POLICY IMPLICATIONS OF LONG-RUN RELATIONSHIP BETWEEN EXTERNAL RESERVE AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

This study analysed the policy implications of external reserve on economic growth in Nigeria using time series data from 1980 to 2014. The study utilized Multiple Linear Regression analysis, Analysis of Variance (ANOVA), Augmented Dickey Fuller (ADF) Test, Johansen Cointegration Methods. The results of the Augmented Dickey Fuller test, showed that the data became stationary at the first difference thus, integrated of order one while the Johansen Cointegration method was used to test for the existence of long run relationship among the variables and the results showed that there is a presence of long run relationship between external reserve and economic growth. The results of the Multiple Linear Regression analysis showed that the estimated coefficient of the predictor variable, external reserve (EXTSV) was 3.42. By implication, a unit increase in External reserve resulted to an increase in economic growth by US$3.42billion in Nigeria. The policy implication of this is that measures that will enhance the stability in the amount of foreign reserve should be encouraged. Additionally, policies should be geared toward a permanent (long-run) increase in reserves rather than temporarily exchange reserve. It was recommended that the government should always be prepared to have a hedge against unforeseen periods of macroeconomic instability or external shocks by making policies that focus on more accumulation of the external reserves. One of the ways by which this can be done is to increase exports and reduce imports.

Keywords: Policy, external- reserve, growth and long- run.

INTRODUCTION

Foreign reserve can also be used interchangeably with Foreign-exchange reserves (also called forex reserves or FX reserves) and they are assets held by a central bank or other monetary authority, usually in various reserve currencies, mostly the United States dollar, and to a lesser extent the euro. Economic growth is a necessary condition for economic development.
Long-run phenomenon is a macroeconomic term which remains at the fore of National Economic Policy making for enhanced growth in developing countries especially in Nigeria. This has induced African countries to hold reserves to allow monetary authorities to intervene in markets to influence the exchange rate and inflation (Lapavitsas, 2007; Elhiraika and Ndikumana, 2007). Many African countries including Nigeria argued that adequate foreign reserves may allow them to borrow abroad, attract foreign capital and promote domestic private investment as a result of strengthened external position and reduced vulnerability to external shocks. Thus, it is believed that maintaining adequate reserves can boost investors' confidence and enhance investment and growth (Elhiraika and Ndikumana, 2007).

However, it is believed that keeping scarce resources in reserve when there is a series of issues to be attended to domestically, such as education and health among others, may hinder economic growth (Osabuohien and Egwakhe, 2008). Nonetheless, many economists opined that the level of foreign reserve of a country determines the country's rating in the global market and a robust level of foreign reserves will make a country appear financially responsible and credit worthy (Nneka, 2012). This has its own policy implications.

External reserves according to IMF (2000) "consist of official public sector foreign assets that are readily available to and controlled by the monetary authorities for direct financing of payment imbalances, and directly regulating the magnitude of such imbalances, through intervention in the exchange markets to affect the currency exchange rate and/or for other purposes". By this definition, external reserves include international reserve assets of the monetary authority but exclude the foreign currency and the securities held by the public including the banks and corporate bodies.

The Central Bank of Nigeria (CBN) Act 1991 vests the custody and management of the country's external reserves in the CBN. The Act provides that the CBN shall at all times maintain a reserve of external assets consisting of gold, balance at any bank outside Nigeria where the currency is freely convertible; treasury bills; securities of or guarantees by a government of any country outside Nigeria, securities of or guarantees by international financial institutions of which Nigeria is a member; Nigeria's gold tranche at the international monetary fund and allocation of special drawing rights made to Nigeria by the International Monetary Fund.

Though the management of foreign exchange reserves of a country is the exclusive responsibility of the central bank, the quantum of reserves to be held at any point in time depends on several exogenous factors, depending on its development objective and the prevailing policy directives. The pertinent question is whether these factors in relation to policy directions have help Nigeria to achieve its economic growth objective under the macroeconomic framework.

The opinion on the rationale behind maintaining foreign reserves varies from one scholar to the other. For instance, Mendoza (2004) suggests that reserves are held for both transaction and precautionary motives. Dooley *et. al.* (2004) argued that reserve accumulation agenda in Asian central banks was to prevent their currencies from appreciating against the U.S. dollar in order to promote their export-led growth strategy.In principle, countries hold reserves in order to meet unexpected and temporary fluctuations in international payments. In this context, the optimal size of reserves depends on the balance between the macroeconomic adjustment costs that result if reserves are exhausted and the opportunity cost of holding reserves (Heller, 1996).

According to Gosselin and Parent (2005) there is a relatively stable long run reserve demand function that depends on five categories of explanatory variables; economic size, current account vulnerability, capital account vulnerability, exchange rate flexibility, and the opportunity cost. Aizenman and Marion (2004) point out that the size of international transactions; their volatility, exchange rate arrangement and political stability are some of the key determinant of international reserve holdings in most East Asia. Given the prevailing economic down turn in Nigeria, is it still realistic goal to continue to maintain an external reserve or to deplete the reserve in other to meet the current national challenge. This work

examine the narrow view and examined only the relationship between external reserve and growth in Gross Domestic Product (GDP).

Official reserves are a major public asset even in well developed economies. There values could be high as some percentage points of gross domestic product (GDP). In some developing emerging countries, in particular, the corresponding figure is considerably higher. Merely from the standpoint of preserving this valuable public asset, the management of external reserves is an important task for most central banks. Grubel (1971) suggests that the choice of reserve adequacy is influenced by the quantity theory of money.

Despite a number of previous studies on Nigeria's economic growth and her external reserves, for instance, Mendoza (2004) made an empirical investigation of "International Reserve Holding in the Developing Countries" CBN (2007) examined study "Building and Management of External Reserves for Economic Development", Alasan (2011) conducted an empirical analysis on External Reserves Management and Economic development in Nigeria from 1980-2008 and the study shows a positive and significant relationship between external reserves and some explanatory variables. The variables include gross domestic product, export oil and capital goodsHowever little or none of the previous researchers was able to check for the existence of long run relationship between external reserve and economic growth and their policy implications. Hence, the need to carry out this research work. The study will be use to researchers, scholars and students who may want to carry out further studies on similar research topics especially at this period of economic meltdown.

Research Questions

This study intends to provide answers to the following research questions among others:
1. Do external reserves have effect on economic growth?
2. Is there a long-run relationship external reserves and economic growth?
3. What is the policy implications of external reserve in Nigeria over the previous years?

Objectives of the Study

1. to investigate the effects of external reserve on Nigeria's economic growth;
2. to determine whether there is a long-run relationship external reserve and economic growth;
3. to evaluate the policy implications of external reserve.

Statement of Hypotheses

Based on the specific objectives of the study, the following null hypotheses will be tested:
H_{01}: External reserve has no significant effect on economic growth.
H_{02}: There is no long run relationship between external reserve and economic growth.

LITERATURE REVIEW
Theoretical Framework

The Self-insurance theory, precautionary theory, mercantilist theory and macroeconomic stabilization theory are the theoretical underpinnings of this research work. They are used to explain external reserves as they impact on economic growth. Wijnbergen (1990) pioneered work on Self-insurance Theory, it examined the cash/debt buy-backs in the context of

missing terms of trade contingent instruments in international capital markets coupled with differences in risk aversion between commercial creditors and developing countries' borrowers. The author argued that the price of debt in secondary markets does not adequately reflect the insurance value of reserves to debtors. In the 'bad state' (i.e. a debt default) the debt buy-back is of little use as no debt can be serviced. Hence, the Self-insurance Theory demonstrates how foreign reserves ensure that policymakers have some additional options during the bad periods. A study by IMF (2003) suggested that a ratio of reserves to short-term external debts above one reflects an important reduction in crisis vulnerability, as long as the current account is not out of line and the exchange rate is not misaligned. Mendoza (2004) equally investigated a possible self-insurance motivation for increased reserve-holding in 65 developing countries after the Asian financial crisis. An empirical verification of the hypothesis, that a self-insurance framework is a reasonable explanation for the recent increase in reserve accumulation, provided evidence that several countries could indeed be self-insuring. The recent accumulation of reserves in developing countries has thus been largely interpreted as a form of self-insurance precipitated by the high level of global economic and financial instability and the absence of an adequate international system for crisis management.

However, The Mercantilist theory posits that many countries accumulate foreign reserves as a means for effective exchange rate management and as a tool for maintaining low exchange rates in order to promote trade and international competitiveness (Durdu *et. al.*, 2007). On this model, Yeyati (2008) also noted that one reason for the recent surge in the stock of foreign reserves in developing countries is to prevent real exchange rate appreciation as a result of capital inflows, either due to the 'mercantilist' objective of preserving competitiveness or to avoid a potential overvaluation that may eventually create downside risks.

The precautionary theory is related to the precautionary motives for holding money which involves holding of money to meet unforeseen contingencies. When applied to the concept of foreign reserve, it stresses the traditional use of reserves as savings for potential times of crises, especially balance of payments crises. Originally, the creation of the IMF was viewed as a response to the need of countries to accumulate reserves, if a specific country is suffering from a balance of payments crisis, it would be able to borrow from the IMF, as this would be a pool of resources, and so the need to accumulate reserves would be lowered.

However, the process of obtaining resources from the International Monetary Fund is not automatic, which can cause problematic delays especially when markets are stressed. Hence, the IMF never fulfilled completely its role, serving more as provider of resources for longer term adjustments. During the 2008 crisis, the Federal Reserve instituted currency swap lines with several countries, alleviating liquidity pressures in dollars, thus reducing the need to use reserves.

Review of Related Empirical Studies on External Reserve

Calvo (1996) suggests that a country's vulnerability to crisis should be measured, in part, by the size of its money supply, defined broadly, relative to its reserve holdings, since broad money reflects a country's potential exposure to the withdrawal of assets. Greenspan (1999) suggests that the ratio of short-term externals debts to reserve is the best indicator of how a country's reserves will hold out during periods of international contagion and that this ratio should be used to determine an adequate reserve level. Similarly, Fischer (2001) points out

that countries holding very large external reserves will cope better with the financial crisis of recent years than others. In light of this, he expects that countries should keep external reserves for unforeseen issues. According to Fukuda and Kon (2007), when increased foreign reserves are persistent, consumption declines because permanent income declines. But when increased foreign reserves are temporary, consumption does not decline because of the permanent income hypothesis. Temporary increases of foreign exchange reserves therefore reduce domestic savings and have a negative impact on domestic investment and economic growth.

On the contrary, Kevin *et. al.* (2013) conducted a study on the Macroeconomic effects of foreign exchange reserves using balanced panel data of 13 countries and the sample period of 32 years ranging from 1980 to 2012. The study revealed that foreign exchange reserves have a statistically significant negative influence on consumption and debt maturity and a positive impact on exports and economic growth.

Similarly, Akinwunmi and Adekoya (2014) examined external reserves management and its effects on Nigeria economic growth from 1985 to 2013 using secondary data. Data sourced were subjected to Durbin Watson auto-correlation test, for reliability of the data sourced and diagnostic tests such as unit root test (Augmented Dickey Fuller) and Johansen co-integration test, for the stationary and non-stationary of the data and long run relationship between the dependent and independent variables and multiple regression were used to test for the relationship between the explainable variables and external reserves management in Nigeria. The research work reveals that an external reserve is essential to the economy of Nigeria and must be kept at desirable level so at to achieve its purpose. Therefore, the study concludes that, external reserves management has a positive significant relationship with foreign direct investment, economic growth and monetary policy rate but has negative relationship with inflation and exchange rate.

METHODOLOGY
Study Area

The study area is Nigeria. Nigeria is a federal constitutional republic in West Africa, bordering Benin in the west, Chad and Cameroon in the east, and Niger in the north. Its coast in the south lies on the Gulf of Guinea in the Atlantic Ocean. Nigeria is often referred to as the "Giant of Africa", owing to its large population and economy. With approximately 184 million inhabitants, Nigeria is the most populous country in Africa and the seventh most populous country in the world. It comprises 36 states and the Federal Capital Territory, where the capital, Abuja is located.

Method of Data Collection

Secondary data were used for the analysis and data were collected from secondary sources which include statistical bulletins and other published data that are relevant to the study. The data, particularly the IMF's International Financial Statistics and data files as well as the World Bank's International Debt Statistics and national accounts data, were accessed through the internet.

Data Analysis Techniques

Regression Analysis was used to achieve objective 1 and its t test to test the corresponding Null Hypotheses H_{01} while a Cointegration Test was used to achieve objective 2and to test the corresponding Null Hypothesis H_{02}, Graphical illustration was used to achieve objective3. Prior to conducting the Cointegration Test, a Unit Root test was conducted to test for the stationarity of the data for the various variables in the model which is a necessary condition for conducting Cointegration test particularly when dealing with time series data.

Model Specification

In order to empirically analyze the effect of external reserve on economic growth, the RGDP was used as an index for economic growth and other relevant macroeconomic variables were also taken into account. Hence,
$$RGDP_t = f(XRSV_t, RER_t, XPOT_t, MPOT_t)\ldots\ldots\ldots\ldots \text{ (i)}$$
Where:
RGDP denotes Real Gross Domestic Product;
XRSV denotes External reserve;
RER denotes Real Exchange Rate
XPOT denotes Export
MPOT denotes Import
t represents the various time periods.

Equation (i) expresses the economic growth - indexed by RGDP (i.e. Real GDP also known as constant-price," "inflation-corrected" GDP or "constant dollar GDP"), explicitly as a function of External Reserve.
Mathematically,
$$RGDP_t = \beta_0 + \beta_1 XRSV_t + \beta_2 RER_t + \beta_3 XPOT_t + \beta_4 MPOT_t\ldots\ldots \text{ (ii)}$$
In order to take cognizant of all other factors that determine economic growth apart from the predictor variables specified in the equation above, the random error term was introduced to account for the unexplained variations in the Dependent Variable. Thus, the new equation was stated as:
$$RGDP_t = \beta_0 + \beta_1 XRSV_t + \beta_2 RER_t + \beta_3 XPOT_t + \beta_4 MPOT_t + \mu_t\ldots\ldots\ldots(iii)$$
μ is the stochastic element, a real random term which explains the variation in the regressand not explained by the reggressors while $\beta_0, \beta_1, \beta_2, \beta_3$ and β_4 are the parameter coefficients.

Unit-Root Test

In empirical research on time series data particularly when one of the aims of the research is to test for long run relationship, it is necessary to conduct a Unit Root test which shows the stationarity or non-stationarity nature of the data. The Augmented Dickey-Fuller test (ADF) is widely regarded as the most efficient test for integration and it is at present the most widely used in practice.

Thus, the ADF test was used to test the following hypothesis:
H_0: the data has a unit root (that is, non-stationary) against
H_1: the data has no unit root (that is, stationary).
If the datum for each variable turns out to contain unit roots, it implies they are non-stationary. Stationarity could, however, be achieved by first differencing of the levels if the series are integrated of order one i.e. $I(1)$.

Economic '*A Priori*' Criteria

This evaluation is guided by economic theory to ascertain if the parameter estimate conforms to expectation. External reserve (XRSV) and export (XPOT) are expected to have a positive relationship with economic Growth (RGDP) while, Import (MPOT) and Real Exchange Rate (RER) a negative relationship with (RGDP). That is, $\beta_1, \beta_3 > 0$ while $\beta_2, \beta_4 < 0$

(i)   The student t was used to test the Null Hypothesis below:

H$_{01}$: $\beta_1 = 0$ i.e. External reserves has no significant effect on economic growth. A p-value of less than 0.05 means rejection of null hypothesis.

Cointegration Test

This test reveals the existence of a long run relationship among variables (Gujarati, 1995). The Johansen Cointegration Method was adopted in this study to test for the existence of long-run relationship between economic growth and external reserve.

RESULTS AND DISCUSSION
Effects of External Reserve on Economic Growth (Empirical Analysis)

Sequel to the regression analysis result (Table 1), the estimated model is:
RGDP = 118123724380 + 5.82381537848*XRSV - 4832.63618199*RER + 0.443873628617*XPOT - 0.858576208527*MPOT
The regression result shows that all the sign of the predictor variables conform to the *a priori* criteria. The positive sign of the coefficient of external reserve shows that external reserve contributes positively to economic growth. Thus, external reserve has positive effect on economic growth. This is in consistency with the findings of Kevin *et. al.* (2013) and Akinwunmi and Adekoya (2014).By implication, a unit increase in External reserve leads to an increase in RGDP by approximately US$5.82billion. Having discussed the "cause and effect" relationship between economic growth (RGDP) and external reserve (XRSV) based on the signs and magnitude of the coefficient of the XRSV, the next question is that: is the value of this coefficient significant at 5 %? From the regression results (table 1), the computed *P-value* of *XRSV* is less 0.05. Thus, the Null Hypothesis (H$_{01}$) was rejected at 5 % level of significance. This implies that external reserves have a significant effect on economic growth. The co-efficient of determination (denoted by R-squared) of 0.81 implies that the external reserves (XRSV) and other control variables account for 81% variation in Economic Growth (indicated by RGDP) while the remaining 19% is accounted for by the stochastic variable.

Table 1:Result of Multiple Regression Analysis

Dependent Variable: RGDP
Method: Least Squares
Date: 10/23/16   Time: 14:30
Sample: 1981 2015
Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.18E+11	2.48E+10	4.763884	0.0000
XRSV	5.823815	0.951830	6.118547	0.0000

RER	-4832.636	80884019	-5.97E-05	1.0000
XPOT	0.443874	0.639395	0.694209	0.4929
MPOT	-0.858576	1.025357	-0.837344	0.4090

R-squared	0.806787	Mean dependent var	2.10E+11
Adjusted R-squared	0.781025	S.D. dependent var	1.15E+11
S.E. of regression	5.39E+10	Akaike info criterion	52.38892
Sum squared resid	8.70E+22	Schwarz criterion	52.61111
Log likelihood	-911.8061	Hannan-Quinn criter.	52.46562
F-statistic	31.31726	Durbin-Watson stat	0.447667
Prob(F-statistic)	0.000000		

Key: RGDP- Real Gross Domestic Product, XRSV-External Reserve, XPOT – Export, MPOT – Import and RER – Real Exchange Rate
Source: Author's Data Analysis (2016)

Reserve holding is expected to increase with economic size and the volume of international transactions. Thus, in view of the nature of commodity base production and oil export in Nigeria, both the level and growth rate of output are expected to influence reserve accumulation. Increased current and capital account vulnerability should motivate central banks to hold more reserves, while exchange rate flexibility reduces demand for reserves. However, Economic theory predicts that the higher the opportunity cost of holding reserves, the lower the demand for reserves. This has implications for development.

Long Run Relationship between External Reserves and Economic Growth

Testing for a long run relationship among variables in a model requires that all the data of such variables are stationary and must be of the same order of integration (Gujarati, 1995). The results of Augmented Dickey Fuller (ADF) test for stationarity of (RGDP) and (XRSV) indicated that they were not stationary at levels (i.e. at their real values) but became stationary at the first difference, Thus all the variables are integrated of order one i.e. *I* (1). When variables become stationary at the same order of integration, then there is a possibility of cointegration among them i.e. existence of a long-run relationship (Gujarati, 1995; Nneka, 2012). To establish the existence (or otherwise) of a long-run relationship among the variables, a cointegration test was conducted using Johansen Cointegration approach.

From Table 3, the trace statistic, Max-eigenvalue and MacKinnon-Haug-Michelis (1999) *p-values*, reveal that there is one cointegrating equation. This is because from "at_most one", the *p-values* exceed the critical values at the 0.05 level. Thus, the Null hypothesis (H_{02}) of *none (i.e. no long run relationship) was rejected at 5 per cent. This implies that a long-run relationship exists between economic growth and external reserve.

Similarly, Fischer (2001) points out that countries holding very large external reserves will cope better with the financial crisis of recent years than others. In light of this, he expects that countries should keep external reserves for unforeseen issues. According to Fukuda and Kon (2007), when increased foreign reserves are persistent, consumption declines because permanent income declines. But when increased foreign reserves are temporary, consumption does not decline because of the permanent income hypothesis. Temporary increases of foreign exchange reserves therefore reduce domestic savings and have a negative impact on domestic investment and economic growth. The policy implications going by the discussion

so far is that policies should be geared toward a permanent increase in reserves rather than temporarily exchange reserve.

Table 2: Augmented Dickey Fuller Test for Stationarity of the Series

Null Hypothesis: D(RGDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.378187	0.0006
Test critical values: 1% level	-4.262735	
5% level	-3.552973	
10% level	-3.209642	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDP,2)
Method: Least Squares
Date: 10/23/16   Time: 14:37
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1))	-1.005654	0.186987	-5.378187	0.0000
C	-6.29E+09	4.36E+09	-1.443056	0.1594
@TREND("1981")	9.26E+08	2.72E+08	3.402950	0.0019
R-squared	0.491464	Mean dependent var	4.03E+08
Adjusted R-squared	0.457561	S.D. dependent var	1.50E+10
S.E. of regression	1.11E+10	Akaike info criterion	49.17893
Sum squared resid	3.67E+21	Schwarz criterion	49.31497
Log likelihood	-808.4523	Hannan-Quinn criter.	49.22470
F-statistic	14.49641	Durbin-Watson stat	1.949609
Prob(F-statistic)	0.000039		

Null Hypothesis: D(XRSV) has a unit root
Exogenous: None
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.811276	0.0000
Test critical values: 1% level	-2.639210	
5% level	-1.951687	
10% level	-1.610579	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(XRSV,2)
Method: Least Squares
Date: 10/23/16   Time: 14:39
Sample (adjusted): 1984 2015
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(XRSV(-1))	-0.725593	0.150811	-4.811276	0.0000
D(XRSV(-1),2)	0.579383	0.157883	3.669693	0.0009

				-
R-squared	0.454493	Mean dependent var		1.70E+08
Adjusted R-squared	0.436310	S.D. dependent var		5.29E+09
S.E. of regression	3.97E+09	Akaike info criterion		47.10152
Sum squared resid	4.72E+20	Schwarz criterion		47.19313
Log likelihood	-751.6244	Hannan-Quinn criter.		47.13189
Durbin-Watson stat	1.773707			

Key: RGDP- Real Gross Domestic Product, XRSV-External Reserve,
Source: Author's Data Analysis (2016)

Table 3: Johansen Cointegration Test
Date: 10/23/16   Time: 14:41
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments
Trend assumption: Linear deterministic trend
Series: RGDP XRSV
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.430827	19.86012	15.49471	0.0103
At most 1	0.037528	1.262251	3.841466	0.2612

 Trace test indicates 1 cointegratingeqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.430827	18.59787	14.26460	0.0097

| At most 1 | 0.037528 | 1.262251 | 3.841466 | 0.2612 |

Max-eigenvalue test indicates 1 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

RGDP	XRSV
-9.47E-12	1.13E-10
-2.81E-11	1.18E-10

Unrestricted Adjustment Coefficients (alpha):

D(RGDP)	4.26E+09	-2.05E+09
D(XRSV)	-2.30E+09	-5.54E+08

1 Cointegrating Equation(s):	Log likelihood	-1584.749

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	XRSV
1.000000	-11.87831
	(1.55319)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.040350
	(0.02053)
D(XRSV)	0.021800
	(0.00685)

Key: RGDP- Real Gross Domestic Product and XRSV-External Reserve
Source: Author's Data Analysis (2016)

Trend of External Reserve
Nigeria External Reserves: **Existing Levels and Trends**

Nigeria's external reserves are derived mainly from the proceeds of crude oil production and sales. Nigeria produces approximately 2,000,000 barrels per day of crude oil in joint venture with some international oil companies, notably Shell, Mobil, and Chevron. Out of this, Nigeria sells a predetermined proportion directly while the joint venture partners sell the rest. The joint venture partners pay Petroleum Profit Tax to the Federal Government through the Federal Board of Inland Revenue (CBN, 2007). From the late 1990s to the present, accumulation of foreign reserve by Nigerian government has shown some profound features, with reference to size, pace, and ownership categorizations. Form the gragh above, Nigeria's external reserve peak in 2007/08 Sequel to the global financial crisis of 2008/09, Nigeria's foreign reserves declined, but there was a rise between 2011 to 2014 and a sudden drop in 2015. Nigeria has witnessed significant rise in external reserves from US$3.40 billion in 1996

to US$28.28 billion in December 2005 peaking at an all-time high of US$62.08 billion in September 2008 before declining to US$ 39.07 billion as at July 2014.
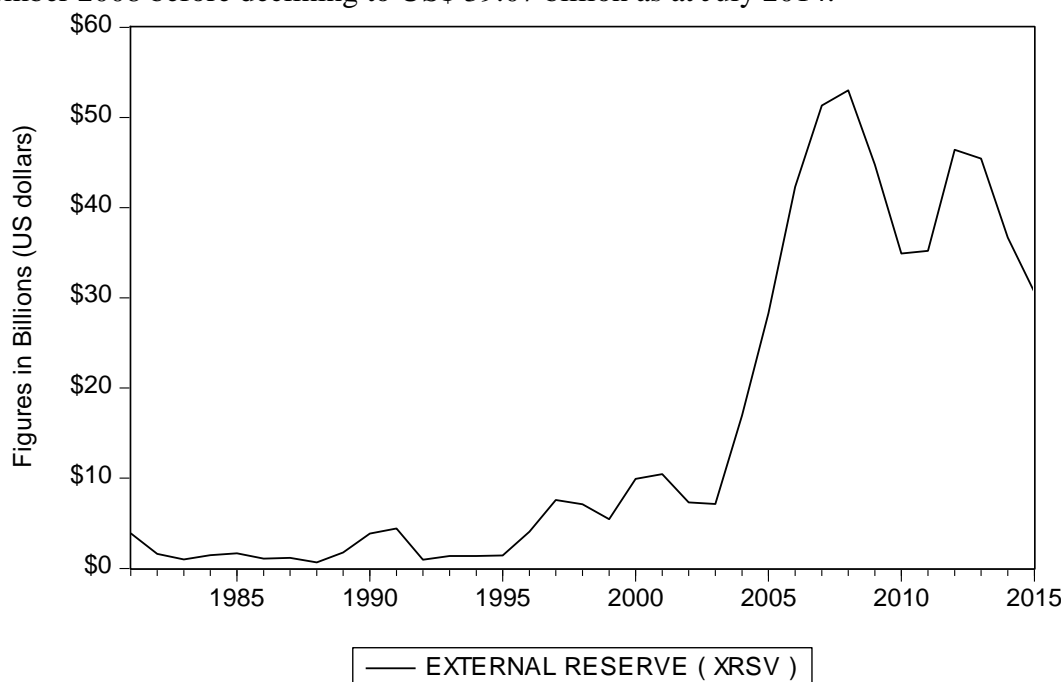

Figure 1: A Graph Showing the Trends of External Reserve (1981-2015)
Source: Author's Data Analysis (2016)

The huge accretion to external reserves between 2000 and 2008, reflected favourable developments in the oil market; including high prices, strong demand and improved domestic production. However, the significant drop in reserves between 2008 and 2010 was attributed to the effects of the 2008/09 Global Financial Crisis (GFC), significant production declines due to insecurity in the oil producing region and high import bills. More recently, Foreign Exchange Reserves in Nigeria averaged 4128.789 USD Million from 1990 until 2014, reaching an all-time high of 37497.241USD Million (World Bank, 2014).

CONCLUSION AND RECOMMENDATION

Based on the findings made in this study, we conclude that there is an existence of long run relationship between external reserves and economic growth and external reserve has significant effects on economic growth. Therefore, the resultant effects of external reserves on economic growth in Nigeria are positive and significant. Temporary increases of foreign exchange reserves reduce domestic savings and have a negative impact on domestic investment and economic growth. Similarly, since holding very large external reserves helps to cope better with the financial crisis, it is expected that Nigeria should keep external reserves for unforeseen issues. The policy implication of this is that measures that will enhance the stability in the amount of foreign reserve should be encouraged. The CBN Act which provides that the CBN at all times maintain a reserve of external assets consisting of gold, balance at any bank outside Nigeria where the currency is freely convertible; treasury bills; securities of or guarantes by a government of any country outside Nigeria, securities of or guarantes by international financial institutions of which Nigeria is a member; Nigeria's gold tranche at the international monetary fund and allocation of special drawing rights made to Nigeria by the International Monetary Fund should strictly followed. Additionally, policies should be geared toward a permanent increase in reserves rather than temporarily exchange

reserve. The researcher recommends that the government should always be prepared to have a hedge against unforeseen periods of macroeconomic instability or external shocks by making policies that focus on more accumulation of the external reserves. One of the ways by which this can be done is to increase exports and reduce imports.

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