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The Effectiveness of Fiscal Policy on Inflation Control in Nigeria (1981-2013)

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Abstract
The study investigates the effectiveness of fiscal policy on inflation control in Nigeria. Augmented Dickey Fuller (ADF) was adopted in determining the stationary condition of the variables. The variables were stationary at first difference. Thus Johanson co-integration test was employed to test for the convergence of the variables. The result revealed that there is existence of long run convergence and thus, the variables were co-integrated. However, error correction technique was used to minimize the effect of spurious regression. The overall result showed that the inflation rate in Nigeria is not exogenous and therefore the variables only respond to policy shocks.
Keywords: Fiscal policy, inflation, and policy implication.

INTRODUCTION

Background of the study

The maintenance of price stability, growth in output and full employment are the three major pursuits of macroeconomic goals (Blanchard and Fisher 1993). The maintenance of price stability continues to be the overriding objective of the macroeconomic policy for most countries in the world today. In an inflationary economy, the functions of money as a medium of exchange and store of value adversely affects output, employment and income distribution (CBN1984) by implication the achievement of two other goals i.e. full employment in output revolves around the objective of price stability.

Inflation is a social malady as well as pervasive econometric phenomenon whose effects are felt in varying degrees by every citizen and in all sectors of the economy. Persistence increases in general price level has always being a compelling problem to both policy makers and the entire citizenry in Nigeria.

The government and the central bank of Nigeria employed the tools of fiscal and monetary policies in regulating the economy. The objective of monetary and fiscal policy are wide ranging from increase in Gross Domestic product (GDP) growth rate, reduction in rate of inflation and unemployment improved balance of payment accumulation of financial savings and external reserves as well as stability in exchange rate of naira (Yakubu,Bafour and Sheu 2013). Generally, two policies i.e. fiscal and monetary policies aim at achieving macroeconomic stability. There are a lot of cyclical fluctuations in the country's economic activities which has led to periodical increase in the countries unemployment and inflation rate as well as external sector disequilibria (Nathan 2012). Fiscal policy as a major economic stabilization weapon that involves taken measure to regulate and control the volume, cost and availability as well as direction of money in an economy to achieve some specified macroeconomic policy objective and to combat undesirable trends in the Nigerian economy (Nathan2012b),

Other economic policy like monetary policy and exchange rate policy and market forces of demand and supply cannot be effectively used as stabilization policy. These necessitate the use of fiscal policy instrument in stabilizing the economy. Fiscal policy instrument could be in form of either increase or decrease in taxes as well as government expenditure which constitute the bedrock of fiscal policy, but in reality ,government policy require both fiscal policy and monetary instrument to stabilize the economy since one of this single instrument cannot combat all the economic problem. (Ndiyo and Udah 2003).

Fiscal policy instrument involves increase taxes (such as income tax and VAT) and reduce spending. This will improve the budget situation and helps to reduce demand in the economy. Both of these policies reduce inflation by reducing growth of aggregate demand. In Nigerian's case, the economy seems to be growing reasonably strongly. Therefore, inflation can be reduced without causing a recession (Tejvan 2013).

Other policies to control inflation is wage control, in a situation whereby general price increase is caused by wage inflation e.g. powerful unions bargaining for higher real wage growth can help to reduce inflation. Lower growth of wage goes a long way to reduce cost push inflation and helps to moderate demand pull inflation. Tejvan (2013).

Statement of the Problem

The world's economy experienced a lockstep movement during the peak of the global financial crisis in recent decades than any other time. There were rapid correlations of GDP growth which had been moderate in the years before the crisis drastically rose up between the period of 2007-2009. The increased co-movement was not restricted to the developed economies, which is the source of global financial crisis, but spread across all

geographic regions and developed, emerging market and developing economies (IMF 2013).

The problem of economic recession started in Nigeria in the early 1980s which led to depression in the mid-1980s. The economic depression continues until early 1990's without being able to recover from it. As a result, government initiated various policies measures in other to combat and overcome the problem of which much could not be achieved. Also from 1992 – 2002, the economy experienced another period of macro-economic instability characterized by distortion of macroeconomic aggregate from policy target for example the policy target for 2002 GDP growth rate was 5 percent of which 3.5 could only be achieved. Also, the target for M2 was 26 percent as against 15.3 percent proposed while that of inflation was 12.9 percent as against the proposed policy target of 9.3 percent.

However there was an improvement in the economic performance in 2003. There is clear evidence from available statistics (National Bureau of Statistics) that GDP increased by 10.2 percent compared with 3.5 percent in 2002. Inflation rose from 12.9 percent to 14 percent between 2002 and 2003. The increasing magnitude of money supply which exert pressure on the exchange rate and domestic demand and hence persistence price increase has being the major source of macroeconomic instability (Enang 2009b). This study intends to implore the extent to which fiscal policy can combat inflationary trend in the Nigerian economy.

Conceptual framework and literature review

Fiscal policy constitute one of the important tools used by government in the pursuit of macroeconomic stability in the economy of most developing countries. Various researchers had attempted to carry out empirical test on the efficacy of fiscal and monetary policies on Nigerian economy. Nathan empirically investigated the impact of fiscal policy on the Nigerian economy employed the co- integration error correction model (ECM) to estimate his data between 1970 and 2010. He concluded that there is a causal relationship between gross domestic product (GDP) and money supplied, fiscal deficits and exports and that there was a causal relationship between export and gross domestic product and hence fiscal policies.

The empirical investigation of (Aminu and Anono 2012), employed Augmented Dickey Fuller technique in testing the unit root property of the series and Granger. Causalty test of causation between GDP and inflation 1970- 2010. The result suggests that all the variables in the model are stationary while the test of casualty concludes that GDP causes inflation and not inflation causing GDP. The result also reveal that inflation possess a positive impact in economic growth by encouraging productivity and output level and on evolution of total factor productivity.

Also, in the study of Yakubu, Bafour and Sheu tested the effect of monetary, fiscal policies interaction on price and output growth in Nigeria and test for dynamic correlations of variables captured by the impulse response analysis and variance decomposition. The finding shows that policy variables i.e. Money supplied and government revenue has more positive impact on price and economic growth in Nigeria specifically in the long run, thus sometimes with lag

Analytical Methodology

The study adopts an econometric approach in its empirical analysis of the effectiveness of fiscal policy on inflation control in Nigeria. The data used in this study were from secondary source mainly from central Bank of Nigeria's statistical bulletin and it covers the period of (1981 - 2013).

Specification of Empirical model

The model is specified in line with the Nathan Pelesai Audu (2012)

$$\Delta INFL_t = \propto_0 + \sum_{i=1}^{k} \propto_1 \Delta INFL_{t-i} + \sum_{i=1}^{k} \propto_2 \Delta TAX_{t-i} + \sum_{i=1}^{k} \propto_3 \Delta GOVE_{t-i} + \propto_4 e_{t-1} + V_t$$

$$\Delta TAX_t = \propto_0 + \sum_{i=1}^{k} \propto_1 \Delta INFL_{t-i} + \sum_{i=1}^{k} \propto_2 \Delta TAX_{t-i} + \sum_{i=1}^{k} \propto_3 \Delta GOVE_{t-i} + \propto_4 e_{t-1} + V_t$$

$$\Delta GOVE_t = \propto_0 + \sum_{i=1}^{k} \propto_1 \Delta INFL_{t-i} + \sum_{i=1}^{k} \propto_2 \Delta TAX_{t-i} + \sum_{i=1}^{k} \propto_3 \Delta GOV_{t-i} + \propto_4 e_{t-1} + V_t$$

INFL = *f*(TAX,GOVE)

Where INFL is the inflation rate

Tax - is Tax revenue

Gove = Government expenditure

This research will subject the variables to unit root test in order to examine their stationarity condition and carry out long run convergence test using Johansen cointegration test. The vector error correction model will capture the variables short run adjustment and causality test.

Table 1.UNIT ROOT TEST

Variables	ADF at level	ADF (Difference)	Remarks
Log(INFL)	-2.294218	-3.599841	I(1)
Log(Tax)	-0.277332	-4.154554	I(1)
Log(GOVE)	-2.229751	-6.066377	I(1)

Author Computation using Eviews 7

Table 2: Johansen Cointegration Test

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value
None *	41.05581	29.79707
At most 1 *	23.15847	15.49471
At most 2 *	7.373551	3.841466

Table 3: Vector Error Correction Model

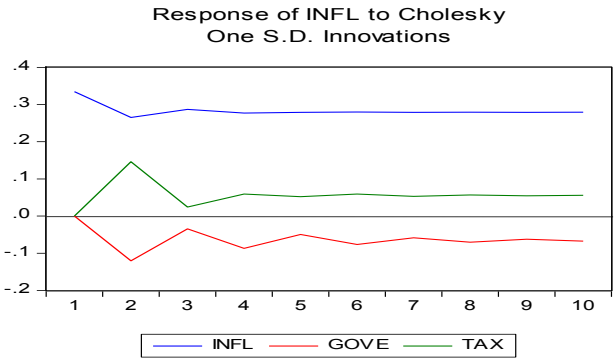
Variables	D(INFL)	D(GOVE)	D(TAX)
ECT	-0.062258 (0.02042) [-3.0479]	-0.038553 (0.07592) [-0.50783]	-0.285204 (0.06375) [-4.47376]
D(INFL(-1))	-0.181581 (0.19016) [-0.95486]	0.031808 (0.17970) [0.17701]	0.124785 (0.15090) [0.82696]
D(GOVE(-1))	-0.414691 (0.15914) [-2.60578]	-0.691305 (0.15038) [-4.59697]	-0.046657 (0.12628) [-0.36947]
D(TAX(-1))	0.273683 (0.25979) [1.05347]	0.162096 (0.24549) [0.66029]	0.121591 (0.20615) [0.58982]
C	-0.013158 (0.06061) [-0.21707]	-0.017511 (0.05728) [-0.30573]	-0.002894 (0.04810) [-0.06017]
R-squared Adj. R-squared F-statistic	0.880484 0.844405 44.12932	0.479196 0.399072 53.98070	0.616824 0.557873 10.46346

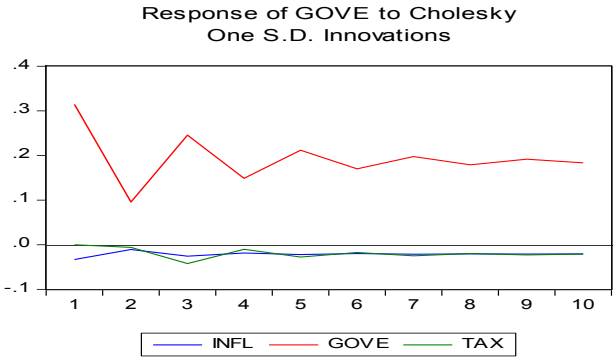
Table 4: VEC Granger Causality/Block Exogeneity Wald Tests

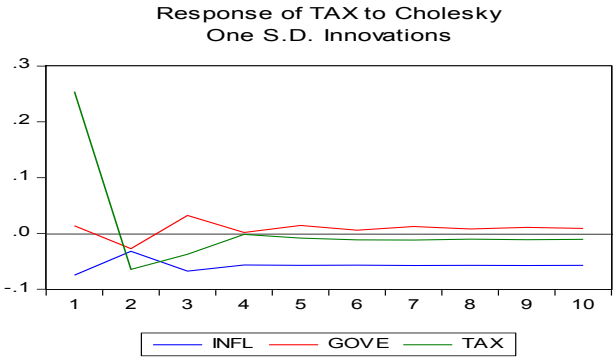
Dependent variable: D(INFL)		
Excluded	Chi-sq	Prob.
D(GOVE)	6.790094	0.0092
D(TAX)	1.109794	0.2921
All	7.229382	0.0269

Dependent variable: D(GOVE)		
Excluded	Chi-sq	Prob.
D(INFL)	0.031332	0.8595
D(TAX)	0.435984	0.5091
All	0.490504	0.7825

Dependent variable: D(TAX)		
Excluded	Chi-sq	Prob.
D(INFL)	0.683856	0.4083
D(GOVE)	0.136508	0.7118
All	0.709052	0.7015







The Interpretation

The study adopted the Augmented Dickey Fuller (ADF) test in determining the stationarity condition of the variables. The variables were not stationary at level but tend to be stationary at first difference. However, the lack of stationarity at level aroused the need to determine the long run convergence of the variables . In testing the long run convergence of the variables, the study adopted the Johansen cointegrating test. The test shows the existence of three cointergrating equation, which implies that there exist long run convergence and thus the variables are cointegrated.

In order to minimize the effect of spurious regression the research adopted the error correction technique with the aim of examing the short-run adjustment of the model and determine the directional causality direction of the variables . The vector error correction term of -0.06225 indicates that 6.225percent of disequilibria will be corrected annually (periodically) in the model of inflation rate, the exogeneity test indicates that there is existence of causality between inflation rate and government expenditure, while tax does not granger cause inflation in Nigeria. However, inflation rate and tax does not granger cause government expenditure. Also, inflation and government expenditure does not granger cause tax. The results in the table show that inflation rate in Nigeria is not exogenous and therefore, the variable responds to the shocks in policy.

Conclusion and recommendations

Based on the findings it was discovered that tax does not cause inflation in Nigeria while Government expenditure granger cause inflation over the period. From the model estimated the following policy implication are worthwhile: The fiscal policy shocks exerts great impact on the control of inflation in the short run in Nigeria. The impulse responses table indicates that a shock to price level will flatten out in long runs. The increase in the government expenditure will have an increasing effect on the price level, while tax policy tends to be ineffective in determining the growth of the inflation.

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