

Crude Oil Price Fluctuations and Nigeria Economic Growth: 1997-2015

Okonkwo, Ikeotuonye Victor¹ and Mojekwu, Kenechukwu Ogbonna²

Dr Okonkwo is Senior Lecturer in the Department of Banking and Finance, Nnamdi Azikiwe University, Awka Anambra State, Nigeria. His research interests include Capital Market Operations, Risk Management, Insurance and Financial Management.

E-mail: vi.okonkwo@unizik.edu.ng (Phone: +2348064258055)

² Mr Mojekwu is a PhD student in the Department of Banking and Finance, Nnamdi Azikiwe University, Awka Anambra State, Nigeria. His research interests include Financial Management. E-mail: mojes2005@gmail.com (Phone: +2348034617726)

Abstract

There has been mixed findings regarding the relationship between oil price fluctuations and the growth of an economy. 'Dutch disease theory' has been confirmed in some nations. This study examined the effects of oil price fluctuations on Nigeria economic growth with a view of determining whether the Dutch disease theory applies in Nigeria. Using data on crude oil price, Gross Domestic Product, Exchange rate, Government expenditure and Unemployment rate sourced from the Central Bank of Nigeria statistical bulletin and National Bureau of statistics Annual report from 1997 -2015, the work regressed and estimated the relationship and effects of oil price on the independent variables. The statistical package used for running the estimation was E-views 7.0. It was discovered that Crude oil price has positive but insignificant effect on Gross Domestic Product; negative and significant relationship exist between Oil price and Exchange rate; Crude oil price has positive and significant effect on Government expenditure; and Oil price has positive but insignificant effect on Unemployment rate in Nigeria. The study recommends independence of the Central Bank of Nigeria (CBN) which should be allowed to manage excess crude oil account; diversification of Nigeria economy through focusing on non - oil revenue; and concerning development of agricultural sector the local governments, state governments and federal government should work together in setting up farm settlements in various parts of the country.

Keywords: Crude oil price, Gross Domestic Product, Exchange rate, Government Expenditure, Unemployment rate

Introduction

Crude oil is a major source of energy in Nigeria and the world. Crude oil being the mainstay of the Nigeria economy plays a vital role in shaping the economic and political destiny of the country. Crude oil is hereby called fossil fuel or oil. It was discovered in Nigeria in 1956 at Oloibiri in Niger Delta after half a century of exploration by Shell B.P.

The nation Nigeria joined the rank of oil producers in 1958 when its first oil field came on stream producing 5,100bpd (Udoka & Nkamare, 2014).

The drive to exploit the vast wealth in fossil fuel is to displace the crushing poverty that affects majority of Nigerians through providing structures that facilitates economic growth and development. The continuing gap in poverty level despite the vast natural resources indicate what scholars describe as “resource curse.” Of course Nigeria exports of oil and natural gas at a time of peak prices have enabled the country to post current account surplus in recent years. Reportedly, 80 percent of Nigeria’s energy revenues flow to the government 16 percent covers operational costs and the remaining 4 percent go to investors (Nwanna & Eyedayi, 2014).

Oil price shock (sudden increase in the price of oil) in the past resulted to increase in revenue to Nigeria and caused an increase in money supply (Oyeyemi, 2013). This increase in money supply has a serious implication for macro-economic indices like interest rate and inflation rate. The increase in money supply improved liquidity and increased spending both in real and financial assets which leads to increase in gross domestic product and reduction in unemployment rate. The momentum was not sustained. Expected structure to sustain economic development and growth were not strategically entrenched in the system of governance. Selfishness, ignorance and corruption robbed the nation the potential benefit from oil and gas industries as bulk of the revenue has been looted or mismanaged by public office holders at all levels of government. Much efforts were not taken to diversify the economy in anticipation of possible negative shocks.

Decline in oil price results to a fall in government revenue. Thus, the government has to borrow in order to finance its budget. Debt servicing will possibly rise, external reserves depletes, dissatisfied persons tend to anti-social activities, federal and state allocations reduce, increase in security budget, delay in paying salaries of civil servants and demise of infrastructural projects. The reduced flow of money in growing population and economy will lead to job cuts and abysmal activities in the capital market.

There has always been public outcry whenever oil price fluctuates negatively. The fundamental abuse and misallocation of oil revenue has introduced distrust in the system and perhaps silent causes of militia in various regions of nation. Some researchers believe that oil price fluctuation has a significant impact on Nigeria economy, others believe that there is no significant impact on the economy. Their findings are contradictory and is on this background that the study was motivated to fill the knowledge gap on the effects of oil price fluctuations on Nigeria economy. This work seeks empirical explanation on how fluctuations in oil price has affected the economic growth of Nigeria (1997 -2015).

The subsequent sections of this work include: conceptual framework; theoretical framework and empirical review of related works. Others are methodology; data presentation and analysis; summary of findings, conclusion and recommendations.

Conceptual Framework

Nations that export oil are most likely to experience contributions to the economic conditions and well-being of the populace. There are positive and negative contributions. Among the positive contributions are source of revenue to the government (Jaida, 2002), transformation and addition to balance of payment (CBN, 2014), increase in external trade (NNPC report, 2006; Lewis, 2001), increase in Gross Domestic Product (Aigbedion & Iyayi, 2007), source of employment (Odularu, 2007), transfer of technology (Oyejide & Adewuyi, 2011), provision of internal energy requirements (Oyejide & Adewuyi, 2011), increased income per capita (Husan, Arezki & Medas, 2015), and development of the economy say by providing infrastructure, industry, health facilities, educational supports, transportation and agricultural development (Afolabi, 2011).

The negative contributions resulting from oil exploration and exports include: Neglect of Agricultural sector and increased food import bills, urban congestion and oil spillage. Others are excess liquidity and its attendant consequences such as high rate of inflation, and over dependence on it to the detriment of strategic planning of the economy (Ijeh, 2010). Odeyemi (2016) observed the implications of fall of oil price on Nigeria economy. Among the consequences are devaluation of the naira, depletion of external reserves in a bid to save devaluing naira, depletion of funds for Government business, economic recession and dwindling activities in the Capital Market.

Theoretical Framework

A number of theories guided thinking in this study. Among the theories are Mainstream Theory, Linear/Symmetric Theory, Renaissance Growth and Dutch Disease Theory. The principal theory upon which data were analysed was the Dutch disease theory. The mainstream theory postulates that economic growth results from production; and production refers to transformation of matter in some way, and requires energy. Capital, labour and land are primary factors of production; and energy resources such as oil and gas, coal and fuel are categorised as intermediate inputs usually created during the production period and entirely used up during the production process. The mainstream theory downplays the role of energy resources in economic growth (Oriakhi & Iyoha, 2013).

The linear/symmetric theory asserts that oil price volatility has linear relationship on the macroeconomic indicators. Thus fluctuations in say Gross National Product (GNP), and Gross Domestic Product (GDP) are occasioned by frequent fluctuations in oil prices (Goodwin, 1985; Hooker, 1986, Laser, 1987; Hooker, 2002). The renaissance growth theory an off-shoot of symmetric theory propounded that volatility/change in oil prices rather than oil price level that has significant influence on economic growth (Lee, 1998).

The Dutch disease theory of economic growth states that higher oil prices, generally, change the industrial structure of the oil-exporting country making it more concentrated on oil industry and non-traded sectors. The higher oil revenues lead to the appreciation of local currency, which consequently causes the increase of imports of consumer goods. Thus, the high concentration on imports tends to reduce the competitiveness of the local producers. It follows according to the Dutch disease theory that an increase in oil prices is not a beneficial situation for the economy of an oil-exporting country (Corden & Neary, 1982).

Empirical Review

From related studies no other nations a mixed result was recorded. According to Ito (2012) the economy of Russia is highly sensitive to the oil price changes. The results of analysis showed that in a long-term period 1% increase in oil prices would increase GDP by 0.44%. Mendoza and Vera (2010) studied the asymmetric effect of oil price shocks on economic growth and found that the oil price shocks that occurred during the period (1984-2008) had a positive effect on the Venezuelan economy. The study showed that oil price increases were more significant and affected the economy more intensively than the oil price decreases. Salim and Rafiq (2013) investigated the impact of oil price volatility on six major emerging economies of Asia, namely China, India, Indonesia, Malaysia, Philippines and Thailand. The work measured quarterly oil price volatility with the realized volatility (RV) and made a number of findings. For China, it was reported that oil price volatility impacts output growth in the short run. And, for India and the Philippines, oil price volatility was found to impact both GDP growth and inflation before and after the Asian financial crisis.

A related study in Nigeria, the Dutch disease theory seems evident. Olaokun (2000) showed that oil price increases exert a negative effect on the economies of Ghana and Nigeria, but has a positive effect on Russia, which like Nigeria is an oil producing country. Olomola (2006) found out that oil price volatility is highly significant in explaining GNP growth and unemployment. Similarly, Oriakhi and Osaze (2013) examined the consequences of oil price volatility on the growth of the Nigerian economy within the period 1970 to 2010 using quarterly data and employing the Vector Auto regression (VAR) methodology. They found that oil price volatility impacted directly on real government expenditure, real exchange rate and real import, while real government expenditure impact on real GDP, real money supply and inflation. By implication, oil price changes determine government expenditure level, which in turn determine the growth of the economy thereby reflecting the dominant role of government in Nigeria.

Omisakin (2008) carried out a study on the impacts of oil price shocks on the macroeconomic performance in Nigeria using Vector Auto regression (VAR) approach. The study found that oil price shocks significantly contributed to the variability of oil revenue and output. Thus, oil price shock does not have substantial effects on money

supply, price level and government expenditure in Nigeria over the period covered by the study. The impact of oil price volatility on macroeconomic activity in Nigeria has also been examined by Apere and Ijeoma (2013) finds a unidirectional relationship between interest rate, exchange rate and oil prices. However, a significant relationship between oil prices volatility and real GDP was not found. The paper concludes that oil price volatility is an important determinant of real exchange rates and in the long run, while exchange rate rather than oil price volatility affects output growth in Nigeria.

Oyeyemi (2013) confirms the positive relationship between oil price increases and economic situation; showing that during the periods of oil price decreases disruption effects occurred in balance of payments and government finances. Moreover, it was mentioned that even a small shock in global oil prices will have a long-term effect on the economic growth of the country. Similarly, Ani, Ugwunta, Iyama and Eneje (2014) in a study on Oil price volatility and economic development: Stylized evidence in Nigeria investigated chiefly the causal relationship between oil prices and key macroeconomic variables 1980 to 2010. The findings indicate that there is a positive but insignificant relationship between oil price and the Nigerian GDP. Generally, oil prices have no significant impact on real GDP and exchange rate in Nigeria.

Methodology

The secondary data used for this study were sourced from the Central Bank of Nigeria (CBN) statistical bulletin and annual report of National Bureau of Statistics. The ex post facto design was adopted for this work. The estimation was based on Ordinary Least Square multiple regression method using log mode. The e-views 7 software was used for the model estimation. The study adopts and modified the empirical model used by Oriakhi and Iyoha (2013). The model was used to examine the effect of oil price volatility and its consequences on the growth of Nigeria economy and it is specified as:

$$Y_t = \beta_0 + \beta_1 \text{GDP} + \beta_2 \text{GE} + \beta_3 \text{EXC} + \beta_4 \text{INF} + \beta_5 \text{MS} + \beta_6 \text{IM} + U_t \dots\dots\dots (1)$$

Where: Y_t is the oil price volatility; GDP is the Gross Domestic Product; GE is Government expenditure; EXC is the exchange rate; INF is the rate of inflation, MS is the real money supply; IM real imports; β_0 is the intercept; $\beta_1 - 6$ indicate the slope or coefficient of the explanatory variables.

This study examines the effect of oil price fluctuations on Nigeria economic growth between 1997 and 2015. The model specified for the study is:

$$Y_t = \alpha_0 + \alpha_1 \text{GDP} + \alpha_2 \text{GE} + \alpha_3 \text{EXC} + \alpha_4 \text{UNE} + U_t \dots\dots\dots (2)$$

$$\text{Log}(Y_t) = \alpha_0 + \alpha_1 \text{log(GDP)} + \alpha_2 \text{log(GE)} + \alpha_3 \text{log(EXC)} + \alpha_4 \text{log(UNE)} + U_t \dots\dots\dots (3)$$

Where: Y_t is oil price; GDP is the Gross Domestic Product; GE is government expenditure; EXC is exchange rate; UNE is the rate of unemployment; α_0 is the intercept; $\alpha_1 - 4$ is coefficient of the explanatory variables; and U_t is the error term.

Theoretically the coefficient will take the following outcome:

$$\alpha_1 > 0, \alpha_2 > 0, \alpha_3 > 0, \alpha_4 > 0$$

Thus, gross domestic product, government expenditure and exchange rate should exert a positive effect on oil price while unemployment is expected to exert a negative effect on oil price.

Data Presentation and Analysis

The input data for the study are shown in appendix 1 depicting the data on oil price, Gross Domestic Product, Exchange rate, Government expenditure and Unemployment rate. The descriptive statistics from the model are shown in Table 1 and Figure 1.

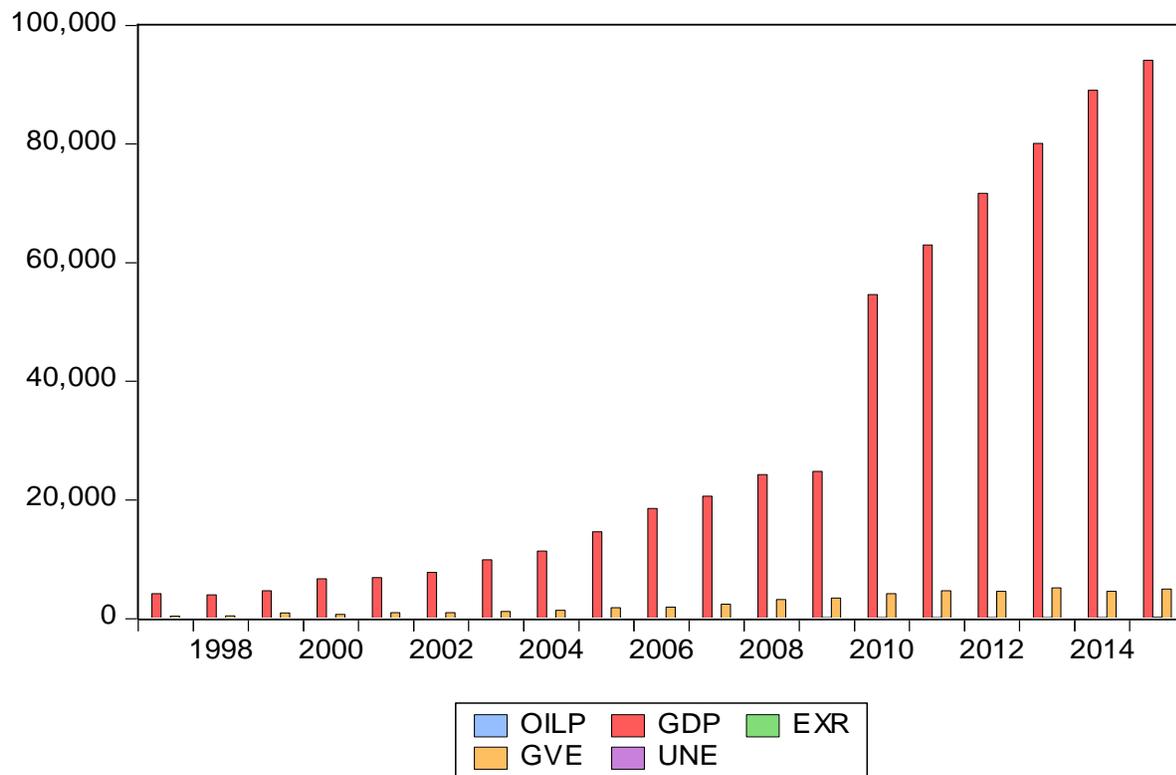
Table 1: Descriptive statistics on the input variables: OILP, GDP, EXR, GVE, AND UNE

	OILP	GDP	EXR	GVE	UNE
Mean	56.28105	32163.06	131.3794	2548.991	14.30526
Median	50.59000	18564.59	131.2500	1938.000	14.60000
Maximum	109.4500	94144.96	196.9750	5185.318	27.40000
Minimum	12.28000	3989.450	74.62500	428.2152	3.100000
Std. Dev.	33.87535	31860.06	29.34177	1720.908	8.862497
Skewness	0.317408	0.868919	-0.014920	0.284680	0.055994
Kurtosis	1.667450	2.144742	3.028698	1.481718	1.594782
Jarque-Bera	1.724789	2.969978	0.001357	2.081570	1.573184
Probability	0.422150	0.226505	0.999322	0.353177	0.455394
Sum	1069.340	611098.1	2496.208	48430.83	271.8000
Sum Sq. Dev.	20655.71	1.83E+10	15496.91	53307420	1413.789
Observations	19	19	19	19	19

Sources: Researchers' Computation using E-views 7.0

From Table 1 OILP has a mean of 56.28105 and standard deviation of 33.87535; GDP has a mean of 32163.06 and standard deviation of 31860.06; EXR has a mean of 131.3794 and standard deviation of 29.34177; GVE has mean of 2548.991 and standard deviation of 1720.908; and UNE has a mean of 14.30526 and standard deviation of 8.862497. The Jarque - Bera statistic ranges between 2.97 and 1.59 except in EXR of 0.0013. This indicate reason for application of double log mode in estimation of the model. All the results indicate that the mean is greater than the standard deviation in each of the variables. This suggest that the variables meet the basic requirement for normal distribution.

Figure 1: Bar Chart on the variables: OILP, GDP, EXR, GVE, and UNE (1997-2015)



Sources: Researchers' Computation using E-views 7.0

Figure 1. indicate that oil price, exchange rate, and unemployment rate for the period 1997 to 2015 were flat with little or no increase. Government expenditure for the period under review has been increasing with minor increase occurring in 2005. Since then, there has been an appreciation but little movement in government expenditure for the period under review. Gross domestic product has been increasing for the period under review with major and superlative movement occurring in 2009.

The variables were subjected to stationarity test using Augmented Dickey Fuller Test. The output data in Table 2 shows the stationarity test or unit root test.

Table 2: Unit Root Test on the variables: OILP, GDP, EXR, GVE, and UNE

Variables	Level	Mckinnon Critical Values					Order of Integration	DF
		1 ST Diff.	2 ND Diff.	1%	5%	10%		
OILP	-1.402491	-2.915913	-5.463765	-3.920350	-3.065585	-2.673459	I(2)	1%
GDP	1.511475	-3.388430	-6.928273	-3.920350	-3.065585	-2.673459	I(2)	1%
EXR	-0.395155	-2.380895	-3.839915	-3.920350	-3.065585	-2.673459	I(2)	5%
GVE	-0.111959	-5.328491	-10.87857	-3.920350	-3.065585	-2.673459	I(2)	1%
UNE	-0.601691	-5.442475	-6.896048	-3.920350	-3.065585	-2.673459	I(2)	1%

Source: Researchers, Computation using E-views 7.0

Augmented Dickey Fuller Test as shown in Table 2 shows that all the variables are stationary at second difference. The variables are integrated at I(2) because of their volatility nature. The result implies that all variables, which were I (2) series have to be differenced twice, to yield meaningful results that will be useful in making inference within the study.

The test for serial autocorrelation and normality were conducted using Breusch-Godfrey serial correlation LM test and Jarque -Bera test. The output data are shown in Table 3 and Figure 2.

Table 3: Result of the test for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.197455	Prob. F(1,13)	0.6870
Obs*R-squared	0.000000	Prob. Chi-Square(1)	1.0000

Sources: Researchers' Computation using E-views 7.0

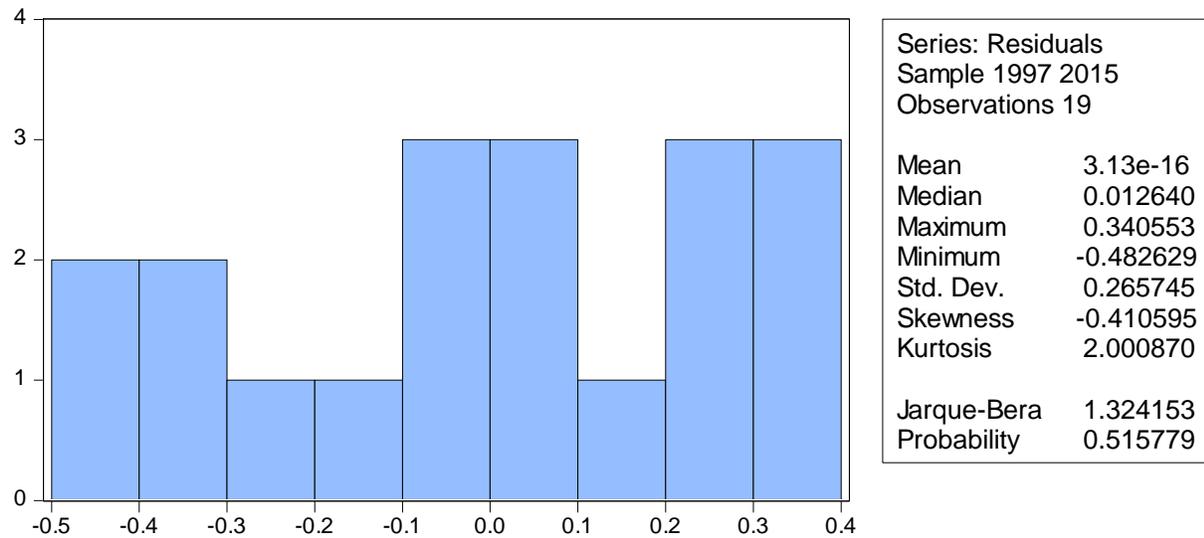
H_0 = There is no serial correlation in the model

H_1 = There is serial correlation in the model

Decision rule: Usually if the probability value is less than 0.05 the H_0 is rejected and the H_1 is accepted.

The result of the serial correlation shows that the probability value is 0.6870 is greater than 0.05 implying that we accept H_0 and reject H_1 . We then conclude that there is no serial autocorrelation in the model and that the model is appropriate.

Figure 2: Result of Normality Test



Source: Researchers' Computation using E-views 7.0

The result of the normality test shows that the probability value is 0.515779 and is greater than 0.05. Thus, we accept H_0 and reject H_1 and conclude that the residual is normally distributed and random.

A further test of **heteroscedasticity** was done, and the output data is shown in Table 4.

Table 4: Result of the test for Heteroskedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.055239	Prob. F(4,14)	0.9936
Obs*R-squared	0.295209	Prob. Chi-Square(4)	0.9901
Scaled explained SS	0.080210	Prob. Chi-Square(4)	0.9992

Source: Researchers' Computation using E-views 7.0

We proposed:

H_0 = There is no heteroskedasticity

H_1 = There is heteroscedasticity

The result of the heteroskedasticity test indicates that the probability is 0.9936 which is greater than 0.05 we then accept the null hypothesis (H_0) meaning that there is no heteroskedasticity in the model and there is homoskedasticity. This shows that the models have global utility and is normally distributed. And based on this we conclude that this is the best model to explain the relationship between these variables included in the model.

The estimation of the model was then executed using Ordinary Least Square method which is line of best fit. The out data shown in Table 5 is the **Regression Result**.

Table 5: Regression Result on the variables: OILP, GDP, EXR, GVE, UNE (1997-2015)

Dependent Variable: LOG(OILP)				
Method: Least Squares				
Date: 08/19/16 Time: 04:27				
Sample: 1997 2015				
Included observations: 19				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP)	0.032421	0.213314	0.151986	0.8814
LOG(EXR)	-1.299656	0.576564	-2.254141	0.0407
LOG(GVE)	0.718739	0.299116	2.402874	0.0307
LOG(UNE)	0.383765	0.217789	1.762095	0.0999
C	3.453600	2.264004	1.525439	0.1494
R-squared	0.901777	Mean dependent var		3.823728
Adjusted R-squared	0.873714	S.D. dependent var		0.697290
S.E. of regression	0.247794	Akaike info criterion		0.268499
Sum squared resid	0.859629	Schwarz criterion		0.517036
Log likelihood	2.449258	F-statistic		32.13336
Durbin-Watson stat	1.862128	Prob(F-statistic)		0.000001

Source: Researchers' Computation using E-views 7.0

The result of Table 5 also shows that R^2 value is 0.901777, which means that 90.18% of the variation in OILP is explained in the model leaving only less than 10% to the error term. This also means that line of best fit was highly fitted. This shows that this model is the best model to explain the relationship between the variable under consideration. Durbin-Watson statistic value of 1.862128 shows that there is no presence of autocorrelation in the model. The result of F-stat is 32.13336 and the probability of F-stat is 0.000001 implying that the overall regression is statistically significant. This also means that all the independent variables taking together will explain significantly the variations on crude oil price.

The result of the regression shown in Table 5 further shows that the coefficient of gross domestic product is (0.032421) with probability value of 0.8814, which is greater than 0.05. The t statistic value of 0.151986 is less than 2. This means that OILP has a positive and insignificant effect on GDP. The p-value > 0.05 (i.e. 0.8814 > 0.05) thereby confirming the insignificant effect of crude oil price on gross domestic product. This result however agrees with previous study of Apere and Ijeoma (2013) who found no significant relationship between oil price fluctuations and GDP in Nigeria which tends to confirm that Nigeria economy has a case of "Dutch disease".

On the other hand the coefficient of exchange rate is (-1.299656) with probability value of 0.0407, is less than 0.05. The t statistic value of -2.254141 is greater than 2. This means that crude oil price has a negative but significant effect on exchange rate. The p - value < 0.05 (i.e. 0.0407<0.05) shows the significant impact of oil price on exchange rate. This however is negative and significant. This result suggests that Nigeria is a net-oil exporter; Nigeria's real exchange rate appreciates when oil price hike facilitates higher inflow of foreign exchange into the economy.

The coefficient of government expenditure which was used as one of the control variable in the model is 0.718739 with a probability value of 0.0307 which is less than 0.005; and the t statistic value of 2.402874 is greater than 2. This means that GVE has a positive and significant effect on OILP. Also, p - value < 0.05 (i.e. 0.0307 < 0.05) thereby confirming the significant effect of OILP on GVE. Thus, GVE has a positive and significant effect on OILP for the period under review. This agrees with the a priori expectation that OILP should have a positive effect on GVE. The result confirms the huge monetization of crude oil receipts and subsequent increase in government expenditure for the period under review.

The coefficient of unemployment rate which is another independent variable in the model is 0.383765 with a probability value of 0.0999 which is greater than 0.005; the t statistic value of 1.762095 is less than 2. This means that OILP has a positive and insignificant effect on UNE. The p - value > 0.05 (i.e. 0.0999 > 0.05) confirming the insignificant effect of OILP on UNE. Thus, OILP has a positive and insignificant effect on UNE. The result however disagrees with a priori expectation and shows that the effect is insignificant.

The work investigated the speed or degree of adjustment (i.e. the rate at which the dependent variable adjust to changes in the independent variables) using the vector error correction model. The output result is shown in Table 6.

Table 6: Vector Error Correction Model on the variables: OILP, GDP, EXR, GVE and UNE

Variables	Coefficient	Standard Error	t-Statistic
ECM(-1)	-0.647803	0.30284	2.13912
DOILP(-1)	0.046958	0.36202	0.12971
DGDP(-1)	0.000850	0.00072	1.17920
DEXR(-1)	-0.831462	0.33175	-2.50629
DGVE(-1)	0.014099	0.01155	1.22076
DUNE(-1)	1.994957	1.52928	1.30450
C	41.49106	49.6121	0.83631

Source: Researchers' computation using E-views 7.0

The result shown in Table 6 revealed that 64.7803% of the disequilibrium in the short run will be corrected in long run and how the errors in the previous year are

corrected in the present year. This implies that the present value of OILP adjust moderately to changes in GDP, EXR, GVE and UNE.

The hypotheses that Oil price does not granger cause the changes in the independent variables were tested using granger causality test. The output result is shown in appendix 2. The result however revealed as follows: that oil price does not granger cause any of the independent variables rather gross domestic product granger causes exchange rate in Nigeria; that there is unidirectional causal relationship between GDP and EXR with causation from GDP to EXR; that there is unidirectional relationship from government expenditure (GVE) to gross domestic product (GDP), unemployment rate (UNE) to gross domestic product (GDP) and from government expenditure (GVE) to unemployment rate (UNE).

The summary result of the test of hypotheses that there is no significant relationship between the oil price and the independent variables: gross domestic product, exchange rate, government expenditure, and unemployment are shown in Table 7.

Table 7: Summary result of the hypotheses

Variables	t-Statistic	p-value	Observation	Decision
GDP	0.151986	0.8814	p-value > 0.05	Accept null
EXR	0.576564	0.0407	p-value < 0.05	Reject null
GVE	0.299116	0.0307	p-value < 0.05	Reject null
UNE	0.217789	0.0999	p-value > 0.05	Accept null

Source: Extracts from table 1.

This work test of hypotheses showed that:

1. There is no significant relationship between fluctuations in oil price and gross domestic product.
2. There is significant relationship between fluctuations in oil price and exchange rate.
3. There is significant relationship between fluctuations in oil price and government expenditure.
4. There is no significant relationship between fluctuations in oil price and unemployment rate.

Although, the oil price fall crisis may not persist always, however, since the Nigerian economy is renowned to be oil dependent, there is a need to look inwards for a re alignment of priorities for the economy to be viable, and forestall any present or future oil price fall crisis on the economy, thus a call for a shift from the oil sector into areas that were neglected or not paid rapt attention. The cry for diversification of the Nigerian economy has been long overdue. Considering the harsh economic realities following the falling oil price, there have been series of renewed calls for the diversification of the Nigerian economy by various stakeholders. Diversification is seen as a panacea for stabilizing the Nigeria economy. It is not the oil or money “per se” which develops a nation but rather the strategic and effective utilization of the oil wealth to develop and diversify

the economy. Fiscal recklessness ought to be reduced to the barest minimum especially any time there is increase in price of oil.

Summary of Findings, Conclusion and Recommendations

The empirical results showed that:

- a. Crude oil price has a positive but insignificant effect on gross domestic product during the period under review. The insignificant effect could be as a result of high level of corruption and mismanagement of oil revenue in the country.
- b. Crude oil price has negative and significant effect on exchange rate for the period under review. Crude oil is the highest foreign exchange earner for Nigeria whenever there is decline in oil price Nigeria is negatively affected.
- c. Crude oil price has positive but insignificant relationship with the unemployment rate in Nigeria. This shows that misappropriation of public funds and poor administration may have denied Nigeria the needed fund to provide infrastructure for business to succeed in the country.
- d. A positive and significant relationship was found between crude oil price and government expenditure. Thus, oil price at the prevailing exchange rate determines the level of government spending, which in turn determines real GDP.

Conclusion

The Findings indicated that Nigeria has failed to adequately utilize the oil revenue maximally for sustainable economic growth. When oil prices are high a great deal of optimism sets in and the nation tends to spend to meet admittedly tremendous needs, that is, expand expenditure when oil earnings increase, maintain the position where there is a dip in earnings and seek a desperate way out when there is crisis (Okonjo-Iweala, 2006). Government should develop a structure to diversify the economy for sustainable economic growth and to stabilize the naira in event of oil price falls.

Recommendations

This work therefore recommends as follows:

1. Nigerian government should vigorously pursue the independence of the Central Bank of Nigeria (CBN). It is not very clear at the moment if the CBN is practically independent of the government. CBN independence is crucial when it is necessary for it to neutralize the effect of the government's fiscal recklessness. With an independent CBN, the government can set up a Reserve Fund to be managed by the CBN. When oil prices rise, excess funds can be deposited in this fund and when the price declines, shortages in government revenue can be met through the fund. This practice is popular both in Botswana and Norway. Even due this has been introduced in Nigeria it needs to be strengthened and managed specifically by CBN.
2. Government should make the strong move towards diversification. Governments need to now redouble their efforts and put in place the necessary measures towards full economic diversification. On agriculture, the local governments, state

governments and federal government should work together in setting up farm settlements (mechanised farming) in various parts of the country. While the Federal government should make it mandatory for Corps members to do their National Youth Service in the various farms with adequate pay and incentives.

3. Economic diversification will require significant foreign investment, both from the private sector and from development finance institutions. Nigeria needs to make sure it is an attractive destination - this will require continued work on issues like anticorruption crusades, security, and infrastructural development.
4. Governments at all levels, especially the States and local governments need to focus on increasing their non-oil revenue and building their internally generated revenue levels.
5. Electricity generation and distribution should be given priority attention. The Government needs to continue to push through with the implementation of the Power roadmap and show the will to make the additional changes needed for the power sector to deliver. The Nigerian economy can only reach its potential when power supply is stable.

Reference

- Afolabi, K. (2011) Impact of Oil Export on Economic Growth in Nigeria, *Journal of economic and behavioural studies*, 2(3), 92 -96.
- Aigbedion, I. and Iyayi, S. E. (2007) Diversifying Nigeria's Petroleum Industry, *International journal of physical sciences*, 2(10), 263-270.
- Ani, W., Ugwunta, D., Inyama, O. and Eneje, B. (2014) Oil Price Volatility and Economic Development: Stylized Evidence in Nigeria, *Journal of Economics and International Finance*, 6(6), 125 - 133.
- Apere, O. T. and Ijeoma, A. M. (2013) Macroeconomic Impact of Oil Price Levels and Volatility in Nigeria, *International Journal of Academics and Research in Economic for Management Sciences*, 2(4), 15-25.
- Central Bank of Nigeria (1990) *Annual Report and Statement of Account*, Vol. 12, Abuja: CBN Publications.

- Corden, W. and Neary, J. (1982) Booming Sector and De-Industrialisation in a Small Open Economy, *Economic Journal*, 92(368), 825-848.
- Goodwin, H. (1985) Oil Price Changes and its Economic and Social Reactionary Effect: An Appraisal, *Switz Journal of Social Economics*, 4(2), 50-53.
- Hooker, C. (1986) Effects of Oil Price and Exchange Rate Variations on Government Revenue in China, *Journal of Economics* 2(1), 2-3.
- Hooker, M. (2002) Are Oil Shocks Inflationary? Asymmetric and Non-Linear Specifications versus Changes in Regime, *Journal of Money, Credit and Banking*, 34(2), 540-561.
- Husan, A. M., Arezki, R. and Medas, P. (2015) Global Implication of Lower Oil Price. *Economic analysis working papers*, 10(7), 50-45.
- Ijeh, C. A. (2010) Assessing the Impact of Overdependence on Oil Revenue to Nigeria Economy, *Journal of business management and economics*, 2(4), 164-170.
- Ito, K. (2012) The Impact of Oil Price Volatility on Macroeconomic Activity in Russia, *Economic Analysis Working Papers*, 9 (5), 10-25.
- Jaidah, A. M. (2002) Perspective on the Oil Market, *OPEC review*, 10(6), 254-260.
- Laser, Y. (1987) Interest, Inflation, Growth and the Direction of the Hong-Kong Economy, *Chinese Economic Reviews*, 120(8), 19-33.
- Lee, K. (1998) Oil Price Changes and Volatility; A Correlation Analysis on the Economy of China, *Scholarly writers' publications*, 15(4), 44-49.
- Mendoza, O. and Vera, D. (2010) The Asymmetric Effects of Oil Shocks on an Oil Exporting Economy, *Cuadernos de Economía*, 47(135), 3-13.
- Nwanna, I. O. and Eyedayi, A. M. (2014) Impact of Crude Oil Price Volatility on Economic Growth in Nigeria, *Journal of business and management*, 18(6), 10-19.
- Odeyemi, L. (2016) Ten Ways the Falling Oil Prices is Affecting Nigerians. [Online]. Available from: <http://bizwatchnigeria.ng/10-ways-the-falling-oil-prices-is-affecting-nigerians/>.

- Odularu, G. O. (2007) Crude Oil and the Nigeria Economic Performance. *African Economic Journal*, 4(20), 225 -230.
- Okonjo-Iweala, N. (2006) NEEDS and Its Impact on Nigeria Economy, *Journal of Finance*, 30(3), 100-150.
- Olaokun, O. (2000) Oil Price Shock Effects on Economies of African Nations, *African Economic Journal*, 3(10), 30-39.
- Olomola, P. (2006) Oil Price Shocks and Aggregate Economic Activity in Nigeria, *African Economic and Business Review*, 4(2), 40-45.
- Omisakin, A. O. (2008). Oil Price Shocks and the Nigerian Economy: A Forecast Error Variance Decomposition Analysis, *Journal of Economics Theory*, 2(4), 124-130.
- Oriakhi, D. E. and Osaze, I. D. (2013) Oil Price Volatility and its Consequences on the Growth of the Nigerian Economy: An Examination (1970-2010), *Asian Economic and Financial Review*, 3(5), 683-702.
- Oyejide, T. A. and Adewuyi, A. O. (2011) Enhancing Linkages of Oil and Gas Industry In Nigeria Economy, *Trade policy research*, 8(10), 10-21.
- Oyeyemi, A. M. (2013) The Growth Implications of Oil Price Shock in Nigeria, *Journal of Emerging Trends in Economics and Management Sciences*, 4(3), 343-349.
- Salim, R. and Rafiq, S. (2013) The Impact of Crude Oil Price Volatility on Selected Asian Emerging Economies, *Journal of Development Economics*, 51(11), 1-33.
- Udoka, C. O. and Nkamare, S. E. (2014) The Implication of Crude Oil Glut on the Performance of The Nigeria Capital Market, *Journal of Business Management*, 18(15), 11-23.

Appendix 1: Presentation of Data on Oil price, Gross Domestic Product, Exchange Rate, Government Expenditure and Unemployment Rate.

Year	OILP (\$)	GDP (#)	EXR (#)	GVE (#)	UNE (%)
1997	18.86	4,189.25	74.6250	428.22	3.2
1998	12.28	3,989.45	84.3679	487.11	3.2
1999	17.44	4,679.21	92.5284	947.69	3.1
2000	27.6	6,713.57	109.5500	701.06	4.7
2001	23.12	6,895.20	113.4500	1,018.03	4.2
2002	24.36	7,795.76	126.9000	1,018.16	3.8
2003	28.1	9,913.52	137.0000	1,225.97	14.8
2004	36.05	11,411.07	132.8500	1,426.20	11.8
2005	50.59	14,610.88	129.0000	1,822.10	11.9
2006	61	18,564.59	127.0000	1,938.00	14.6
2007	69.04	20,657.32	116.8000	2,450.90	12.7
2008	94.1	24,296.33	131.2500	3,240.82	14.9
2009	60.86	24,794.24	148.1000	3,452.99	19.7
2010	77.38	54,612.26	148.8127	4,194.58	21.4
2011	107.46	62,980.40	156.7000	4,712.06	23.9
2012	109.45	71,713.94	155.7567	4,605.39	27.4
2013	105.87	80,092.56	155.7375	5,185.32	24.7
2014	96.29	89,043.62	158.8050	4,587.39	25
2015	49.49	94,144.96	196.9750	4,988.86	26.8

Source: Central Bank of Nigeria Statistical Bulletin and Annual Report National Bureau of Statistics 2015.

KEYS: OILP = Crude Oil Price; GDP = Gross Domestic Product; EXR = Exchange Rate

GVE = Government Expenditure; UNE = Unemployment Rate

Appendix 2: Causality Test

Result of Causality Test

Pairwise Granger Causality Tests			
Date: 08/19/16 Time: 06:00			
Sample: 1997 2015			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause OILP	18	0.85248	0.3705
OILP does not Granger Cause GDP		0.36731	0.5535
EXR does not Granger Cause OILP	18	0.64684	0.4338
OILP does not Granger Cause EXR		1.02291	0.3279
GVE does not Granger Cause OILP	18	0.89736	0.3585
OILP does not Granger Cause GVE		0.24543	0.6275
UNE does not Granger Cause OILP	18	1.33365	0.2662
OILP does not Granger Cause UNE		3.31442	0.0887
EXR does not Granger Cause GDP	18	3.27199	0.0906
GDP does not Granger Cause EXR		4.95636	0.0417
GVE does not Granger Cause GDP	18	8.90604	0.0093
GDP does not Granger Cause GVE		0.75909	0.3973
UNE does not Granger Cause GDP	18	5.73158	0.0302
GDP does not Granger Cause UNE		0.70245	0.4151
GVE does not Granger Cause EXR	18	2.32712	0.1479
EXR does not Granger Cause GVE		0.47357	0.5019
UNE does not Granger Cause EXR	18	0.06346	0.8045
EXR does not Granger Cause UNE		4.53122	0.0503
UNE does not Granger Cause GVE	18	2.79430	0.1153
GVE does not Granger Cause UNE		7.71330	0.0141

Source: Researchers' Computation using E-views 7.0