policy makers to maneuver the ensuing liquidity crisis provided the fiscal stimulus that made the transition to a period of economic adjustment process inevitable.

In light of these considerations, two major issues would dominate the study on the role of oil in the Nigerian economy. First, is an analysis of why, how and through what channels oil has contributed to the current economic crisis? The second issue centers on the role of the government and economic policy in creating and reinforcing the distortions in the national output and income given that the bulk of the oil rent that came to the government. These two issues focus on an interpretation of the trend and the lessons from Nigeria's economic performance and policy experience since the advent of oil.

1.2 Problem Statement

Given the number of years that the oil sector began its operations and the substantial financial resources, endowment available in the country, coupled with the impact of the sector on the economic growth of the country, one can claim that the sector has not been sufficiently active especially in the 1990s which was characterized by gross mal-appropriation of public fund. The problems with Nigerian economy have been traced to the failure of successive governments to utilize oil revenue and excess crude oil income in the development of other sectors of the economy effectively and efficiently. Over all, there has been poor performance of national institutions such as power, energy, road, transportation, politics, financial systems, and investment environment have been deteriorating and inefficient (Nafziger, 2003). In view of this with respect to the relative contribution of the oil sector compared with other sectors, it is imperative to establish the performance of oil sector of Nigeria.

1.3 Objectives of the Study

This study intends to examine the performance of Nigerian oil sector over the years. Specifically, the objectives of the study are:

(i)   To investigate the extent of the contribution of oil sector to the Gross Domestic Product (GDP) of Nigeria;

(ii)   To examine the effect of the oil sector performance on the standard of living of Nigerians.

The rest of this paper is organized as follows: Section 2 presents the literature review and related issues on Nigerian oil sector. The methodology of the study is discussed in section 3. Section 4 shall focus on the analysis of data and discussion of findings while section 5 shall conclude the study.

2. Literature Review

2.1 Conceptual Review

Oil resources here refer to non-renewable resources that took millions of years to be created under the surface of the earth (Nehring, 1978; Dam, 1976). They are referred to as non-renewable resources because they can run out, or be used up. Oil resources are exploited from the soil in their crude form and are usually refined before they are used for their various purposes. Obadan (1987) defined oil resource as a mixture of hydro carbon oils obtained below the surface. He opined that oils in Nigeria, generally occurs at depths below 1,500 meters. According to him, it is the raw material around which a chain of commercial activities known as the petroleum industry resolves. It is a major source of energy in the world market today and has in fact, become the bedrock of man's progress and civilization. Obadan further stressed that petroleum is the raw material for a wide range of chemicals for the production of pharmaceuticals, fertilizers, fibers for the manufacture of textile and numerous other products essential for human existence. More so, he added that petroleum jelly for the body, candles for lightening and bitumen for tarring roads are some of the many byproducts of petroleum.

Oil products are derived from crude oil and they include petrol, diesel, kerosene, natural gas, bitumen. Oil products are basically used in industries for production of goods and services and they are also used domestically for personal consumption in which the greater percentage of it comes from developing countries. The oil industry is very important to the Nigerian economy. It provides among other things the greatest part of the foreign exchange earnings and total revenue needed for socio-economic and political development of Nigeria. The bulk of Nigerian crude oil is sold unrefined and when refined, the products range from petrol to heavy liquids for road tarring. Government has been the custodian of petroleum and its products in Nigeria. Though, this brought a temporary growth in the economy, the price instability of the crude oil in the world market has led to the downfall of Nigerian economy in various sectors, such as the production, manufacturing and services sectors.

Etiebet (1999) observed that price of oil products is derived from crude oil prices and it therefore follows that prices of petroleum products should trail crude oil prices. According to the author, it is not always the case for a number of reasons. In the first place, there is always a time lag between crude oil processing and product distribution through network. On the part of Adeyemi (2004) cited by Bakare & Fawehinmi (2011) viewed the oil exploration as a damaging instrument rather than for it to be a contributing factors to the welfare of the

residents. Whereas, activities such as flaring of natural gas and seismic surveys constitute great damages to the environment, more far reaching environmental destructions result from oil spillage. Odularu (2008) supported the position that crude oil discovery has had negative impact with respect to the surrounding communities within which the oil wells are exploited. Some of these communities still suffer environmental degradation, which leads to deprivation of means of livelihood and other economic and social factors. He further stated that, although large proceeds are obtained from the domestic sales and export of petroleum products, its effect on the growth of the Nigerian economy as regards returns and productivity is still questionable. Osuoka (2007), communities in the oil Niger Delta area have experienced drastic decline in food production as a result of pollution, other Nigerian communities have also suffered from the indirect impact of the oil economy. With high revenues accruing to the government from oil exports, all other sectors of the economy were neglected by the state and as economy develops, more funds are needed to meet the rapid expansion (Owolabi & Ajayi, 2003).

Ewa and Agu (2003) shared their view that the dominance of oil in Nigerian economy has led to instability in the economy, as such makes price instability of oil products to be more prevalent in Nigeria than other countries. The authors observed that smuggling is attractive and profitable due to price differential. This act of smuggling oil products from Nigeria to her neighbouring countries is one of the factors which make price instability of oil products to be prevalent in Nigeria.

2.2 Theoretical Framework

2.2.1 The Resource Curse Theory

The "resource curse" theory, presupposes that nations with rich natural resources may fail to develop in other sectors ultimately bringing about financial problems. The theory also assumes that such a country will also fail to develop infrastructure and other industries; instead they focus on a handful of industries which cripples the economy by encouraging very isolated investments and development; while ignoring the need to develop a more diversified economy. The result is that the country is also forced to a large extent to rely on other nations for a wide variety of goods and services; and may in fact end up with a net loss at the end of the year (Auty, 1993). The term resource curse was first used by Richard Auty (1998) to describe how countries rich in natural resources were unable to use that wealth to boost their economies; these countries had lower economic growth than countries without an abundance

of natural resources. This was exemplified with the "Dutch Disease" syndrome, a situation which makes it difficult to diversify the economy, generally undermining non-oil activities. Numerous studies including one by Sachs and Warner (2001), and Billon (2001), have all shown a link between natural resource abundance and poor economic growth. Hardin (1968) on his part opines that in the traditional Commons Problems, free access to a finite resource ultimately dooms the resource through over exploitation. Natural resources can and often do provoke conflicts within the society as different groups and factions fight for their share as expressed by Collier and Hoeffler (2002). This tends to erode government's abilities to function effectively.

2.2.2 Theory of Negative Externalities

The theory of negative externalities is very fundamental in the analyses of environmental Economics. This is because pollution in any form is known to result in harm to both people and the environment. Externalities are benefits or costs generated as an unintended outcome of an economic activity that do not accrue directly to the parties involved in the transaction and where no compensation takes place. They manifest themselves through changes in the physical biological environment. Positive externality arises when actions of an individual or a group confers to others positive effects or reward. A technological spill over is a positive externality which occurs when a firm's invention not only benefits the firm but also enters into the society's pool of technical knowledge and benefits the society as a whole. On the other hand, pollution is a negative externality which occurs for instance, when a factory discharges its untreated effluents in a river, the river is polluted and consumers of the river bear costs in the form of health costs or/and water purification.

Alfred Marshall (1842) noted to have introduced the externality theory in economics, but his theory was only concerned with positive externalities accruing to the third parties outside transactions (Marshall, 2009). In the 1920's, Pigou propounded the negative externalities theory having realized that externalities contained not only benefits but also costs. According to Pigou (1920), externality theory deals with the problem of smoke emission by a factory damaging nearby businesses or residents. His solution for correcting the negative externality is to impose a per unit tax on output to the firm generating the negative externalities. The per unit tax should be equal to the difference between the social marginal cost and the private marginal cost corresponding to the social optimal output, the output satisfying the condition and the price equals the social marginal cost. Imposition of such a tax will raise the output price and reduce the demand thereby helps in internalizing the environmental costs to some

extent in the decisions of producers and consumers of the product. Pigou recognizes that sometimes, government may find it necessary to exercise some means of authoritative control. Negative externality theory as has been described earlier, arises when the welfare of one party is adversely affected by the action of another party and the loss in welfare is uncompensated for due to a lack of liability to third parties who suffered the damages.

Others like Baumol & Oates (1988), Coase (1960) and Meade (1973) also identified the conditions for terming an event an externality. For instance, a situation where actions affect the production possibilities of the economy and the welfare of people, who are not fully consenting parties in reaching production decisions, as they are in sales and purchases (Meade, 1973). No compensation is made for welfare losses and gains. It is the negative externality theory as exposed by Pigou.

2.3 Empirical Review

Mohammad Reza Farzanegan and Gunther Markwardt (2007) studied the dynamic relationship between oil price shocks and major macroeconomic variables in Iran by applying a VAR approach. The study points out the asymmetric effects of oil price shocks for instance; positive as well as negative oil price shocks significantly increase inflation. They found a strong positive relationship between positive oil price changes and industrial output growth. They identified a marginal impact of oil price fluctuations on real government expenditures. Salehi Esfahani, H; Mohaddes, K (2009) developed a long run growth model for a major oil exporting economy and derives conditions under which oil revenues are likely to have a lasting impact. They showed that (log) oil exports over the period 1979-2006 enter the long run output equation with a coefficient equal to the share of capital and found clear evidence for long run relations: an output equation as predicted by the theory and a standard real money demand equation with inflation acting as a proxy for the (missing) market interest rate. They also defined that the Iranian economy adjusted quite quickly to the shocks in foreign output and oil exports, which could be partly due to the relatively underdeveloped nature of Iran's financial markets.

Mehrara, M., Maki, M. and Tavakolian, H. (2010) studied the non-linear relationship between oil revenues and real output growth of the Iranian economy during 1959–2007 using a threshold error correction model. They showed that the response of economic growth to oil revenue growth in low regimes of oil revenues is greater than in high regimes of oil revenues.

Clemente *et al.* (2002) used a general equilibrium model; they assessed the effectiveness of the Venezuelan stabilization fund in reducing macroeconomic volatility in the presence of price shocks in international oil markets and contrast the results with two other configurations of the stabilization fund. The decreased volatility does require accumulating more resources in the stabilization fund. However, that the reduction in macroeconomic volatility resulting from the fund activity does not necessarily translate into less volatility in producer prices for all sectors of the economy. The tradable sector experiences less volatility, while the non-tradable sector suffers from higher volatility, both for positive and negative price shocks. For the petroleum sector, the stabilization fund reduces petroleum sector revenue volatility if measured in dollars, while in domestic currency revenue is more volatile.

Similarly, Azaiki and Shagari (2007) suggest that income from a nation's natural resources (e.g. petroleum) has a positive influence on economic growth and development. Contrary to this opinion expressed above, other studies on this subject matter, found that natural resources income influences growth negatively. That is, an increase in income from natural resources does not necessarily result in an increase in economic growth. For example, using a sample of 95 developing countries that included Indonesia, Venezuela, Malaysia, Ivory Coast and Nigeria, found that countries that have a high ratio of natural resource exports to GDP which appears to have shown slower economic growth than countries with low ratio of natural resource export to GDP. Collier and Hoeffler (2002) is of the opinion that increase in natural resources income does not result in increase in economic growth. This is so because they found that 23.0 per cent of countries that are dependent on oil exports are likely to experience civil war in any five-year period compared to 0.6 percent for countries without natural resources. During each of these periods, there was no economic growth. Bawa and Mohammed (2007) also supports the argument that increased natural resources income does not result in increases in economic growth but result in vicious development cycle (i.e. violent and adverse development).

Riman, Akpan, Offiong and Ojong (2013) examined the nexus among oil revenue shock, non-oil export and industrial output in Nigeria for the period 1970 to 2010. The study employed Vector Autoregressive (VAR) model and co-integration technique to examine the long run relationship, while the Vector Error Correction Model (VECM) was used to analyze the short-run behavior of the variables. The Johansen co-integration estimate showed that a long run behavior exist among oil revenue shock, non-oil export, policy/regime shift and industrial output in Nigeria. The VECM estimate showed that the speed at which industrial output

converges towards long-run equilibrium after experiencing shock from oil revenue was very slow. The long run estimate showed that oil revenue shock and policy/regime shift had negative impact on industrial output and non-oil export. The impulse response function and variance decomposition analysis suggested that the major drivers of industrial development in Nigeria are non-oil export, regime shift and oil revenue. The study recommended the diversification of the economy from crude oil export and ensuring a stable government that will endure long enough to sustain industrial and other economic policies.

3. Methodology

3.1 Model Specification

To ascertain the performance of the oil sector to the economic growth in Nigeria, we intend to carry out empirical studies on the performance of oil sector in Nigeria between 1981 and 2012. The research adopts the traditional aggregate demand model. (Solomon and Hinde, 2008; Blanchard, 2004), specified as follows:

$$Y = C + I + G + (X - M) \qquad \text{………………………………………………….} \qquad (i)$$

Where;

Y = Gross Domestic Product; C = Domestic Consumption; I = Aggregate Investment; G = Government Expenditure; X = Exports; M = Imports

Implicitly, equation (i) can be re-written as:

$$Y_t = f (C_t, I_t, G_t, X_t, M_t) \qquad \text{……………………..………………………………..} \qquad (ii)$$

Export is made up of oil exports and non-oil exports. Thus, the total export will be disaggregated accordingly.

$$\text{Export} = \text{Oil Export (OilX)} + \text{Non-oil Export (nOilX)} \qquad \text{…………………….} \qquad (iii)$$

Combining identities (i), (ii) and (iii) produces:

$$Y_t = f (C_t, I_t, G_t, OilX_t, nOilX_t, M_t) \qquad \text{……………………………………..} \qquad (iv)$$

Specifying identity (iv) in a log linear form for reason of the ease of interpretation (Kabir, 1988) yields:

$$In\ Y_t = \beta_o + \beta_1 InC_t + \beta_2 InI_t + \beta_3 InG_t + \beta_4 In\ OilX_t + \beta_5 In\ nOilX_t + \beta_6 InM_t + \mu_t \qquad \text{……..} \qquad (v)$$

Where:

In = Natural logarithm; β_o = Intercept; $\beta_1 - \beta_6$ are parameters; μ_t = White noise error term

3.2 A priori Expectation

It is expected that independent variables display their respective behaviours to the dependent variables that is being specified in the model. Hence, C, I, G, OilX and nOilX are expected to have a positive relationship with the GDP except M.

Table 1: Economic A priori Expectation

Variables	Expected Sign
Consumption (C)	Positive (+ve)
Investment (I)	Positive (+ve)
Government expenditure (G)	Positive (+ve)
Oil Export (OilX)	Positive (+ve)
Non-Oil Export (nOilX)	Positive (+ve)
Import (M)	Negative (-ve)

4. Presentation of Data and Discussion of Findings

Table 2: Data Presentation

Year	Gross Domestic Product	Investment	Oil Export	Non-Oil Export	Government Expenditure	Import	Domestic Consumption
1981	205,222.10	12,215.00	10,680.50	342.80	11,413.70	119.80	56,190.00
1982	199,685.30	10,922.00	8,003.20	203.20	11,923.20	225.50	68,980.00
1983	185,598.10	8,135.00	7,201.20	301.30	9,636.50	171.60	58,930.00
1984	183,563.00	5,417.00	8,840.60	247.40	9,927.60	282.40	56,907.00
1985	201,036.30	5,573.00	11,223.70	497.10	13,041.10	51.80	60,508.00
1986	205,971.40	7,323.00	8,368.50	552.10	16,223.70	913.90	49,345.00
1987	204,806.50	10,661.00	28,208.60	2,152.00	22,018.70	3,170.10	92,755.00
1988	219,875.60	12,383.70	28,435.40	2,757.40	27,749.50	3,803.10	93,805.00
1989	236,729.60	18,414.10	55,016.80	2,954.40	41,028.30	4,671.60	103,427.00
1990	267,550.00	30,626.80	106,626.50	3,259.60	60,268.20	6,073.10	112,310.00
1991	265,379.10	35,423.90	116,858.10	4,677.30	66,584.40	7,772.20	104,012.00
1992	271,365.50	58,640.30	201,383.90	4,227.80	93,835.50	19,561.50	107,040.00
1993	274,833.30	96,915.50	213,778.80	4,991.30	136,645.40	41,136.10	127,786.00
1994	275,450.60	105,575.50	200,710.20	5,349.00	156,837.20	42,349.60	118,146.00
1995	281,407.40	141,920.20	927,565.30	23,096.10	254,038.00	155,825.90	98,500.00
1996	293,745.40	204,047.60	1,286,215.90	23,327.50	282,969.60	162,178.70	91,500.00
1997	302,022.50	242,899.80	1,212,499.40	29,163.30	428,215.20	166,902.50	86,370.00
1998	310,890.10	242,256.30	717,786.50	34,070.20	487,113.40	175,854.20	88,620.00
1999	312,183.50	231,661.70	1,169,476.90	19,492.90	947,690.00	211,661.80	112,410.00

Year	Gross Domestic Product	Investment	Oil Export	Non-Oil Export	Government Expenditure	Import	Domestic Consumption
2000	329,178.70	331,056.70	1,920,900.40	24,822.90	701,059.40	220,817.70	109,800.00
2001	356,994.30	327,135.70	1,839,945.30	28,008.60	1,018,026.00	237,106.80	142,220.00
2002	433,203.50	499,681.50	1,649,445.80	94,731.80	1,018,156.00	361,710.00	164,250.00
2003	477,533.00	865,876.50	2,993,110.00	94,776.40	1,225,966.00	298,922.30	164,250.00
2004	527,576.00	863,072.60	4,489,472.20	113,309.40	1,426,200.00	318,114.70	164,250.00
2005	561,931.40	804,400.80	7,140,578.90	105,955.90	1,822,100.00	797,298.90	73,105.90
2006	595,821.60	1,546,525.70	7,191,085.60	133,594.90	1,938,003.00	932,495.70	164,200.00
2007	634,251.10	1,915,348.80	7,950,438.30	169,709.70	2,450,897.00	819,964.24	146,011.18
2008	672,202.60	2,030,510.00	9,680,194.20	94,316.70	3,240,820.00	920,079.52	142,363.42
2009	718,977.33	2,184,828.76	7,290,353.84	123,377.32	3,452,990.80	757,590.61	137,986.10
2010	775,525.70	2,403,311.64	7,850,530.17	125,390.90	4,194,217.90	845,485.79	132,733.32
2011	834,161.83	2,621,794.50	7,992,520.42	129,277.90	3,055,385.74	855,123.17	144,658.80
2012	1,009,011.22	2,840,277.40	8,152,807.39	128,414.51	3,278,862.29	839,648.67	140,750.56

Source: Central Bank of Nigeria, Statistical Bulletin, 2014 Various Issues.

Table 3: Augmented Dickey-Fuller Test Results

S/NO	VARIABLES	ADF STATISTIC AT LEVEL	CRITICAL VALUE 5%	ADF STATISTIC 1ST DIFFERENCE	CRITICAL VALUE (5%)	ORDER OF INTEGRATION
1	GDP	2.5869	-2.9918	3.5172	-2.9980	1(1)
2	INV	1.1259	-2.9604	0.1830	-2.9677	1(1)
3	OILX	1.6883	-2.9918	0.8525	-2.9980	1(1)
4	nOILX	0.3291	-2.9677	1.0402	-2.9718	1(1)
5	GEX	2.2977	-2.9918	3.3381	-2.9980	1(1)
6	IMP	1.8078	-2.9677	1.7746	-2.9862	1(1)
7	DC	0.8078	-2.9677	1.7746	-2.9862	1(1)

Source: Author, 2015

The Augmented Dickey Fuller (ADF) test of unit roots was conducted for all the time series (including a deterministic trend), which were used in the study. The ADF results showed that all the variables were non-stationary at their levels .The test results revealed that the series were all integrated series of order I (1). Augmented Dickey-Fuller result shows that investment in relation to Gross Domestic Product is positive at ADF level. Oil export, Non-oil Export, Government Expenditure, Import and Domestic Consumption in relation to Gross Domestic Product are positive at ADF statistic level Order of integration (1).

Johansen procedure is used to identify long-run relationship amongst the co-integrating vectors. Table 4 reports the estimates of Johansen procedure and standard statistics. In determining the number of co-integrating vectors, we used degrees of freedom adjusted version of the maximum eigenvalue and trace statistics, since the existence of small samples with too many variables or lag Johansen procedure tends to overestimate the number of co-integrating vectors.

Table 4: Normalized Co-integrated Coefficients

Normalized Co integrating Coefficients: 1 Co integrating Equation(s)						
GDP	INV	OILX	nOILX	GEX	IMP	DC
1.000000	2.5722	2.6341	1.2250	2.6870	2. 5102	1.5721
	(2.689)	(2.315)	(1.5174)	(3.2321)	(2.5721)	(-0.5671)
Log likelihood	-784.5544				C	6575.114

Test indicates 1 co-integrating equation(s) at 5% significance level.

Table 5 presents the result of Johansen co-integration test. Accordingly, the Eigen value statistics and likelihood ratio detect each co-integrating vectors relationship at 5% level of significance. This test indicates the presence of a long run equilibrium relationship among variables. As a result, the error correction model is estimated.

Table 5: Johansen Co-integration Test

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	Hypothesized No.of CE(s)
0.999803	247.4402	33.8	None*
0.991711	138.9910	27.5	At most 1*
0.970422	102.1011	21.1	At most 2*
0.939185	81.19760	14.2	At most 3*
0.021416	0.627815	3.84	At most 4
0.021416	0.627815	3.84	At most 5

Note: *(**) denotes rejection of the hypothesis at 5% (1%) significance level

The existence of at least one co-integrating relationship between set variables implies that error-correction models (ECM) exist. The significance of the ECM is an indication of the existence of a long-run equilibrium relationship between the dependent and factors affecting it.

4.1 Discussion of Findings

Table 6: The Over-parameterized Error Correction Model

Dependent Variable: D (GDP,2)

Method: Least Squares

Sample (adjusted): 1981- 2012

Included observations: 32 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.250211	2.132061	2.105716	0.0274
D (INV,2)	2.155020	0.120332	1.213710	0.0638
D (OILX ,2)	1.035032	0.073240	0.873011	0.0712
D (nOILX,2)	0.623205	2.906722	-0.839325	0.7520
D (GEX,2)	1.103043	1.602311	2.503051	0.0544
D (IMP,2)	1.025012	2.003270	1.375250	0.0366
D (DC,2)	0.028401	4.290108	-0.071367	0.7220
ECM (-1)	-0.350114	0.309438	-1.452025	0.0048
R-squared	0.952430	Mean dependent var		-1003.125
Adjusted R-squared	0.823411	S.D. dependent var		32559.43
S.E. of regression	10236.52	Akaike info criterion		21.65224
Sum squared resid	1.10E+09	Schwarz criterion		22.24736
Log likelihood	-103.1047	F-statistic		17.24042
Durbin-Watson stat	1.923925	Prob (F-statistic)		0.000013

In table 6, the R-squared (R^2) of 0.95, which measures goodness of fit, indicates that 95% of the systematic variations of growth rate in Gross Domestic Product is explained by the explanatory variables during the period of the study. The overall F-statistics of 17.2 with a low probability of less than 5%, gives clear that the equation is well fitted. The Durbin-Watson statistics of 1.92 indicates the presence of autocorrelation in our specification. Investment and oil export has a positive relationship with output level of Gross Domestic Product. A one per cent rise in the investment and oil export will increase the output level of gross domestic product by 2.15 and 1.03 per cent respectively, The F-Statistic shows that we accept the alternative hypothesis and reject the null hypothesis. This means that investment and oil export in the country has had a positive effect on the growth process in Nigeria economy.

Non-oil Export, Government Expenditure, Imports and Domestic Consumption have a positive and significant relationship with output level of Gross Domestic Product at first difference. The implication of this finding is that the non-oil export, government expenditure, import and domestic consumption up to 2012 has resulted to increases in output level of gross

domestic product in Nigeria with lagged difference. The co-efficient of determinant shown that 95% of the total variations in output level of gross domestic product is explained by the explanatory variables.

The ECM coefficient is -0.350114 and has a probability value of 0.0048, thus confirms that ECM value is indeed significant. This implies that 35.0% deviations from disequilibrium in previous year can be adjusted in the current year. The negative sign of coefficient indicates convergence in short run model. ECM coefficient is relatively lower and indicates that short run dynamics of Gross Domestic Product gradually adjusts to long run equilibrium.

The coefficient of determination from the results presented from the result indicates that the independent variables contributed 0.95 to Gross Domestic Product (GDP) over the period under review with the significant level of 0.000013 which is less than 0.05 indicated that the independent variables are making a unique contribution to the economic growth of Nigeria. The result is in agreement with the work of Azaiki and Shagari (2007); Gary and Sunoh (1994) which is against the assertion of Colliner & Hoeler (2002); Bawa and Mohammed (2007) that increase in natural resources income does not result in increase in economic growth.

5. Conclusion

The oil sector is to achieve a specific target which is economic growth and also to fine tune the economy when there are some abnormalities (disequilibrium). The aim of the study was to evaluate the performance of oil sector on the Nigerian economic growth. This study embarks from other studies that have focused on how natural resource based growth strategies affect economic growth. The findings from previous studies vary with some studies concluding that natural resource based growth is appropriate. Other studies find that a natural resource based growth strategy is effective for economic growth in the presence of good institutions while other studies conclude that a natural resource based growth strategy will not lead to sustained economic growth and that industrialization is necessary for economic growth. Resource based growth was found to be unsuccessful for Nigeria. While growth was achieved, the resource based growth strategy has not led to continuous and consistent growth for the economy. In general the study results do not support the view that oil and real GDP are neutral with respect to each other. Consequently, our findings are consistent with the expectations that oil-dependent economies (like Nigeria) are relatively more vulnerable to oil shocks. We could therefore conclude that oil is a limiting factor to output growth in Nigeria and that shocks to

oil supply will have effect on output. Emanating from the empirical findings based on the study during the period under review, the following strategic policy options are proffered as follows: There is need for successive governments to judiciously channel revenue to the development of the non-oil sector of the economy so as to promote the export potential of the non-oil sector. Given that all is exhaustible resources, efficient channeling of oil revenue towards the development of the non-oil sector will also help the government in the achievement of transformation and diversification. Increased investment will be needed to foster increased oil production. More stringent policies to discourage importation, especially of items which can be readily purchased within the country should be formulated and implemented.

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