

Fiscal Policy Rules for Managing Oil Revenues in Nigeria

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Abstract

Nigeria is heavily dependent on oil revenue to finance over 80 per cent of its total expenditure, making its budget vulnerable to fiscal shocks. This poses a serious threat both to the sustainability of the country's budget and to its macroeconomic stability. Oil windfall induces government spending that is difficult to retrench when the oil revenue falls, distorting government budget allocation pattern, cohesion and stability and increase deficits and debt stock that has often created an unfavorable environment for monetary policy. The question then is what form of fiscal policy rules will perform better in reducing debt accumulation and promote the necessary medium-term budget deficit stability. Theoretically, Basci et al (2004) proposed two alternative fiscal policy rules in terms of their impact on debt sustainability: a rule that fixes the ratio of primary surplus to GDP ("fixed surplus rule") and one that sets the primary surplus as a linear function of debt to GDP ratio ("variable surplus rule"). In this paper, we extend the analysis looking at the effect of being dependent on natural resource revenues on the sustainability of the two rules. A simple debt dynamic equation, incorporating real shocks and oil price dynamic, is constructed, and the probability of exceeding the steady state debt level is simulated using Monte Carlo technique. The results show that the fixed surplus rule performs better than the simple variable surplus rule when real interest rate is relatively high and the ability to adjust government expenditure is limited.

Keywords: Fiscal Policy Rules, Debt sustainability, Monte Carlo Simulation, Nigeria

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1. INTRODUCTION

Macroeconomic dynamic in Nigeria has been dominated in the past by fiscal instability. There have been a strong deficit and debt bias stemming from government revenue volatility. As a result, monetary authority has been forced to implement neutralizing monetary policies leading to macroeconomic instability.³

Policies adopted in response to high debt levels among the emerging and developed countries vary. Brazil and Turkey have used the fixed primary surplus rule, which fixes the ratio of primary budget surplus to GDP (Basci et al, 2004). Argentina and Peru have applied limits to the overall balance and primary expenditure. New Zealand has rules for the operating balance as well as debt limits.⁴ There is also the Stability and Growth Pact in the European Union, though the issue of flexibility is beginning to appear in the practical application of the constraints.⁵

Drawing on this literature, the paper illustrates the appropriate fiscal policy rules that will perform better in reducing debt accumulation and promote the necessary medium-term budget deficit stability in Nigeria. It intends to supplement a similar work by Baunsgaard (2003).⁶

The paper compares the performance of the fixed primary surplus rule to an alternative, the variable primary surplus rule, under which the primary budget surplus is explicitly defined as an increasing function of the debt-to-GDP ratio, using Monte Carlo technique. However, since government revenue in Nigeria is exogenously given, the paper deviates a bit from the existing literature by decomposing the primary surpluses into gross budgetary revenue and non-

³ See Batini (2004) and Obinyeluaku (2006)

⁴ See Kopits and Symansky (1998) and Kopits (2001).

⁵ See Dixit and Lambertini (2003) for more details.

⁶ He designed a fiscal rule nested within the long-run sustainable use of oil revenue in Nigeria.

interest budgetary expenditure in order to capture not only the volatility in revenue via oil price dynamic, but also to control for the government expenditure.⁷ At least, for any fixed (variable) primary surplus rule, there is also the level of fixed (variable) budgetary expenditure necessary to maintain such rule. Shocks to real economy and oil prices are incorporated in the model.⁸ As the criterion of comparison, we use the probability of exceeding the sustainable debt level at the end of the simulation horizon starting from a given initial debt level.

The results show that in general the variable surplus rule performs better than the simple fixed surplus rule, by reducing debt accumulation and the necessary medium-term primary surplus. On the other hand a fix surplus rule works better when the real interest rate is relatively high, i.e. when the explosive behavior of debt dynamic is especially pronounced: With both rules fiscal stability implies a marked increase in expenditure variability, more pronounce for the variable interest rule. This result suggests that the government's ability to make a credible commitment to a fiscal rule depends on the flexibility of fiscal expenditure.

The paper is organized as follows. Section II provides a brief overview of past fiscal policy in Nigeria. Section III develops the model, and the analytical definitions of the two fiscal rules and debt sustainability. The results of the numerical simulations are presented in section IV and V. Section VI concludes.

II THE FISCAL STANCE

The past two decades have witnessed a considerable increase in government indebtedness in Nigeria. Beyond the issue of poor quality of public

⁷ Fiscal policy rules could play a role in stabilizing expenditure programs at level consistent with the necessary medium-term deficit stability.

⁸ A fiscal rule targeting a certain overall or primary fiscal balance in Nigeria without taking into account, oil revenue volatility, will not prevent procyclical fiscal policies (Baunsgaard, 2003).

expenditure, the ability to save windfalls from excess crude oil proceeds by the government remains critical in ensuring that government expenditure is maintained at a sustainable level and consistent with the absorptive capacity of the economy.

Figure 1a reveals that there is a substantial increase in government spending, primary deficit and debt in Nigeria between 1980 and 2005. The oil windfall between 1990 and 1992 was followed by rapid growth in government spending with an average of about 21 percent of GDP during that period. However, as the oil market weakened in the subsequent years, oil receipts were not adequate to meet increasing levels of demands, and expenditures being reinforced by political pressures, were not rationalised. Government resorted to borrowing mainly from the central bank to finance the huge deficits (see figure 1b).

From figure 1b, the CBN absorbs almost half of the Nigerian public debt following Commercial bank and the public. This implies that government is mainly financing its huge deficits through seigniorage – the so called “fiscal indiscipline.” And when government prints money (or use seigniorage), it increases the money supply and this in turn causes inflation.

Although the democratically elected government in 1999 adopted policies to restore fiscal discipline, the rapid monetization of foreign exchange earnings between 2000 and 2004, another era of oil windfall, resulted in a large increases in government spending. In 2005 alone, government spending increases to 19 percent of GDP from 14 percent in 2000. Extra budgetary outlays not initially included in the budget increased. Worst till, most of this spending are not directed towards capital and socio-economic sectors.

Corollary, primary deficit worsened from an average of 2.6 percent of GDP in 1980s to one of 6.2 percent in 1990s. In 2002 alone, primary deficit increases to 5 percent of GDP from 2 percent in 2000. This increase in deficits results in

a mounting stock of debt, ranging from 88 percent of GDP in 1980s to 96 percent of GDP in 1990s. In 2002 alone, the shock of debt increases to 91 per cent of GDP from 45 per cent in 2000. However, considering the uncertain fiscal dynamics in Nigeria, the recent fiscal adjustment witnessed in 2005 might still not be sustained.

Nigeria's fiscal revenues are largely coincided with oil revenue accounting for nearly 80 percent of government revenues, which implies that the economy is highly exposed to price fluctuations in the world oil markets. Naturally, oil revenue is very volatile due to world oscillation in oil prices and to unpredictable changes in OPEC assigned oil quota – of which Nigeria has been a member since 1958 following the commercial discovery of oil in Ofoibiri in River State, Nigeria in 1956.

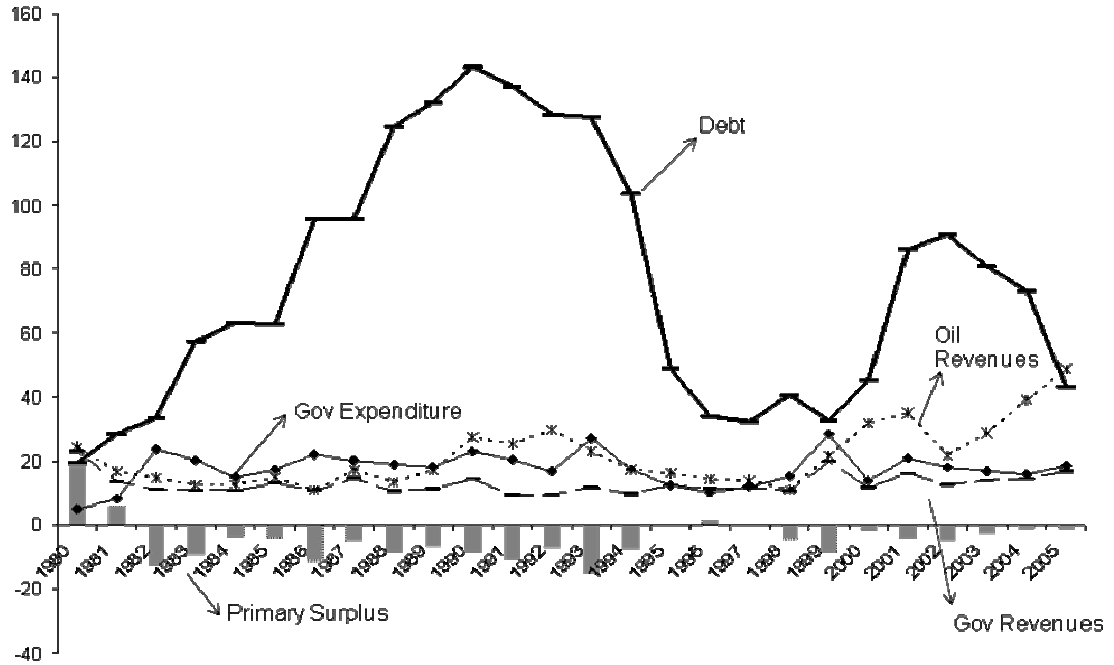
Absent suitable fiscal rules and a proper finance-management framework for oil related risks over the past two decade in Nigeria have led to boom-and-bust-type fiscal policies that have generated large and unpredictable movements in government finances.⁹ Consequently, this has been a recurrent source of destabilizing effect of fiscal surprises on the domestic prices and exchange rate as well as financial system.¹⁰

⁹ Also see Katz (2003)

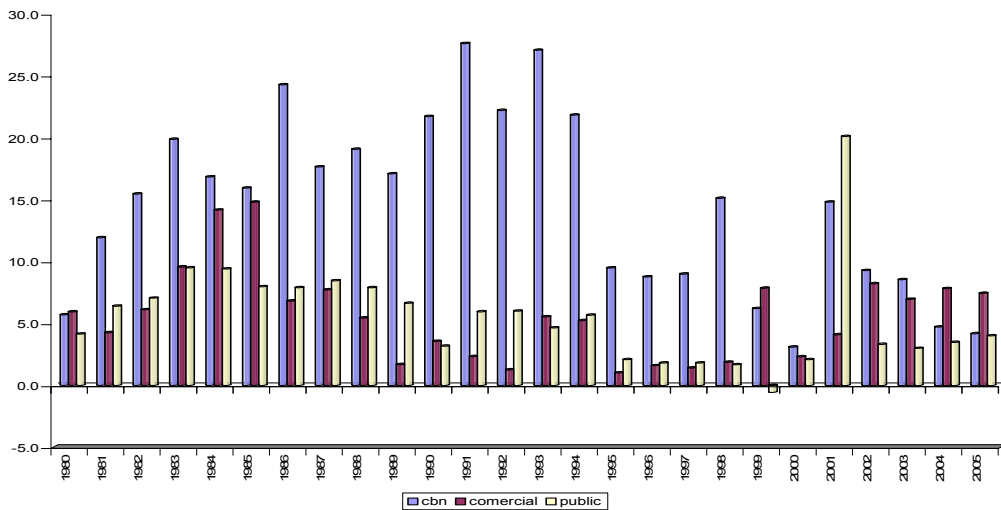
¹⁰ See Welcome Address by the former CBN Governor, Dr. J. Sanusi on 2004 Federal Government Budget, and an Address by the New CBN Governor, Prof. C.C. Soludo, on the Bankers' Committee Meeting, July 2004).

Figure 1

(a) Nigeria Fiscal Trends, 1980-2005 (% of GDP)



(b) Holdings of the Nigeria's Governments Domestic Debt by the Central Bank, Commercial Bank and Public (Percentage of GDP)



III FISCAL RULES WITH UNCERTAIN REVENUES

There is an abundant academic literature on why unconstrained discretion over fiscal policy can erode public finances and create unfavourable environment for monetary policy and macroeconomic stability. The bottom line is that there is generally a strong pressure on expanding government expenditure, a reluctance to raise taxes to the extent necessary to fully finance public undertakings (often referred to as fiscal illusion and a deficit bias) and the possibility of an inflation bias.

As monetary policy rule intend to limit the ability of monetary authority to act discretionally, so fiscal policy rules will – if observed – mitigate the government’s tendency to abandon previous policy commitment. They seek to confer credibility on the conduct of macroeconomic policies by removing discretionary interventions. Their goal is to achieve trust by guaranteeing that fundamentals will remain predictable and robust regardless of the government in power. Thus, fiscal policy rules are particularly helpful if the government is not able to guarantee a prudent fiscal policy to the economic sectors. It thus seems appropriate to study the sustainability of simple fiscal rules in a case like Nigeria, where the first source of macroeconomic instability is certainly the dynamic of fiscal policy.

A. FISCAL POLICY WITH STOCHASTIC REVENUES

The possible way to model fiscal policy in Nigeria is to consider the stochastic nature of government revenues that we have illustrated in the previous section. Since about 80 percent of government revenues come from oil, we can safely assume that total gross budgetary revenues equal to

$$GR_t = P_t \left(\bar{Q}_t \right). \quad (1)$$

Where \bar{Q}_t is the quantity of oil,, assumed to be fixed,¹¹ and P_t is its price.

Thus, primary surplus at the end of the budget year is equal to:

$$PS_t = P_t \left(\bar{Q}_t \right) - G_t \quad (2)$$

The government in each year has to plan expenditure G_t on the basis of a forecast of oil revenues for the period. If we assume that the price of oil follow a pure random walk, $P_t = P_{t-1} + v_t$, as our unit root test results shows, this implies that the best forecast of oil price is equal to so $E_t(P_t) = P_{t-1}$. Following this, the expected primary surplus at the beginning of budget year is;

$$E_{t-1}(PS_t) = E_{t-1} \left(P \bar{Q}_t \right) - E_{t-1}(G_t) \quad (3)$$

or,

$$E_{t-1}(PS_t) = P_{t-1} \left(\bar{Q}_t \right) - E_{t-1}(G_t), \quad (3b)$$

The inability to control fiscal revenues introduce a significant element of uncertainty in the budgetary process, equal to the volatility of oil prices v_t . Any fiscal rule, in this context, should be tested using the budgetary process described by equation (3).

Once government expenditure decision and oil prices are determined, the resulting primary surplus will give the following debt dynamic.

¹¹ Being exogenous and determined by OPEC not the government.

$$D_{t+1} = (1 + R_t)(D_t - PS_t), \quad (4)$$

where, R_t is the real interest rate in period t and D_t is the debt stock at the beginning of the period t . Both PS_t and D_t are in real terms. To express (4) in term of output ratio we assume a constant growth rate of output. The path of real output is then given by

$$Y_{t+1} = (1 + g_t)Y_t, \quad (5)$$

where g_t is the constant growth rate. Defining, the debt to GDP ratio as $d_t = D_t / Y_t$ and combining (4) and (5),

$$d_{t+1} = \left[\frac{(1 + r_t)}{(1 + g_t)} \right] (d_t - ps_t), \quad (6)$$

where $ps_t = PS_t / Y_t$.

To facilitate the comparison of our results with the one in Basci et al (2004), we maintain the assumption that R_t and g_t have random components. We therefore can define the random variable $r_t + \varepsilon_t$, the growth adjusted real interest rate, through the following decomposition:

$$1 + r_t + \varepsilon_t = \frac{(1 + R_t)}{(1 + g_t)}, \quad (7)$$

where r_t is the deterministic component of the real growth adjusted interest rate, and ε_t is a zero mean independently and identically distributed (iid) random variable which represents the interest rate, and growth shocks.

Next, assume that the deterministic component of the growth adjusted mean real interest rate $r(d_t)$ is an increasing function of the debt to GDP ratio.¹²

$$r_t = r(d_t) \text{ with } r'(d_t) > 0, \quad (8)$$

where $r'(d_t)$ represents the first derivative of $r(d_t)$

Combining (6), (7) and (8), we obtain,

$$d_{t+1} = (1 + r(d_t) + \varepsilon_t)(d_t - ps_t), \quad (9)$$

where d_t denotes debt to GDP ratio at the beginning of period t , and ps_t denotes the ratio of primary surplus to GDP in period t . It is assumed that growth adjusted mean real interest rate, $r(d_t)$ is an increasing function of the debt to GDP ratio.

Since the analysis here is limited to a developing country, like Nigeria, a linear function of debt stock is assumed, for simplicity.¹³

$$r(d_t) = \rho d_t \text{ For all } t, \quad (10)$$

where $0 < \rho < 1$.

Now, by defining the critical or steady state debt level (d_c) as

$$E[d_{t+1}] = d_t = d_c \quad (11)^{14}$$

¹² See Cantor and Packer (1996), Hu et al (2001) and Basci et al (2004)

¹³ It is also assumed that real interest rate is independent of the fiscal rule adopted.

¹⁴ The critical debt level can be shown to be an unstable equilibrium (see Proposition 3 in Basci et al (2004)). The debt level is unsustainable when it is below the critical debt level.

and combining (9), (10) and (11) we obtain

$$\rho d_c^2 - \rho d_c p s_t - p s_t, \quad (12)$$

B. FISCAL POLICY RULES

As in the Basci et al (2004), two alternative policy rules are considered:

(1) Fixed Primary Surplus Rule

The fixed primary surplus rule is equal to a constant s percent of GDP at every period: $ps_t = s$ for all t , and in our case is

$$p s_t = s = P_{t-1} \left(\bar{Q}_t \right) - G_t, \quad (13)$$

Now by controlling for G_t ,¹⁵ our **fixed expenditure rule** now becomes

$$G_t = \left[P_{t-1} \left(\bar{Q}_t \right) \right] - s, \quad (14)$$

and **fixed primary surplus rule**, revenue at time t (GR_t) minus fixed expenditure rule (which is G_t). Equation (14) is the level of expenditure necessary in order to maintain a fixed primary surplus rule. The **Critical debt level** for the fixed primary surplus rule¹⁶ is the value of debt that solve the following quadratic equation;

$$\rho d_c^2 - s \rho d_c - s = 0, \quad (15)$$

¹⁵ We cannot control for $P_t(Q_t)$ due to oil price volatility.

¹⁶ Obtained by taking $ps_t = s$ into (12)

which can be calculated as,

$$d_c = \frac{\left(s\rho + \sqrt{(s\rho)^2 + 4s\rho} \right)}{2\rho}, \quad (16)$$

as $s, \rho > 0$ so that $s\rho < \sqrt{(s\rho)^2 + 4s\rho}$.

:

(2) Variable Primary Surplus Rule

A variable fiscal rule adjusts the expected level of fiscal surpluses to the outstanding level of debt so that a higher fiscal surplus (a tighter fiscal policy) is set as the debt stock increases: a simple linear expression of that could be

$$ps_t = \sigma d_t, \text{ for all } t, \sigma > 0.$$

Substituting σd_t for s in (14), then; our **variable expenditure rule** will look like;

$$G_t = \left[P_{t-1} \left(\bar{Q}_t \right) \right] - \sigma d_t, \quad (17)$$

and **variable primary surplus rule**, revenue at time t minus variable expenditure rules. Again, (17) is the level of expenditure necessary in order to maintain a variable primary surplus rule.

With this rule the **Critical debt level**¹⁷ is:

$$d_c' = \sigma / \rho (1 - \sigma) \quad (18)$$

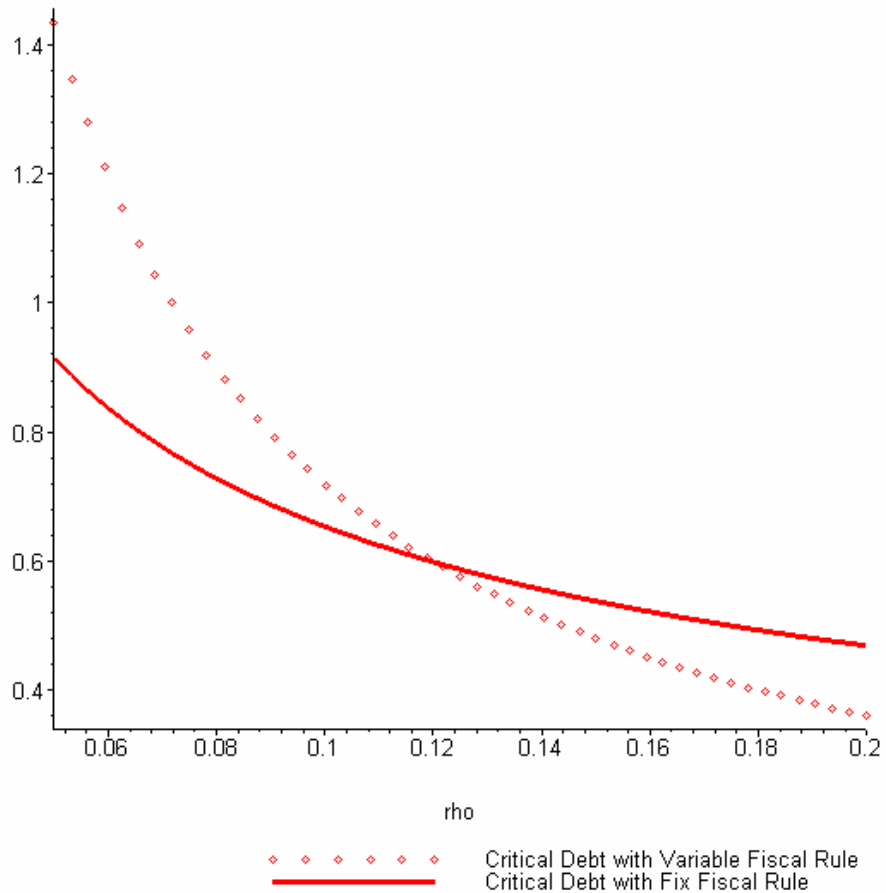
¹⁷ Again, obtained by taking $ps_t = \sigma d_t$ into (12)

When $d_t > d_c$, debt level blows up, and it tends to decline when $d_t < d_c$ under both fiscal rules.¹⁸

Note that which one of the two rules is more stringent depends critically on the level of sensitivity of real interest rate to the level of debt ρ . As we can see from the following numerical representation of the two functions (with parameters values equal to the one used in the simulations that follows), for low level of ρ (and consequently low level of real interest rate at any level of debt), a variable fiscal rule offers a much less stringent constraint to the policy maker. The opposite is true at the opposite end of ρ range, where is now the fix fiscal rule that is a less stringent rule. This is somehow paradoxical: the variable rule, with a built in adjustment mechanism, should by definition give more room of manoeuvre to the policy maker. At the same time high interest rate penalizes very significantly any increase in debt level so that the feedback mechanism in the variable rule might not be fast enough to respond to a change in direction of the debt dynamics. This is not quite intuitive and the simulations will help in explaining this paradox.

¹⁸ As already proved in Basci et al (2004).

Figure 2 : Critical Level of Debt and Sensitivity of Real Interest Rate to Debt Stock



IV SIMULATION RESULTS

The model illustrated in the previous sections is used to conduct simulations for both fiscal rules using Monte Carlo techniques, for initial debt ratios (d_0) ranging from 20 percent of GDP to 100 percent of GDP. To perform the simulations we calibrate initial oil price level so that the government revenues at the beginning of the simulation amount to 20 percent of GDP, which is the average government revenue in Nigeria for the past 10 years. The two shocks in the model, oil shock v_t and real rate shock ϵ_t , are assumed to be normally distributed with zero mean and 2.5 percent variance and 5 percent respectively. The debt ratio is then calculated using equation (9); and 1000 replications of a

five year horizon debt dynamic are computed. Arithmetic averages and standard deviations of these trials are used in the quantitative analysis.

In other to capture the sensitivity of both rules to real interest rate levels, the simulations are conducted with ρ at 10 percent and 15 percent, so that with a baseline debt to GDP ratio of 60 percent, the growth adjusted real interest rate is 6 percent (low) and 9 percent (high) respectively.

For the numerical simulations, we set the parameters for both fiscal policy rules as follows:

Fixed Rule:

$$G_t = \left[P_{t-1} \left(\bar{Q}_t \right) \right] - s, \quad s = 0.04 \quad \text{corresponding to } d_c = 0.6528$$

Variable Rule:

$$G_t = \left[P_{t-1} \left(\bar{Q}_t \right) \right] - \sigma d_t, \quad \sigma = 0.0667, \quad \text{corresponding to } d_c' = 0.7143$$

The main result of the simulation is shown in table 1. Starting with a 60% level of debt to gdp ratio and with $\rho=0.1$, the variable rule minimize substantially the risk of debt exceeding the critical value. On the other hand the Variable rule performs very badly once ρ is increased to 0.15. The probability of exceeding the critical debt level at the next period (or medium-term) is less than 2 percent for the variable rule, but more than 15 percent for the fixed, when the simulation start from an initial debt ratio of 60 percent of GDP.¹⁹ However, although both rules explodes from an initial debt ratio of 60 percent of GDP at higher real interest rate (that is $r \geq 9$ percent), the probability of exceeding the critical debt region is much higher with variable rule than fixed rule. Although

¹⁹ We compute our probabilities using the formulae, $Z = \frac{X - \mu_X}{\sigma_X}$, where X is the critical debt level, μ is the average and σ is the standard deviation, from the simulation results.

the result shown is probably at the extreme end of the distribution, the observed inversion of the ranking of the two rules is robust to any parametric specification as can be seen in table 2 for the initial level of debt of 50%.

This result seems at odd with the intuition and with the similar contribution of Basci et al (2004). The reason for this is that in our model the probability to be affected by an adverse shock is reinforced by the presence of significant uncertainty in the revenue collection. In this set up, a variable rule introduce an extra element of variability in the debt dynamic that can be very penalising at high level of real interest rate

Table 1: Probability Distribution outside the Critical Debt Value in the Medium-term
(Initial debt ratio 60%)

	Fixed Rule	Variable Rule
$\rho=0.1$	13%	2%
$\rho=0.15$	86%	99%

Table 2: Probability Distribution outside the Critical Debt Value in the Medium-term
(Initial debt ratio 50%)

	Fixed Rule	Variable Rule
$\rho=0.1$	0%	0%
$\rho=0.15$	19%	69%

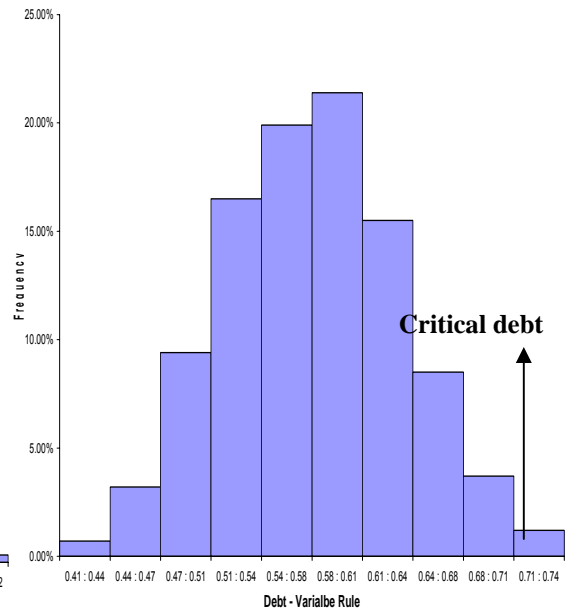
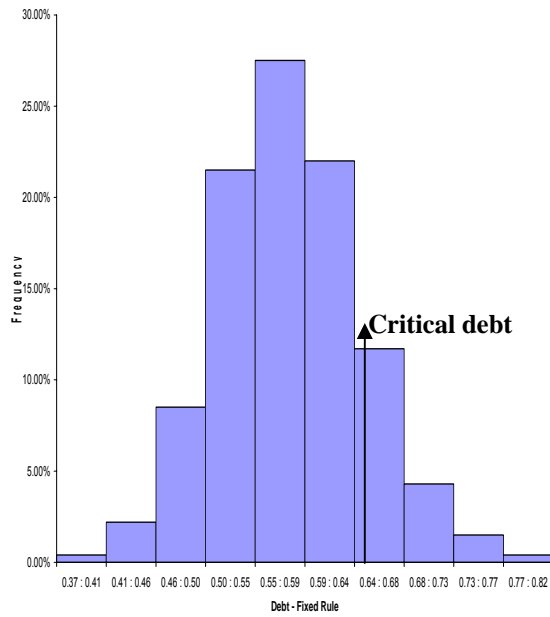
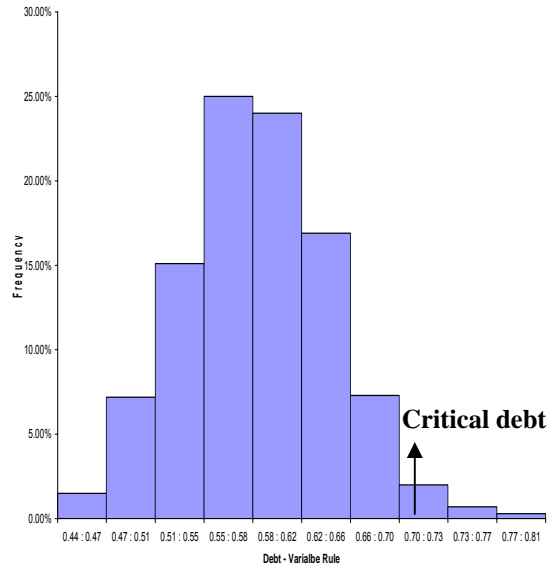
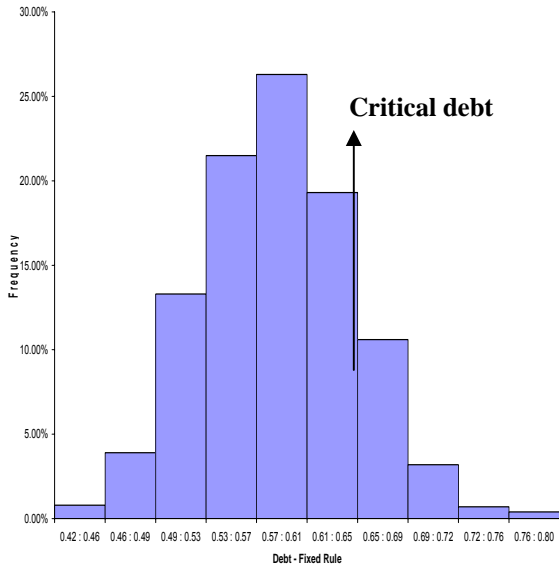


Figure 3: Probability Distribution of 60% Initial Debt Ratio at Next Period and Medium Term with Low Real Interest Rate

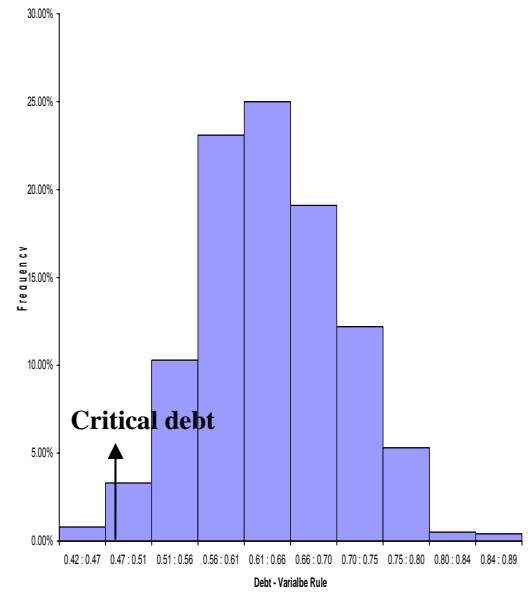
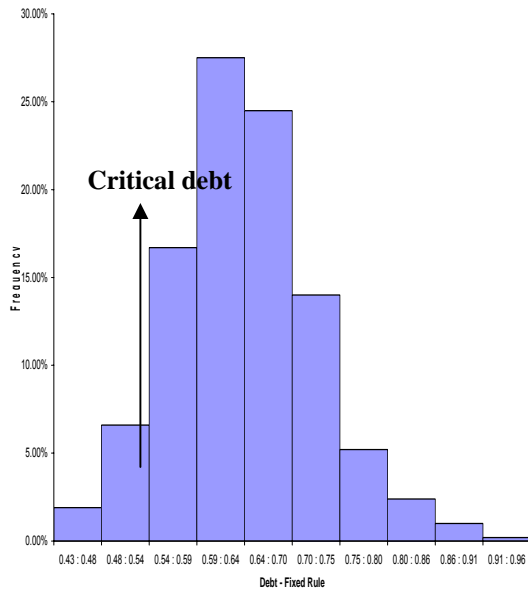
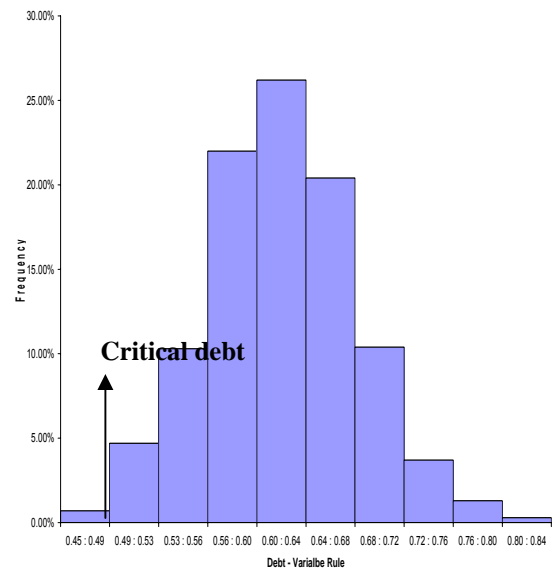
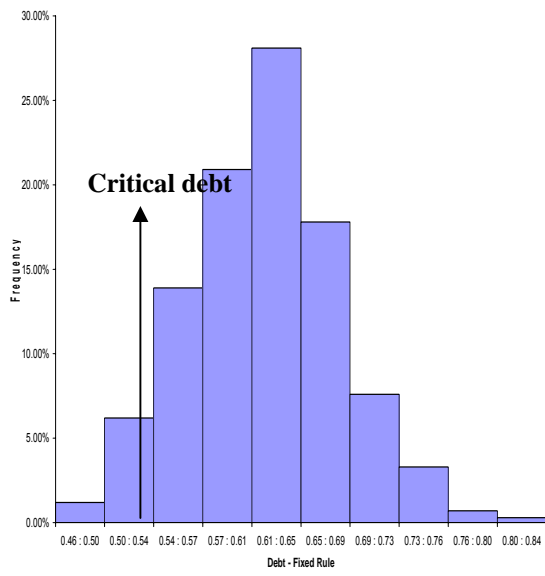


Figure 4: Probability Distribution of 60% Initial Debt Ratio at Next Period and Medium Term with High Real Interest Rate

V FISCAL RULES AND EXPENDITURE VARIABILITY

In our set up, where fiscal revenues are uncertain, the focus switches to fiscal expenditure as the instrument in the hand of the government to satisfy any fiscal constraint. The nature of the two rules analysed can be better understood if we look at the volatility in expenditure plans that they require for the rule to be satisfied. Table 3 and 4 illustrate the variability of expenditure for the two rules in the case of low or high real interest rate and for all the different levels of initial debt that we have simulated. In all cases, and naturally, the variability in expenditure generated by the variable rule is higher than the one generated by the fixed rule²⁰

Table 3: The Coefficient of Variation for both Rules in the Medium-term with Low Real Interest Rate

Initial debt ratio	Fixed expenditure rule	Variable expenditure rule
20	0.164	0.181
30	0.169	0.179
40	0.176	0.183
50	0.170	0.179
60	0.168	0.179

Table 2: The Coefficient of Variation for both Rules in the Medium-term with High real Interest Rate

Initial debt ratio	Fixed expenditure rule	Variable expenditure rule
20	0.174	0.185
30	0.175	0.192
40	0.168	0.182
50	0.164	0.175
60	0.169	0.190

This implies that higher variability in government expenditure (between 15% and 20%) is required in order to achieve and maintain the variable rule.

²⁰ The coefficient of variation (CV) for both rules is measured by σ / μ , from the simulations.

Indeed, figure 4 confirms that for the past two decades, the lowest level of debt to GDP in Nigeria coincides with high variability in government expenditure.²¹

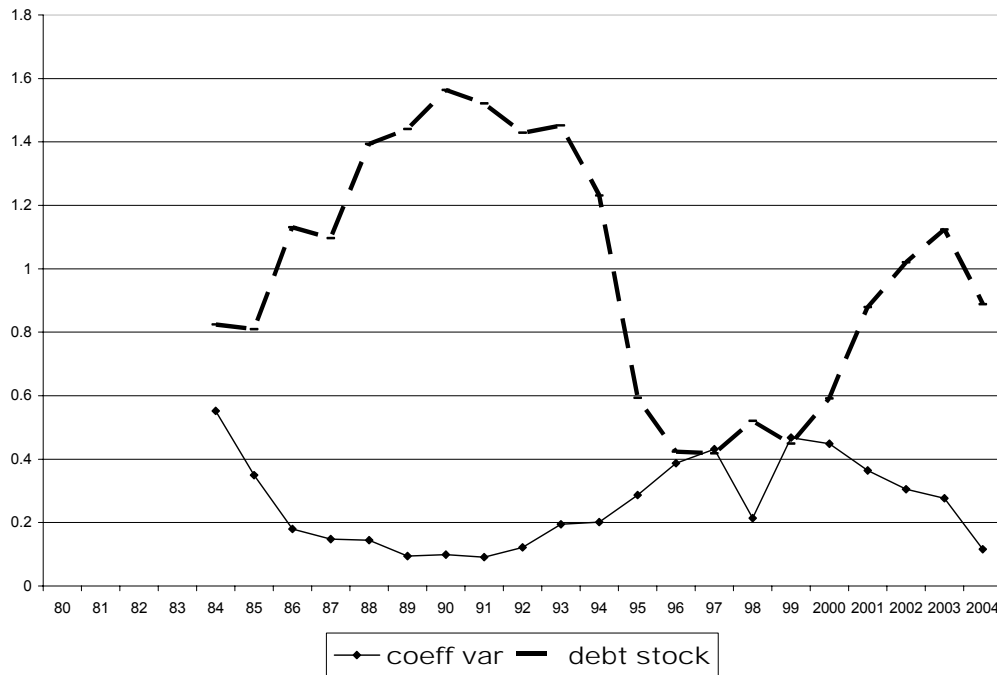


Figure 4: Nigeria Debt and Coefficient of Variation on Government Expenditure (% of GDP) 1980-2004

The stock of debt averaged from 63 percent of GDP between 1984 and 1985 (when CV on government expenditure is about 50 percent) to 118.3 and 124.2 between 1986-90 and 1990-94 (when CV ranges from 10 to 20 percent only). Between 1995 and 1997, another period of high variability on government expenditure (about 40 percent), the stock of debt averaged 55 percent of GDP. In 1999 alone, when CV is about 45 percent, the stock of debt is only 32.5 percent compared with 73.2 percent in 2004 with less than 10 percent variability.

²¹ This time, measured by the same formulae but based on the Nigeria data, 1980-2004 and not on the simulation results..

VI CONCLUSIONS

Given the stochastic characteristics of government revenue in Nigeria, this paper investigates which form of fiscal policy rules performs better in reducing debt accumulation and promote the necessary medium-term budget deficit stability. The results from numerical simulation show that the variable primary surplus rule, defined as an increasing function of the debt ratio, performs better than the fixed primary surplus rule, in reducing debt accumulation only if real interest rate are relatively low and if the government can make a credible commitment to a more flexible fiscal expenditure.

REFERENCES

- Basci, E, M. Fatih Ekinici and M. Yulek (2004) "On Fixed and Variable Fiscal Surplus Rules", IMF Working Paper, No. 04 / 117
- Batini, Nicoletta (2004), Achieving and Maintaining Price Stability in Nigeria, IMF Working Paper, June, pp 4-19
- Baunsgaard, T. (2003) "Fiscal Policy in Nigeria: Any Role for Rules?" IMF Working Paper No. 03 / 155
- Cantor, R and F. Packer (1996) "Determinants and Impact of Sovereign Credit Ratings", FRBNY Economic Policy Review, VOL 2 (October): 37-54
- Dixit, A and L. Lambertini (2003) "Symbiosis of Monetary and Fiscal Policies in a Monetary Union", Journal of International Economics, 60: 235-247
- Hu, V, R. Kiesel and W. Perraudin (2001) "The Estimation of Transition Matrices for Sovereign Credit Ratings", Journal of Banking and Finance, 26 (7): 1353-1406
- Katz, Menachem (2003), Nigeria: The Role of Fiscal Policies in Fostering Macroeconomic and Financial Stability, Paper Presented at the 2nd Annual Conference on Financial Stability of the Money Market Association of Nigeria, Held in Abuja, Nigeria, May 1-15
- Kopits, G (2001) "Fiscal Rules: Useful Policy Framework or Unnecessary Ornament", IMF Working Paper No. 01/145
- Kopits, G and S. Symanski (1998) "Fiscal Policy Rules", IMF Occasional Paper No. 162
- Obinyeluaku, M. I (2006) "Testing the Fiscal Theory of Price Level in Nigeria", University of KwaZulu-Natal Discussion Papers Series, No. 58
- Central Bank of Nigeria (2004), A Welcome Address by the Former Governor of CBN Dr. J. Sanusi on 2004 Federal Government Budget
- Central Bank of Nigeria (2004), Consolidating the Nigerian Banking Industry to Meet the Development Challenges of the 21st Century, Being an Address Delivered to the Special Meeting of the Bankers' Committee by the New CBN Governor, Prof. C.C. Soludo in Abuja, Nigeria