

Economic and Political Determinants of Public Sector Budget Deficits: The Case of Nigeria

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Abstract

The main focus of the paper is to analyze the effects of both economic and political variables on public sector budget deficits. The econometric results show that the determinants of budget deficits includes international capital, international interest rate, debt service costs, public expenditure, political instability and economic growth. The author makes the following recommendations. Firstly, international capital should be used to finance projects that contribute meaningfully to the economy. Secondly, since international interest rate is outside the control of Nigeria's government and monetary authorities, emphasis on foreign loans should be reduced. Thirdly, government should also avoid external debt where necessary. Fourthly, government should increase her spending on infrastructural development. Furthermore, government should strengthen the political institutions including the judiciary, as well as create a level playing ground for all citizens, so as to promote political stability. Moreover, government should give more incentives and subsidies such as low corporate profit tax, improvement in power and energy generation, etc., in order to encourage producers as well as promote economic growth. Lastly, government should sustain the on-going war against corruption.

Introduction

The persistent high budget deficits and the resultant increases in debt in developing and developed countries (including Nigeria) has motivated scholars in the fields of economics and political science to examine the likely factors (that is economic, political, and institutional) that drive public sector budget deficits. Whereas economic theory postulates that economic boom leads to decline in budget deficits, this has not been the case as deficits continued to rise even after prosperity (Ali Bayar and Bram Smeets, 2009). The rise in budget deficits has partly been attributed to policy shifts planned by policy makers and the shocks in international and domestic variables which policy makers cannot influence (Marshall and Schmidt-Hebbel, 1989).

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In the Nigeria's context, fiscal policy has tended to favour huge budget deficits, occasioned by the need to finance public (utilities) projects that the government revenues are unable to finance. To this end, successive governments resorted to various forms of deficit financing, through domestic and foreign borrowing, as well as printing of money. This practice led to accumulation of high debt, especially in the 1980s and 1990s. Couple with this, was the international shocks that resulted from declining oil prices and rising international interest rates, as well as declining inflows of international capital. The international shocks were soon felt in the domestic economy. For instance falling oil prices and inadequate inflows of international capital led to decrease in government revenues. Besides, the increase in international interest rates had severe consequences on the economy as the interest payment on external debt increased the costs of debt servicing. These further re-enforce huge government deficits. In order to resolve the crises and ensure fiscal adjustment, the federal government adopted the Structural Adjustment Programme (SAP) in 1986. This amongst others was to reduce excessive government spending and to increase its revenue.

In spite of government's efforts, Nigeria's fiscal performance worsened. For instance, budget deficits increased from N455.10million in 1970 to 2,821.90 million in 1978 and N8,254.30 million in 1986. Following the introduction of SAP in 1986, budget deficits worsened to 22,116.10 million and 285,104.70 million in 1990 and 1999 respectively. The increase in budget deficits continued as it reached a peak of 301,401.60 million in 2002. However, government deficits improved with declining to N172,601.30 million in 2004, N101,397.50 million in 2006 and N47,378.50 million in 2008. Moreover, budget deficits as a percentage of GDP moved from 10.79 percentage in 1970 to 39.20 percentage in 1993 and 91.33 percentage in 1999. The percentage of deficits in GDP was put at 69.58 percentage in 2002, 28.72 percentage in 2005 and 7.02 percentage in 2008. In summary, despite the huge revenue generated from sales of crude oil, public sector deficits remain high in Nigeria.

The continuous accumulation of high budget deficits has re-shaped the thinking of researches, as they attempt to analyze budget deficits from not only economic but also from political and institutional perspectives (Ali Bayar and Bram Smeets, 2009). That is, economists and political scientists try to explain the movement in government budget deficits taking both political and economic (including institutional) factors into consideration. Some of the political and institutional variables include government's ideology, size of government, party system fragmentation, electoral cycles, presidential budgetary power, and the degree of public sector decentralization. Following the issues raised above, the main objective of this paper is to empirically examine the political and economic determinants of budget deficits in Nigeria.

The paper is structured as follows. Section one is the introduction, while section two contains the literature review and theoretical framework. Section three consists of model specification and estimation, while section four discusses the results and policy implications of findings. Section five makes recommendations and concludes the paper.

Literature Review and Theoretical Framework

Several researchers have examined the economic and political (including institutional) determinants of public sector budget deficits. For example, Ali Bayar and Bram Smeets (2009) examined the economic, political as well as institutional determinants of budget deficits in the European Union for the period 1971-2006. The authors discovered that political fragmentation has no significant impact on public deficits, while partisan behaviour has a negligible impact on government deficits. However, they confirmed that political instability has a significant negative effect on government budget deficits. In Philippine, Diokno (2007) used both narrowest and broader measurement of fiscal deficits in his analysis. Using the narrowest measure of fiscal deficit, the author indicated that inflation, domestic liquidity, capital outlays and tax effort are the main determinants of public deficits. On the other hand, the author used a broader measure of fiscal deficit, and discovered that the important determinants of budget balance include economic growth, inflation, domestic liquidity, capital outlays, intergovernmental transfers and tax effort. On their part, Ellis and Schansberg (1999) focused on the determinants of fiscal deficit at the state level. The author showed that high proportion of young voters is associated with high deficit. On the contrary, a large proportion of elderly voters was found to be related to the lower deficit. Lastly, the author illustrated that political factors are not important in explaining deficit at state level.

In Turkey, Yesim Kustepeli and Gulcan Onel (2005) evaluated the effects of political (parties) fragmentation on fiscal deficits during the period 1976-2004. The results revealed that the most important determinants of deficits is its lagged value. Moreover, the number of political parties in the government in power shows a little impact. The authors concluded that polarization, fragmentation and ideology of government have no significant influence on fiscal deficits. In Cote D'Ivoire, Oussou Kouassy and Bouabre Bohoun (1993) concentrated on the determinants of fiscal deficit and fiscal adjustment. The regression results indicate that public investment has a positive relationship with fiscal deficit. Similarly, tax rates are positively correlated to fiscal deficit. However, the GDP was shown to have a negative relationship with budget deficit. Roubini (1991) reported that fiscal deficits are partly determined by political factors and/or political instability. He concluded that increase in the degree of political instability appears to lead to greater budget deficits.

Peter Calgagno and Monica Escaleras (2005) used the index of political alternation (IPA) to measure political instability in the U.S. states. Their results revealed that political alternation creates instability which in turn has negative effect on fiscal performance in the U.S. states. Ali Salman Saleh and Charles Harvie (2005) advised that reducing government deficit can improve standard of living of the people. Unfortunately, due to political interferences, corruption, inadequate and inefficient governance system, it is difficult to adjust fiscal deficit in Lebanon. In Latin America, Acosta and Coppedge (2001) reported that large deficits are associated with election years. Secondly, the establishment of institutions designed to reduce deficits are important in reducing deficits. Other determinants of government deficits include size of the president's party, its degree

of discipline, its loyalty to the president and the ideological position of the president. Mika Tujula and Guido Wolswijk (2004) showed that growth of government debt, macroeconomic development and political variables are the major determinants of budget balances in OECD countries. In addition, asset prices have been shown to be useful in explaining changes in government budget, but the effect is little. Marcela Eslava (2006) examined the effect of three possible determinants of fiscal balance, namely opportunistic behavior of policy makers, heterogeneous fiscal preferences of either voters or politicians, and the budget institutions. The author observed that less-fragmented governments and ability of voters to influence government fiscal policy tend to reduce budget deficits. Besides, the intervention of court in determining fiscal policy in order to increase spending so as to ensure constitutional rights leads to higher deficits. Roubini and Sachs (1989) examined the effects of structure of governments and political party fragmentation on government deficits. They found that higher number of political parties in government in power tend to raise budget deficits. In addition, in countries where government tenure is short, budget deficits tend to be large. Mink and De Haan (2005) confirmed that public sector deficits are higher in election years, while they remain low in the years preceding election.

In their work, Luca Agnello and Ricardo Sousa (2009) investigated the determinants of public deficit volatility. The authors illustrated that high level of political instability and less-democracy raise public sector deficit volatility. Furthermore, government deficit volatility is greater for small economies experiencing hyper-inflation as well as those with high degree of openness. Some studies such as Aristovnik (2006) and Srdjan Redzepagic and Matthiew Llorca (2007) have focused on fiscal sustainability.

Model Specification and Estimation

This paper uses the standard model that has its basis from Roubini and Sachs (1989a), and later adopted by Yesim Kustepeli and Gulcan Onel (2005). The model is used to analyze the effects of economic and political factors on public sector budget deficits. The econometric model expresses budget deficits (BUD) as a function of international capital inflows (CAP), international interest rate (INTRAT), inflation rate (INF), debt service costs (DEBT), public expenditure (PUBEX), and political variables (POL). Due to many years of military rule in Nigeria, the paper considers only military regime and civilian rule as the political variables. The model is specified as:

$$BUD_t = CAP_t + INTRAT_t + INF_t + DEBT_t + PUBEX_t + POL_t + ECGR + U_t \quad (1)$$

The variables are measured as follows. BUD is measured as budget deficits/surplus-GDP ratio. CAP is captured by the ratio of international capital inflows to GDP. INTRAT refers to the international interest rate, and is captured by the United States LIBOR rate. INF refers to inflation rate. DEBT is captured by the ratio of debt service costs to GDP. PUBEX refers to public expenditure on infrastructure like roads, energy/power, communications, etc. The variable is measured as the ratio of public expenditure to GDP. ECGR refers to economic growth, and it is captured by the growth

of gross of domestic product. POL is captured by dummy, where $D=1$ is for military regime and $D=0$ for civilian rule. U is the error term.

In order to ascertain whether the variables are stationary or not, we employed the Augmented Dicker-Fuller (ADF) statistic. The result of stationarity test of the variables is shown in the Table 1.

Table 1: Stationarity (unit root) test for variables

| Variables | ADF-Statistic | Critical values | Order of integration |
|------------------|-----------------------|---|--------------------------------|
| BUD | -7.097670 (0.0000) | 1% = -2.628961 5% = -1.950117 10% = -1.611339 | Stationary at first difference |
| CAP | -5.086592 (0.0000) | 1% = -2.628961 5% = -1.950117 10% = -1.611339 | Stationary at first difference |
| INTRAT | -3.987412 (0.0003) | 1% = -2.647120 5% = -1.952910 10% = -1.610011 | Stationary at first difference |
| INF | -6.077794 (0.0000) | 1% = -2.630762 5% = -1.950394 10% = -1.611202 | Stationary at first difference |
| DEBSER | -7.817795 (0.0000) | 1% = -2.628961 5% = -1.950117 10% = -1.611339 | Stationary at first difference |
| PUBEXP | -9.285380 (0.0000) | 1% = -2.628961 5% = -1.950117 10% = -1.611339 | Stationary at first difference |
| POL | -6.000000 (0.0000) | 1% = -2.628961 5% = -1.950117 10% = -1.611339 | Stationary at first difference |
| ECGR | -5.686236 (0.0000) | 1% = -2.628961 5% = -1.950117 10% = -1.611339 | Stationary at levels |

Discussion of Results and Policy Implications of Findings

The regression results presented in Table 2 indicate that the explanatory variables account for approximately 78.3 percentage changes in budget deficits in Nigeria. The Durbin Watson statistic (1.87) illustrates the absence of auto correlation. The F-statistic (9.91) indicates that the explanatory variables are jointly significant and capable of explaining budget deficits. The estimation also reveals that international capital inflow has a significant positive association with budget deficits. One percentage increase in international capital in the previous one year causes budget deficits to increase

approximately by 102.68 percent. Thus, the higher the capacity of Nigeria to attract international capital, the more the deficits government accumulates. Despite the huge foreign capital going to the oil sector of the economy, government budget deficits remain high. This may not be unconnected with the high level corruption among government officials and political appointees.

Table 2: Regression Results

Dependent Variable: BUD

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|-----------|
| C | -65.67526 | 14.90410 | -4.406524 | 0.0002 |
| CAP(-1) | 102.6803 | 37.74196 | 2.720587 | 0.0125 |
| INTRAT | 5.631216 | 1.317415 | 4.274443 | 0.0003 |
| INF | -0.084325 | 0.153809 | -0.548244 | 0.5890 |
| DEBT(-1) | 39.42674 | 19.41710 | 2.030517 | 0.0546 |
| PUBEX | -110.0985 | 21.57601 | -5.102819 | 0.0000 |
| POL(-1) | 18.76174 | 6.542847 | 2.867519 | 0.0089 |
| ECGR | -0.061013 | 0.030836 | -1.978620 | 0.0605 |
| ECM(-1) | 0.522315 | 0.202361 | 2.581102 | 0.0170 |
| R-squared | 0.782776 | Mean dependent var | | -17.79581 |
| Adjusted R-squared | 0.703785 | S.D. dependent var | | 23.85517 |
| S.E. of regression | 12.98332 | Akaike info criterion | | 8.202908 |
| Sum squared resid | 3708.462 | Schwarz criterion | | 8.619227 |
| Log likelihood | -118.1451 | F-statistic | | 9.909745 |
| Durbin-Watson stat | 1.869424 | Prob(F-statistic) | | 0.000010 |

Moreover, the results show that international interest rate has a significant positive relationship with budget deficits. One percentage increase in international rate leads to an increase in budget deficits by approximately 5.63 percent. Thus, higher international interest rate tends to raise interest payments on external loans, leading to higher debt accumulation and budget deficits. Furthermore, the estimation shows that debt service has a significant positive relationship with budget deficits. One percentage increase in debt service in the previous one year raises budget deficits by approximately 39.43 percentage. This implies that accumulation of government debt will lead to higher budget deficits. This is a reflection of the Nigerian state, where government's planned expenditure always outstrips government's planned revenue. To fill the gap between expenditure and revenue, government often resorts to budget deficits. In most cases, a large portion of Nigeria's budget has been used to finance her debt liabilities. In addition, the results show that public expenditure (on infrastructure) has a significant negative relationship with budget deficits. One percentage increase in public expenditure reduces budget deficits by approximately 110.10 percentage. Thus, if public expenditure is used to finance infrastructural development, it will lead to low transactions and production costs as well increase profitability of producers or manufacturers. Another discovery from the estimation is that political instability has a significant positive association with budget

deficits. One percentage increase in political instability in the previous one year leads to an increase in budget deficits by approximately 18.76 percentage. Thus, a situation where there is frequent change in government, the tendency to spend more by the new government is always very high. The results also indicate that economic growth has significant negative relationship with budget deficits. A one percentage increase in economic growth results to a decrease in budget deficits by approximately 0.06 percentage. Thus, if higher economic growth results to an increase in government revenue it will reduce the propensity to borrow, leading to reduction in budget deficits. Lastly, the error correction variable has been shown to be significant and positive, indicating that there is a divergence between actual and desired levels of budget deficits.

Recommendation and Conclusion

From the discussion above, following recommendations could be made. Firstly, in as much as we cannot overemphasize the importance of international capital, government should make sure that such funds are used judiciously and used to finance projects that will contribute meaningfully to the economy. Recent revelation has shown that massive corruption is on-going in government agencies like Nigerian National Petroleum Corporation, Power Holding Company of Nigeria, and the Nigeria Ports Authority to mention few. To check this, government should increase its investment in anti-corruption agencies like Economic and Financial Crime Commission and Independent Corrupt Practices Commission. Secondly, since international interest rate is outside the control of Nigeria's government and monetary authorities, emphasis on foreign loans should be reduced. The huge debt stock of Nigeria is attributable partly to high international interest rate. Thirdly, government should also avoid external debt where necessary, because a large proportion of our deficit financing goes into repayment of debt accumulated in the past. Fourthly, government should increase her spending on infrastructural development, which includes roads, communications, power, energy and so on. This would reduce transactions and production costs and raise profitability of firms. Furthermore, government should strengthen the political institutions including the judiciary, as well as create a level playing ground for all citizens, so as to promote political stability. Moreover, government should give incentives and subsidies to producers in order to encourage production of goods and services. These incentives include among others low corporate profit tax, improvement in power and energy generation, etc.

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Appendix 1

**Government Budget Deficits/Surplus, Real GDP, and Percentage
Share of Budget Deficits in GDP**

| Years | Fiscal deficits/surplus (Nm) | Gross domestic Product (Nm) | Fiscal deficits/surplus as a percentage of GDP (%) |
|-------|---------------------------------|--------------------------------|---|
| 1970 | -455.1 | 4,219.00 | -10.79 |
| 1971 | 171.6 | 4,715.50 | 3.64 |
| 1972 | -58.8 | 4,892.80 | -1.20 |
| 1973 | 166.1 | 5,310.00 | 3.13 |
| 1974 | 1,796.40 | 15,919.70 | 11.28 |
| 1975 | -427.9 | 27,172.00 | -1.57 |
| 1976 | -1,090.80 | 29,146.50 | -3.74 |
| 1977 | -781.4 | 31,520.30 | -2.48 |
| 1978 | -2,821.90 | 29,212.40 | -9.66 |
| 1979 | 1,461.70 | 29,948.00 | 4.88 |
| 1980 | -1,975.20 | 31,546.80 | -6.26 |
| 1981 | -3,902.10 | 205,222.10 | -1.90 |
| 1982 | -6,104.10 | 199,685.30 | -3.06 |
| 1983 | -3,364.50 | 185,598.10 | -1.81 |
| 1984 | -2,660.40 | 183,563.00 | -1.45 |
| 1985 | -3,039.70 | 201,036.30 | -1.51 |
| 1986 | -8,254.30 | 205,971.40 | -4.01 |
| 1987 | -5,889.70 | 204,806.50 | -2.88 |
| 1988 | -12,160.90 | 219,875.60 | -5.53 |
| 1989 | -15,134.70 | 236,729.60 | -6.39 |
| 1990 | -22,116.10 | 267,550.00 | -8.27 |
| 1991 | -35,755.20 | 265,379.10 | -13.47 |
| 1992 | -39,532.50 | 271,365.50 | -14.57 |
| 1993 | -107,735.30 | 274,833.30 | -39.20 |
| 1994 | -70,270.60 | 275,450.60 | -25.51 |
| 1995 | 1,000.00 | 281,407.40 | 0.36 |
| 1996 | 32,049.40 | 293,745.40 | 10.91 |
| 1997 | -5,000.00 | 302,022.50 | -1.66 |
| 1998 | -133,389.30 | 310,890.10 | -42.91 |
| 1999 | -285,104.70 | 312,183.50 | -91.33 |
| 2000 | -103,777.30 | 329,178.70 | -31.53 |
| 2001 | -221,048.90 | 356,994.30 | -61.92 |
| 2002 | -301,401.60 | 433,203.50 | -69.58 |
| 2003 | -202,724.70 | 477,533.00 | -42.45 |
| 2004 | -172,601.30 | 527,576.00 | -32.72 |
| 2005 | -161,406.30 | 561,931.40 | -28.72 |
| 2006 | -101,397.50 | 595,821.60 | -17.02 |
| 2007 | -117.20 | 634,251.10 | -0.02 |
| 2008 | -47,378.50 | 674,889.00 | -7.02 |

Source: Columns 2 and 3, Central Bank of Nigeria (2008), Column 4 (author's computation)

Appendix 2

Macroeconomic Indicators

| Years | Overall deficits/ surplus (Nm) | Gross domestic Product (Nm) | Fiscal Deficits as % of GDP | International capital inflows (Nm) | International interest rate (US LIBOR) | Inflation rate (%) | Debt service (Nm) | Government Expenditure (Nm) |
|-------|--------------------------------------|-----------------------------------|--------------------------------|--|--|-----------------------|-------------------------|-----------------------------------|
| 1970 | -455.1 | 4,219.00 | -10.79 | 1,003.20 | | 13.8 | 151.80 | 15.50 |
| 1971 | 171.6 | 4,715.50 | 3.64 | 1,322.80 | | 16 | 81.59 | 58.20 |
| 1972 | -58.8 | 4,892.80 | -1.20 | 1,571.10 | | 3.2 | 67.31 | 132.90 |
| 1973 | 166.1 | 5,310.00 | 3.13 | 1,763.70 | | 5.4 | 74.75 | 249.50 |
| 1974 | 1,796.40 | 15,919.70 | 11.28 | 1,812.10 | | 13.4 | 74.72 | 465.90 |
| 1975 | -427.9 | 27,172.00 | -1.57 | 2,287.50 | | 33.9 | 108.62 | 1,314.70 |
| 1976 | -1,090.80 | 29,146.50 | -3.74 | 2,339.00 | 5.05 | 21.2 | 920.46 | 2,231.40 |
| 1977 | -781.4 | 31,520.30 | -2.48 | 2,531.40 | 5.54 | 15.4 | 134.05 | 3,124.60 |
| 1978 | -2,821.90 | 29,212.40 | -9.66 | 2,863.20 | 7.93 | 16.6 | 309.23 | 3,017.60 |
| 1979 | 1,461.70 | 29,948.00 | 4.88 | 3,153.10 | 11.2 | 11.8 | 229.45 | 2,812.10 |
| 1980 | -1,975.20 | 31,546.80 | -6.26 | 3,620.10 | 13.36 | 9.9 | 256.95 | 5,981.10 |
| 1981 | -3,902.10 | 205,222.10 | -1.90 | 3,757.90 | 16.38 | 20.9 | 1,027.41 | 3,629.40 |
| 1982 | -6,104.10 | 199,685.30 | -3.06 | 5,382.80 | 12.26 | 7.7 | 1,167.17 | 2,542.50 |
| 1983 | -3,364.50 | 185,598.10 | -1.81 | 5,949.50 | 9.09 | 23.2 | 1,007.08 | 2,290.70 |
| 1984 | -2,660.40 | 183,563.00 | -1.45 | 6,418.30 | 10.23 | 39.6 | 1,235.32 | 656.30 |
| 1985 | -3,039.70 | 201,036.30 | -1.51 | 6,804.00 | 8.1 | 5.5 | 1,606.05 | 892.70 |
| 1986 | -8,254.30 | 205,971.40 | -4.01 | 9,313.60 | 6.81 | 5.4 | 1,631.59 | 1,099.90 |
| 1987 | -5,889.70 | 204,806.50 | -2.88 | 9,993.60 | 6.66 | 10.2 | 3,928.95 | 2,159.70 |
| 1988 | -12,160.90 | 219,875.60 | -5.53 | 11,339.20 | 7.61 | 38.3 | 9,238.70 | 2,128.70 |
| 1989 | -15,134.70 | 236,729.60 | -6.39 | 10,899.60 | 9.22 | 40.9 | 13,273.70 | 3,926.30 |
| 1990 | -22,116.10 | 267,550.00 | -8.27 | 10,436.10 | 8.1 | 7.5 | 23,822.30 | 3,485.70 |
| 1991 | -35,755.20 | 265,379.10 | -13.47 | 12,243.50 | 5.7 | 13 | 26,414.40 | 3,145.00 |

| | | | | | | | | |
|------|-------------|------------|--------|------------|------|-------|------------|------------|
| 1992 | -39,532.50 | 271,365.50 | -14.57 | 20,512.70 | 3.52 | 44.5 | 19,400.26 | 2,336.70 |
| 1993 | -107,735.30 | 274,833.30 | -39.20 | 66,787.00 | 3.02 | 57.2 | 81,081.58 | 18,344.70 |
| 1994 | -70,270.60 | 275,450.60 | -25.51 | 70,714.60 | 4.2 | 57 | 49,400.32 | 27,102.80 |
| 1995 | 1,000.00 | 281,407.40 | 0.36 | 119,391.60 | 5.84 | 72.8 | 51,058.40 | 43,149.20 |
| 1996 | 32,049.40 | 293,745.40 | 10.91 | 122,600.90 | 5.3 | 29.3 | 53,047.50 | 117,829.10 |
| 1997 | -5,000.00 | 302,022.50 | -1.66 | 128,331.80 | 5.46 | 8.5 | 68,539.74 | 169,613.10 |
| 1998 | -133,389.30 | 310,890.10 | -42.91 | 152,409.60 | 5.35 | 10 | 64,394.53 | 200,861.90 |
| 1999 | -285,104.70 | 312,183.50 | -91.33 | 154,188.60 | 4.97 | 6.6 | 30,843.38 | 323,580.80 |
| 2000 | -103,777.30 | 329,178.70 | -31.53 | 157,535.40 | 6.24 | 6.9 | 131,048.02 | 111,508.60 |
| 2001 | -221,048.90 | 356,994.30 | -61.92 | 162,343.40 | 3.89 | 18.9 | 155,416.22 | 259,757.80 |
| 2002 | -301,401.60 | 433,203.50 | -69.58 | 166,631.60 | 1.67 | 12.9 | 163,811.32 | 215,333.40 |
| 2003 | -202,724.70 | 477,533.00 | -42.45 | 178,478.00 | 1.13 | 14 | 363,510.32 | 97,982.10 |
| 2004 | -172,601.30 | 527,576.00 | -32.72 | 249,220.60 | 1.35 | 15 | 382,509.94 | 167,721.80 |
| 2005 | -161,406.30 | 561,931.40 | -28.72 | 269,844.70 | 3.21 | 17.9 | 393,953.41 | 265,034.70 |
| 2006 | -101,397.50 | 595,821.60 | -17.02 | 302,843.30 | 4.96 | 8.2 | 415,362.78 | 262,207.30 |
| 2007 | -117.20 | 634,251.10 | -0.02 | 364,008.50 | 4.5 | 5.4 | 511,643.65 | 367,900.00 |
| 2008 | -47,378.50 | 674,889.00 | -7.02 | 397,395.20 | | 11.60 | 381,200.00 | 504,400.00 |

Source: Central Bank of Nigeria, 2008.

Appendix 3

Variables used for Regression

| YEARS | BUD (%) | CAP | INTRAT (%) | INF (%) | DEBT SER | INFRAGDP | POL | ECGR (%) | ECM |
|-------|---------|------|------------|---------|----------|----------|-----|----------|----------|
| 1970 | -10.79 | 0.24 | | 13.8 | 0.04 | 0.00 | 1 | - | NA |
| 1971 | 3.64 | 0.28 | | 16 | 0.02 | 0.01 | 1 | 11.76819 | NA |
| 1972 | -1.20 | 0.32 | | 3.2 | 0.01 | 0.03 | 1 | 3.759941 | NA |
| 1973 | 3.13 | 0.33 | | 5.4 | 0.01 | 0.05 | 1 | 8.526815 | NA |
| 1974 | 11.28 | 0.11 | | 13.4 | 0.00 | 0.03 | 1 | 199.806 | NA |
| 1975 | -1.57 | 0.08 | | 33.9 | 0.00 | 0.05 | 1 | 70.68161 | NA |
| 1976 | -3.74 | 0.08 | 5.05 | 21.2 | 0.03 | 0.08 | 1 | 7.266672 | 13.27491 |
| 1977 | -2.48 | 0.08 | 5.54 | 15.4 | 0.00 | 0.10 | 0 | 8.144374 | 26.09226 |
| 1978 | -9.66 | 0.10 | 7.93 | 16.6 | 0.01 | 0.10 | 0 | -7.32195 | 6.706859 |
| 1979 | 4.88 | 0.11 | 11.2 | 11.8 | 0.01 | 0.09 | 0 | 2.518109 | 4.375276 |
| 1980 | -6.26 | 0.11 | 13.36 | 9.9 | 0.01 | 0.19 | 0 | 5.338587 | -6.77863 |
| 1981 | -1.90 | 0.02 | 16.38 | 20.9 | 0.01 | 0.02 | 0 | 550.5322 | 0.488241 |
| 1982 | -3.06 | 0.03 | 12.26 | 7.7 | 0.01 | 0.01 | 0 | -2.69796 | -9.21253 |
| 1983 | -1.81 | 0.03 | 9.09 | 23.2 | 0.01 | 0.01 | 0 | -7.0547 | 10.09243 |
| 1984 | -1.45 | 0.03 | 10.23 | 39.6 | 0.01 | 0.00 | 1 | -1.09651 | -3.49482 |
| 1985 | -1.51 | 0.03 | 8.1 | 5.5 | 0.01 | 0.00 | 1 | 9.518966 | -4.91376 |
| 1986 | -4.01 | 0.05 | 6.81 | 5.4 | 0.01 | 0.01 | 1 | 2.45483 | -3.29686 |
| 1987 | -2.88 | 0.05 | 6.66 | 10.2 | 0.02 | 0.01 | 1 | -0.56556 | -0.11726 |
| 1988 | -5.53 | 0.05 | 7.61 | 38.3 | 0.04 | 0.01 | 1 | 7.357725 | 2.377209 |
| 1989 | -6.39 | 0.05 | 9.22 | 40.9 | 0.06 | 0.02 | 1 | 7.665243 | -3.43714 |
| 1990 | -8.27 | 0.04 | 8.1 | 7.5 | 0.09 | 0.01 | 1 | 13.01924 | -10.8025 |
| 1991 | -13.47 | 0.05 | 5.7 | 13 | 0.10 | 0.01 | 1 | -0.8114 | -5.64148 |
| 1992 | -14.57 | 0.08 | 3.52 | 44.5 | 0.07 | 0.01 | 1 | 2.255792 | 9.39616 |
| 1993 | -39.20 | 0.24 | 3.02 | 57.2 | 0.30 | 0.07 | 1 | 1.277907 | -18.8846 |
| 1994 | -25.51 | 0.26 | 4.2 | 57 | 0.18 | 0.10 | 1 | 0.224609 | -9.60844 |

| | | | | | | | | | |
|------|--------|------|------|-------|------|------|------|----------|----------|
| 1995 | 0.36 | 0.42 | 5.84 | 72.8 | 0.18 | 0.15 | 1 | 2.162566 | 3.278691 |
| 1996 | 10.91 | 0.42 | 5.3 | 29.3 | 0.18 | 0.40 | 1 | 4.384391 | 26.46163 |
| 1997 | -1.66 | 0.42 | 5.46 | 8.5 | 0.23 | 0.56 | 1 | 2.81778 | 22.04791 |
| 1998 | -42.91 | 0.49 | 5.35 | 10 | 0.21 | 0.65 | 1 | 2.936073 | -16.6397 |
| 1999 | -91.33 | 0.49 | 4.97 | 6.6 | 0.10 | 1.04 | 0 | 0.416031 | -13.9361 |
| 2000 | -31.53 | 0.48 | 6.24 | 6.9 | 0.40 | 0.34 | 0 | 5.443978 | -24.659 |
| 2001 | -61.92 | 0.45 | 3.89 | 18.9 | 0.44 | 0.73 | 0 | 8.45 | -0.8827 |
| 2002 | -69.58 | 0.38 | 1.67 | 12.9 | 0.38 | 0.50 | 0 | 21.34746 | -15.8023 |
| 2003 | -42.45 | 0.37 | 1.13 | 14 | 0.76 | 0.21 | 0 | 10.23295 | -12.4917 |
| 2004 | -32.72 | 0.47 | 1.35 | 15 | 0.73 | 0.32 | 0 | 10.47949 | -2.82573 |
| 2005 | -28.72 | 0.48 | 3.21 | 17.9 | 0.70 | 0.47 | 0 | 6.511934 | 7.423356 |
| 2006 | -17.02 | 0.51 | 4.96 | 8.2 | 0.70 | 0.44 | 0 | 6.031021 | 2.841109 |
| 2007 | -0.02 | 0.57 | 4.5 | 5.4 | 0.81 | 0.58 | 0 | 6.449833 | 28.56913 |
| 2008 | -7.02 | 0.59 | | 11.60 | 0.56 | 0.75 | 0.00 | 6.407226 | NA |

Source: Author's own computation.