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Oil price volatility and economic development: Stylized evidence in Nigeria

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The research presented in this study, investigates chiefly the causal relationship between oil prices and key macroeconomic variables in Nigeria in a multivariate framework using times series data from 1980 to 2010. To examine whether there is prediction between oil prices and macroeconomic indicators (inflation, interest rate, exchange rate and real gross domestic product) as well as the impact of oil prices on the applied macroeconomic indicators, this research adopted the Granger causality and the ordinary least squares respectively. After ensuring data stationarity, the results suggest that in the short run, changes in the gross domestic product (GDP) is not influenced by oil price volatility, nor do we find evidence of influence on key macroeconomic variables. Again the findings indicate that there is a positive but insignificant relationship between oil price and the Nigerian Gross domestic product. Overall oil prices have no significant impact on real GDP and exchange rate in Nigeria. The result suggests that Nigeria has a special case of the Dutch Disease, where a country's seeming good forutne proves ultimately detrimental to its economy.

Key words: Oil and Gas, Gross Domestic Product, causality, macroeconomic indicators.

INTRODUCTION

The Nigerian oil and gas sector plays a very dominant role in the nation's economy with oil receipts accounting for 82.1%, 83% and about 90 per cent of the nation's foreign exchange earnings in 1974, 2008 and 2010 respectively (Ihua et al., 2009). This is an economically precarious situation as confirmed by Oriakhi and Osaze (2013). The over reliance on this wasting resource over the years, has pigeon holed Nigeria's economy as a mono-product economy with notable structural difficulties for the economy. It is worth noting that prior to 1956 when Crude Oil was discovered in marketable quantities, the mainstay of the Nigerian economy comprised of agricultural commodities such as palm oil, rubber, cotton, groundnut, cocoa etc. Since the discovery of oil, Nigerian's reliance on income from oil and Gas has further been buoyed by an almost consistent upward movement in the prices of crude oil reaching about $147 per barrel in 2008, before averaging $90 per barrel in 2010 (Oriakhi and Osaze, 2013).

Volatility in exchange rate and oil prices was defined by

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Englama et al. (2010) as the rate of change in price over a given period. Volatility may as well be expressed as a percentage and computed as the annualized standard deviation of the percentage change in the daily price. By implication, the larger the magnitude and frequency of the change over time, the higher the incidence of volatility. Fluctuations in oil prices may create uncertainty about the future path of the oil price, causing consumers to postpone irreversible purchases of consumer durable goods, and also causing firms to postpone irreversible investments (Chen and Hsu, 2012). In a well written paper, Apere and Ijomah(2013) succintly captured the nature of oil volatility as follows, ' price of oil oscillated between $17 and $26 at different times in 2002 hovered around $53 per barrel by October 2004 and moved further to $55 in 2005. They added that by July 2008, the price of oil rocketed to an all time record of $147 per barrel and thereafter, a sharp drop to US $46 a barrel and this is unending'. In an attempt to situate the oscillation in oil price, the Organisation of Petroleum Exporting Countries (OPEC) attributed the current global crude oil price volatility to continued uncertainty, stemming from the slow pace of global economic growth, continued Eurozone debt crises, high unemployment in advanced economies and the risk of inflation in developing countries (Okere, 2013).

The Central Bank of Nigeria, the Budget and Planning Office, Federal Ministry of Finance and other agencies involved in setting monetary policies in Nigeria and globally are interested in the oil price movements in the local and international oil markets because of its direct bearing on Nigeria's annual budget. Majidi (2006) maintains that the bigger the oil-price increase and the longer higher prices are sustained, the bigger the macroeconomic impact. Nigeria became more exposed to oil price fluctuations the moment she started importing refined petroleum products due the collapse of local refineries in the late 1980's (Obioma, 2006). However, the impact of these oil price shocks as argued by Masih et al. (2010) is likely to be significantly greater in oil-importing countries, especially where policy frameworks are weak, foreign exchange reserve is low, and access to international capital markets is limited.The volatility behaviour of oil price fluctuations have been widely studied, surveyed and many stylized facts documented. A recurring stylized fact of volatility of asset prices is co-movement of exchange rate with highly volatile commodity prices as reported by Rickne (2009).

Empirical studies by Sachs and Warner (2005) and Auty (2001), on the growth rates of countries endowed with natural resources have shown the paradoxical finding that countries which are amply endowed with resources tend to grow slower than others. One economic explanation for this paradoxical phenomenon as emphasised by Rickne (2009) is that the resource exporter's real exchange rate co-moves with highly volatile commodity prices. The OECD (2004) states that for net oil-exporting countries, a price increase directly increases real national income through higher export earnings. However, this trend gave rise to the 'Dutch Disease' which is a situation in which a country's seeming good fortune proves ultimately to have a detrimental effect on its economy. Oriakhi and Osaze (2013), believe that estimating the consequences of oil price shocks on growth is particularly relevant in the case of the Nigerian economy which uniquely qualifies as both an oil exporting and importing economy, by reason of the fact that she exports crude oil, but imports refined petroleum products. Hence, being a net importer of oil, large shifts or fluctuations in oil prices should be a matter of serious concern to the Nigerian government when taking policy decisions that affect her national economic growth and development.

In view of these developments, the research presented in this paper examines the causality between oil price volatility
and key macroeconic variables with further emphasis on how oil price volatility conforms to stylized facts established by theory and prior empirical work. As a follow up to this, the research evaluates the relationship between oil prices and key macroeconomic indices such as exchange rate, level of employment, inflationary rate, stock market development and economic development of Nigeria proxied by real GDP. The rest of the paper is organized in four sections. Section two reviews empirical literature on oil price volatility and macroeconomic variables of developed and developing economies, Section three presents the econometric model and methodology for data analysis, section four presents the empirical results and discussion, while section five concludes.

LITERATURE REVIEW

It is now well documented in both empirical and theoretical literature, that oil price shocks exert negative effects on different macroeconomic indicators through raising production and operational costs. This may affect the economy adversely because they delay business investment by raising uncertainty or by inducing costly sectoral resource reallocation (Salim and Rafiq, 2013).

Using the vector autoregressive (VAR) analysis along with the Granger causality test, generalized impulse response functions and generalized variance decompositions, Salim and Rafiq (2013). Empirically investigate the impact of oil price volatility on six major emerging economies of Asia, namely China, India, Indonesia, Malaysia, Philippines and Thailand. Following Andersen et al. (2004), quarterly oil price volatility was measured by using the realized volatility (RV). For China, it was reported that oil price volatility impacts output growth in the short run. However, for India and the Philippines, oil price volatility was found to impact both GDP growth and inflation before and after the Asian financial crisis. In Malaysia oil price volatility impacts GDP growth, while

there is a very little feedback from the opposite side. For Thailand, oil price volatility impacts output growth for the whole study period. However, after the Asian financial crisis the impact seems to have disappeared. In Thailand, the oil subsidization of the Government by introduction of the oil fund played a significant role in improving economic performance by lessening the adverse effect of oil price volatility on macroeconomic indicators.

The impact of oil price volatility on macroeconomic activity in Nigeria has also been examined by Apere and Ijeoma (2013) using exponential generalized autoregressive conditional heteroskedasticity (EGARCH), impulse response function and lag-augmented VAR (LA-VAR) models. The paper finds a unidirectional relationship between interest rate, exchange rate and oil prices. However, a significant relationship between oil prices and real GDP was not found. The paper concludes that that oil price shock is an important determinant of real exchange rates and in the long run, while exchange rate rather than oil price shocks affects output growth in Nigeria. Hence, they found evidence that international oil price influenced economic growth in Nigeria within the sample period. Using quarterly data and employing the VAR methodology, Oriakhi and Osaze (2013) examine the consequences of oil price volatility on the growth of the Nigerian economy within the period 1970 to 2010. They found that of the six variables examined, oil price volatility impacted directly on real government expenditure, real exchange rate and real import, while impacting on real GDP, real money supply and inflation through other variables, notably real government expenditure. 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.

Since the beginning of the 1980s a large number of studies using VAR model have been done on the macroeconomic effects of oil price changes. However, surprisingly few studies have so far focused on Russia, the world's second largest oil exporter. Anchored on this premise, Ito (2012) empirically examined the impact of oil prices on the macroeconomic variables in Russia using the VAR model. The study spanned fifteen years, from 1994:Q1 to 2009:Q3, yielding 63 observations. The paper reported that a 1% increase (decrease) in oil prices contributes to the depreciation (appreciation) of the exchange rate by 0.17% in the long run, whereas it leads to a 0.46% GDP growth (decline). Likewise, they found that in the short run (8 quarters) rising oil prices not only cause GDP growth and the exchange rate depreciation, but also a marginal increase in inflation rate.

In an attempt to investigate the causal relationship between oil prices and economic growth in Tunisia over a period from 1960 to 2009, Bouzid (2012) conducted an empirical analysis of time series properties of the data collected which is followed by examining the nature of causality among the variables. Tunisia is not oil producing rather oil-importing country. It was found that an increase in oil price decrease economic growth. The increase in oil price has further negatively affected the daily consumption pattern of households. Summarily, the results show that the existence of a long-term relationship between energy prices, economic growth and Granger pairwise causality test revealed unidirectional causality from real GDP to oil prices. In Korea, using modern time series techniques in a cointegrating framework and a VEC model including interest rates, economic activity, real stock returns, real oil prices and oil price volatility, Masih et al. (2010) examined the impact of oil price volatility on stock price fluctuations. They expanded the standard error correction model by examining the dynamics of out of sample causality through the variance decomposition and impulse response function techniques. Results indicate the dominance of oil price volatility on real stock returns. The study emphasised that oil price volatility can have profound effect on the time horizon of investment and firms need to adjust their risk management procedures accordingly.

Englama et al. (2010), argued that as a mono-product economy, where the main export commodity is crude oil, volatility in oil prices has implications for the Nigerian economy and, in particular, exchange rate movements. The latter is particularly important due to the twin dilemma of being an oil exporting and oil-importing country, a situation that emerged in the last decade. The study examined the effects of oil price volatility, demand for foreign exchange, and external reserves on exchange rate volatility in Nigeria using monthly data for the period 1999:1 to 2009:12. Drawing inspiration from the works of Jin (2008), the paper utilized cointegration technique and vector error correction model (VECM) for the long-run and the short-run analysis, respectively. The results showed that a 1.0% permanent increase in oil price at the international market increases exchange rate volatility by 0.54% in the long-run, while in the short-run by 0.02%. Futhermore, the paper reports that sensitivity analysis showed that a permanent 1.0% increase in demand for foreign exchange increases exchange rate volatility by 14.8% in the long-run. The study reaffirms the direct link of demand for foreign exchange and oil price volatility with exchange rate movements.

Close scrutiny of the foregoing review of related literature, indicates that a research gap still remains which this present work intends to fill. First wheras Salim and Rafiq (2013), Bouzid (2012) and Ito (2012) carried out their studies on foreign countries, this work takes into consideration the peculiar nature of Nigeria's geopolitical, cultural and economic environment. Secondly, though Oriakhi and Osaze (2013) and Apere and Ijeoma (2013), conducted their studies using Nigeria data their efforts differ from this one in terms of econometric model and the period covered by the study.

METHODOLOGY

This study, investigates the causal relationship between oil price

and key macroeconomic variables in Nigeria in a multivariate framework using times series data from 1980 to 2010. 1980, has been selected as the cut off year because of availability of usable data and also to allow for two year post second civillian rule which further heightened the pressure on the monoproduct driven economy of Nigeria as a consequence of the very expensive version of Nigeria's Presidential System. Data for Oil price and the other macro economic variables as well as stock market data were sourced from Central Bank Statistical bulletins for several years

The model

To examine whether there is a prediction between oil prices and macroeconomic indicators (inflation, interest rate, exchange rate and real GDP) this study adopts the Granger causality. The Granger causality test determines whether one time series is useful in predicting another time series. A time series *A* is said to Granger-cause *B* if it can be shown, usually through a series of t-tests and F-tests on lagged values of *A* (and with lagged values of *B* also included), that those *A* values provide statistically significant information about future values of *B*. Granger proposed a time-series data based approach in order to determine causality (Pasquale, 2006). Granger-causality is normally tested in the context of linear regression models and specified as follows in our bivariate linear autoregressive model of two variables X_1 and X_2 based on lagged values as applied by Pasquale (2006):

$$X_1(t) = \sum_{j=1}^{P} A_{11,j}X_1(t-j) + \sum_{j=1}^{p} A_{12,j}X_2(t-j) + E_1(t) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

$$X_2(t) = \sum_{j=1}^{P} A_{21,j}X_1(t-j) + \sum_{j=1}^{p} A_{22,j}X_2(t-j) + E_2(t) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where;
p is the maximum number of lagged observations included in the equation, the matrix *A* contains the coefficients of the equation (that is, the contributions of each lagged observation to the predicted values of $X_1(t)$ and $X_2(t)$,
X_1 is the oil price which is constant while X_2 takes the form of various macroeconomic indices identified above and,
*E*1 and *E*2 are residuals (prediction errors) for each time series.

The empirical findings reported in the research presented in this paper are calculated within a simple Granger-causality test, testing whether "oil prices in Nigeria Granger-cause" macroeconomic indices and vice versa. Given the estimated OLS coefficients for equations (1) and (2) four different hypotheses about the causal relationship between oil price and macroeconomic indices can be formulated:

1. Unidirectional Granger-causality from oil price to macroeconomic indices. Here, oil price increases the prediction of macroeconomic indices but not vice versa.
2. Unidirectional Granger-causality from macroeconomic indices to oil price. Here, macroeconomic indices increase the prediction of oil price but not vice versa (this is most unlikely in the Nigerian scenario).
3. Bidirectional causality. In this case oil price increases the prediction of the macroeconomic indices and vice versa.
4. Independence between oil price and macroeconomic indices. In this case there is no Granger-causality in any direction.

Therefore, by observing any one of the above predictions, it suggests possible detection in the causality relationship prediction between oil price and certain macroeconomic indicators in Nigeria. Secondly to examine the relationship between change in oil price and the GDP on the one hand and among other explanatory variables the multiple regression equation was estimated and specified thus:

$$OP_t = K + \beta_1 GDP_t + \beta_2 IR_t + + \beta_4 EXR_t$$

Where
OP_t = oil price in time t
GDP_t = Gross domestic product in time, t.
IR_t = Interest rate in time t
EXR_t = Exchange rate in time t.

DISCUSSION OF FINDINGS

Granger test requires that the data involved should be stationary, accordingly the stationarity of the data are first tested using Dicker- Fuller (DF) test (Dickey and Fuller 1979), Augmented Dicker- Fuller (ADF) test (Dickey and Fuller (1981) unit root tests. We start by checking whether our original time series (exchange rate, inflation, interest rate, oil price and real GDP) series are stationary or not. Actually, we had a similar idea about non stationarity of the series by plotting the variables graphically as represented below in Figure 1.

In the above graphical representation, oil prices series is stationary as it crossed several times the zero-line and we do not have large departure from 0, while all the other series shows evidence of unit root as the line graph failed to cross several times the zero-line and we did have large departure from it. However, we performed an ADF test on the series to ascertain the number of times we differentiated our non-stationary time series to become stationary which the results are as presented in table 1. However, to get a statistical robust evidence of stationarity of the first and second difference of the variables, we can carry out a unit root test on the variables, using all the three possible models and the p-value of the d(y) ADF < 0.05. In the above unit root test, the null hypothesis of a unit root is H0: $a = 0$ versus the alternative: H1: $a < 0$. The ADF unit root test result presented above confirms that change in oil prices is stationary at level while stationarity was achieved for real GDP at the second difference. Stationarity was achieved for inflation rate, interest rate, and oil price at first difference. We therefore, did not reject the null hypothesis of a unit root for exchange rate, inflation rate, interest rate, oil price, and real GDP series and hence differentiate our variable at first difference for exchange rate, inflation rate, interest rate, oil price, and stock prices, and at second difference for real GDP. Figure 2 presents the new differenced series to confirm their stationarity.

It is easy to note that the differentiated series crosses several times the zero line and has small departure from it. Given the stationarity of our series, we proceeded to apply other analysis to determine the relationship as well as the directional causality between our series. We start our analysis by applying a Spearman-rank correlation test

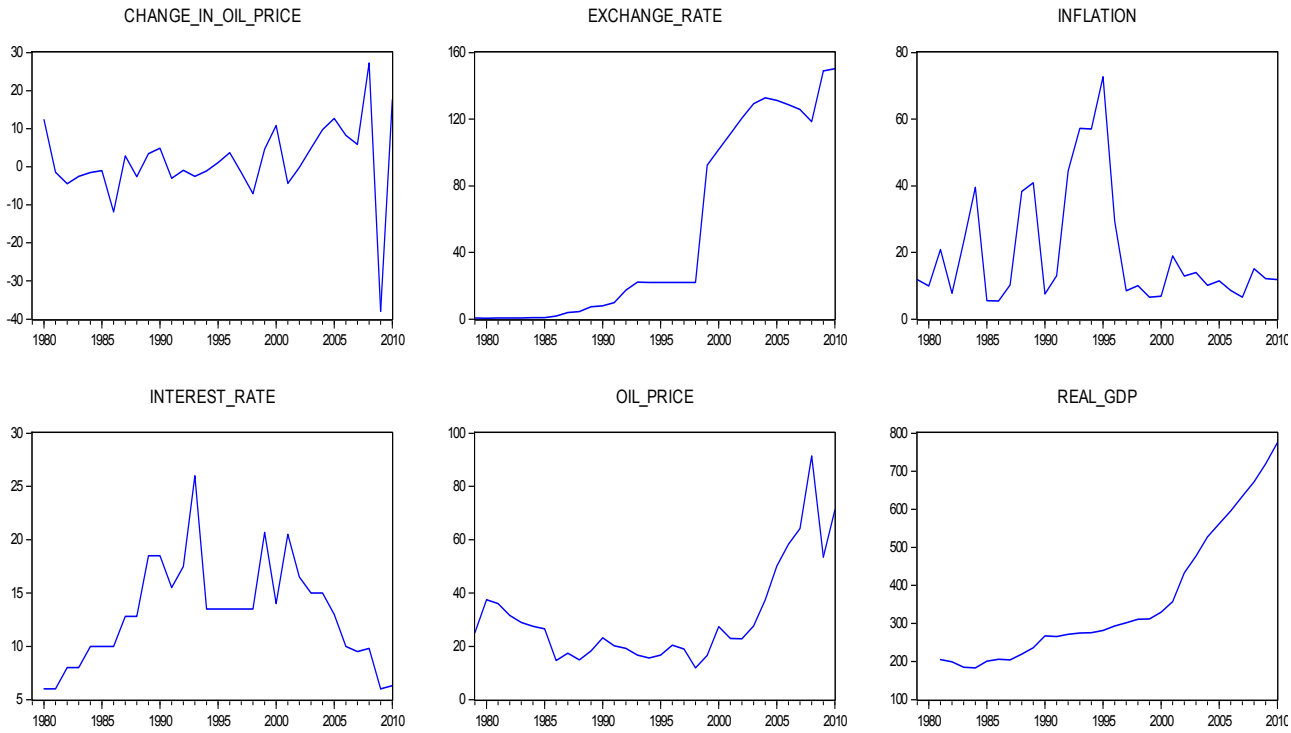

Figure 1. Variables
Source: Authors' Eview 7.0 Output.

Table 1. ADF unit root test result.

Variable	Test Critical values					
	1%	5%	10%	ADF	Status	d(y) ADF
Change in oil prices	-3.670170	-2.963972	-2.621007	-7.969756	1(0)	
Exchange rate	-3.661661	-2.960411	-2.619160	0.163501	1(1)	-5.190888
Inflation rate	-3.661661	-2.960411	-2.619160	-2.743675	1(1)	-5.366489
Interest rate	-4.296729	-3.568379	-3.218382	-2.318496	1(1)	-8.182554
Oil price	-3.670170	-2.963972	-2.621007	-0.074780	1(1)	-7.969756
Real GDP	-3.689194	-2.971853	-2.625121	2.039840	1(2)	-7.047468

Source: Author's Eviews 7.2 output

to examine the relationship between oil price and macro-economic indices. (Table 2) Initial analysis shows that there is a positive but insignificant relationship between oil price and the Nigerian Gross domestic product. Though a positive relationship but, with correlation co-efficient of 0.019157 at 10% level of significance, it is clear that oil price and Nigeria's GDP are not significantly related. This agrees with previous studies of Apere and Ijeoma (2013) who found no significant relationship between oil prices GDP in Nigeria. The Spearman rank-order covariance analysis revealed a negative and non-significant relationship between oil price and other macroeconomic indices (exchange rate, inflation and interest rate) applied in this study suggesting that an increase in oil price negatively correlates with exchange rate, inflation and interest rate.

What is not clear from past empirical studies is the direction of the association or the causality between oil price and the Gross domestic product. To examine this, the research reported in this paper employs Granger causality test (Granger, 1969) and the result presented is presented in Table 3. Oil prices regressed on lagged values of Oil prices and then lagged values of GDP added as explanatory variables in the pairwise Granger causality test in 26 observations presented above reveals no causal relationship between oil prices and Nigeria's

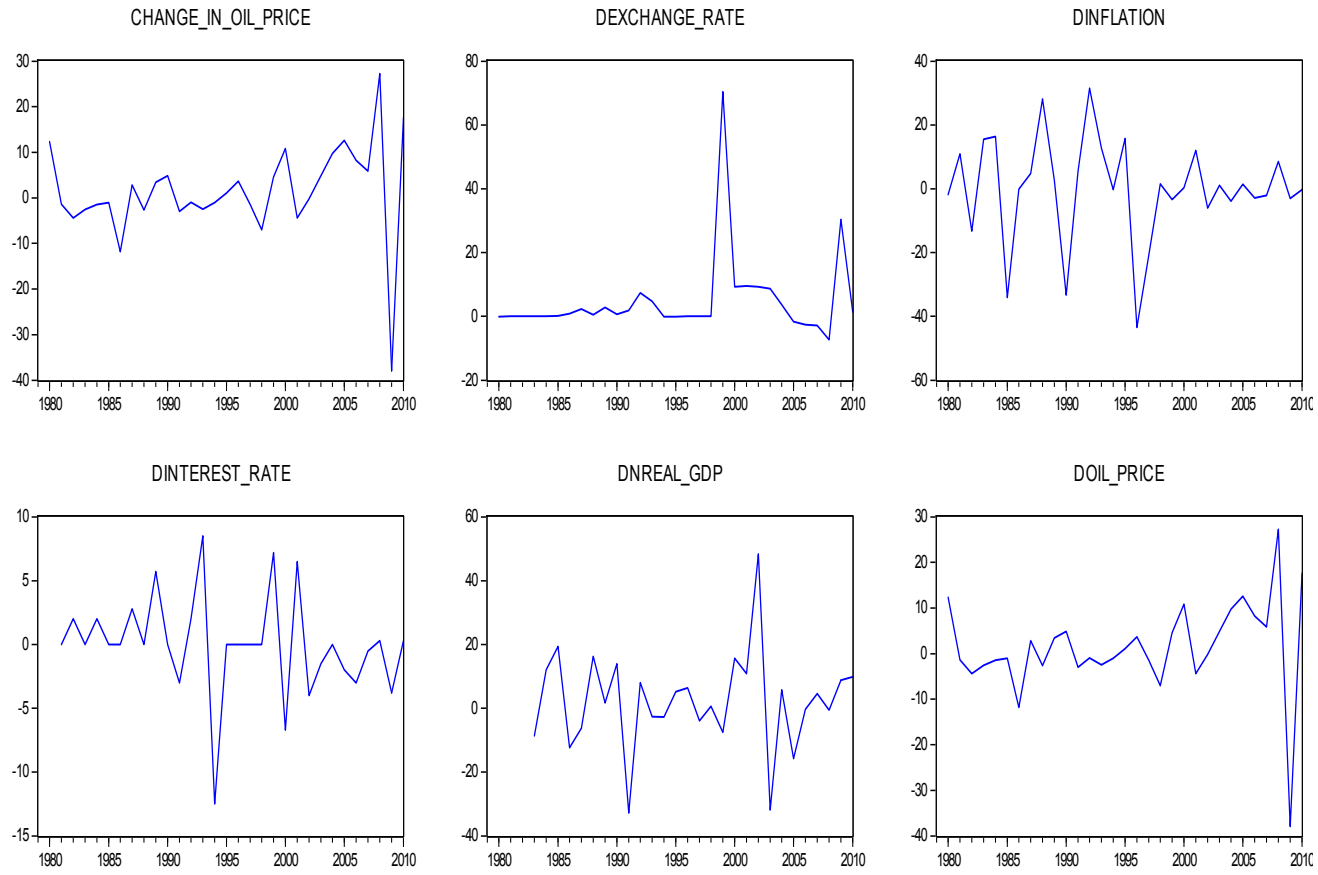

Figure 2. New differenced series to confirm their stationarity.
Source: Authors' Eviews 7.2 Output.

GDP. Given an F-statistics of 0.25925 and 0.26927 and probability of 0.7741 and 0.7665 > 0.1, we accept the null hypothesis of independence between oil price and macroeconomic indices (GDP) in particular. In this case, there is no Granger-causality in any direction between oil price and GDP. This result corroborates the report of Bouzid (2012) who in an attempt to investigate the causal relationship between oil prices and economic growth in Tunisia (which is not an oil producing rather oil-importing country) over a period from 1960 to 2009 found that an increase in oil price decrease economic growth.

Generally, the pairwise Granger causality also reveals that independence between oil price and other macro-economic indices were applied in this study except interest rate. This suggests there is no Granger-causality in any direction between oil price and exchange rate and inflation. However, among the causality between our explanatory variables in general, the pairwise Granger causality reveals a unidirectional causality running from interest rate to inflation suggesting that high credit interest rate in Nigeria of above 24% predicts inflation; and from inflation to real GDP suggesting that high inflation rate in Nigeria of above 11% is the fundamental cause of real GDP growth of 6.5% in Nigeria. This is an interesting finding as it attempts to provide a plausible explanation to Nigeria's much touted GDP growth of between 6.5% to 7%, without commensurate impact on the citizenry. One expects that growth in GDP should naturally be seen and felt in the other macroeconomic parameters ceteri paribus. This has not happened in Nigeria, leading many to believe that Nigeria appears to be practising a novel version of voodoo economics, where growth is seen only through official statistics, rebasing and propaganda. Every other place what is seen is increasing unemployment, dimunition in standard of living, and rising discontent. These are not indices and signposts of growth.

The research concludes by examining the impact of oil price on the applied macroeconomic indices using the least squares method. The results are presented in table 4 below. Overall the least squares results depict that oil prices have no significant impact on real GDP and exchange rate in Nigeria. How can this unusual finding be explained? The place to begin is to examine the nature of the Nigerian economy. Nigeria is not the only mono economy among emerging economies, but it appears to

Table 2. Covariance Analysis: Spearman rank-order Sample (adjusted): 1983 2010 Included observations: 28 after adjustments Balanced sample (listwise missing value deletion) Correlation t-Statistic.

Probability	Dexchange_rate	Dinflation	Dinterest_rate	Doil_price	Dreal_GDP
Dexchange_rate	1.000000	-	-	--	-
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
Dinflation	-0.012589	1.000000	-	-	-
	-0.064196	-	-	-	-
	0.9493	-	-	-	-
	-	-	-	-	-
Dinterest_rate	0.189381	0.357191	1.000000	-	-
	0.983454	1.949957	-	-	-
	0.3344	0.0620	-	-	-
	-	-	-	-	-
Doil_price	-0.214012	-0.275315	-0.060792	1.000000	-
	-1.117134	-1.460268	-0.310556	-	-
	0.2742	0.1562	0.7586	-	-
	-	-	-	-	-
Dreal_GDP	0.183361	-0.146141	-0.000840	0.019157	1.000000
	0.951085	-0.753264	-0.004285	0.097700	-
	0.3503	0.4581	0.9966	0.9229	-

Source; Authors' Eviews 7.2 Output.

Table 3. Pairwise Granger Causality Tests Date: 10/10/13 Time: 23:15 Sample: 1979 2010 Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
Dinflation does not Granger Cause Dexchange_rate	29	0.93197	0.4076
Dexchange_rate does not Granger cause Dinflation	-	0.39142	0.6803
Dinterest_rate does not Granger cause Dexchange_rate	28	0.02660	0.9738
Dexchange_rate does not Granger cause Dinterest_rate	-	0.58718	0.5640
Doil_price does not Granger cause Dexchange_rate	29	0.11402	0.8927
Dexchange_rate does not Granger cause Doil_price	-	0.89876	0.4203
Dreal_GDP does not Granger cause Dexchange_rate	26	0.00050	0.9995
Dexchange_rate does not Granger cause Dreal_GDP	-	0.72850	0.4944
Dinterest_rate does not Granger cause dinflation	28	5.28203	0.0130
Dinflation does not Granger cause Dinterest_RATE	-	2.01257	0.1565
Doil_price does not Granger cause Dinflation	29	0.24375	0.7856
Dinflation does not Granger cause Doil_price	-	0.06680	0.9356
Dreal_GDP does not Granger cause dinflation	26	0.62547	0.5447
Dinflation does not Granger cause Dreal_GDP	-	2.87410	0.0788
Doil_price does not Granger cause Dinterest_rate	28	1.59924	0.2237
Dinterest_rate does not Granger cause Doil_price	-	0.43541	0.6522
Dreal_GDP does not Granger cause Dinterest_rate	26	0.81533	0.4560
Dinterest_rate does not Granger cause Dreal_GDP	-	1.73982	0.1999
Dreal_GDP does not Granger cause doil_price	26	0.25925	0.7741
Doil_price does not Granger cause Dreal_GDP	-	0.26927	0.7665

Source; Authors' Eviews 7.2 output.

Table 4. Dependent Variable: Doil_price method: Least Squares Date: 10/10/13 Time: 23:28 Sample (adjusted): 1983 2010 Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Dreal_GDP	-0.034790	0.140641	-0.247369	0.8068
Dexchange_rate	-0.234202	0.157324	-1.488657	0.1502
Dinflation	-0.049457	0.132504	-0.373251	0.7124
Dinterest_rate	0.362217	0.550467	0.658019	0.5171
C	2.774382	2.328334	1.191574	0.2456
R-squared	0.094150	Mean dependent var		1.416429
Adjusted R-squared	-0.063389	S.D. dependent var		10.99231
S.E. of regression	11.33535	Akaike info criterion		7.854163
Sum squared resid	2955.275	Schwarz criterion		8.092056
Log likelihood	-104.9583	Hannan-Quinn criter.		7.926889
F-statistic	0.597629	Durbin-Watson stat		2.491534
Prob(F-statistic)	0.668005			

Source: Authors' Eviews Output.

be the only one that rides on a 'circuit of oil reversal'. This is the culture where successive governments bleed the natural resources, run down local refineries, operate off shore refineries in a circuit and engage in massive refined products importation in a cartel-like fashion. And worse still, the few available foreign exchange is wasted through a racket called oil subsidy which is a rent seeking patronage system organized to sustain those who tout to hold the levers of power. These issues have not been factored in the regression conducted above, and account significantly for the unusual results. The sad commentary is that unless these bottlenecks are dismantled, official statistics of rising fortunes cannot be felt by the citizenry.

CONCLUSION

The Central Bank of Nigeria, the Budget and Planning Office, Federal Ministry of Finance and other agencies involved in setting fiscal and monetary policies in Nigeria and globally are interested in the oil price movements in the local and international oil markets because of its direct bearing on Nigeria's annual budget and attendant cause or influence on macroeconomic indicators. Government officials and certain scholars maintain that the bigger the oil-price increase and the longer higher prices are sustained, the bigger the macroeconomic impact. However, to confirm or argue the above assertion, the research presented in this paper examined the causal effect between oil prices and macroeconomic indices as well as the impact of oil prices on macroeconomic indices in Nigeria. Conclusively, though a positive relationship exists between oil prices and economic growth, the research presented in this paper suggests that neither do oil prices have a causal relationship with macroeconomic indices nor does it have a significant positive impact on Nigeria's economic growth and other macroeconomic indicators. Thus confirming the paradoxical finding that countries which are amply endowed with resources tend to grow slower than others as is the case in Nigeria.

Conflict of Interests

The authors have not declared any conflict of interests.

REFERENCES

Agbayi E, Chawai E (2009). "Nigeria LNG Commitment to the Development of Nigerian Technological Capacity", Petroleum Technology Development Journal An International Journal 2:1-8.

Apere OT, Ijeoma AM (2013) "Macroeconomic Impact of Oil Price Levels and Volatility in Nigeria", Int. J. Acad. Res. Econ. Manage. Sci. 2(4):15-25. http://hrmars.com/hrmars_papers/Macroeconomic_Impact_of_Oil_Price_Levels_and_Volatility_in_Nigeria.pdf

Auty R (2001) "Resource Abundance and Economic Development", Oxford, Oxford University Press.

Bouzid A (2012). "The Relationship of Oil Prices and Economic Growth in Tunisia: A Vector Error Correction Model Analysis", Romanian Econ. J. 15(43):3-22. http://econpapers.repec.org/article/rejjournl/v_3a15_3ay_3a2012_3ai_3a43_3ap_3a3-22.htm

Chen S, Hsu K (2012). "Reverse Globalization: Does High Oil Price Volatility Discourage International Trade?" Munich Personal RePEc Archive, MPRA Paper No. 36182, posted 25. January 2012 16:01 UTC.

Englama A, Duke O, Ogunleye T, Isma'il U (2010). "Oil Prices and Exchange Rate Volatility in Nigeria: An Empirical Investigation" Central Bank of Nigeria Economic and Financial Review 48(3):31-48.

Ferderer J (1996). "Oil Price Volatility and the Macroeconomy: A Solution to the Asymmetry Puzzle", J. Macroecon. 18:1-16.

Granger CWJ (1969). "Investigating Causal Relations by Econometric Models and Cross Spectral Methods", Econometrica 37:224-238.

Ihua UB, Ajayi C, Eloji KN (2009). Nigerian Content Policy in the Oil and Gas Industry: Implications for Small and Medium-sized Oil Services Companies. Proceedings of the 10th Annual Conference, IAABD.

Ito K (2012). “The Impact of Oil Price Volatility on Macroeconomic Activity in Russia”, Economic Analysis Working Papers 9 (5).
Jin G (2008). “The Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth: A comparative analysis for Russia, Japan, and China”, Res. J. Int. Stud. 8:98-111: www.eurojournals.com/rjis_8_09.pdf
Majidi M (2006). “Impact of Oil on International Economy, International Economics Course, Centre for Science and Innovation Studies.
Masih R, Peters S, Mello L (2010). Oil Price Volatility and Stock Price Fluctuations in an Emerging Market: Evidence from South Korea. pp.1-32. http://www.iese.edu/en/files/Oil%20Price%20Volatility%20and%20Stock%20Market%20Fluctuations_tcm4-46145.pdf
Obioma R (2006). “An examination of oil prices and its changes on the Nigerian Economic Growth”, J. Welfare Econ. 4(2):25-28.
OECD (2011). “The Effects of Oil Price Hikes on Economic Activity and Inflation”, OECD Economics Department Policy Notes, No. 4.
OECD (2004). OECD Economic Outlook, No. 75, Paris. http://stats.oecd.org/Index.aspx?DataSetCode=EO75_MAIN
Oriakhi DE, Osaze D (2013). “Oil Price Volatility and Its Consequences On the Growth of the Nigerian Economy: An Examination (1970-2010)”, Asian Econ. Finan. Rev. 3(5):683-702
Rickne J (2009). “Oil Prices and Real Exchange Rate Movements in Oil-Exporting Countries: The Role of Institutions, Research Institute of Industrial Economics”, IFN Working Paper No. 810, 2009.
Ricken J. (2009). “Oil Price and Real Exchange Rate Volatility in Oil-Exporting Economies: The Role of Governance”, IFN Working paper No. 810, Research Institute of Industrial Economics, Stockholm, Sweden: http://www.ifn.se/Wfiles/wp/wp810.pdf
Sachs J, Warner M (2005). “Natural Resource Abundance and Economic Growth, In: G.M. Meier, J.E. Rauch (Eds.), Leading Issues in Economic Development, eighth ed. Oxford University Press, New York pp.161-168.
Salim R, Rafiq S (2013). The Impact Of Crude Oil Price Volatility On Selected Asian Emerging Economies. pp. 1-33. http://www.wbiconpro.com/220-Salim.pdf