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Impact of Military Expenditure on Inflation in Nigeria1980-2012

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Abstract

The study entitled "Impact of Military Expenditure on Inflation in Nigeria; 1980-2012" investigates the relationship between inflation and some macroeconomic variables particularly military expenditure. Military expenditure was disaggregated into recurrent and capital components while other variables are interest rate, money supply and exchange rate. The methods of study were basically co-integration, ARCH and granger causality tests. The empirical results show that long run relationship exists between inflation and the macroeconomic variables. Whilst, impact of capital military expenditure and exchange rate on inflation rate is found to be negative, recurrent military expenditure, interest rate and money supply exhibit positive impact on inflation in Nigeria. And, the study could not establish causality between inflation and military expenditure during the period under review. It therefore recommended that any increase in military expenditure should be on the capital component since its impact on inflation is negative.

Keywords: Military Expenditure, Inflation, Co-integration, ARCH and GARCH

1.1 Introduction

The study of defence economics involves researching defence problems from various economic fields which involves analysis of the interdependence between defence and the national economy through various routes.

Defense economics research is carried out widely in the US and Europe, but it is not yet common in Nigeria. At the end of the Cold War, the reduction in defence expenditure was regarded as a "peace dividend".

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But recently we have been faced with unconventional conflicts such as terrorism and in the Nigeria case internal security which include religion, political and until recently and more deadly Boko Haram. To cope with these conflicts we should consider defence problems from a new point of view that will change security measures. Such security measures entail more military expenditure and the impact of such fiscal policy measure is brought to bear on inflation.

There is no doubt that the Nigerian economy is fragile and ill-prepared for the stress of strong armed forces required in Nigeria today. The impact of military expenditure on growth has long been debated in the literatures. But the impacts on other macroeconomic variables among which include inflation have not been well documented. For example, it is not certain if military expenditure exerts dampening effects on inflation, enlarge real output or has feedback effects on other macroeconomic variables. Besides, the deep economic crisis that has engulfed the Nigerian economy since 1981 led to the adoption of Structural Adjustment Program (SAP) aimed at, among other things stable macroeconomic variables.

However, all policy prescriptions have failed to address the ugly trends in the economy. For example, the exchange rates have continued to depreciate while balance of payments and fiscal deficits as well as inflation and unemployment rates have continued to rise. Another problem of the economy has been rising debt stock (domestic and external). The behavior of these aggregates seems to have been linked to huge annual military expenditure. The inflationary trend, coupled with the different approaches to a stable exchange rate regime in Nigeria, has been a major challenge for policy makers in the defence sector.

Over the past decade and a half, a substantial volume of empirical research has been directed towards identifying the elements of public expenditure that bear significant association with inflation (Bose, et al., 2003). This empirical literature varies in terms of data sets, econometric techniques, and often produces conflicting results (Grier and Tullock 1989). Explanations offered to account for these varied and conflicting results can broadly be divided into two categories. According to the first, it is the differences in the set of conditioning variables and initial conditions across studies that are responsible for the lack of consensus in the results (Bose, et al., 2003).The second category consists of a handful of studies (Kneller, et al. 1999) who suggests that the variation in the results reflects the wide spread tendency among researchers to ignore the implications of the government budget constraint for their regressions.

In particular, the latter view emphasizes the need to consider both the sources and the uses of funds simultaneously for a meaningful evaluation of the effects of taxes or expenditures on inflation.

In addition to producing conflicting views, the existing literature displays a disturbing trend. Most of the conclusions drawn regarding the growth effects of public spending were based either on the experiences of a set of developed countries or on the basis of large samples consisting of a mixture of developed and developing countries. Accordingly, there remains little by way of understanding the process by which public expenditure policies shape the prospect of inflation for developing countries. This trend has continued despite the long standing debate among development experts that there exists not only a significant difference in the composition of public expenditure between the developed and developing countries, but the difference is also profound in the way in which public expenditures shape the outcome in these two set of countries.

The objective of the paper is to look at the impact of military expenditure as an extension of government expenditure on inflation in Nigeria. The linkages between military expenditure and economic growth have been well documented in the literature (see for example, Egwaikhide and Ohwofasa, 2009, Olowononi and Aiyedogbon, 2008), but studies on military expenditure and inflation in sub-Sahara African (SSA) especially Nigeria are scanty in the literature. Expectedly, the sequence of the paper is clear. Following the introduction, section two contains brief related literature. Section three unveils the method of study while four presents the results. Finally, section five concludes the paper.

2.1 Conceptual Literature on Inflation

The concept of inflation has been defined as a persistence rise in the general price level of broad spectrum of goods and services in a country over a long period of time.

Inflation has been intrinsically linked to money, as captured by the often heard maxim, 'inflation is too much money chasing too few goods'. Hamilton (2001) described inflation as an economic situation when the increase in money supply is faster than the new production of goods and services in the same economy.

According to Ojo (2000), the term inflation is described as a general and persistent increase in the prices of goods and services in an economy. Inflation rate is measured as the percentage change in the price index (consumer price index, wholesale price index, producer price index etc). Essien (2005) opines that the consumer price index (CPI) for instance, measures the price of a representative basket of goods and services purchased by the average consumer and calculated on the basis of periodic survey of consumer prices. Owing to the different weights of the basket, changes in the price of some goods and services have impact on measured inflation with varying degrees.

There are three major types of inflation according to neo-Keynesians. The first is the demand-pull inflation which occurs when aggregate demand is in excess of available supply (capacity). The output gap can result from an increase in government purchases, increase in foreign price level, or increase in money supply. The second is known as cost-push inflation or supply shocks inflation and occurs in the event of a sudden decrease in aggregate supply, owing to an increase in the price/cost of the commodity/production where there are no suitable alternatives (Thomas, 2006). It is often reflected in price/wage spirals in firms, whereby workers try to keep up their wages with the change in the price level and employers pass on the burden of higher costs to consumers through increase in prices. The third type, referred to, as structural inflation, is built-in inflation, usually induced by changes in monetary policy. Within these broad typologies of inflation, there are other types of inflation with varying determinants, effects, and remedies, which are classified based on the intensity, severity and persistence of the price increase.

Thus, we have: hyperinflation (an extreme acceleration of yearly price increases of three-digit percentage point). Extremely high inflation (ranging between 50 percent and 100 percent); chronic inflation (15-30 percent) and lasting for at least 5 consecutive years); high inflation (with rates between 30 percent and 50 percent a year); moderate inflation (when the general price level ranges from 5 percent to 25-30 percent); and low inflation (when the change in the consumer price index ranges from 1-2 to 5 percent).

For any inflation below zero, a country is regarded as experiencing deflation (Piana, 2001). It is pertinent to note that there exist no biding restrictions on the ranges of these classifications of inflation.

2.2 Conceptual Literature on Military Expenditure

There are three basic definitions of military expenditure serving as standards for the different international institutions that publish data on military expenditure: that of the North Atlantic Treaty Organization (NATO), the United Nations Organization and the International Monetary Fund (IMF). Only the first two are discussed here. According NATO, established in 1950, military expenditure comprises; "all current and capital expenditures on the armed forces, in the running of defence departments and other government agencies engaged in defence projects as well as space projects; the cost of paramilitary forces and the police when judged to be trained and equipped for military operations; military R & D, tests and evaluation costs, and costs of retirement pensions of service personnel, including pensions of civilian employees. Military aid is included in the expenditures of the donor countries. Excluded are items of civil defence, interest on war debts and veterans payments" (NATO, 2010).

The UN definition is based on Stockholm International Peace Research Institute (SIPRI) definition. In the view of SIPRI (2010), defence expenditures include all current and capital expenditures on the armed forces, including peace keeping forces; defence ministries and other governmental agencies engaged in defence projects; paramilitary forces when judged to be trained, equipped and available for military operations, and military space activities. Such expenditures should include: personnel–all expenditures on current personnel, military and civil retirements, pensions of military personnel and social services for personnel and their families; operations and maintenance; procurement; military research and development; military construction; and military aid (in the military expenditures of the donor country). Excluded military related expenditures are: civil defence; current expenditure for previous military activities such as veteran benefits, demobilization, and conversion of arm production facilities and destruction of weapon (www.sipri.org). According to the UN group of military experts, there is a lack of detailed data on military spending and that makes it hard to apply a common definition worldwide.

Thus, the same definition as given by SIPRI which is based on the NATO definition given above serves as a guideline for the UN definition (www.mtholyoke.edu).

2.3 Review of Empirical Literature

In the United States, Atesoglu (2009), using Factor Augmented Vector Autoregressive (FAVAR) model concluded that shock of real military spending has positive impact on aggregate output. Looney (1989) analyzed extended possible inflationary impacts of military spending and suggested two possible sources of greater inflation in arms producing states. First, military spending could result in cost-push inflation (inflation resulting from insufficient supply inputs) because the military bureaucracy continues to reward contractors that sustain substantial cost over-runs. Second, demand related inflation (inflation resulting from excessive demand) could result in an economy, already operating at full capacity, from the increased aggregate demand associated with increased government spending. Cost-push inflation could occur only in the producing states while demand related inflation would occur in either economy only if it was at full capacity. His final regression analysis shows that military spending restricts growth in non-producing states while enhancing it in producing states.

Wijeweera and Webb (2009) employed VAR analysis on four variables including real output, military spending, non-military expenditures and real interest rate for Sri Lankan economy. The study reported that military spending affects economic growth positively, Shahbaz, et al. (2011) for example examined the relationship between defence spending and economic growth using Keynesian model in Pakistan by applying ARDL bounds testing approach to co-integration for long run and error correction method for short span of time. The findings show a negative relationship between military spending and economic growth. Steve and David (1993) employed vector auto-regression and granger analysis on time series data from South Korea and Taiwan on defense allocation, inflation, and unemployment to determine the extent of granger causality involved. The findings show that with the exception of South Korean, results failed to indicate direct and simple causal connections between these variables during the time period analyzed, thereby suggesting that these two newly-industrializing East Asian countries have been largely successful in dampening the negative economic consequences of a comparatively heavy defense burden.

In a study conducted by Ozsoy (2010) on the relationship between defence spending and macroeconomic variables which include inflation, the study used VAR model and Granger Causality for four countries which include Egypt, Israel, Jordan and Turkey.

The study found that while Egypt and Israel have unidirectional causality running from defence spending to inflation, causality could not be established for other countries. The results of their impulse response functions in case of a shock of defence spending as a percentage of GNP showed that while the rate of Israel's inflation and current accounts as a percentage of GNP is affected by positive direction, Turkey's growth rate is affected negatively. For Egypt and Jordan, the significant effects of defence spending on macroeconomic variables could not be found. Krishna (2008) scrutinized the effect of military spending on income inequality in four major South Asian economies for the period 1975 to 2005. The study found that there is a positive effect of military expenditure on income inequality in South Asia. Also it was discovered that there is a direct relationship between wartime military spending and income inequality and an inverse relationship between peacetime military spending and income inequality.

In Nigeria, Olaniyi (1993) evaluated the impact of defence expenditure on national economic indicators such as the growth in GDP, unemployment, inflation and balance of payment equilibrium. The equations were estimated using the ordinary least square (OLS) method. His results revealed that the Nigerian defence sector contributes positively to real growth in GDP, but it has a progressive distributional effect and a dampening effect on inflation. Aiyedogbon (2010) investigated the relationship between inflation and military expenditure in Nigeria. Macroeconomic variables which include exchange rate, gross domestic product and government policy of structural adjustment programme proxied by dummy variable were included as determinants of inflation and employed the econometric methodology of vector error correction model for the period 1980-2010. The findings revealed that military expenditure contributed more than any other variables employed in the study in fuelling inflation in Nigeria at least during the study period. In a related study, Aiyedogbon and Ohwofasa (2011) examine the relationship between inflation and macroeconomic variables which include military expenditure, exchange rate and economic growth proxied by gross domestic product and gross fixed capital formation. The study tested for stationarity and co-integration, vector error correction model, impulse response function, variance decomposition and granger causality tests.

The results contradicted the earlier findings in that military expenditure does not induce inflation in Nigeria in the period under review especially in the long run when the impact of military expenditure on inflation is likely to be negative.

Aiyedogbon, et al. (2012) further scrutinized the relationship between inflation and macroeconomic variables among which include military expenditure, exchange rate, economic growth proxy by gross domestic product and gross fixed capital formation. The study employs vector error correction model and granger causality approaches for a data set spanning 1980-2010.The findings thus mirror the earlier study namely that military expenditure does not induce inflation in Nigeria and thus recommended that the current funding of the military sector should be sustained for effective combat readiness both internally and externally. In a related development, Aiyedogbon and Ohwofasa (2012) explored the relationship between inflation and military expenditure in Nigeria from 1986-2011.The variables for the study include inflation rate, exchange rate, gross domestic product and military expenditure while the method of study were co-integration and error correction model. Result shows that military expenditure exerted negative influence on inflation within the period of analysis while past level of inflation rate have positive significant influence on current inflation.

Adebiyi and Oladele (2006) investigated the empirical relationship between public education expenditure and defence spending in Nigeria, using annual time series data from 1970 to 2003. The study employed error correction model while the effects of stochastic shocks of public education expenditure and defence spending were explored, using vector autoregressive (VAR) model. The study stressed that although it is contended by some that the military may contribute towards the promotion of the modernization of developing societies through the enhancement of the quality and quantity of human capital by, among others, dismantling social rigidities, there is limited conclusive evidence to support this view. Thus the results revealed positive and statistical significant in all the techniques employed. The study concluded that it is not unlikely that military activity has served to enhance the productive capability of the Nigerian economy via some modernizing effect. Hence, in the short and long run, the impact of military expenditure on Nigeria's stock of human capital, particularly education, has been positive. In a similar study by Omojimite (2012), the author examined the proposition that military expenditures "crowd-out" expenditures on education in Nigeria during the period 1973-2006 data.

A VAR model was estimated using the tools of variance decomposition and impulse response functions. The study reveals that there is a positive and significant relationship between defence spending and education expenditures. The study also finds a negative and significant relationship between expenditures on education and economic growth as well as defence spending and economic growth.

3.1 The Model

Theoretical Framework

The search for reliable price stability continues to be an intensive activity. Given the nature of the Nigerian economy, very little is still known about the contemporary relationship between inflation and other key macroeconomic variables including military expenditure. In line with the literature review, the model of Aiyedogbon and Ohwofasa (2012) is adopted for the present study. However, military expenditure is disaggregated into recurrent and capital components while the ARCH model replaces the VAR model employed by the earlier authors. Thus:

INF = f(RME, CME, EXCH, INT, MS)

Where:

INF = Inflation rate proxied by consumer price index
RME = Recurrent Military Expenditure
CME = Capital Military Expenditure
EXC = Exchange Rate
INT = Interest Rate
MS = Money Supply

In stochastic log form, this becomes:

$$\ln INF_t = \alpha_0 + \alpha_1 \ln RME_t + \alpha_2 \ln CME_t + \alpha_3 \ln EXCH_t + \alpha_4 \ln INT_t + \alpha_5 MS + \varepsilon \ldots\ldots(1)$$

In equation (2), α_0 is the constant coefficient while α_1 to α_5 are the coefficients to be estimated and are expected to be greater than zero, ε is the error term.

3.2 ARCH and GARCH Estimation

The role of GARCH in the study is to ascertain how explosive the impact of inflation on military expenditure is. If the coefficient of the GARCH and ARCH effects is greater than one then inflation during the study period will be regarded as explosive so that urgent policy measure has to be taken.

The variance of the dependent variable is modeled as a function of the past values of the dependent and independent or exogenous variables. The models were introduced by Engle (1982) and generalized as GARCH (Generalized ARCH) by Bollerslev (1986). The GARCH specification is model as follows:

$$INF = X_t'\theta + \epsilon_t \quad \ldots\ldots (2)$$

$$\delta^2_t = \omega + \alpha^2_{t-1} + \beta\delta^2_{t-1} \quad \ldots\ldots (3)$$

Equation (2) specifies the mean as a function of exogenous variables with an error term while equation (3) models the variance (δ^2_t) as a function of the constant (ω), volatility from previous period i.e. the ARCH term, and last period's forecast variance, the GARCH term. GARCH (1, 1) is used because it is the most popular. The ARCH parameters correspond to α while the GARCH parameters to β and the sum of the two coefficients (i.e. $\alpha + \beta$) if close to one for example will indicate that volatility (inflation) shock is persistent in the Nigerian economy.

3.3 Unit Root Test

The Augmented Dickey Fuller (ADF) and the Phillips-Perron tests were used to test for unit roots as in the equation below.

$$\Delta Yt = Ci + \omega Yt - 1 + C2t + \sum_{t=1}^{p} di\Delta Yt - 1 + \varepsilon t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

yt = relevant time series

Δ = an operator for first difference

t = a linear trend

εt= error term

The null hypothesis of the existence of a unit root is Ho: ω=0. Failure to reject the null hypothesis leads to conducting the test on further differences of the series. Further differencing is conducted until stationarity is reached and the null hypothesis is rejected. Akaike Information Criteria (AIC) and the Schwarz criterion (SC) were employed to determine the lag length.

3.4 Co integration Test

The purpose of this test is to establish if the variable have a long run relationship. Johasen and Juselius (1990) test proposes the use of two likelihood ratio tests namely, the trace test and the maximum eigenvalues test. The trace statistic for the null hypothesis of co-integrating relations is computed as follows:

$$\Gamma_{trace}(r) = -T\sum_{i=1}^{m}\log[1-\lambda_t] \quad \ldots\ldots(7)$$

Maximum eigenvalue static tests the null hypothesis of r co-integrating relation against r + 1 co-integrating relations and is computed as follows:

$$\Gamma_{max}(r, r+1) = -T\log(1-\lambda_{r+1}) \quad \ldots\ldots(8)$$

3.5 Granger Causality Test

In order to determine whether changes in one variable are a cause of changes in another, we employed the Granger (1969) causality test. Granger (1969) causality method of investigating whether A causes B is to see how much of current B can be explained by past values of B and then to see whether by including lagged values of A we can improve the explanation of B. B is said to be Granger-caused by variable A if A helps in the prediction of B, or if the coefficients on the lagged A's are statistically significant (Eviews User's Guide 1994-1997). The main idea of causality is quite simple, if A causes B, then changes in A should precede changes in B (Pindyck and Rubinfeld, 1998). This characteristic makes causality test an important one in the test of endogeniety. The simple granger causality test for a two variable model is as follows:

$$InINF_t = \beta_0 + \sum_{t=1}^{n}\beta_{1i}InINF_{t-1} + \sum_{t=1}^{n}\beta_{2i}InMILEX_{t-1} + e_t \quad \ldots\ldots(9)$$

$$InMILEX_t = \alpha_0 + \sum_{i=1}^{n}\alpha_{1i}InINF_{t-1} + \sum_{i=1}^{n}\alpha_{2i}InMILEX_{t-1} + \mu_t \quad \ldots\ldots(10)$$

The null hypothesis for equation (9) is that InINF does not Granger cause InMILEX. This hypothesis will be rejected if the coefficients of the lagged INFs (Summation of β_1 as a group) are found to be jointly significant (different from zero). The Null hypothesis for equation (10) is that InMILEX does not granger cause InINF. Similarly, this hypothesis is rejected if the coefficient of the lagged MILEXs (Summation α_2i as a group) is found to be jointly significant. If both of these null hypotheses are rejected, then a bidirectional relationship is said to exist between the two variables (military expenditure and inflation).

4.1 Results Presentation and Analysis

The results of table 4.1 show that for both the ADF and PP tests, all the variables were stationary at 1 percent either at first or second differencing. And since staionarity was achieved at first or second differencing levels, co-integration test was then conducted and the results presented in table 4.2 below.

Table 4.1: Results of Stationarity Test

ADF (Trend & Intercept)				Phillips-Peron (PP) (Trend & Intercept)		
Variable	Level	1st Diff	2nd Diff	Level	1st Diff	2nd Diff
LINF	-3.8701*	-6.1210**	-7.4469**	-3.3977	-6.1692**	-10.584**
LRME	-2.4943	-4.0919*	-4.0919**	-2.5993	-6.7399**	-15.543**
LCME	-2.8748	-6.5291**	-9.9163**	-4.5670**	-4.5670**	-18.465**
LTME	-2.5334	-4.4664**	-7.2998**	-2.8833	-6.8582**	-15.645**
LINT	-1.9811	-6.1077**	-9.8980**	-2.1163	-8.1610	-14.300**
LMS	-3.2342	-2.1469	-4.3863**	-2.4692	-2.7428	-7.1057**
LEXC	-1.2042	-3.9444*	-5.5778**	-0.9560	-4.8158**	-9.4988**
Critical Value						
1%	-4.2826	-4.2949	-4.3082	-4.2712	-4.2826	-4.2949
5%	-3.5614	-3.5670	-3.5731	-3.5562	-3.5614	-3.5670
10%	-3.2138	-3.2169	-3.2203	-3.2109	-3.2138	-3.2169

Source: Extracted from Eview 4.0; *(**) stationarity at 5%(1%) respectively

A cursory look at table 4.2 reveals that there are at least two co-integrating equations for the trace test both at 5 and 1 percent levels while the max-eigenvalue test contains at least one co-integrating equation each at 1 or 5 percent confidence level respectively. This shows that there is a long run relationship between inflation, military expenditure and the other macroeconomic variables employed in the study.

Table 4.2: Co-integration Results

Null Hypothesis	Alternative Hypothesis	Statistical Value	5 percent critical value	1 percent critical value	Eigen value
Trace Statistics					
r = 0	r > 0	138.2	94.2	103.2	0.82
r > 1	r > 1	84.8	68.5	76.1	0.70
Max-Eigen Statistics					
r = 0	r = 1	53.4	39.37	45.10	0.82
r <1	r = 2	37.7	33.46	38.77	0.70

4.2 Results of ARCH Estimate

Table 4.3 is divided into three panels in which panel one contains output of the independent variables, two is the variance equation of the ARCH model while three is the diagnostic test. In panel three, the F-stat is presented along-side its probability value. Thus, it can be seen that the model is normally specified since the Jaque-Bere p-value is less than the critical level of 5% or 0.05 so that the alternative hypothesis is rejected and we can conclude that there is no specification problem. Similarly, the ARCH LM test reveals that autocorrelation is not a problem as the p-value is less than the critical level. Although in panel two, the DW statistics of 1.47 shows presence of negative serial correlation, this does not pose any problem since the ARCH LM test rejects the alternative hypothesis.

Table 4.3: ARCH Results

Dependent Variable: LINF
Method: ML - ARCH

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Constant	-3.414702	4.823749	-0.707894	0.4790
LRME (1)	0.693190	0.351671	1.971134	0.0487
LCME (1)	-0.289557	0.188408	-1.536860	0.1243
LINT (1)	0.931750	0.715571	1.302107	0.1929
LMS (2)	0.077298	0.540577	0.142992	0.8863
LEXC (1)	-0.493884	0.575521	-0.858152	0.3908
Variance Equation				
Constant	0.030616	0.085184	0.359410	0.7193
ARCH(1)	0.804437	0.662697	1.213883	0.2248
GARCH (1)	0.279122	0.455159	0.613240	0.5397
R^2 = 0.22; F-stat = 0.63; DW = 1.47				
Diagnostics Test				
Jarque-Bera (Normality) Test: F-stat = 1.62, Prob = 0.44 ARCH LM Test: F-stat = 0.83, Prob = 0.37				

However, the F-stat of 0.63 is somehow low and it shows that the model is not significant while R^2 reveals that about 22 percent of inflation rate in Nigeria is explained by the independent variables.

Table 4.3 further shows that the impact of capital military expenditure and exchange rate on inflation rate are negative while recurrent military expenditure, interest rate and money supply exert positive influence on inflation in Nigeria within the period under review. For example, a one percent increase in recurrent military expenditure has the tendency to increase inflation by 0.69 percent while a one percent increase in capital military expenditure is capable of decreasing inflation by 0.29 percent. However, only recurrent military expenditure is statistical significant in explaining inflation in Nigeria. The negative constant shows that in the absence of the independent variables, inflation rate in Nigeria would be negative.

In panel two, the sum of the ARCH and GARCH coefficients ($\alpha + \beta$) of equation (4) above is close to one indicating that volatility shocks are quite persistent. This means that inflation in Nigeria for the period under review was highly volatile.

Table 4.4: Granger Causality Test

Pairwise Granger Causality Tests
Date: 02/08/14 Time: 17:51
Sample: 1980 2012
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
LOG(TME) does not Granger Cause LOG(INF)	32	1.38430	0.24894
LOG(INF) does not Granger Cause LOG(TME)		0.82655	0.37077

For causality to be established between the variables, the p-value must be less than the chosen level of significant which in this study is 5% or 0.05. Thus, for both variables, the p-value is greater than 0.05 and hence we cannot reject the null hypothesis and concluded that there is no causality between inflation and military expenditure in Nigeria for the period being considered. That is neither inflation nor military expenditure causes each other.

5.1 Concluding Remarks

The paper entitled *Impact of Military Expenditure on Inflation in Nigeria; 1980-2012* examines military expenditure both as aggregate and disaggregate levels.

The focus of the study is to find out whether annual increase in military expenditure contributes in fuelling inflation in Nigeria. Thus, the variables employed for the study were inflation rate, recurrent and capital military expenditure, interest rate, money supply and exchange rate. The econometric methodology encompasses test for stationarity, co-integration, ARCH and granger causality tests. While the disaggregated value of military expenditure was used for the ARCH test, the study employs total military expenditure for the granger causality test. The paper found that there is a long run relationship between the macroeconomic variables. Whilst impact of capital military expenditure and exchange rate on inflation rate is negative, recurrent military expenditure, interest rate and money supply exert positive influence on inflation in Nigeria.

Finally, the paper could not establish causality between inflation and military expenditure during the period under review and recommended that any increase in military expenditure should be on the capital component whose impact on inflation is negative. Also, increase in money supply that fuel inflation should be checked while devaluation in the exchange rate that reduces the value of the naira and result in inflation should be discouraged.

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