Developing Country Studies
ISSN 2224-607X (Paper) ISSN 2225-0565 (Online)
Vol.6, No.6, 2016

An Examination of External Shocks and Government Revenue in Nigeria

Chukwunonso S. Ekesiobi Chibuike R. Oguanobi Emilia M. Mgbemena Ogochukwu T. Ugwunna
Department of Economics, Chukwuemeka Odumegwu Ojukwu University, Anambra State, Nigeria

Abstract
This paper investigates the empirical relationship between external shocks and government revenue in Nigeria using cointegration approach and error correction mechanism (ECM). The result of the study confirms a long run relationship between government revenue and the explanatory variables (oil revenue, government expenditure, tax revenue, terms of trade shock and exchange rate). The significance of external shocks and its negative sign shows that external shocks exert substantial pressure and uncertainty on government revenue in Nigeria. The coefficient of oil revenue and its significance also is an indication that oil revenue remains the main determinant of government revenue in Nigeria. Based on these findings, the study recommended among others things that government should intensify committed efforts to diversify its source of revenue.
Keywords: External Shock, Government Revenue, Exchange rate and Diversification.

1. Introduction

Macroeconomic dynamics in Nigeria has been dominated in the past by fiscal instability (Obinyeluaku & Viegi, 2010). This government finance volatility contributes to economic uncertainty and insecurity. Consequently, the central bank is faced with the challenge of implementing neutralizing monetary policies which also contributes to macroeconomic instability. In the recent past, most developing countries had been exposed to the phenomenon of external shocks and Nigeria is no exception. Since the last two decades to at least recently, two set of issues loom large on the economic horizon of Nigeria – government revenue volatility and the country's vulnerability to shocks emanating from outside the domestic economy. Modern ideologies of globalization hold that trade provide countries with new growth opportunities but also expose them to external shocks. With openness increasing significantly over the past decades from a medium across countries of 44 percent in 1960 to 85 percent in 2004 (Jansen, et al, 2009), policy-makers and economists have shown a continuing interest in the relationship between trade and public revenues.

Since late 2007, the world is gradually witnessing major external shocks originating from imbalance demand and a volatile commodity markets (Zhu, 2010). External shocks reflect foreign economic episodes to which economies are exposed to with changes in the international commodity prices and fluctuations in the real terms of trade as well as the real exchange rates. For Nigeria, it reflects periods of instability in international oil prices and such commodity price shocks accompanied by global economic crisis are rippling across the international economy. The usually not so accurately predictable impact of such external shocks on the world economy has caused great anxiety to economic policy-makers around the world (Zhu, 2010). The concern also causes interest in seeking an improved understanding of the relationship between external shocks and government revenue, since both have significant consequences on economic performance.

In a resource-based economy such as those dependent on oil, exports and government revenue are uncertain and highly volatile. With the discovery of oil in 1956 in Nigeria and its exportation in 1958, Nigeria oil export rose steadily and is now ranked among the top 10 producers in the world. Oil has since been the dominant factor in income generation in Nigeria since the past 50years, accounting for one-third of the GDP, more than 90 percent of the exports and 80 percent of government revenues (Adeleke et al, 2012). Thus, a slight fluctuation in oil price can have a great impact on the economy of the country.

The fact that Nigeria is particularly vulnerable to oil price shocks is a situation which has unfortunately made the country severely affected by international oil prices, a situation which has in turn contributed greatly to fluctuations in government budget revenues and expenditures. This often leads to distorted plans due to shortfalls in petrodollar and in some other instances overshoots in projected revenue which goes to fuel consumption subsidies in the domestic economy. On the contrary, the developed nations rely more on real sector activities and taxation in generating revenue often supplemented by borrowing from the public. In Nigeria, oil revenue is a key source of government revenue and it directs the course of spending. So, instability in price of oil in the international market would chiefly among other peculiar factors, lead to unstable implementation of government projects and obligations.

According to the UN (2005), major source oil price volatility in the markets today can be explained by the difference in information asymmetry among market participants. Other factors driving oil price fluctuations include: crude oil inventories, existence of future exchanges in the market, disagreement on production quotas and member's mistrust which have added to uncertainty and fuelled volatility, weather, short-term political developments, transportation problems (shipping, pipeline etc), economic growth, problems along production,

consumption chain and comments by OPEC members and leaders of oil-producing countries, as well as socio-political issues as witnessed in Nigeria, Venezuela and elsewhere (Adeleke et al, 2012).

Montenegro (1994), revealed that a one dollar increase in oil price in the early 1990's resulted in attendant increase in the Nigerian foreign exchange earnings by US 650 Million dollars (2% of GDP) and its government revenues by US 320 Million dollars per year. The huge natural endowment and location of Nigeria also support the speculation that global demand for her oil and gas will remain high many years to come (Adeleke et al, 2012). While this is good for the country, her major problem had been managing the revenues to reflect in all sectors of the economy. This is because, Nigeria risks repeating patterns of weak economic governance and volatile government spending unless its policies feature certain safeguards to cushion the effects of external shocks from the country's main revenue source.

Nigeria—Africa's largest economy and its most populous nation—is feeling the full brunt of a falling oil price. The value of the commodity has fallen by more than 65 percent since mid-2014 from $112 per barrel to less than $39 (Amadou, 2016). Such a decline is a significant negative shock for a country that typically derives two-thirds of its government revenues from oil. Nevertheless, much lower oil prices has and will continue to pose strong challenges for public finance at all levels of government, this also present a major constraint on the ability of the new federal government to launch some of its ambitious programs.

Nigeria's reliance on oil production for income generation clearly has serious implications for its economic policy management (World Bank, 1994). This study seeks to investigate the relationship between external shocks and government revenue and will strive to address the policy choices before the Nigerian government that will enable it to manage external oil shocks and those emanating from exchange rate and trade. To achieve its goal, this paper is organised into 5 sections. Section one introduces the work and section 2 contains an exposition into empirical studies on the subject matter. Sections 3 and 4 look at the methodology and findings of the paper respectively, while section 5 concludes the study.

2. Literature Review (Empirical)

External shocks are the changes in the variables outside a particular economy which has great impact on the domestic economy. External shocks can be either positive or negative on an economy. Since the main source of external shocks is on the international prices of goods and services, then, the positive external shocks occurs when the prices of a major exports of a country is rising and/or the prices of a major imports falls. A negative external shock refers to a situation where prices of a major export of a country falls and/or the prices of a major import rises.

Ahmed (2003) uses a VAR model to study the sources of short-term fluctuations in the output of six Latin-American countries and finds that changes in the terms of trade and foreign output play a moderate role in driving output fluctuations. Also, in Raddaz (2007), terms of trade changes are found to have a small effect on output volatility of low-income countries.

Broda (2004) uses a panel VAR approach to study the role of exchange rate policies in insulating economies against real shocks. He finds that in the long run, terms of trade shocks can explain 30 percent of the real output volatility in countries characterized by fixed exchange rate regimes against 10 percent in countries with flexible exchange rate regimes.

Aliyu (2009) analysed the dynamic relationship between oil price shocks and major macroeconomics variables in Nigeria by applying a VAR approach. The study pointed out the asymmetric effects of oil price shocks; for instance, a positive as well as negative oil price shocks significantly increase inflation and also directly increases real national income and government revenues through higher exports earnings, though part of which is offset by losses from lower exports demand due to economic recession suffered by trading partners. His study showed a strong positive relationship between positive oil price changes and real government revenues and expenditures.

Farzanegan and Markwardt (2009) stated that due to the high dependence on oil revenues, oil price shocks had a special impact on the Iranian economy. By applying a VAR approach, they analysed the dynamic relationship between asymmetric oil price shocks and major macroeconomic variables in Iran. Contrary to the previous empirical findings for oil net importing developed countries, oil price increases (decreases) have a significant positive (negative) impact on government revenues.

Olusegun (2008) investigated the impact of oil price shocks on the macroeconomic performance in Nigeria using VAR approach. Forecast error variance decomposition is estimated using 7 key Nigerian macroeconomic variables which are; real GDP, CPI, real oil revenue, real money supply, real government recurrent expenditure, real government capital expenditure and real oil price. An annual data between the periods 1970 – 2005 were employed, Johansen cointegration test show at least four cointegrating vectors among the variables. The forecast error decomposition estimated from the VAR model shows that oil price shocks significantly contribute to the volatility of oil revenues and output.

Also, Ayadi (2005) in his study of the relationship between oil price shocks and economic development

using VAR model found that oil prices changes affect real exchange rates which in turn affect economic development through industrial production. However, this indirect effect of oil prices on economic development is not statistically significant.

Some indicators of external shocks include; terms of trade shocks, current account deficit, exchange rates fluctuations, demand and supply shocks, oil prices shocks, external debt shocks etc. Rewane (2007) analyzes the impact of oil revenue on Nigeria's creditworthiness, debt profile and sustainability, looking especially at the phenomenon of oil-led spending and borrowing that occurred during 1973-2004. The findings show that Nigeria still continued to receive large annual disbursements from private creditors even as its actual creditworthiness (as determined by the differential between its real GDP growth rate and the real interest rate of the dollar, and by its debt-burden indicators) fell towards the end of the period.

Akpan (2009) studied the dynamic relationship between oil price shocks and major macroeconomic variables in Nigeria 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 and also directly increases real national income through higher export earnings, though part of this gain is seen to be offset by losses from lower demand for exports generally due to the economic recession suffered by trading partners. The findings of the study show a strong positive relationship between positive oil price changes and real government expenditures.

Umar and Abdulhakeem (2010) examined the impact of Oil Price Shocks on the economy of Nigeria. Using a VAR technique, the impact of crude oil price changes on four key macroeconomic variables was examined. The results showed that oil prices have significant impact on real GDP, money supply and unemployment. It impact on the fourth variable, consumer price index is not significant. This implies that three key macroeconomic variables in Nigeria are significantly explained by exogenous and the highly volatile variable. Hence, the economy is vulnerable to external shocks.

Abeng and Alehile (2012) focused on establishing the links between fiscal deficit and short-term changes in major macroeconomic variables like real output, interest rate, exchange rate, inflation rate and crude oil price in Nigeria using a VECM Approach. Empirical results show that the model adequately explains the behaviour of government of fiscal deficit.

Iklaga and Evbuomwan (2012) evaluated the macroeconomic impact of oil price shocks on oil rich economies. The paper focuses on the Nigerian economy, adopting a statistical Structural VAR analysis using quarterly data 1981Q1 – 2010Q4. It conducted an analysis of a broad array of macroeconomic variables including output, inflation, exchange rate and money supply and some administered prices. The results show that oil prices have considerable impact on output, inflation, money supply and exchange rate. The implication is that key macroeconomic variables in Nigeria are significantly influenced by external shocks given the oil dependent structure of the economy.

Akinleye and Ekpo (2013) examined the macroeconomic implications of symmetric and asymmetric oil price and oil revenue shocks in Nigeria, using the vector autoregressive (VAR) estimation technique. It found that both positive and negative oil price shocks influence real government expenditure only in the long run rather than in the short run.

Saibu and Apanisile (2013) studied the effectiveness of both fiscal and monetary policies in mitigating external shocks on Nigerian economy. The Mundel-Flemming theoretical framework was adopted to model the interaction between domestic and international macroeconomic policy variables using the Autoregressive Distributed Lag (ARDL) analytical technique. The result showed that external shocks had hindered the effectiveness of domestic policy overtime.

Based on the past studies, Terms of trade volatility is probably the most widely used measure for external shocks. It can be deduced from the past studies that external shocks exert substantial pressure on the macroeconomy. Most of the previous studies used VAR model approach to study external shocks and its effects on those macroeconomic variables other than the government revenues. This present study would follow a cointegration approach and error correction mechanism to analyse the relationship between external shocks and government revenues in Nigeria.

3. Methodology

3.1. Model Specification

The main thrust of this study is to analyse the relationship between external shocks and the government revenues in Nigeria. Drawing from the literature, the possible way to model fiscal policy in Nigeria is to consider the stochastic nature of government revenue. Based on the nature of this study after considerations of similar studies like Umar and Abdulhakeem (2010), Abeng and Alehile (2012), Iklaga and Evbuomwan (2012), Akinleye and Ekpo (2013) and Saibu and Apanisile (2013), the model is therefore specified as:

$$InGR = \beta_o + \beta_1 InOR + \beta_2 InGE + \beta_3 InTR + \beta_4 InES + \beta_5 InEXR + U_t \quad \text{---------- (1)}$$

Where GR = Government Revenues, OR = Oil Revenues, GE = Government Expenditures

TR = Tax Revenues, ES = External Shocks measured as terms of trade shocks (terms of trade is the ratio of the price of exports to the price of imports), EXR = Exchange Rates

U_t = Stochastic error term in the current period; β_o = Constant intercept term; $\beta_1 - \beta_5$ = Parameters; In = Natural logarithm

The effect of external shocks on government revenue in Nigeria will be captured using time series data (annual). All the data patterning to the chosen variables will be obtained from the CBN statistical bulletin over the period 1987 – 2014. The choice of this period is purposely conceived to reflect the periods of financial deregulation, exchange rate liberalization and recent oil price movements.

3.2. Estimation Techniques

Cointegration and error correction techniques will be employed in the study. These methods are believed to overcome the problem of spurious regression while at the same time provide consistent and good estimates of both long run and short run elasticities that satisfy the properties of the classical regression method. The aim of the cointegration analysis is to establish long run equilibrium relationship between variables. In the Engle-Granger cointegration analysis, variables of consideration are said to be cointegrated if in the regression of one variable on the others, their residuals as the proxy for their combination are integrated less than original variable. For instance, if the variables are integrated of order one, I (1), then, their residuals should be integrated of order zero, I (O). Such as the residuals are stationary; I(O). Alternatively, cointegration exists among the variables if they are integrated of the same level. The implication of this analysis is that deviation or drift may occur between the variables, but this is temporary as equilibrium holds in the long run for them.

The error correction model (ECM) represents an alternative way of presenting equilibrium relationship between variables. It shows the dynamic error analysis of the cointegrated variables. As such, in this paper, the first step to the ECM analysis is the estimation of the static government revenue function given by equation (1). Upon rejection of the null hypothesis of no cointegration, the lagged residuals from the cointegration equation are imposed as the error correction term (ECT_{t-1}) in an error correction equation. This is given thus:

$$\Delta InGR = \beta_o + \beta_1 \Delta InOR + \beta_2 \Delta InGE + \beta_3 \Delta InTR + \beta_4 \Delta InES + \beta_5 \Delta InEXR + \beta_6 ECT_{t-1} + U_t \quad \text{--------- (2)}$$

Where Δ is the difference operator, ECT_{t-1} is the vector of stationary residuals from the cointegration equation (1), U is the error term.

All variables in equation (2) are I (0) or stationary, this implies that the t-ratio can now be applied to test for the significance of error correction term or any of the explanatory variables.

The error correction term in the equation represents the speed of adjustment from one period to another. If it is significant carrying with it a negative sign and that all other variables in equation (2) are jointly significant, then the variables jointly are said to have significant effect on the dependent variable. The first stage of cointegration and error correction techniques is the test for unit root. The whole analysis then proceeds from it.

4. Results and Discussion

This section begins with discussions on the order of integration of the series as the first step in the cointegration analysis. It is important as an integrated series accumulates past effects, which means that a disturbance to the series does not return to any mean value, hence non-stationarity. The order of such a series is then determined by the number of times it must be differenced to make it stationary. If two or more series are integrated of the same order, then a linear relationship can be estimated. When the order of integration of the linear relationship is examined, it is similar to testing for the null hypothesis that there is no cointegration against the alternative that there is cointegration. The results of the order of integration are presented in table 4.1.

4.1. Unit Root

In table 1 shows the results for Government revenues (GR), Oil revenues (OR), Government expenditure (GE), Tax revenues (TR), External shocks (ES), and the Exchange rates (EXR). The tests were carried out on level and first differences and were performed by including both a constant and a deterministic trend in the regression. The critical values for ADF tests at 1 and 5 percent level of significance are -3.67 and 1.95 respectively.

Table 4.1: Unit Roots Test
Augmented Dickey – Fuller (ADF)

Variable	Level	First difference
In GR	1.298314	-3.857912*
In OR	0.380774	-4.226052**
In GE	0.3502046	-5.012411**
In TR	2.467519	4.7648796**
ES	0.7604184	-3.861562*
EXR	-0.409132	-3.681276*

Source: Author's Computation from Eviews 8.
Note: **, * signify that the statistics are significant at 1% and 5% level of significance respectively.

From table 4.1 above, it can be seen that the hypothesis of non-stationarity is rejected for Oil revenues, Government expenditures, Tax revenues at 1% Level of significance while it is at 5% for Government revenues, External shocks and Exchange rates. This shows that all the series are integrated of order one, I (1). By implication, it follows that we can proceed to the second stage of testing for cointegration relationship between government revenues and its explanatory variables as given in this paper.

4.2. Cointegration Analysis

The main objective is to test for the stationarity of the linear relationship of the variables whose order of integration were determined in sub-section 4.1 or to determine whether the variables are integrated of order zero: such as they are cointegrated. If cointegration of these variables is confirmed, it portends that a non-spurious long run relationship exist. When this is combined with the error correction model (ECM), whose variables are I (0) in the next sub-section, consistent estimates of both long run and short run elasticities is evident.

For cointegration analysis, the Engle & Granger (1987) residual – based procedure was employed. While the residual – based test is suitable for a single equation, hence it is called the single-equation approach, the Johansen reduced rank approach is a system approach in that it tests for the existence of more than one cointegrating relationship. In the application of the Johansen procedure, the constant and the trend variables are set unrestricted; such as they are not forced to lie in the cointegration space only. The Engle & Granger (1987) residual – based approach is applied in this paper.

Having found out that the variables of interest are integrated of order one, the study proceeds to the second stage of estimating the cointegration model for government revenues. The results are given in table 4.2. The result of the ADF statistics of the residuals rejects the null hypothesis of no cointegration between government revenues and the chosen explanatory variables. This implies that there exists a stable long run equilibrium relationship between the series.

Table 4.2: Long run Regression Results

Constant	**In OR**	**In GE**	**In TR**	**ES**	**EXR**
0.087	0.869	-0.0013	-0.0024	-0.034	0.028
(0.5261)	(28.7)**	(4.23)**	(4.32)**	(8.96)**	(11.2)**

Source: Author's Computation from Eviews 8.
Note: Figures in parenthesis are the t-statistics.
** = significant at 1%; * = significant at 5%.
The 1 and 5 percent critical values of ADF are -3.67 and -1.95 respectively. $R^2 = 0.998$, Adj $R^2 = 0.997$, ADF = -3.39, F-value = 4568.37

The estimated coefficient of InOR, InGE, InTR all have the expected signs and are all significant at 1% level of significance. The coefficient of oil revenues 0.869 suggests that oil remains the main determinant of government revenues in Nigeria. To be noted is that the coefficient of external shocks (ES) was significant with a negative sign. This implies that external shocks have exerted a substantial pressure and uncertainty on the government revenues in Nigeria. Also the coefficient of exchange rate is significant with a positive sign. This means that there has been a continuous exchange depreciation which tends to offset the costs of negative external shocks in the long run. The significance of the coefficients of explanatory variables is that they all influence the government revenues.

4.3. Error Correction Model

Following the estimation of the long run relationship between government revenues and its explanatory variables, the results of the error correction model are presented in table 4.3. Here the model was regressed on the first difference of all variables plus the lagged value of the error term. The coefficient of the error term of about 0.4056 is significant at 10% level of significance with the expected negative sign. A significant error term with the right sign indicates a strong feedback effect of deviation of government revenues from its long run

growth path. The value of the coefficient of the error term represents the speed of adjustment. Here the coefficient of the error term is 0.4056; meaning that about 41 percent of the discrepancy between actual and equilibrium value of the government revenues is corrected in each period.

Table 4.3: Error Correction Regression

Constant	ΔIn OR	ΔIn GE	ΔIn TR	Δ ES	Δ EXR	ECT_{t-1}
0.0012	0.136	-0.00021	-0.00047	-0.00025	0.00031	-0.4056
(3.423)*	(1.701)*	(-1.372)*	(-1.081)*	(1.281)*	(1.863)*	(-2.86)*

Source: Author's Computation from Eviews 8.

Note: Figures in parenthesis are the t-statistics
** = significant at 1%, * = significant at 10%
R^2 = 0.787, DW = 1.99, F– value = 52.11

5. Conclusion

This paper examined the effect of external shocks on government revenue in Nigeria. Government revenue was estimated as a function of oil revenue, government expenditure, tax revenue, external shocks and the exchange rate for the period 1987 – 2014 following cointegration approach and ending with error correction frame.

Empirical results showed that there is a long run relationship between government revenue, oil revenue, government expenditure, tax revenue, external shocks and the exchange rate. The study also found evidence of stability of both long run and short run government revenue during the investigated period. The implication of this from the stand point of policy is that revenue diversification is needed to guarantee fiscal depth and overall macroeconomic stability.

References

Abeng, M.O., & Alehile, K.S.(2012), "Macroeconomic shocks and fiscal deficit behaviour in Nigeria: A VECM Approach", *Central Bank of Nigeria Economic and Financial Review*, 50 (1)

Adeleke, G.A., Orisadare, M.A., & Ekperiware, C.M. (2012), "Oil price shocks and fiscal policy management: Implications for Nigerian economic planning", *International Journal of development and sustainability*, 2168 – 8662.

Ahmed, S. (2003), "Sources of macroeconomic fluctuations in Latin America and implications for choice of exchange rate regime", *Journal of Development Economics,* 72, 181-202

Akpan, E.O (2009), "Oil price shocks and Nigeria's macro economy", Available at http://www.csae.ox.ac.uk/conferences/2009-edia/papers/252-akpan.pdf

Akinleye, S.O., & Ekpo, .S. (2013), "Oil price shocks and macroeconomic performance in Nigeria", *Economiamexicana*, 565-624

Aliyu, S.U.R. (2009), "Impact of oil price shocks and exchange rate volatility on economy growth in Nigeria. An Empirical Investigation", *Research Journal of Internatıonal Studıes*, 11, 4-15.

Amadou, S.Y. (2016), "Foresight Africa 2016: President Buhari's budget sets the right course", Retrieved from http://www.brookings.edu/blogs/africa-infocus/posts/2016/01/06-foresight-nigeria-buhari-budget-sy

Ayadi, O.F. (2005), "Oil price fluctuations and the Nigerian economy", *OPEC Review*, 199 – 217.

Broda, .C. (2004), "Terms of trade and exchange rate regimes in developing countries", *Journals of International Economics*, 63 (1), 31-58

Engle, R.F., & Granger, C.W.J. (1987), "Co-integration and error correction representations, estimation and testing", *Econometrica*, 251 – 76.

Farzanegan, M.R., & Markwardt, .G. (2007), "The effects of oil price shocks on the Iranian economy" *Energy Economics*, 31 (1), 134-151

Iklaga, F.O., & Evbuomwan, O.P. (2012), "Macroeconomic impact of oil price shocks on oil rich economies: Evidence from Nigeria using a structural VAR approach", Available at http://ecomod.net/system/files/macroeconomic%20impact%20of%2oil%20price%20shocks%20on%20oil%20rich%20economies.pdf

Jansen, .M., Lennon, .C., & Phermartini, .R. (2009), "Exposure to external country specific shocks and income volatility", *World Trade Organization, Economic Research and Statistical Division Staff Working Paper ERSD – 2009 – 04*

Montenegro, S. (1994), "Macroeconomic risk management in Nigeria: Dealing with external shocks", Retrieved fromahttp://siteresources.worldbank.org/INTFINDINGS/685507-1161268713892/21098561/find30.htm

Obinyeluaku, .M., & Viegi, N, (2010), "Fiscal policy rules for managing oil revenues in Nigeria", Retrieved from http://www.africametrics.org/documents/conference08/day1/session2/obinyeluaku_viegi.pdf

Olusegun, O.A. (2008), "Oil price shock and Nigerian economy: A forecast error decomposition analysis",

Journal of Economic Theory, 2 (4), 124 – 130

Raddaz .C. (2007), "Are External shocks responsible for the instability of output in low income countries?", *Journal of Development Economics,* 84 (1), 155 – 187

Rewane, .M. (2007), "Overrated? The impact of oil revenue on Nigeria's creditworthiness, debt profile & sustainability (1973-2004)", Available from https://economics.stanford.edu/sites/default/files/publications/rewane_misan_2007_honors_thesis.pdf

Saibu, M.O., & Apanisile O.T. (2013), "A bound test analysis of the effects of global economic shocks on Nigerian economy: the role of fiscal and monetary policies (1960-2011)", *Australian Journal of Business and Management Research*, 2 (12), 58-68

Umar, .G., & Abdulhakeem, K.A. (2010), "Oil price shocks and the Nigeria economy: A variance autoregressive model", *International Journal of Business and Management*, 5 (8)

United Nations (2005), "*The exposure of African government to international oil volatility and what to do about it",* Geneva: UN

World Bank (1994), "*Nigeria : Macroeconomic risk management- Issues and options*", Country Operations Division, Western Africa Department.

Zhu, M.K. (2010), "Impact of external shocks on Nation's policy responses and economic growth", *Journal of Applied Business and Economics*, 167 – 77.