

Budget Deficits and Inflationary Dynamics in Nigeria

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Abstract

As the level of economic activity depends basically upon the level of aggregate monetary demand, a government may influence the level of activity by varying its own expenditure. In conditions of high unemployment, the government may run a deficit budget since it will spend more than it takes in taxation in an effort to get more people working. This study is therefore an attempt to ascertain the extent to which budget deficit causes inflation in Nigeria. It covers a period of eleven (11) years from 1998 to 2009 and all the data used in the study were collected from secondary sources, which include: the Central Bank of Nigeria, the Federal Office Statistics and the Nigerian Stock Exchange. The data were duly analyzed using correlation techniques. The result of our analysis revealed an adjusted R-Square value of 0.821, which means that budget deficit is responsible for about 82% of the level of inflation in the economy. It is therefore recommend for the Nigerian economy, that the Government should; consider minimizing budget deficit to an optimal level such that it can increase aggregate demand to promote investment and employment. More so, a structural approach should be adopted such as investment in tourism and expansion of agricultural production by creating more incentives for these sectors.

Introduction

The issue of budget deficits and financing has been of primary concern to the government because commonly, deficits are perceived as a negative trait in the economy (Sani, 1992). According to Perot (1993) in Shapiro (2003), the only good budget is a balanced budget and it constitutes an economic threat as continuing deficits means passing on greater debt on to our future generations. However, these deficits can sometimes be good for us because real structural deficits have ushered in greater growth in output and consumption, encouraged savings and investments thereof, while these cumulative savings and investments enhance productivity performance via increased public sector spending and this injects more purchasing power into the economy to stimulate economic activity. Haache (1998), opined that budget deficit and financing have been economic problems facing the nation and are also major factors fueling inflation over the years in the same way. Government expenditure resulting in fiscal deficits is associated with inflation. This is because, there is a relationship between government expenditure resulting in fiscal deficits and inflation, although there are other causes of inflation in the economy such as inadequate domestic output of goods and services and inefficient distribution systems. According to Ackely (2002), deficit reduction by cutting down government expenditure has worsened unemployment, capital and project workers are being laid off, also with the entrance of potential workers (graduates and secondary school leavers). This is because increased government expenditure via capital projects creates job opportunities and increases

national income but with reduced government expenditure, there is increased taxation to generate revenue which induces inflation.

According to Hanasen (2004), deficit financing is via taxation and borrowing (either locally or internationally). From the private sector the government switches the real burden of deficit financing unto the banks and the effects of this is to reduce the volume of loanable funds in banks for investors, reduced money in circulation and reduced private consumption (as consumer demand on deposits will be reduced); but by borrowing from the Central Bank of Nigeria (CBN), which the government can instruct to print more money which though is highly inflationary, it increases money in circulation without a corresponding increase in the general output level. This increases the propensity to consume more than the propensity to save; as the recipients of this new income consume more, the result is a demand-pull inflation as there will be more money than available goods and services. The Central Bank could credit the Government with deposits to be operated by cheques while borrowing internationally; the burden of national debt is increased. Borrowing, though inflationary can be useful if invested productively. Therefore, a good mode of deficit reduction and financing is one without inflationary pressures and recessionary tendencies. This however appears to be utopic.

It is an attempt to fill this gap that the researcher tends to ascertain the extent to which budget deficit causes inflation in Nigeria. Based on this purpose, we hypothesized that budget deficit has no significant implication on inflationary level in Nigeria.

Literature Review

Nigerian economy has been plagued by huge budget deficits since the 1970's till date. Government deficit budget exists where government expenditure on goods and services, and transfer payments exceeds tax revenues and must, be recovered by borrowing, which increases national debt and initiates inflation. But if expenditure falls short of revenues, the surplus is used to reduce the debt.

An annually balanced budget is probably impossible to achieve, given the endogenous nature of tax receipts (Cagan, 2006). Real structural deficits usher in greater growth in output and consumption, thus encouraging savings and investment. Increased investments enhance productivity performance via increased public sector spending which injects moiré purchasing power into the economy to stimulate economic activity.

The budget deficit is calculated from the national budget which is a financial model used to forecast the expected amount of tax revenue as compared with planned expenditure for a period of one year. The budget is formulated aside from raising revenues to meet the requirements of the nation. It seeks to lay a solid foundation for dynamic growth for subsequent years. In the budget, the Government allocates revenue raising measures and expenditure to various sectors of the economy.

The Government exercises the right to rise via taxation the revenue it needs to meet the commitment and its proposals are normally embodied in the budget; it is also one of the economic regulators as overall fiscal policy. The balance, between government income and expenditure has a vital part to play in determining the performance of the economy (Hicks, 1991).

As the level of economic activity depends basically upon the level of aggregate monetary demand, a government may influence the level of activity by varying its own expenditure (Haache, 1999). In conditions of high unemployment, the government will run a deficit budget since it will spend more than it takes in taxation in an effort to get more people working.

The budget deficit means that government expenditure is greater than its income, i.e. that excess of expenditure over tax revenues, hence that amount must be borrowed or added to the national debt or that amount that must be covered by printing bank notes. This is normally as a last resort since it is very inflationary in the economy. The deficit of the economy is measured as a ratio of the Gross Domestic Product - GDP, while a budget surplus means that the government raises more money via taxation than it spent - its income is greater than its expenditure.

Nwakwo (2007) observed that the problem in the economy is that while consumers are likely to be happy to operate in expanding the economy by spending higher after-tax-income, they are normally not eager to accept lower money and real incomes as taxes are increased. Public reaction to lower disposable incomes (when income taxes rise) or higher prices (when expenditure taxes rise) is normally to demand and often security-wage increases which more than compensates for higher tax burden and instigates inflation. In such circumstances the government is likely to resort to various policies of direct control.

To fight the problem of inflation, the government may decide to run a budget surplus through taxes increases. This increase taxation has a depressing effect on the economy so investment is likely to decline but investment increases productivity contributes to fight inflation and stimulates economic growth. Furthermore, since taxation leads to higher prices, fiscal measures in curbing inflation may be in these circumstances counter-productive (Morley, 1991). The only good rule is that the budget should never be balanced - except for an instance when a surplus to curb inflation is being altered to a deficit, to fight inflation.

The budget in its framework also considers the effect that its proposals will have on particular sectors of the economy. It must also consider the relative needs for extra expenditure on infrastructure and development.

The deficit in an economy results from many factors - economic and non-economic alike. According to Shapiro (2003), the factors include:

- i) A persistent rise in the general price level i.e. inflation. Although, the deficits and modes of deficit reduction and financing also 'give rise to inflationary conditions.
- ii) Huge capital projects of the government which is in the current expenditure category of the government.
- iii) Slow growth rate of the Gross Domestic Product (GDP) and subsequently a crawling economy.
- iv) High unemployment which saps funds from the economy in creating jobs for people and benefits such as pensions, insurance etc. and,
- v) Other non-economic factors such as mismanagement of funds.

The distinction between the two causes of changes in the budget balance is easily seen in what is called the public sector budget deficit function which relates the budget deficit {B} to national income [Y]. Endogenous changes in the budget balance due to changes in national income are shown by movements along the given function and changes in the budget balance due to policy induced changes in government expenditure [G], transfer payments [Q] or in tax rates [T], are shown by shifts in the function and such shifts indicate a different budget balance at each level of national income.

Basically deficits in an economy are perceived as a negative characteristic as it means a growing debt for the future generation (Hicks, 1991). This is true as generation will pass down to generation the bulk of government treasury bill and certificates and the accrued un-cleared national debt and its effects in the economy but contrary to public knowledge these deficits can sometimes be good for the economy because it is a fact that real structural deficits as opposed to

government outlays financed by taxation has ushered in greater growth of output and consumption, also encouraged savings and investments, adds 'purchasing power and increases aggregate demand of the private sectors.

Although it is necessary to differentiate between the effect of the economy on the deficit and the effect of the deficit on the economy, economically during recessions and high unemployment, there is reduced consumption which increases the deficit while greater deficits (real structural deficits) increases public wealth induces more consumption, reduces unemployment and ushers' in greater growth in output (Cyejide, 2002).

Modes of deficit reduction and financing include decreased government expenditure, increased taxation and borrowing, although borrowing could be highly inflationary thereby reducing savings and consumption in the private sector. For instance, if the government reduces deficit by raising taxes, this could reduce disposable income for tax payers and surely reduce consumption and personal savings; therefore concern and efforts via fiscal policy should be directed at stimulating more government spending - preferably for public investment and lower taxes rather than cutting down the deficit as the deficits would naturally come down as we reduce unemployment, speed economic growth and achieve a prosperous economy.

According to Olivera (1991) deficits causes sustained inflation when they are financed by monetary expansion. When they are financed from the private sector, they cause either a small change in the price level when income is below potential or a significant but once-and-for-all rise in the price level if they take income temporarily above potential. Olivera (1991) revealed that four different ways in which a government can finance a deficit:

- (i) It can raise money by increasing, taxes, thus transferring purchasing power from taxpayers to itself.
- (ii) It can borrow money from willing lenders - domestic or international, thus transferring current purchasing power from them to itself, in return for the promise to repay with future purchasing power which can be complicating since foreign liabilities (from international borrowing) will be building up which will have to be met by exporting goods and services to earn the necessary foreign exchange - which means that the standards of living of future generations are being sacrifices in order to sustain the consumption of the present generation.
- (iii) It may sell-off valuable assets, such as nationalized industries; although this is only a temporary solution.
- (iv) It can in effect print enough money to permit itself to bid the resource it needs from potential users. This is done via the sale of bonds to the Central Bank, in return the Central Bank credits the government with a deposit on which the government can draw cheques to pay for its purchases. If resources are already fully employed this method of finance must create an inflationary gap and thus cause a rise in the price level. Aggregate demand, already high enough to purchase all the output the economy is producing becomes excessive as the government enters the market with its own new demand; and this rise will mean that the households and firms will be able to buy less than they have otherwise bought and the government will be able to obtain resources for its own activities leaving fewer resources for private consumption and private capital formation (Sani, 1992; Hansen, 2004).

Borrowing though inflationary could be very useful if implemented productively - although it is very necessary to note that a good mode of deficit reduction and financing is one without inflationary pressures and recessionary tendencies which is not an easy task (Onuigbo, 1992). Rather an appropriate mix of debt instruments suitable 'for optimum' operations of economic activities is most convenient. Regarding the theory of income determination, predictions, sometimes budget deficits will cause inflation and at other times it will not.

Methodology and Analysis

This study covers a period of eleven (11) years from 1998 to 2009. It involves an analysis of secondary data on budget deficits and inflation to determine the existing relationship between them. All data used in this research were collected from secondary sources, these sources include: the Central Bank of Nigeria, the Federal Office Statistics and the Nigerian Stock Exchange. The data were duly analyzed using correlation techniques to calculate for the adjusted R-square which measures the relationship between budget deficits - the independent variable and inflation - the dependent variable and the test of significance - t-value which measures the extent budget deficits can be used in explaining the level of inflation.

The result of our analysis as presented in the appendix revealed that the adjusted R-Square value of 0.821 means that budget deficit can explain about 82% of the level of inflation in the economy. We can see that the adjusted R-square value of $0.821 > 0.5$, hence it is concluded that there is a relationship between the variables thus we reject the null hypothesis.

The t-value which measures how significantly budget deficit can be used to explain the level of inflation in the economy has a value of 2.057. Comparing the t-value of 2.057 and that from statistical table which is 1.833, the calculated t-value > 1.833 which means that budget deficit is significant in explaining inflationary level in the economy and this confirms the rejection of the null hypothesis.

From the graph model (see appendix), we can see that budget deficit values and the lagged inflation values follow the same trend. They are both progressing except for a slight kink in the deficit curve between 2000 and 2002 when the deficit increased which was caused by tight monetary policies pursued during the year.

From 2004, can be seen that as deficit and inflation increased in almost the same proportion thus narrowing the gap between the curves and if they meet both curves will move on the same line. The closing of this gap between the curves shows that budget deficit is an important variable in explaining the level of inflation in the economy.

Conclusion and Recommendations

Budget deficit has a major impact on the level of inflation in the economy because it increases the supply of money in circulation without a corresponding increase in the general output level and tends to induce macro-economic instability. In addition, it affects private sector activities and the level of public debt which must be repaid in the future. The primary impact of a deficit of the budget, is increase in credit expansion and money supply in the economy. The expenditure of such deficit increases aggregate demand which may be in excess of aggregate supply of goods and services. This situation inevitably accelerates inflationary pressure in the economy.

For the period under review, the Federal Government borrowed heavily to finance its fiscal deficit and money supply often increased beyond what the economy could cope with in the short run, this situation of excess liquidity in the financial system has often encouraged excess demand. Excess budget deficit undermine the attainment of macro-economic objectives of price stability, economic, growth, full employment and balance of payment equilibrium in the economy.

Although some level of inflation cannot be absent as inflation is a problem, the Nigerian economy will encounter in pursuit of development, we can conclusively say for the period under review anti-inflationary measures such as price control measure is important to correct the deficits of other anti-inflationary measures.

We can deduce from our analysis and findings that the variables – budget deficit and inflation have a significant relationship, that is, deficits influence the level of inflation in the economy. This relationship is enhanced by the particular mode of deficit financing that is being implemented at that time. From our conclusion, we realize that any mode of deficit financing that induces monetary expansion without a corresponding increase in production will boost the level of inflation in the economy. It is therefore recommended for the Nigerian economy, that the Government should; consider minimizing budget deficit to an optimal level such that it can increase aggregate demand to promote investment and employment. More so, a structural approach should be adopted such as investment in tourism and expansion of agricultural production by creating more incentives for these sectors.

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Appendix

Values of Inflation and Deficits Inflation Values (Base Year = 1998)

Table 1

Year	Deficit	Inflation (Y)
1998	3456	67.9
1999	2615	98.8
2000	3040	100.0
2001	8254	105.4
2002	5890	116.1
2003	12161	181.2
2004	15153	272.7
2005	32116	293.2
2006	35755	330.9
2007	55532	478.4
2008	1011265	751.9

To measure the effect of inflation when lagged by one year i.e. the effect of budget deficits of one year on the inflation of the next year

Table 2: One Year Lag on Inflation

Year	Deficit (Millions)	Year	Inflation
1998	3456	1999	94.8
1999	2615	2000	100.0
2000	3040	2001	105.4
2001	8254	2002	116.1
2002	5890	2003	181.2
2003	12161	2004	272.7
2004	15153	2005	293.2
2005	22116	2006	330.9
2006	35755	2007	478.4
2007	55532	2008	751.9
2008	101126.5	2009	1322.6

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This procedure was completed at 12:49:51

REGRESSION VARIABLE=ALL

/DEPENDENT=INFL

/METHOD=ENTER

/RESIDUAL=DURBIN.

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SPSS/PC+

* * * * MULTIPLE REGRESSION * * * *

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. INFL INFLATION (N'm)

Beginning Block Number 1. Method: Enter

Page 7

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* * * * MULTIPLE REGRESSION * * * *

Equation Number 1 Dependent Variable... INFL INFLATION (N'm)

Variable(s) Entered on Step Number

1... DEFICIT BUDGET DEFICITS (N'm)

Multiple R .9479

R Square .89861

Adjusted R. Square .82068

Standard Error 16.12138

Analysis of Variance

	DF	Sun of Squares	Mean Square
Regression	1	995.85453	995.85453
Residual	9	2339.09093	259.89899

= 3.83170 Signif F = .0820

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SPSS/PC+

1/7/09

* * * * MULTIPLE REGRESSION * * * *

Equation Number 1 Dependent Variable.. INFL INFLATION (N'm)

----- Variables in the Equation -----

Viable	B	SE B	Beta	T	Sig T
DEFICIT	3.26762E-04	1.66928E-04	.9479	2.057	.0820
Instant)	18.70274	6.32882	2.955	.0161	

Block Number 1 All requested variables entered.

CORRELATIONS VARIABLES =ALL.

The raw data or transformation pass is proceeding
11 cases are written to the uncompressed active file.

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Correlations: INFL DEFICIT V INFL 1.0000 9479 V
DEFICIT .479 1.0000

N of cases: 11 . – tailed Signif: * – .01 ** – .001 H is printed if a coefficient cannot be computed

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This procedure was completed at 12:49:50
T-TEST PAIRS DEFICIT WITH INFL.

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Paired samples t – test: DEFICIT BUDGET DEFICITS (N'rn.) V
V INFL INFLATION (N'rp)

1Variable Number Standard Standard
of Cases Mean Deviation Error V V

DEFICIT	11	24279.9545	30540.353	9208.263
INFL	11	26.6364	18.262 5.506	

(Difference) Standard Standard 2 – Tail t Degrees of 2 – Ti1

Mean Deviation Error Corr, Prob. Value Freedom Prob.
24253.3182 30530.378 9205.255 .546 .082 2.63 9 .025

Durbin – Watson Test 1.49068

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This procedure was completed at 12:49:57 -
FINISH. -
End of Include file.