Fiscal Deficits and Economic Growth in Nigeria: A Chow Test Approach

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ABSTRACT

The recent criticism of poor fiscal performance levelled against the democratic regimes in Nigeria has resulted in questions being asked as to the soundness of the acclaim which heralded its advent. Such questions generally focus on the growth impacts of the deficits incurring during this regimes. In view of this, this study examined the relative impact of fiscal deficits (FSD) on economic growth in Nigeria during the military and democratic regimes. The study employed Chow endogenous break test, unit root and cointegration tests. The results derived from the Chow test analysis reveal that there is a difference between the growth-impact of FSD in the two regimes. In particular, the study found that FSDs had a significant growth-impact during the military regime, while it has not had a significant impact on economic growth during the democratic regime. On the other hand, the study's results indicated that the interest rate did not have a significant growth-impact during both regimes, while the gross fixed capital formation had a significant growth impact during both regimes in view of the findings, the study recommended the strengthening of the country's budgetary institutions so as to ensure the de-politicization of the budgetary process. Furthermore, the study recommended the reduction in the current lending rate so as to ensure increased access to investment funds by domestic entrepreneurs.

Keywords: Fiscal Deficit, Economic Growth, Chow Test, Military Regime, Democratic Regime
JEL Classifications: C40, D53, E42, G17, O23, O40, P43

1. INTRODUCTION

The attainment of a sustained level of economic growth is a key objective of national governments, especially those with nascent democracies such as Nigeria. This is in spite of the heavy emphasis on development. The importance of the maintenance of sustained rates of growth stems from its importance as a prerequisite for development. In general, the attainment of this goal in developing countries has involved the extensive use of fiscal policy which has resulted in the maintenance of a sustained fiscal deficit (FSD) (Umaru and Gatawa, 2014). However, over time there has been a strong debate as to the efficacy of fiscal policy as an instrument of macroeconomic stabilization and the promotion of economic growth, with proponents arguing that monetary policy is better suited for the achievement of such objectives. This debate is hotter where the issue of the long-term sustenance of FSDs is concerned, especially with respect to developing countries (Umaru and Gatawa, 2014).

With respect to the effects of deficit financing, Fasoranti and Amasoma (2013); Umaru and Gatawa (2014) have observed that the manner in which FSDs are financed is a major determinant of its impact on the economy. FSDs are usually financed using external and internal sources. The use of the former creates a deficit in the current account resulting in exchange rate appreciation and disequilibrium in the balance of payments, while the latter results in high interest rates and a decrease in private investment borrowing-, and seigniorage (Osinubi and Olaleru, 2006; Fasoranti and Amasoma, 2013). The impact of domestic financing of deficit is explained by the crowding out theorem which is based on the argument that increases in government expenditure generally leads to an inefficient allocation of society's resources by starving more efficient private investors of investment funds. In essence, government spending essentially "crowds out private investment." In this regard, Ojong and Owui (2013) observed that the continuous deficit financing in the economy through the central banks sometimes results in inflationary pressures by creating excess

liquidity in merchant and commercial banks through as a result of the existence of excess reserves. Another strand of theory, the Ricardian theory, sees FSD as having no growth effects. This is based on the argument that such deficits do have not stimulate consumption or crowd out private investment because it does not have an impact on the real interest rate (Mohanty, 2012).

On the other hand, Keynes saw FSDs as "a short-run a short-run phenomenon anchored on the multiplier effect of government expenditure on national output." The view is based on the existence of idle resources in the economy. Deficit spending is thus necessary because it will, given a high marginal propensity to consume, lead to increase the level of output and investment in the economy (Umaru and Gatawa, 2014). The Keynesians are also of the view that private investors are generally more optimistic about the future course of the economy when there is a budget deficit since deficits increase domestic output, thus, inducing them to invest more in what is known as the "crowding in effect" (Saleh, 2003).

In Nigeria, FSDs are a reoccurring theme. The poor state of the nation's infrastructures, chronically high levels of poverty and the need to ensure rapid economic growth, especially during the recent recession, have been the some of the main reasons put forward by governments over time for the perpetuation of FSDs. However, in view of the criticisms and accusations of fiscal irresponsibility, corruption and wanton misappropriation of public funds which have so far been levelled against the government in recent times, there is a need for assessment of such justification of the sustenance of FSDs. This is more evident when the general optimism which was associated with the advent of the current democratic era in 1999 is taken into account. Prior to this period, the various military administrations were accused of high levels of corruption and the maintenance of deficits as a means of enriching the then military rulers, despite the potential negative impacts of such actions on the economy. This is further reinforced by analysts' argument that military governments generally have poor deficit outcomes which erroneously dissociates democratic governments from the accumulation of such deficits (Udoh et al., 2012). The return to civilian rule it was hoped would usher in a new era of fiscal discipline and economic prosperity. However, nearly 16 years later, the country is still no closer to achieving the growth targets it aspired to in 1999. While, the studies on the Nigerian economy have examined the growth effects of FSDs form various angles, the relative performance of FSDs under military and civilian governments in Nigeria has so far been neglected. This study seeks to redress this issue by examining the impact of FSD on economic growth in Nigeria before and during the advent of the current democratic era. The study covers the period 1986-2013.

2. REVIEW OF RELATED LITERATURE

The growth impact of FSDs in developing countries has been a subject of serious interest to researchers. Such studies have yielded mixed results, depending on the political and institutional characteristics of the respective countries. For instance, in a survey of studies on the budget deficit-interest rate relationship, Saleh (2003) found sufficient evidence of the presence of a strong link between the two variables. The study also found that deficit financing through increases in money supply and monetization had potential inflationary consequences. The results of a related study by Onwioduokit and Bassey (2014) indicated that FSDs have a significant and positive impact on real economic growth in Gambia, and that such impact is with a 1-year lag. Ahmad (2013) found the existence of a bi-directional causality between budget deficit and gross domestic product (GDP) in Pakistan. Velnampy and Achchuthan (2013) on the other hand, found that FSD did not have a significant growth impact in Sri Lanka. Acaravci and Ozturk (2008) examine the general validity of twin deficits hypothesis for Turkey during the period 1987:1-2005:4 by using autoregressive distributed lag (ARDL) model and the bounds test for cointegration were used to assess the short-run and long-run dynamics between the twin deficits in Turkey. The empirical analysis in this paper rejects the Ricardian equivalence hypothesis and supports the Keynesian view that there is a long-run relationship between budget deficit and current account imbalances. The empirical results also indicate that the direction of causality runs from the budget deficit to the current accountdeficit. In general, the interest in the effects of FSDs in Nigeria mirrors the global interest. As such, several studies have also been carried out to examine this relationship. In this regard, in Audu (2012) found that FSDs have had a significant effect on the GDP in Nigeria. The results of Ojong and Owui (2013) indicated the existence of a significant link between deficit financing and growth in Nigeria. The results of another study by Umaru and Gatawa (2014) which was based on the disaggregation of government expenditure using the ARDL approach indicated that FSDs induces growth in Nigeria.

On the other hand, the results of the study by Wosowei (2013) indicated that FSDs did not have a significant impact on macroeconomic performance in Nigeria. The study also found bidirectional causality between GDP, unemployment, taxes and FSDs. Similar results were obtained by Ezeabasili et al. (2012). Their findings showed that FSDs have a negative impact on economic growth in Nigeria. The study by Fasoranti and Amasoma (2013) found the existence of a bi-directional causality between external sector performance and budget deficit in the long run in Nigeria. A unidirectional causality was however found to exist from the former to the latter in the short run.

The review of literature so far carried yields mixed results. However, in general, these studies examined the impact of FSDs on macroeconomic performance in Nigeria over time without clearly showing the relative impact of such deficits under different administrative/political setting. Doing so would clearly provide answers to questions on the impact of political considerations and institutional quality under different administrative regimes on the growth-performance of FSDs. This is the issue which this study addresses.

3. ASSESSMENT OF THE PERFORMANCE OF FSD IN NIGERIA

The performance of FSDs in Nigeria is assessed through the use of the deficit-GDP ratio (FPR). This is carried out for both

military and democratic regimes using the aid of the following Figures 1 and 2.

The graphical representation of the deficit-GDP ratio (FPR) as shown in Figure 1 shows that the performance of deficit under the military regime was low during the 1980s' and early 1990s'. However, a significant rise in the ratio occurred between the years 1993 and 1998, with the deficit-GDP ratio being positive between 1995 and 1997. This indicates an improved fiscal performance during that period. However, the performance of FSDs decline in the later part of the era.

On the other hand, the performance of FSD as is given in Figure 2 shows that while there was an increase in the deficit-GDP ratio during the democratic era - 1999-2008, such increase was negative. This indicates a poor deficit performance during the period. The deficit-GDP ratio also decline in the years 2009-2013.
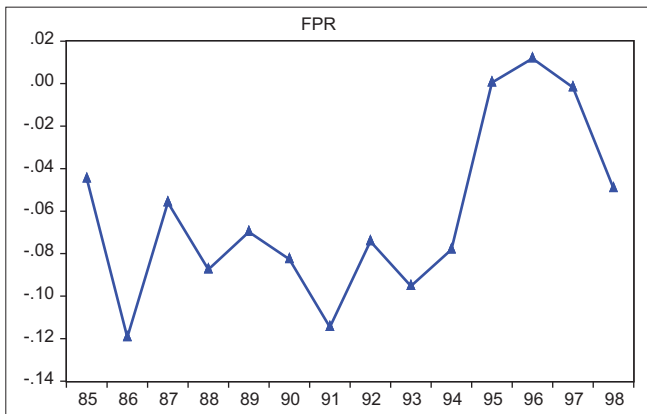
4. MODEL

This study is anchored on the Keynesian view of the efficacy of fiscal policy. The model for the study is given as follows:

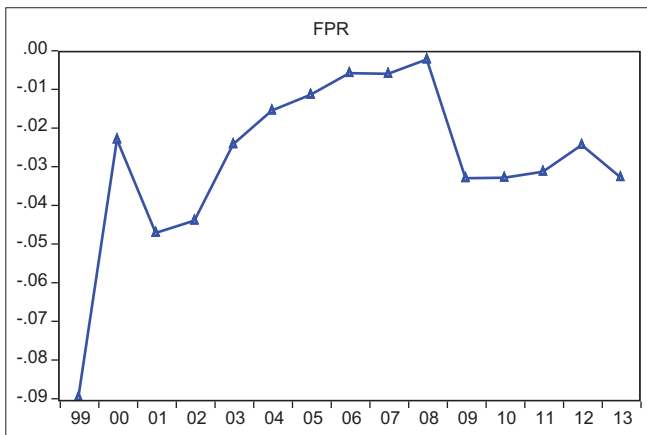$$GDP = \Theta_0 + \Theta_1 \, FSD + \Theta_2 \, IRS + \Theta_3 \, LAU + \Theta_4 \, CAF + U$$
$$\Theta_0 > 0, \Theta_1 > 0, \Theta_2 < 0, \Theta_3 > 0 \text{ and } \Theta_4 > 0$$

Figure 1: Deficit performance during the military regime

Source: Authors' computation

Figure 2: Deficit performance during the democratic regime

Source: Authors' computation.

Where
GDP = Gross domestic product (uses as a measure of economic growth)
FSD = Fiscal deficit
IRS = Interest rate
CAF = Gross fixed capital formation
U = Stochastic error term

5. METHODOLOGY AND SOURCES OF DATA

The data for this study is derived from the Central Bank of Nigeria statistical bulletin. The study uses the augmented Dickey–Fuller (ADF) test to examine the data for the existing of unit roots. The Chow endogenous breaks test to examine the growth impact of FSDs before and after the advent of democracy on the level of economic growth. According to Koutsoyannis (2001), the Chow test is given by the formula:

$$F^* = \left\{ \left[\sum e_p^2 - \left(\sum e_1^2 + \sum e_2^2 \right) \right] / k \right\} / \left\{ \frac{\left(\sum e_1^2 + \sum e_2^2 \right) /}{\left(n_1 + n_2 - 2k \right)} \right\}$$

Where
e_p = Estimated error term for the pooled sample
e_1 = Estimated error term for the first sample
e_2 = Estimated error term for the second sample
n_1 = The total number of observations in the first sample
n_2 = The total number of observations in the second sample
k = The total number of parameters in the model

6. EMPIRICAL RESULTS

The results of this study are presented and analysed as shown in Table 1.

The ADF test reveals that GDP and CAF are stationary at level. On the other hand, FSD and the interest rate (IRS) are stationary after first differencing.

The computed Chow test statistic given in Table 2 indicates the rejection of the null hypothesis of no breaks at the specified

Table 1: ADF test

Variable	ADF test statistic	Critical value (5%)	ADF test statistic	Critical value (5%)	Order of integration
GDP	5.247484	−2.971853			I (0)
FSD	0.664183	−2.971853	−4.374364	−2.976263	I (1)
IRS	−2.770015	−2.971853	−5.657248	−2.981038	I (1)
CAF	−4.355391	−2.986225			I (0)

Source: Authors' computation. ADF: Augmented Dickey–Fuller

Table 2: Chow breakpoint test: 1999

Null hypothesis: No breaks at specified breakpoints	
F-statistic	4.394241*

*F**=2.84. Source: Authors' computation

break points. This means that there is a significant change in the parameters of the model at that point. The result implies that there is a significant difference between the growth-impact of FSDs before and after the onset of the current democratic era.

The results of the regression for the pre-democratic regime are presented in Table 3. The result indicates that FSD and the level of fixed capital formation had a significant and positive impact on economic growth during the military era. On the other hand, the interest rate was not a significant determinant of economic growth within the period. The R^2 indicates that the model used in the study has a strong fit, while the F-statistic confirms the adequacy of the model. Finally the DW statistic is inconclusive.

The results of the regression for the democratic era presented in Table 4 shows that FSD and the interest rate have not had a significant impact on economic growth during the current democratic regime. On the other hand, the level of fixed capital formation has had a significant impact on economic growth in Nigeria during the current democratic regime. The R^2 indicates that the model used in the study has a strong fit, while the F-statistic confirms the adequacy of the model. Finally the DW statistic is inconclusive.

7. CONCLUSION AND POLICY RECOMMENDATIONS

The general acclaim with which the advent of democracy in Nigeria was greeted was due to the expectations of the country's citizens that a democratic government would usher in an era of economic prosperity and the entrenchment of human rights. This it was believed would be achieved the implementation of prudent macroeconomic policies and the strengthening of institutions

to ensure good governance. The then military government was accused of a high level of fiscal imprudence which it was pointed out was the reason for the country`s macroeconomic woes. However 16 years later, the country has still not experienced an a relatively appreciable rate of growth, this is in spite of the recent rebasing of the country`s GDP which makes the Nigerian economy the largest in Africa. Among Nigerian, the general feeling is that the relatively low growth rates of the country as is evidenced in the low levels of expansion of economic activity is largely a product of the sustained FSDs it has been argued is characterised by an extremely large recurrent expenditure. It is argued that the maintenance of large FSDs is largely due to over-inflation of contracts and the prevalence of unproductive projects.

In view of the above, this study was carried out to examine the relative impact of FSDs on economic growth in Nigeria during the democratic and military regimes. The results of obtained indicate that there is a significant difference between the impact of FSDs on economic growth in the two regimes. However, FSD was observed to have significant growth-impacts during the military era and insignificant growth-impact during the democratic regime. The study also found that the interest rate did not have a significant growth-impact during both regimes, while the gross fixed capital formation had a significant growth impact during both regimes.

The findings imply that the countries institutions are weak and that the popular view that there is no prudence in the choice of and implementation of deficit budgets by the civilian regimes. The argument here is that the recent argument for the sustenance of FSDs which was tied to the need to cushion the Nigerian economy and Nigerians from the effects of the recent global financial crisis is untenable. This is because the results confirm the popular belief that the country's expenditure are over inflated and largely unproductive. In view of this, the study recommends strengthening of the country's fiscal institutions. This will de-politicize the budget formulation and implementation process which will ensure that budgets, whether deficit, surplus or balanced, have a positive growth impact in the country. Furthermore, the study recommends the reduction in the current lending rate so as to ensure increased access to investment funds by domestic entrepreneurs.

Table 3: Regression for the era of military rule

Variable	Coefficient	Standard error	t-statistic	P
C	157725	132651.7	1.189016	0.2619
FSD	3.260985	0.912432	3.573948*	0.0051
IRS	−18379.44	8648.756	−2.125097	0.0595
CAF	12.85386	0.409676	31.37568*	0
R^2	0.990243			
Adjusted-R^2	0.987316			
F-statistic	338.2973			
DW	2.459161			

t*=2.228, F*=3.71. Source: Authors' computation

Table 4: Regression for the democratic era

Variable	Coefficient	Standard error	t-statistic	P
C	5061821	4071470	1.243242	0.2396
FSD	5.359984	3.23817	1.655251	0.1261
IRS	−86266.34	257072	−0.335573	0.7435
CAF	9.013793	1.050639	8.57934*	0
R^2	0.976778			
Adjusted-R^2	0.970445			
F-statistic	154.2301			
DW	2.211029			

t*=2.201, F*=3.59. Source: Authors' computation

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