



## **AN ASSESSMENT OF THE RELATIONSHIP BETWEEN BUDGET DEFICIT SYNDROME AND CONSUMER WELFARE IN NIGERIA (1985 – 2014)**

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### **ABSTRACT**

*Nigeria over the years have concurrently operated deficit budget, though there have been various studies on the relationship between budget deficit and macroeconomic variables but the relationship between budget deficit and consumer welfare have not really been researched into in Nigeria. The study investigated the relationship between budget deficit syndrome and consumer welfare in Nigeria for the period 1985-2014. The data were analyzed with the Fully Modified Ordinary Least Square Approach (FMOLS). The time series properties of the data were tested by ADF unit root and johansen co-integration test. A uni-directional causal relation existed between consumer welfare and budget deficit while bi-directional causality existed between consumer welfare and indirect tax. The empirical findings revealed a minimal positive and insignificant impact of the budget deficit on consumer welfare, as a 1 per cent increased in budget deficit caused less than 1per cent (0.008) increased in consumer welfare. The study thereby concluded that budget deficit did not have significant influence on consumer welfare during the period under study. It is therefore necessary for the government to build fiscal strategy by promoting fiscal prudence and disciplines that will reduce wastage and linkages in the system which will be geared toward the consumer welfare gain.*

**Keywords:** Budget deficit, Consumer welfare, Welfare gain, Welfare loss, Consumer price index, Indirect tax.

### **Contribution/ Originality**

This study contributes to the existing literature on budget deficit as it affects the consumer welfare and it provides empirical linkages between budget deficit, consumer welfare, inflation, indirect tax and interest rate. This study is one of very few studies which have investigated the relationship between budget deficit and consumer welfare in Nigeria which was inadequately investigated in previous studies.

### **1. INTRODUCTION**

The desire for growth and increase in capital formation of developing countries in recent times has brought the issues of budget deficits into sharp focus. In the developing countries like Nigeria, a fiscal deficit is seen as a complex of concurrent thing characterized with huge recurrent

spending. Igwe and Omoke (2010) defined budget deficit as a fiscal period where total government expenditure exceeds its revenue. The effect of budget deficit on aggregate economic activity has become a focus point in economic theories over time. Nonetheless, there appears no agreeable consensus yet understanding of the effect of budget deficit on consumer welfare.

The development of a budget deficit is often traced to the Keynesian inspired expenditure-led growth theory. The economic fundamental of fiscal policy (budget) is to affect a counter policy that will offset booms, recession and depression during the course of business cycle. More so, deficit budget financing is essentially used in fine-tuning the economy. This is why John Maynard Keynes in 1930 advocated deficit financing into the economy as a way to stimulating aggregate demand via the multiplier effect as an agent of transition in an economy. Economies of the world adopted Keynesian theory that government has to motivate the aggregate demand side of the economy in order to stimulate economic growth. However, the consequences of budget deficit on macroeconomic variables cannot be underestimated in most countries of the world, including Nigeria (Olomola and Olagunju, 2004).

However, from the foundation of micro economics, consumption is one of the variables that enter in the consumer's utility function and the level of consumption is usually regarded as the welfare of a household or consumer. Consumer welfare can be studied more extensively under the Welfare economics which is a branch of economics that uses microeconomic techniques to evaluate well-being (welfare) at the aggregate (economy-wide) level ([www.wikipedia.com/consumerwelfare/](http://www.wikipedia.com/consumerwelfare/)). Khemani and Shapiro (1993) Consumer welfare refers to the individual benefits derived from the consumption of goods and services. In theory, individual welfare is defined by an individual's own assessment of his/her satisfaction, given prices and income. Exact measurement of consumer welfare therefore requires information about individual preferences. Although, there is no clear consensus on the definition of 'consumer welfare', there is the common understanding of 'consumer welfare' in economics: 'consumer welfare' is usually understood as 'consumer surplus' which is the aggregate measure of the surplus of all consumers. Consumer surplus is a measure of the welfare that people gain from consuming goods and services. The surplus of a given consumer is the difference between her valuation of a good and the price she actually pays for it Akman (2009). The more developed an economy becomes, the less it spends on food and the more it spends on non-food items (CBN, 2007). In Nigeria, private consumption expenditure has taken as much as 70 percent of the GDP in recent times; it is the largest component on the expenditure side and thus has played a major role in determining the economic growth of the country (Central Bank of Nigeria (CBN), 2013). The government expenditure multiplier on consumption has become a controversial issue, as there is disagreement as regards both the magnitude and sign (Maratin and Marzo, 2010).

### 1.1. Statement of the Problem

Nigeria recorded a Government Budget deficit equal to 1.80 percent of the country's Gross Domestic Product in 2013. Government Budget in Nigeria averaged -2.33 Percent of GDP from 2006 until 2014, 4.60 Percent of GDP in 2008 and a record low of -6.60 Percent of GDP in 2009

and -1.9 in 2014. ([www.tradeeconomics.com/nigeriabudget/](http://www.tradeeconomics.com/nigeriabudget/)). From 1980 till now, the Nigerian government have operated budget deficit except in 1995 and 1996, when surpluses were recorded. According to Fadiya and Odior (2011) the reason for the trend in budget deficit appears to be a direct impact of government activities on tax and spending pattern which has led to rising price of consumer goods, high debt burden on government, high rate of unemployment, exchange rate among others, which is a negative response to consumer's welfare. Various studies have shown that many developing countries operate fiscal deficit budget policies that are often subjected to incessant fluctuations (Fadiya and Odior, 2011). Budget deficit is an important issue regarding fiscal policy instrument and its effect and impact on consumption, consumer welfare, aggregate demand and growth in an economy. However, moderate government deficit expenditure may have both positive and negative effect on the long-run economic growth using consumption as a transmission medium. More so, consumption in an economy comprises of various households and firms decision on both consumer and capital goods expenditures.

In Nigeria, there have been various studies on the relationship between budget deficit and macroeconomic variables over the years (see (Olomola and Olagunju, 2004; Igwe and Omoke, 2010; Oduwara, 2011; Oladipupo and Akinbobola, 2011; Isaih, 2012; Okoro, 2013; Ali and Ahmad, 2014)). However, there are limited works on the relationship between budget deficit and consumer welfare. Hence, to my knowledge the relationship between budget deficit and consumer welfare is still under-researched in Nigerian. Majorly, Nigerian economy under various governments over the years have operated fiscal deficit and the current government of President Mohamudu Buhari appears to be starting his tenure on the same precedent. After much lamentation, the 2015 budget was described by the senate as a deficit budget whose content is grossly exaggerated (Ogunmade, 2015). A study of this nature is quite relevant given the current state of the economy, where governments at all levels have to finance their budget through deficit. However, in all these, the policy makers have failed to consider over the years the impact and effect of budget deficit on the consumer welfare. This paper tends to answer these research questions; what is the trend of the budget deficit in Nigeria? Is there a causal relationship between budget deficit and consumer welfare in Nigeria? And, what is the nature of the impact of budget deficit on consumers' welfare in Nigeria? It is therefore imperative to know the trend of the Nigeria deficit budget, the impact of budget deficit on consumer welfare and the relationship that exist between budget deficit and consumer welfare in Nigeria. It is believed this work will throw much light into ways by which fiscal policy (budget deficit) can be used to boost aggregate demand as it affect consumers welfare through consumption expenditure in Nigeria. However, the scope of the study will be limited to the year 1985 to 2014, the length of the period will allow the study to establish a dynamic relationship between budget deficit and consumers welfare in Nigeria and the empirical fact derive will serve as a benchmark for proper budget deficit management in Nigeria that will simulate and gear consumption and consumers welfare.

## 2. LITERATURE REVIEW

Attempt to pursue growth in any country is the implementation of a yearly financial plan gear towards ensuring projected growth commensurate with actual planned growth rate. Budget is therefore a growth tool through the management of available resources that will reveal a financial statement position of a country's financial plan with the proposal for spending and means of generating income through tax usually in a year. During planning and implementation of fiscal year, government may end up with deficit, surplus and balance budget. Surplus budget entails a plan where revenue exceeds government expenditure while balance budget entails equality between both government revenue and expenditure. The term budget deficit, a common public budgeting phenomenon has been described as a situation whereby the expected revenue is lower than the proposed expenditure.

It is an expansionary policy that is expected to promote growth, particularly when an economy is going through recession. In developing countries, it often has been argued that high inflation on consumption materializes when governments face large and persistent deficits that are financed through money creation. Hence, inflation emerges as a fiscal driven monetary phenomenon. Nevertheless, if inflation is a consequence of non-fiscal disturbances, real tax revenues might decline and the budget deficit could end up being endogenous to the inflationary process. It becomes effective by lowering the compulsory levies impose on individuals and consumption of goods. Reduction in tax enhances the purchasing power of the consumers (citizens). Also, an efficiently managed budget deficit financing is could be a panacea to technological and infrastructural development that will impact positively on the well-being and welfare of a nation's citizen and at the same on the path of achieving economic growth.

The Neo classical school of thought, [Friedman \(1968\)](#) argued that the monetary authorities could control inflation rate, especially in the long run, through the control of the money supply. He stressed further that deficit financing can lead to inflation, which will lead to the loss of welfare and the consumption pattern of its citizens will drastically be reduced, If and only if the economy output is at full employment level. Thus, money-financed deficits are inflationary; bond-financed deficits need not be. Whether bond financed deficits are inflationary or not depends upon the current approach to policy of the monetary authorities. If interest rates are pegged or stable, then bond-financed deficits are inflationary, because this calls for an expansion in the money supply that ultimately leads to rising prices. Contrary to classical idea is the Keynesian school of thought that believes in short run analysis of current income as the sole determinant of consumption pattern of citizens. He sees deficit financing as a veritable tool for the achievement of economic objectives and also overcoming fluctuations that can affect any economy. He believes that deficit financing government expenditure will increase consumer's income consumption pattern and ultimately consumer welfare gain. Keynesian approach gives the result that an increase in the deficit brought about either by an increase in government spending or a reduction in taxes has the effect of raising or reducing consumption pattern through income.

[Lozano \(2008\)](#) the connection between budget deficit and final consumption has been explored extensively in both industrial and developing economies, with mixed results. In

developing countries, it often has been argued that high inflation on consumption materializes when governments face large and persistent deficits that are financed through money creation. Hence, inflation emerges as a fiscal driven monetary phenomenon. Nevertheless, if inflation is a consequence of non-fiscal disturbances, real tax revenues might decline and the budget deficit could end up being endogenous to the inflationary process. Thus, fiscal and monetary policies could exhibit a simple or a bi-directional causal-relationship: changes in inflation could influence the fiscal authority's decisions and (or), conversely, the budget deficit could have implications for money growth and inflation. However, an issue to bear in mind is the effect of this double digit inflationary trend on the consumers' welfare and consumption pattern because consumption can only increase welfare of the citizens in an atmosphere of price stability. In real terms, price increases have worsened the welfare of most consumers (Leyaro, 2009).

Consumption is the fundamental process in the economy that addresses the scarcity problem which makes it a ultimate goal of economic activity. Consumption expenditure covers the largest percentage of aggregate expenditures in any fiscal year and it also assumes to be a principal determinant of agent of Welfare (Horvath, 2009). The choice of consumption expenditure by household is determine by both subjective (psychological and social factors in form of business and individual motives) and objective factors which include change in fiscal policy(budget deficit), change in income level, change in the rate of interest and attitude to saving (Jhingan, 2003).

Leyaro (2009) a consumer's own monetary valuation is the best measure of the welfare effect. Since the measure is in terms of money, individual valuation measures are commensurable and could in principle be added to form a measure of the aggregate benefit to all consumers. This monetary valuation of utility is the maximum amount a consumer would be prepared to pay for the opportunity of buying a good at any point in time given the price and income that is, the consumer's budget constraint (Leyaro, 2009). Though there are different ways to measure household welfare (see (Nicita, 2004; Porto, 2006; Barrand, 2008)).

### 2.1. Consumer Welfare

The term consumer welfare has several interpretations and it has often been misinterpreted or even misunderstood, while there is no clear consensus to it definition. It is sometimes used to refer to economic efficiency or a certain consumer interest without defining its real content. However, consumer welfare is an economic concept with relevant socio-political and legal implications. More so, the economic rationale behind the consumer welfare standard seems to be often overridden by its political rationale, which is to legitimize the enforcement of competition rules by competition authorities and reflect society's preferences on income distribution.

Khemani and Shapiro (1993) Consumer welfare refers to the individual benefits derived from the consumption of goods and services. In theory, individual welfare is defined by an individual's own assessment of his/her satisfaction, given prices and income. Exact measurement of consumer welfare therefore requires information about individual preferences. In practice, applied welfare economics uses the notion of consumer surplus to measure consumer welfare. When measured over all consumers, consumers' surplus is a measure of aggregate consumer welfare. In anti-trust

applications, some argue that the goal is to maximize consumers' surplus, while others argue that producer benefits should also be counted.

According to Cseres (2007) consumer welfare is generally defined as the maximization of consumer surplus, which is the part of total surplus given to consumers. This is realized through, 'direct and explicit economic benefits received by the consumer as measured by its price, quality and the consumer's income'. The consumer welfare argues that the ultimate goal should be to prevent increases in consumer prices, restriction of output or deterioration of quality due to the exercise of market power by dominant economic agents.

In consumer law consumer welfare stands for correcting market failures in order to improve the consumer's position in market transactions. Consumer welfare is concerned with efficient transactions and cost-savings but it is also directed at social aspects of the market such as the safety and health of consumers (Cseres, 2007).

'Consumer welfare' is usually understood as 'consumer surplus' which is the aggregate measure of the surplus of all consumers. Consumer surplus is a measure of the welfare that people gain from consuming goods and services. The surplus of a given consumer is the difference between her valuation of a good and the price she actually pays for it Akman (2009).

However, according to Leyaro (2009) a consumer's own monetary valuation is the best measure of the welfare effect of price change. Since the measure is in terms of money, individual valuation measures are commensurable and could in principle be added to form a measure of the aggregate benefit to all consumers. This monetary valuation of utility is the maximum amount a consumer would be prepared to pay for the opportunity of buying a good at any point in time given the price and income that is, the consumer's budget constraint.

## 2.2. Empirical Literatures

Lyrouti (2003) hypothesis was based on Keynes and Ricardo equivalent theory that consumption function is a basic element to determine national income and submitted that an increase in budget deficit leads to an increase in real domestic product to an increase in interest rate and consumption and the causality test based on Ricardo equivalence indicates that an increase in budget deficit leads to a decrease in the consumption and eventually leads to decrease in economic growth. Fabiosa and Jensen (2002) while using the Indonesian economy explained that macroeconomic shock will have impact on the level on the level of household welfare via low private consumption expenditure and inflation may also affect measure of consumer welfare if income of low income families responds slowly to increases in price level. Linneman and Schabert (2004) presents a sticky price model of dynamic stochastic general approach in which government expenditure and household/private consumption expenditure enter the representative agent of utility function and he concluded that in some cases, positive government expenditure shocks crowd in household consumption. Lavi and Strawczynski (2005) examined the impact of fiscal policy on consumption in Israel with emphases on fiscal expectation approach with the use of Engel and Granger Causality test and the study indicates an increase in financing deficit to private consumption while indirect tax on wages has a negative effect on household consumption

and also a substitutability relationship between government consumption and private/household consumption. Olomola and Olagunju (2004) examined the linkage between fiscal deficit and private consumption spending in Nigeria during the period of 1970-2001 using vector error correction approach. The result shows that fiscal deficit exert great influence through substitution effect between private and public consumption and indirect influence on other macroeconomic variables employed.

Fadiya and Odior (2011) explored the implication of macroeconomic variables volatility on private consumption using structural auto regression (SVAR) between 1980-2008 and discovered that volatility of macroeconomic volatility variables does lead to a decline in consumption and inflation play a long run effect on private consumption than it does in the short run which thus negates welfare of consumer.

Leyaro (2009) used a survey data to econometrically estimate elasticity's and the effects of price changes on consumer welfare, and used the resulting model to simulate the consumer welfare effects of tariff reductions in Tanzania. He obtained data on private household's expenditures, consumption and income and the ratio of items expenditure provides the measure of budget share. Also, the indirect utility function was used to estimate the household compensating variation, the measure of consumer welfare effects of price changes. The household benefited welfare rise, albeit very marginally, in the initial period of reforms, and then worsen in the subsequent periods (intermediate and long terms).

Bajari *et al.* (2005) developed a new approach to measuring changes in consumer welfare due to changes in the price of Owner-occupied housing. In their approach, an agent's welfare adjustment is defined as the transfer required keeping expected discounted utility constant given a change in current house prices. Real expenditures on consumption was dependent on investment in housing, real saving which must equal total real income and they demonstrated that, up to a first-order approximation, there is no aggregate change in welfare due to price increases in the existing housing stock.

Nevo (2012) used overall consumption expenditure subject to real income, price index and demand shifters in his work "measurement of consumer welfare" and he proved that there is consumer welfare gain as a result of increase in real income and welfare loss as price index increases.

### 3. THEORETICAL FRAMEWORK AND THE METHODOLOGY

The framework of this study is built on the Keynesian school of thought that believes in short run analysis of current income as the sole determinant of consumption pattern of citizens. He sees deficit financing as a veritable tool for the achievement of economic objectives and also overcoming fluctuations that can affect any economy. He believes that deficit financing government expenditure will increase consumer's income, consumption pattern and ultimately consumer welfare gain. Keynesian approach gives the result that an increase in the deficit brought about either by an increase in government spending or a reduction in taxes has the effect of raising or reducing consumption pattern through income.

Fabiosa and Jensen (2002) used a two estimating equations to derive consumer/household welfare model. They analyzed how Indonesian consumers adjusted to macroeconomics shock with a particular focus on adjustments in consumption decisions by estimating the welfare impacts of these adjustments by the use of two – step procedures of Heien and Wessels (1990) and Shonkwiler and Yen (1999) in order to allow assessment of parameter attenuation (Inflation) impact on consumer welfare estimates. Given a demand function below

$$q^* = q^*(P, Y), \tag{1}$$

Where  $q^*$  is a vector of consumption quantities,  $P$  is a vector of prices, and  $Y$  is income. The demand function is assumed to be integrable that gives a well-behaved cost function in equation 2

$$C = C(U, P), \tag{2}$$

Where  $U$  is a utility level. Welfare impact analysis can use equation (2) to measure compensating variation, which quantifies the change in the cost ( $C$ ) of purchasing a consumption bundle that gives the same level of utility in the reference period, given the price changes.

Finally, we have this model below

$$w_i \alpha_{io} + \sum_{j=i}^n Y_{ij} \ln p_{jt} + \beta \ln \left( \frac{Y_t}{P_t} \right) + \lambda_i D_{it} + \epsilon_t \tag{3}$$

Where  $w$  is budget share and the  $j$ th commodity share is  $w_j = (p_j q_j) / Y$ ;  $q_j$  is the quantity demanded of  $j$ th commodity;  $Y$  is the group expenditures,  $p_j$  is the nominal price of  $j$ th commodity.  $\epsilon_t$  is stochastic error term distributed and  $(\alpha, \beta, Y, \lambda)$  is a vector of parameters. This model was able to examine the household/consumer welfare adjustment to macroeconomic shock. However, this also inspired our theoretical reasoning for this paper. More so, a consumer’s own monetary valuation is the best measure of the welfare effect (Leyaro, 2009). Since the measure is in terms of money, individual valuation measures are commensurable and could in principle be added to form measure of the aggregate benefit to all consumers. This monetary valuation of utility is the maximum amount a consumer would be prepared to pay for the opportunity of buying a good at any point in time given the price and income that is, the consumer’s budget constraint (Leyaro, 2009).

### 3.1. Model Specification

Keynes advocated for government intervention to aggregate demand and domestic consumption via the multiplier effect. Therefore, the Keynesian national income identity model is expressed as follows;

$$Y = C + I + G \tag{1}$$

Where;

Y = National income

C = Consumption Expenditure

I = Investment

G = Government Expenditure

Consumption is the largest component of aggregate demand or expenditure and consumption theory expressed consumption as a function of disposable income:

$$C = f(Yd) \text{ ----- (2)}$$

$$Yd = Y - T \text{ ----- (3)}$$

Equation (2) in linear form

$$C = \alpha + \beta Yd \text{ ----- (4)}$$

$$C = \alpha + \beta (Y - T) \text{ ----- (5)}$$

When government expenditure exceeds government revenue then there is a deficit and since we are interested in budget deficit (BDF) then;

$$C = f(BDF) \text{ ----- (6)}$$

Inspired by the works of Fabiosa and Jensen (2002); Bajari *et al.* (2005); Lavi and Strawczynski (2005); Leyaro (2009) and Nevo (2012) household consumption expenditure which is also known as private consumption expenditure was the variable used as a proxy for consumer welfare in their models. However, in line with these and a little modification, therefore the model to be adopted in this work is as formulated below

$$PCE = f(BDF, CPI, INT, ITX) \text{ ----- (7)}$$

CPI (Consumer price index) and ITX (Indirect tax) were additional control variables since they affect consumption pattern and ultimately consumer welfare gain or loss.

Therefore, this model is specified explicitly in a linear form thus:

$$PCE = \beta_0 + \beta_1 BDF + \beta_2 CPI + \beta_3 INT + \beta_4 ITX + U_E \text{ ----- (8)}$$

Specifying the function in explicit form by log linearizing

$$LPCE = \beta_0 + \beta_1 LBDF + \beta_2 LCPI + \beta_3 LINT + \beta_4 LITX + U_E \text{ ----- (9)}$$

Where;

PCE = Private Consumption Expenditure

BDF = Budget deficit

INF = Consumer price index (Inflation)

INT = Interest Rate

ITX = Indirect tax

U - stochastic error term,

$\beta_0$  - shift/ constant parameter

$\beta_1, \beta_2, \beta_3,$  and  $\beta_4$  are parameters co-efficient of the respective independent variables

### 3.2. A priori Expectation

This is relationship that is expected to exist between the endogenous and exogenous variables in the model.

$PCE = f(BDF); f_1(BDF) > 0; \beta_1 > 0$ . This implies that an increase or more government budget deficit financing in the economy it is expected to have a positive impact on the Private consumption expenditure that is a consumer welfare gain.

$PCE = f(CPI); f_1(CPI) < 0; \beta_2 < 0$ . This implies an increase in consumer price index (inflation) in an economy is expected to have a negative effect on the Private consumption expenditure that is it will bring about consumer welfare loss.

$PCE = f(INT); f_1(INT) < 0; \beta_3 < 0$ . An increase in Interest rate will have a negative impact on private consumption expenditure.

$PCE = f(ITX); f_1(ITX) < 0; \beta_3 < 0$ . It implies an increase on government indirect tax will have a negative impact on the consumer's expenditure which in turn will bring about consumer welfare loss.

### 3.3. Estimation Techniques

This paper employed the use of the Fully Modified Ordinary Least Square method (FMOLS). This econometrics technique FMOLS was originally proposed by Phillips and Hansen (1990). The method employs the semi-parametric correction to eliminate the long-run correlation between the cointegrating equation and the innovations. The FMOLS is to provide optimal estimates of Co-integration regression. The basic idea of the FMOLS approach is to account for the serial correlation and test for the endogeneity in the regressors that result from existence of cointegrating relationship. Chaifik and Younce (2012) to apply the FMOLS for estimating long-run parameters, the condition that there exists a Cointegration relation between a set of 1(1) variable is satisfied. Therefore we have to confirm the presence of the unit root and test the Cointegrating relation.

The co-integration techniques demonstrate the long run relationship of the estimated equations, the techniques will also demonstrated that, if two time series variable are co-integrated after differencing, that is, there is a meaningful long-run relationship between them. The Johansen cointegration approach can determines the number of cointegrated vectors for any given number of non-stationary variables of the same order. Al-abdulrazag and Ameerah (2013). The augmented Dickey-Fuller unit root test (ADF) is an approach for testing the existence of unit root in the time series. The objective of applying the Augmented Dickey-Fuller unit root test (ADF) for individual series included in the model is provided evidence as to whether or not the variables used in the regression process are stationary and to indicate the order of integration. However, the Granger causality will also be used, it is meant to show that direction of causality between variables in the model, it helps to examine whether past changes in one variable (Z), helps to explain the current changes in another variable (Y) over and above the explanation provided by past changes in (Y). However, co-integration tests for stationary variables would be meaningless because variables have to be integrated in order to be cointegrated. Thus, we examine the stationary of variables in question; the unit root test is then performed.

### 3.4. Sources of Data

The data used in this study is a group of selected economic and financial indicators in Nigeria from already processed data (secondary source of data), (CBN, 2013) CBN annual reports and CBN online data base. The major limitation of this paper is the inaccuracy and inconsistency associated with data generated from Nigeria agencies. This is because data generation and processing is still at its fancy in Nigeria.

#### 4. EMPIRICAL RESULTS

The section of the paper presents the result and interpretations of our analyses. The empirical analysis of the study began by to examine the trends of the budget deficit in Nigeria, we examine the stationary (unit root test) of the variables in the model, then followed by others econometrical tools (Cointegration, Fully modified ordinary least square method and the Granger causality test).

##### 4.1. Trend Analysis of the Nigerian Budget Deficit

The budget deficit trend is represented by the graph in Fig 4.1. The graph showed an up and down swings trend of the Nigeria budget deficit over the years (1985-2014), representing the syndrome nature of Nigerian deficit budget. However, the budget deficit showed negative downward swings throughout the years, except for in the year 1995 and 1996 where budget surplus was operated (N1, 1271.00billion and N3, 2049.40billion respectively). The downward and negative trend of the budget deficit became more increasing after the military government to democratic government in 1999, from the year 2008 to 2011 recorded the most negative swings, as also reported earlier that Nigeria budget deficit average 4.60 percent of GDP in 2008 and 6.60 percent in 2009. The economic implication of this is that any shock to budget deficit will be sustained over a long period of time as it shown non stationarity properties. The developing countries and in Nigerian, fiscal deficit budget policies are often subject to incessant fluctuations (Fadiya and Odior, 2011).

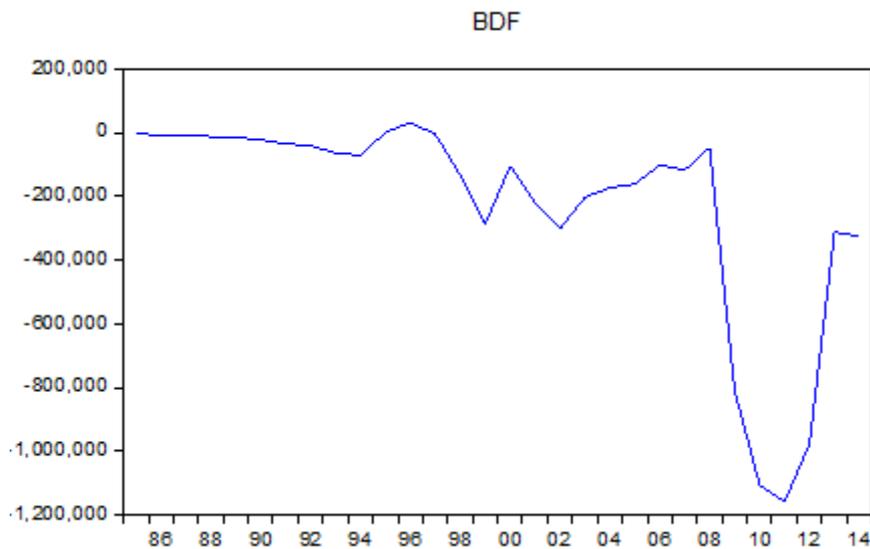


Fig-4.1. Nigerian Budget Deficit Trend

Source; Author's computation

#### 4.2. Unit Root Test

Table-4.2. ADF Unit Root Test

Variable	Augmented Dickey Fuller Test	1% Level Critical value	5% Level Critical value	Probability value	Level of Integration
PCE	-9.736365	-2.650145	-1.953381	0.0000	1(1)
BDF	-4.184270	-2.650145	-1.953381	0.0002	1(1)
CPI	-4.716722	-1.953858	-2.653401	0.0000	1(2)
INT	-3.422802	-2.660720	-1.955020	0.0014	1(1)
ITX	-5.370168	-2.650145	-1.953381	0.0000	1(1)

Source: Author's computation.

Table 4.2 reports the result of the unit root test ADF. However, the result revealed the ADF value is greater than the critical t-value at 95% level of significance for four (4) of the variables (PEC, BDF, INT and ITX) in their first differenced, 1(1) and CPI was stationary at the second differenced, 1(2). The implication of these is that four of the variables are integrated together in the same order, as this is the first sign of a long run relationship between the variables.

#### 4.3. Cointegration Test Result

The cointegration test determines the number of cointegration vector for any given number of non-stationary variables of the same order, it examine whether or not there is at least one linear combination of cointegration in the long run.

Table-4.3. Johansen Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.857411	105.5224	69.81889	0.0000
At most 1 *	0.604437	50.98430	47.85613	0.0247
At most 2*	0.387943	29.01586	25.79707	0.1609
At most 3	0.331202	11.26984	15.49471	0.1954
At most 4	0.000220	0.006172	3.841466	0.9369

Source: Author's computation.

The table 4.3 represents the cointegration test as it shown that there are three (3) cointegrated equations in the model at 5% critical value based on the fact that the trace statistic is greater than the critical value at 5%. This is now the confirmation of the unit root test in order of integration that private consumption expenditure, budget deficit, interest rate and indirect tax cointegrated in the long run at the same speed, and so, there exist a long run equilibrium relationship between the variables.

#### 4.4. Fully Modified Ordinary Least Square Method Result (Fmols)

According to Chaifik and Younce (2012) to apply the FMOLS for estimating long-run parameters, the condition that there existed cointegration relations between a set of 1(1) variable must be satisfied. Therefore, since this condition had been satisfied with the result of the unit root and cointegration test, we then proceeded to the FMOLS analysis.

Table-4.4. Fully Modified Ordinary Least Square Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LBDF	0.008478	0.038877	0.218065	0.8292
LCPI	-0.268960	0.040254	6.681558	0.0000
LINT	0.174493	0.203484	0.857528	0.3996
LITX	0.458336	0.125479	3.652705	0.0013
C	6.673356	1.500548	4.447278	0.0002
R-squared	0.917383	Mean dependent var		12.55933
Adjusted R-squared	0.903614	S.D. dependent var		0.450657
S.E. of regression	0.139912	Sum squared resid		0.469808
Durbin-Watson stat	1.706801	Long-run variance		0.023245

Dependent Variable: LPCE

Method: Fully Modified Least Squares (FMOLS)

Source: Author's computation

$$LPCE = 6.673356 + 0.008478LBDF - 0.268960LCPI + 0.174493LINT + 0.458336LITX$$

According to the long run Fully Modified Ordinary Least Square (FMOLS) result, all the variables have positive elasticity's except Consumer price index (LCPI) which was negative. More so, only the impact of LCPI and Indirect tax (ITX) were significant, the intercept of the regression line was positive and significant; the R-squared value of 0.917383 indicated a good fit and explained that about 91% systematic variation in consumer welfare was caused by budget deficit, consumer price index, interest rate and indirect tax and the Long run variance value of 0.023245 implied a change of deviation from the long run equilibrium relationship among the variables was about a minimal of 2% that is there was 98% assurance that long run equilibrium relationship existed. The result suggested that 1% increase in budget deficit will increase the consumer welfare by a little 0.8% which was also not significant. The indirect tax has a positive and significant impact on consumer welfare in Nigeria, where a 1% increase in value added tax and other forms of indirect taxes will bring about consumer welfare gain by 45% which was contrary to the a-priori expectation. However, consumer price index (inflation) showed a considerable significant negative impact on consumer welfare, where a 1% increase in CPI causes a 17% consumer welfare loss. As opinioned by [Leyaro \(2009\)](#) Inflationary trend and price increases have worsened the welfare of most consumers, and also proved by [Nevo \(2012\)](#) welfare loss as price index increases.

#### 4.5. Granger Causality Test

This test is to show the casual relationship between two variables, if two variables cointegrated in the long run it follows that there must be granger causality in at least one direction ([Engle and Granger, 1987](#)). However, the result shown a uni-directional causality running from PCI to BDF at 5% significant level, which implied consumer welfare granger caused budget deficit in the Nigerian economic. There was also a uni-directional causality running from PCI to CPI and a uni-directional causality running from PCI and BDF at 5% significant level by rejecting the null hypothesis. The null hypothesis was rejected and it was

concluded a bi-directional causal relationships runs from PCI and ITX at 5% significant level vice versa, implied consumer welfare and indirect tax granger caused one another.

## 5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

This accessed the relationship between budget deficit and consumer welfare in Nigeria through certain question raised and the used of some set of objectives; it analyzed the trends of budget deficit in Nigeria over the years, it examined the effect of the Nigerian budget deficit syndrome on her consumers' welfare and it determined the causal link between budget deficit and consumer welfare. All questions were answered and all objectives were met through the series of analyses test carried out. The study employed time series data from the year 1985-2014; data were sourced from CBN statistical bulletin, CBN online line data bank and trade economics web page. The result of our test analyses revealed that budget deficit in Nigeria has positive effect on consumer welfare insignificantly and it was also revealed a uni-direction causality between budget deficit and consumer welfare. However, it implied that over the years of fiscal deficit budgets operated in the economy as had very little insignificant impact on consumer welfare gain.

Conclusively, the empirical evidence from this work has shown the relationship that existed between consumer welfare, budget deficit, consumer price index, interest rate and indirect tax in the Nigerian economy. It was revealed that consumer price index has a significant negative impact on consumer welfare in Nigeria and with a uni-direction relationship existed. Indirect tax has significantly impacted positively on Nigerian consumer welfare gain with bi-directional causal relationships, it implied that the indirect taxes imposed on the citizens do not reduced their purchasing power and consumption patterns which had ultimately brought about consumer welfare gain to the citizens. One of the examples of this was the increment in the satellite cables (DSTV, GOTV, STARTIME, AFRISAT etc.) subscription fees, which the companies attributed to high government taxes, which didn't still stop Nigerians from subscribing also the tariffs imposed on imported goods (Majorly; Rice, Imported wines, Telecommunication gargets, Cosmetic products etc.) didn't stop Nigerian form the consumption of such goods rather encourages Nigerians more to consume them.

Having carried out analyses and obtained the results as presented and discussed previously, this research work recommends that active and effective budget management system should be put in place to correct the insignificant impact of budget deficit on consumer welfare, fiscal policy makers and administrators can build fiscal strategy that will have significant and admirable impact on the Nigerian citizens welfare and hence reduce consumer welfare loss and poverty among the citizens by promoting fiscal prudence and disciplines that will reduce linkages and wastage in the system. Deficit financed through money creation should be reduced or avoided as possible because it plug in inflationary pressure to the economy thereby leading to consumer welfare loss. However, considering the causal relationship that exist between consumer welfare and inflation, consumer welfare and budget deficit, it is relevant that measures has to be put in place in order to enhance policies coordination among various arms of government, especially monetary policy should be made to complement fiscal policy. For Nigerians to enjoy consumer

welfare gain monetary policy has to be strengthened as well to act as checks and balances, that is, monetary policy should be used to complement fiscal policy in order to curtail the pressure of rising general price level and to guide against consumer welfare loss. Hence, when budget deficit is used as fiscal policy instrument, been financed by debt with high interest rate should be avoided and discouraged because Nigerian economy unproductive debt is completely high, and with no significant impact on consumer welfare gain.

More so, considerations should also be on the value added taxes and all other indirect taxes system not to be grossly abused by government and her agencies so as to maintain and improve upon the consumer welfare gain Nigerians enjoys at the moment.

The paper will like to suggest to the center government of Nigeria to really consider the establishment of a department (Department of Consumer Welfare / Affairs, just like in India) that will majorly be responsible to oversee the impacts of all government policies, directives, external shocks and macro-economic variables on the Nigerian consumer welfare, also, to promote and protect the welfare of the consumers and strengthen the consumer welfare movement in the country.

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