International Journal of Applied Research

Dr. CI Ezeanyeji
Department of Economics
Faculty of Social Sciences
Chukwuemeka Odumegwu
Ojukwu University (COOU)
Anambra State, Nigeria

Imoagwu Chika Priscilla
Department of Economics
Nwafor Orizu College of
Education, Nsugbe Anambra
State, Nigeria

Ejefobihi Ugochukwu Frank
Department of Economics,
Chukwuemeka Odumegwu
Ojukwu University (COOU),
Anambra State, Nigeria

Public Debt and inflation in Nigeria: An econometric analysis

Dr. CI Ezeanyeji, Imoagwu Chika Priscilla and Ejefobihi Ugochukwu Frank

Abstract
This study examined the relationship between public debt and inflation in Nigeria for the period 1981 to 2017. The Augmented Dickey-Fuller (ADF) test, co-integration test and Error Correction Model (ECM), were employed in the analysis. The results of the analyses revealed that public debt, exchange rate and money supply has positive and significant impact on inflation in Nigeria. Also, real GDP growth rate has negative and statistically insignificant impact on inflation in Nigeria. The study recommends that government should sustain lower inflation rate through tight fiscal and monetary policies, financing of budget deficit from non-inflationary sources, implementation of price stabilization program by subsiding basic food items, and effectively managing public debt. Also, government should propose polices to reduce the public debt, through enhancing the tax base and lowering expenditures through structural reforms.

Keywords: Public debt, inflation rate, exchange rate, money supply, real gdp growth rate

1. Introduction
Inflation is a persistent increase in the prices of goods and services in an economy (Ojo, 2000) [23]. Inflation is a key macroeconomic indicator of a country, providing an important insight into the state of the economy. A low and stable inflation rate uplifts the poor and vulnerable citizens and gives a nurturing environment for economic growth (Ahmad, Sheikh & Tariq, 2012) [3]. The massive growth in external debt in sub-Saharan Africa (SSA) over the past two decades has given rise to concerns about the detrimental effects of the debt, especially the well-known "debt overhang" effect (Panizza, 2008; Choong, *et al*., 2010) [25, 7]. It is generally expected that developing countries, facing a scarcity of capital, will acquire external debt to supplement domestic saving (Imimole, *et al*., 2014; Ekperiware & Oladeji, 2014; Malik, *et al*., 2010; Aluko and Arowolo, 2010; Safdari & Mehrizi, 2011; Sulaiman & Azeez, 2012) [14, 10, 17, 5, 27, 28]. Besides, external borrowing is preferable to domestic debt because the interest rates charged by international financial institutions like International Monetary Fund (IMF) is about half compared to the interest charged in the domestic market (Pascal, 2010). However, whether or not external debt would be beneficial to the borrowing nation depends on whether the borrowed money is used in the productive segments of the economy or for consumption (Safdari & Mehrizi, 2011) [27]. Adepoju, *et al*., (2007) [2] state that debt financed investment need to be productive and well managed, enough to earn a rate of return higher than the cost of debt servicing.

Inflation on the other hand, rings bell in the market economies of the world. It is a monster that threatens all economics because of its undesirable effects. Rutasitara (2004) [26] notes that authorities have to keep an eye on the different factors that may easily trigger a rise in inflation at all times, even when the rate of inflation seems to be low because it could erode the value of money holdings, trade flows, investor confidence, etc. Omotosho and Doguwa (2013) state that inflation causes higher risk premia, hedging costs, unforeseen redistribution of wealth and ultimately a reduction in overall economic growth. Lipsey and Chrystal (1995) [16] stress that inflation is bad especially when it is unexpected because it distort the working of the price system, creates arbitrary redistribution from debtors to creditors, creates incentives for speculation as opposed to productive investment activity.

Correspondence
Dr. CI Ezeanyeji
Department of Economics
Faculty of Social Sciences
Chukwuemeka Odumegwu
Ojukwu University (COOU)
Anambra State, Nigeria

The problem of inflation surely is not a new phenomenon. It has been a major problem in developing countries like Nigeria over the years. In the bid to combat inflation and achieve other macroeconomic stability, Nigeria's monetary authorities have adopted various exchange rate arrangements over the years. It shifted from a fixed regime in the 1960s to a pegged arrangement between the 1970s and the mid-1980s, and finally, to the various types of the floating regime since 1986 (Dada & Oyeranti, 2012; Usman & Adegbite, 2014) [8, 30], following the adoption of the Structural Adjustment Programme (SAP). The fixed exchange rate regime induced an overvaluation of the naira and was supported by exchange control regulations that engendered significant distortions in the economy. That gave vent to massive importation of finished goods with the adverse consequences for domestic production, balance of payments position and the nation's external reserves level (Akonji, 2013) [4]. Moreover, the period was bedeviled by sharp practices perpetrated by dealers and end-users of foreign exchange (Adelowokan, 2012) [1]. It is therefore imperative to examine the relationship between the public debt and inflation in Nigeria.

2. Review of Related Literature
2.1 Theoretical Review
Several theoretical contributions have been made as regards the subject matter of public debt and inflation. The burden of external debt is the concern of threshold school of thought which emphasizes the non-linear relationship between debt and growth (Calvo, 1998) [6]. It links debt and growth to problem of capital flight where at high debt, levels growth falls. According to the threshold theory, the fall in growth is due to the higher distortionary tax burden on capital required to service the debt. It leads to lower rate of return on capital, lower investment and hence lower growth. It maintains that low debt regimes have higher growth rate and lower strand of thought in the debt – growth nexus sees external debt as capital inflow with positive effect on domestic savings and investment and thus on growth which leads to poverty reduction via appropriate targeting of domestic savings and investment (Calvo, 1998) [6]. Ricardo's theory of public debt was based on an emphasis of the fact that the primary burden to the community was derived from wasteful nature of public expenditure itself rather than from the methods adopted to finance such expenditure. Regarding the question of financing public expenditure, his view was that the requisite funds would ultimately have to be drawn from the liquid resources of the community and that in point of economy; it would make no great difference whether such funds were raised by taxes or by loans. However, where the funds were raised through the later, it would be referred to as public debt. External debt involves debt servicing, which in most cases require payment in foreign currency. Whereas, the continuous increase or decrease in demand for foreign currency tends to influence the exchange rate and inflation.

Another theory is Profligacy theory which attempts to correct the weakness of growth-cum debt theory by focusing on the institutional arrangement under which a loan was contracted. This theory recognises that the debt crises arose from weak institutions and policies that have wasted resources through unbridled official corruption and damaged living standards and development. This policies led to distortions in relative prices and encouraged capital flights

as seen in substantial liquid funds of private citizens of debtor countries in foreign banks (Nyong, 2005) [22] as cited in (Udoka & Ogege, 2012) [29].

The Demand pull inflation approach suggests a positive relationship between aggregate demand and the price level at a constant level of output. Another view of inflation is that increases in costs (supply shocks) enhance inflation. Besides demand pull and cost push inflation, the Keynesian approach considers that costs of production raise the price level. In addition, the Keynesians believe that the behaviour of the price level in the future would not change if past and expected price level depend on past price level.

The monetarists are of the view that inflation is a monetary phenomenon. They believe that expansionary monetary policy increases output for a time. In the long run however, money affects mainly the price level. The real variables i.e. employment, real output etc are affected only by real factors. Therefore, monetarists argue that while in the short run both real GDP and price level increase due to an increase in money supply, only the price level goes up in the long run.

2.2 Empirical Literature
Public debt burden of developing countries like Nigeria continues to be one of the key barriers to economic and social progress. Using three sub-samples of developing countries (22 in Asia, 11 in Latin America and 27 in Africa) over the period 1990 – 2014 through the estimation method of difference panel GMM, Nguyen (2015) [20] investigated the effects of public debt, inflation and their interaction on growth rate in developing countries. The estimated results showed that for the whole sample and the sub-sample of Latin America, the effects of public debt and inflation on growth are negative, while their interaction is positive. For the sub-sample of Asia, public debt and inflation have positive effects on growth, whereas their interaction has a negative impact; and for the sub-sample of Africa, the effects of public debt and interaction on growth are negative, whereas the influence of inflation is positive. These results suggest some important implications for governments in these developing countries.

Ezeanyeji and Ejefobihi (2015) [12] investigated the impact of inflation on economic growth in Nigeria from 1991 to 2013. The study adopts an Ordinary Least Square (OLS) of simple regression model in order to test the impact of inflation on economic growth of Nigeria during the period of study. Gross Domestic Product (GDP) represents the dependent variable while inflation rate represents the independent variable. The study pointed out that inflation has impacted negatively on economic growth of Nigeria. Similarly, Ezeanyeji, Okeke and Usifoh (2018) [13] investigated the effect of external debt management on exchange rate in Nigeria from 1981 to 2016. The Augmented Dickey Fuller test, the maximum lag selection criteria for the Johansen co-integration test, the Error Correction model (ECM) estimation and the stability and diagnostic test were employed using annual dataset of financial sector variables and economic growth for the period 1981 to 2016. The research findings indicated that the external debt stock does not affect the exchange rate of Nigeria. Furthermore, the Nigeria's external service payment negatively affected the average official exchange rate in Nigeria.

Adopting descriptive research design and an econometric estimation approach anchored on Vector Error Correction Estimation (VECM), Nwali and Nkwede (2016) [21] established the combine influence of two components of public debt (internal and external public debt) burden on the growth of Nigerian emerging and fragile economy for the periods of 1961-2013. The results confirmed that public debt has a negative short-run and long-run impact on the Nigerian economic growth and the adjustment process from the result indicates a low speed of adjustment for the errors in the previous year to be corrected in equilibrium.

Essien, Agboegbulem, Mba and Onumonu (2016) [11] examined the impact of public sector borrowings on prices, interest rates, and output in Nigeria. The study employed Vector Autoregressive framework, the Granger causality test, impulse response, and variance decomposition of the various innovations to study the impact. However, the study revealed that the level of external and domestic debt over the period of this study had no significant impact on the general price level and output. Similarly, Mweni, Njuguna and Oketch (2016) [19] established the effect of external debt on inflation in Kenya over the period of 1972 to 2012. The study employed Augmented Dickey-Fuller (ADF), tests for heteroskedasticity, autoregressive conditional heteroskedasticity (ARCH), autocorrelation and normality in the analysis. The study revealed that there is a significant effect of external debt on inflation.

Da Veiga, Ferreira-Lopes and Sequeira (2014) [9] examined the implications of public debt on economic growth and inflation in a group of 52 African economies between 1950 and 2012. The results indicate that the limits of public debt affect economic growth and exhibit negatively, from a given level of debt, an inverted U behaviour regarding the relationship between economic growth and public debt. Similarly, using an unbalanced panel data from the period of 1960−2004 and GMM estimation method, Karakaplan (2009) [15] investigated the conditional effects of external debt on inflation. The research findings indicated that debt is less inflationary in economies with well-developed financial markets.

To the best of the researcher's knowledge from the empirical literature reviewed, no study has ever sought to establish the econometric analysis of the public debt and inflation in Nigeria from the period of 1981 to 2017. The choice of period is based on the continuous increase in Nigeria's external debt. Therefore, this study seeks to bridge the identified gaps and contribute to knowledge by assessing the econometric analysis of the public debt and inflation in Nigeria.

3. Methodology
3.1 Model Specification
In order to achieve the objectives of the study, the model adopted for this study is derived from the previous study carried out of by Mweni, *et al.*, (2016) [19] and modified it to incorporate the public debt (% of GDP), inflation rate, exchange Rate, money supply (% of GDP) and real GDP growth rate. The functional form of the model is therefore specified as follows:

$$PD = f(INF, EXR, MS, RGDP) \text{ -------------------------- (1)}$$

Where;
PD = Public debt (% of GDP)

INF = Inflation Rate
EXR = Exchange Rate
MS = Money supply (% of GDP)
RGDP = Real GDP growth rate
The estimating form of equation (1) above is represented as:

$$PD = \beta_0 + \beta_1 INF_t + \beta_2 EXR_t + \beta_3 MS_t + \beta_4 RGDP_t + \mu \text{ -------- (2)}$$

Where; β_0 is the constant term, $\beta_1 - \beta_4$ are estimation parameters, t is the time trend and μ is the random error term.

3.2 Estimation Method and Sources of Data
The estimation method used in this study was in three procedures. The first estimation procedure examines the unit root level of the series used in the investigation. It enables the study to determine the integrated order of the data series through the application of the Augmented Dickey-Fuller (ADF) unit root test. The second estimation procedure will be theory of co-integration which has been developed to eliminate the problem of spurious correlation often associated with non-stationary macroeconomic time series data. According Mill (1990) [18], co-integration establishes the link between integrated processes and the concept of steady state equilibrium. The third estimation procedure involved using error correction model (ECM) to investigate the short run dynamics and long run equilibrium relationship among the data series. The application of ECM is necessary because, it is used to correct temporary short run deviation of a series within long run equilibrium relationship.

Annual time series data were extensively utilized to investigate the relative impact of public debt on inflation in Nigeria. Secondary data is being used in this study. The source of data is the World Bank national accounts data and Central Bank of Nigeria (CBN) Statistical Bulletin, vol. 28, 2017. The relevant variables sourced include – public debt (% of GDP), inflation rate, exchange Rate, money supply (% of GDP) and real GDP growth rate for the period 1981 to 2017.

4. Results and Discussion
4.1 Unit Roots Test Result
The knowledge of the time series properties of the variables of interest is important in order to obviate the possibilities of spurious regression. This was implemented using the conventional – Augmented Dickey-Fuller (ADF) unit root test. For convenience, table 1 below shows the summary of the computed Augmented Dickey Fuller unit root test for each of the variables.

Table 1: Augmented Dickey-Fuller (ADF) Test for model.

Variables	ADF-Statistic	Critical Value			Order of Integration
		1%	5%	10%	
PD	-5.673218	-3.632900	-2.948404	-2.612874	1(1)
INF	-5.526004	-3.632900	-2.948404	-2.612874	1(1)
EXR	-5.303326	-3.632900	-2.948404	-2.612874	1(1)
MS	-5.618371	-3.632900	-2.948404	-2.612874	1(1)
RGDP	-10.84287	-3.632900	-2.948404	-2.612874	1(1)

Source: Author's Compilation with the use of E-views 9 Output

The test results for ADF showed that all the variables (public debt (% of GDP), inflation rate, exchange Rate, money supply (% of GDP) and real GDP growth rate) were not stationary at levels but were significant at first

difference. Hence, by taking their first difference they became stationary. The next step after finding out the order of integration is to establish whether the non-stationary variables could be co-integrated. The co-integration of two time series suggests that there is a long-run or equilibrium relationship between them.

4.2 Johansen Co-Integration Test
A necessary but not sufficient condition for co-integrating test is that each of the variables be integrated of the same order. The Johansen co-integration test uses two statistics tests namely; the trace test and the likelihood eigenvalue test. The first row in each of the table test the hypotheses of no co-integrating relation, the second row test the hypothesis of one co-integrating relation and so on, against the alternative of full rank of co-integration. The results are presented in table 2 below.

Table 2: Co-integration Test Result

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value 0.05	Prob.**
None*	0.868664	190.2986	69.81889	0.0000
At most 1*	0.805790	123.3087	47.85613	0.0000
At most 2*	0.564271	69.22787	29.79707	0.0000
At most 3*	0.496499	41.81364	15.49471	0.0000
At most 4*	0.440611	19.17006	3.841466	0.0000
Trace test indicates 5 co-integrating eqn(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-Eight Statistic	0.05 Critical Value	Prob.**
None*	0.868664	66.98990	33.87687	0.0000
At most 1*	0.805790	54.08087	27.58434	0.0000
At most 2*	0.564271	27.41423	21.13162	0.0057
At most 3*	0.496499	22.64358	14.26460	0.0019
At most 4*	0.440611	19.17006	3.841466	0.0000
Max-eigenvalue test indicates 5 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's Compilation with the use of 9 Output

From table 2 above, both the Trace statistic and Max-Eigen statistic reported that there was presence of five (5) co-integration equation among the variables. This means that a long run interaction existed among these relevant variables. Both the Trace statistic and Max-Eigen statistic were greater than their respective critical values and significant at 5 percent level. As such, it was concluded that a long run equilibrium relationship rightly existed among these variables of interest used in the study.

4.3 Error Correction Model (ECM)
Since the variables are cointegrated, the error correlation model is required to construct the dynamic relationship of the model. The purpose of the error correlation model is to indicate the speed of adjustment from short run dynamic to the long run equilibrium state.

Table 3: Result of Error Correction Model (ECM) Result

Dependent Variable: D(INF)				
Method: Least Squares				
Date:03/07/19 Time: 03:54				
Sample (adjusted): 1982 2017				
Included observations: 36 after adjustments				
Variable	Coefficient	Std. Error	t-statistic	Prob.
C	-35.70470	14.19578	-2.515163	0.0175
INF	0.371847	0.069154	5.377083	0.0000
EXR	0.016320	0.044557	0.366268	0.7167
MS	1.894010	0.771028	2.456472	0.0200
RGDP	-0.223466	0.528510	-0.422823	0.6754
ECM(-1)	-0.195814	0.086150	-2.272936	0.0304
R-Squared: 0.627244; Adjusted R-squared: 0.565119; F-statistic: 10.09634; Prob(F-statistic): 0.000010; Durbin-Watson Stat: 1.659826				

Source: Author's compilation with the use of E-view 9.

4.3.1 Results and Discussion
From the results, the constant term is negative, even though it does not have any economic meaning, it meet our a priori expectation. In other words, with respect to the coefficients, the constant (C) has a value of -35.70470. This indicated that the value is negative and statistically significant with p-value of 0.0175 which is less than 0.05. Therefore, this shows that regardless of change on the explanatory variables, the inflation will be increased by 35 percent.

The value of regression coefficient of public debt as percentage of GDP is 0.37, demonstrating that if public debt goes up by one million; price level goes up by about 37 percent. The impact of public debt on price level is positive and highly statistically significant. The reason may be that when government borrows directly from central bank to finance its expenditures, money supply increases then price level increases as explained in theory of demand-pull inflation.

Again, the coefficient of exchange rate is positive but statistically insignificant on inflation. This implies that a 1% increase in exchange rate on the average will bring about 1.63 percent increase inflation in Nigeria. Also, we observe that value of coefficient of money supply is 1.89, which shows that one million additions in money supply increase the price level by 189 percent. The regression coefficient of money supply is positive and statistically significant. Furthermore, the coefficient of real GDP growth rate is negative and statistically insignificant on inflation. This implies that a 1% increase in real GDP growth rate will reduce inflation by 22 percent.

The value of R^2 is 0.62. Thus our model explains about 62% of variation in the inflation. The problem of autocorrelation has been removed with the help of autoregressive process,

which is an efficient technique to tackle this problem. The value of DW-statistic is 1.6. This value is close to 2. Thus, as a rule, we can accept the null hypothesis that autocorrelation is absent from the regression errors. Finally, the coefficient of error correction mechanism (ECM) is negative. This is in line with economic and econometrics expectations. The error correction mechanism corrects 19% of the total error that occurs in the model.

5. Conclusion and Recommendation
The study examined the relationship between public debt and inflation in Nigeria from 1981 to 2017. The Augmented Dickey-Fuller (ADF) test, co-integration test and Error Correction Model (ECM), were employed in the analysis. The respective tests show that all the variables used in the model were stationary at first differencing respectively. Also, the co-integration test carried out indicates that there is long – run relationship between the dependent variable and predictor variable – and public debt (% of GDP), exchange rate, money supply (% of GDP) and real GDP growth rate in Nigeria. The study revealed that public debt has positive and significant impact on inflation in Nigeria. Moreover cost of borrowing is a huge burden on budget and to finance budget deficit government has to resort to different sources and deficit financing leads to decrease in value of currency, ultimately creates inflation. Government must come up with policies and structural reforms to increase the revenue and lower its current expenditure. The rise in public debt in Nigeria is attributed to government extra budgetary activities which most often are not used for the proposed project. Commitment to budget should be encouraged for fiscal discipline on the part of the government and its agencies.

6. References
1. Adelowokan OA. Exchange Rate Pass-Through in Nigeria: A Dynamic Evidence. European Journal of Humanities and Social Sciences. 2012; 16(1):785-801.
2. Adepoju AA, Salau AS, Obayelu AE. The Effects of External Debt Management on Sustainable Economic Growth and Development: Lessons from Nigeria. Munich Personal RePEc Archive (MPRA), 2007, 2147, 1-30.
3. Ahmad MJ, Sheikh MR, Tariq K. Domestic Debt and Inflationary Effects: An Evidence from Pakistan. International Journal of Humanities and Social Science. 2012; 2(18):256-263.
4. Akonji DR. The Impact of Exchange Rate Volatility on the Macro Economic Variables in Nigeria. European Scientific Journal. 2013; 9(7):152-165.
5. Aluko F, Arowolo D. Foreign aid, the Third World's Debt Crisis and the Implication for Economic Development: The Nigerian Experience. African Journal of Political Science and International Relations. 2010; 4(4):120-127.
6. Calvo GA. Growth, Debt and Economic Transformation: The Capital Flight Problem. In: Coricelli, F., Mattoe, M., Hahn, F. (Eds.), New Theories in Growth and Development, St. Martin's Press Ltd., New York, 1998, 251-269.
7. Choong CK, Lau E, Liew VK, Puah CH. Does debts foster economic growth? The experience of Malaysia. African Journal of Business Management. 2010; 4(8):1564-1575.
8. Dada EA, Oyeranti OA. Exchange Rate and Macroeconomic Aggregates in Nigeria. Journal of Economics and Sustainable Development. 2012; 3(2):93-101.
9. Da Veiga JL, Ferreira Lopes AF, Sequeira T. Public Debt, Economic Growth, and Inflation in African Economies. MPRA, 2014, 57377, 17.
10. Ekperiware MC, Oladeji SI. External Debt, Servicing and Debt Relief Transmissions in Nigeria. Journal of Economics and Sustainable Development. 2014; 5(20):11-33.
11. Essien SN, Agboegbulem NTI, Mba MK, Onumonu OG. An Empirical Analysis of the Macroeconomic Impact of Public Debt in Nigeria, CBN Journal of Applied Statistics, ISSN 2476-8472, The Central Bank of Nigeria, Abuja. 2016; 7(1):125-145.
12. Ezeanyeji CI, Ejefobihi UF. Inflation and Economic Growth in Nigeria: An Impact Analysis. Wilolud Journals: Continental Journal of Social Sciences. 2015; 8(1):1-12.
13. Ezeanyeji CI, Okeke MN, Usifoh KS. External Debt Management and Exchange Rate in Nigeria: The Synergy. Governance and Public Sector Management in Interactive Knowledge (IK), 2018, 167-189.
14. Imimole B, Imoughele LE, Okhuese MA. Determinants and Sustainability of External Debt in a Deregulated Economy: A Cointegration Analysis from Nigeria (1986-2010). American International Journal of Contemporary Research. 2014; 4(6):201-214.
15. Karakaplan MU. The Conditional Effects of External Debt on Inflation. Journal of Social and Economic Research. 2009; 9(17):203-217.
16. Lipsey RG, Chrystal KA. An Introduction to Positive Economics8th Edition. Oxford: Oxford University Press, N.Y, 1995.
17. Malik S, Hayat MK, Hayat MU. External Debt and Economic Growth: Empirical Evidence from Pakistan. International Research Journal of Finance and Economics, 2010, 44.
18. Mills TC. Time Series Techniques for Economists. Cambridge University, 1990.
19. Mweni FT, Njuguna A, Oketch T. The Effect of External Debt on Inflation Rate in Kenya, 1972-2012. International Journal of Financial Research. 2016; 7(4):198-207.
20. Nguyen VB. The Effects of Public Debt, Inflation, and their Interaction on Economic Growth in Developing Countries: Empirical Evidence based on Difference Panel GMM. Asian Journal of Empirical Research. 2015; 5(11):221-236.
21. Nwali AC, Nkwede FE. Aggregate Public Debt Burden and the growth of a fragile economy: The Nigerian Experience. IOSR Journal of Economics and Finance (IOSR-JEF). 2016; 7(2):46-57.
22. Nyong MO. International Economics: Theory, Policy and Application. Calabar, Wusen publishers, 2005.
23. Ojo MO. Principles and Practice of Monetary Policy in Nigeria, Lagos: Nigeria, 2000.
24. Omotosho BS, Doguwa SI. Understanding the Dynamics of Inflation Volatility in Nigeria: A GARCH Perspective. CBN Journal of Applied Statistics. 2013; 3(2):51-74.
25. Panizza U. Domestic and External Public Debt in Developing Countries. United Nations Conference on

Trade and Development (UNCTAD) Discussion. 2008; 188:1-20.

26. Rutasitara L. Exchange Rate Regimes and Inflation in Tanzania. *AERC Research* African Economic Research Consortium, Nairobi, 2004, 138.

27. Safdari M, Mehrizi MA. External Debt and Economic Growth in Iran. Journal of Economics and International Finance. 2011; 3(5): 322-327.

28. Sulaiman LA, Azeez BA. Effect of External Debt on Economic Growth of Nigeria. Journal of Economics and Sustainable Development. 2012; 3(8):71-79.

29. Udoka CO, Ogege S. Public Debt and the Crisis of Development in Nigeria Econometric Investigation. Asian Journal of Finance & Accounting. 2012; 4(2):231-243.

30. Usman OA, Adegbite TA. Impact of Monetary Policy on Industrial Growth in Nigeria. International Journal of Academic Research in Business and Social Sciences. 2014; 4(1):18-31.