# Determinants of Aggregate Consumption Expenditure in Nigeria (1981-2015)

**Eberechi B. Ikwuagwu*, Florence O. Ariwa & Kingsley O. Onyele**
Department of Banking and Finance
Michael Okpara University of Agriculture,
Umudike, Umuahia, Abia State,
Nigeria
*eby4real24@yahoo.com, florenceariwa@gmail.com,
kingsleyonyele@gmail.com

***Abstract***
*The study investigated the determinants of aggregate consumption expenditure in Nigeria using time series data from 1981 to 2015. Based on the dataset sourced from Central Bank of Nigeria Statistical Bulletin, income (proxied by gross domestic product), interest rate, government revenue and inflation rate were the key determinants of aggregate consumption expenditure considered in this study. Following the behavioural pattern of the variables on the basis of time series property test involving Augmented Dickey-Fuller (ADF), Autoregressive Distributed Lagged model (ARDL) was adopted due to mixed integration of the variables. The result of the Auto Regressive Distributed Lagged (ARDL) model showed that income (proxied by gross domestic product) has a positive and significant effect on aggregate consumption expenditure in both short run and long run. Also, interest rate was significant in influencing aggregate consumption expenditure. The Granger causality test revealed that among the determinants of consumption expenditure considered, inflation rate was a strong predictor of consumption expenditure. The CUSUM and CUSUMSQ tests showed evidence of long run stability of the parameters of the model. It was therefore recommended among other things that policies that improves gross domestic product should be pursued such as encouraging small businesses and foreign investors by creating a friendly investment environment in the Nigerian economy in order to accelerate productivity which in turn spurs consumption of goods and services.*

***Keywords:*** *Consumption, gross domestic product, interest rate, inflation and tax revenue*

## 1.0 INTRODUCTION

Aggregate consumption expenditure comprises of individuals, businesses and government spending on goods and services in an economy (Akekere & Yousuo, 2012, & Wilcox, 1990). It is a vital economic factor because it represent a proxy that measures the overall consumer confidence in an economy (Oduh, Oduh & Patterson, 2012). Theoretically, increase in consumer confidence is usually linked to higher levels of consumption expenditure in the economic activity (Akekere & Yousuo, 2012). According to Ezeji & Ajudua (2015), consumers represent a major factor in economy as they provide the government and firms with information on consumers' perception. This is because individuals, firms, and government embark on various productive activities and if these products are not consumed, the production process will be discouraged and firms will go bankrupt (Oduh, Oduh & Patterson, 2012). Consequently, the gospel of economic growth cannot be preached without due consideration of consumption expenditure.

The concept of consumption expenditure is well established in the literature based on the

absolute income hypothesis (AIH) proposed by Lord Keynes (Fasoranti, 2012). According to Keynes, people on the average increase their consumption as income increases but not by as much as the increase in their income. Based on this premise, diverse definitions have been given to the term "consumption". However, all the definitions points to the fact that consumption connotes the final purchase of goods and services by economic unit such as individuals, firms and government (Odionye, Ugwuebe & Ibeleme, 2015, Akekere & Yousou, 2012, Kapoor & Ravi, 2009, Cromb & Corugedo, 2004, & Elmendorf, 1996).

Literature abound that a slight disturbance in the component of consumption would result to a significant change to a nation's aggregate demand performance (Fasoranti, 2012). This is based on Lord Keynes psychological law that "the propensity to consume increases as income increase but not as much as the increase in income." Nevertheless, further research by Keynes and other scholars have shown that consumption expenditure could be determined by some other factors apart from income. Hence, the concept of consumption expenditure have been inextricably linked to a host of macro-economic variables such as inflation rate, interest rate, savings, fiscal policy etc. (Odionye *et al.*, 2015, Akekere & Yousuo, 2012, Fasoranti, 2012, Kapoor & Ravi, 2009, Fasoranti, 2012, Cromb & Corugedo, 2004, Wilcox, 1990).

Considering the determinants of consumption expenditure, Cromb & Corugedo (2004) posits that sources of funds that arises as a result of earning interest on capital or payment of interest for the use of money will only be available if other people are willing to sacrifice current consumption and provide a pool of funds (deposits in banks) from which loans can be advanced. As such, sacrificing current consumption implies a form of savings; and savings connotes a fraction of disposable income not consumed (Udude, 2015). Consequently, volatility of interest rates would influence interbank lending rate (i.e. the rate at which banks lend money to each other). For instance, as interest rates decreases, people are encouraged to borrow more money, and the result is that consumers have more to spend, causing the economy to grow and inflation to accelerate. On the other hand, in a period of rising interest rates, consumers tend to save as returns are higher. Hence, with less disposable income due to accelerated savings, the economic progress slows down and inflation decreases (Cromb & Corugedo, 2004). Consequently, if inflation is left unchecked, there will be significant loss in purchasing power (Udude, 2015).

According to Keynes, income is the core determinant of consumption expenditure. However, aggregate income is being affected by personal income tax. Hence, the income left to an individual after the deduction of personal income tax is termed disposable income. As such, a study of this nature calls for due consideration of the relationship between fiscal policy and aggregate consumption expenditure. If the rich are taxed more and tax revenue given as subsidies to poor people, aggregate consumption would rise. For instance, if subsidies are given, the consumption spending of the beneficiary would rise. Therefore, increase in tax revenue would shift the consumption function through redistribution of income. Consequently, high taxes can curtail consumption by reducing disposable income. However, most of the literature on determinants of consumption expenditure in Nigeria has not incorporated the tax effect.

This paper is motivated by the shortage of empirical works on the determinants of aggregate consumption in Nigeria that considered the effect of government revenue (by way of tax) among other variables detailed in the literature. The findings of this paper will assist policy makers in redressing the economic environment towards generating significant improvement in aggregate consumption expenditure and economic prosperity in Nigeria.

## 2.0 LITERATURE REVIEW

### 2.1 THEORETICAL UNDERPINNING: DETERMINANTS OF CONSUMPTION EXPENDITURE

The foremost theory illustrating the determinants of consumption expenditure was put forward by Lord Maynard Keynes. In 1936, in his absolute income hypothesis, Keynes postulated that the main determinant of consumption expenditure is income. Following his explanations on the subject matter, Keynes stated that current consumption expenditures is a function of current disposable income such that as income accelerates, the marginal propensity to consume increases, though at a decreasing rate. According to him, the marginal propensity to consume (MPC) is less than the average propensity to consume (APC) and that APC falls as income increases (Fasoranti, 2012).

Fasoranti (2012) summarized Keynes proposition as follows:

a) The MPC is positive but less than one,
b) The APC falls as income increases

Following the shortcomings identified in the Keynesian hypothesis, James S. Duesenberry, Milton Friedman, Modigliani, F.A. Ando and R.E. Brumberg among others modified the Keynesian absolute income hypothesis (AIH). According to Dutta (2016) James S. Duesenberry opined that consumption hinges on relative income. According to him, consumption spending is highly influenced by income earned by neighbouring households. In fact, it is the relative income that determines consumption expenditures. This is called 'emulatory consumption'. Duesenberry demonstrated that in the long run MPC = APC, as opposed to Keynes' short run consumption function hypothesis-MPC < APC (Dutta, 2016).

Similarly, Milton Friedman argued that consumption is a function of permanent income such that unexpected or transitory incomes have little effect on permanent consumption. Friedman asserted that permanent consumption is always associated with permanent income. Friedman's hypothesis of permanent income also suggest that in the long run MPC=APC.

Finally, Modigliani and Brumberg in their life cycle hypothesis, argued that people formulate their expenditure plans in accordance with their expected incomes over lifetime i.e., some perception of lifetime incomes. While making consumption decisions, individuals look at the total income to be earned over their lifetime. Modigliani, Andos' 'life cycle hypothesis' also maintained that in the long run MPC = APC.

It is noteworthy that all these theories hold the same conclusion: Average propensity to consume (APC) tends to decline as income rises.

### 2.1 Determinants of consumption expenditure

Apart from income, Lord Keynes attached importance to other factors under the following headings "objective" and "subjective" factors (Dutta, 2016 & Odioye, *et al.* 2015).

**1. Objective Factors**

Objective factors or economic factors are subject to change in the short run and are quantifiable.

**a) Interest rate:**

It is generally believed that an increase in interest rate encourages savings and discourages consumption expenditure and economic growth (Onwumere, Okore & Ibe, 2012, Udoka & Roland, 2010). According to Dutta (2016) the money value of fixed interest bearing assets falls when its interest rate rises. This makes owners of these assets poorer and, will

discourage consumption. At a high rate of interest, preference for bond tends to rise. This will induce people to consume less.

**b) Sales effort:**

Various sales efforts of producers of consumer goods are considered as a means for increasing consumption demand. It is quite likely that an increase or decrease in the amount of sales effort may lead to greater or lower demand for consumer goods. However/given the total income, an increase in sales effort may not lead to an increase in the demand for consumption goods. Further, there is no independent measure of the volume of effective selling effort. Hence, increase in demand following an increase in advertising outlay is difficult to estimate (Dutta, 2016).

**c) Consumers' wealth:**

Wealth like shares, bonds, house property, etc., influence consumption decisions. Owners of these assets do not have enough preference for these assets. That is why their desire to save is less since they are already the owners of these assets. People who do not own assets intend to save more and consume less now in order to have assets in future. In other words, property-owners have the greater desire to consume while desire to save is the greatest to the people who do not own assets. Such is known as Pigou effect, after the name of the classical economist A. C. Pigou. Pigou effect states that the more saving a man has, the less the strength of his desire to save more.

**d) Terms of consumer credit:**

If consumer credit is available on reasonable terms, some sort of spending will develop. Similarly, it is agreed that the interest rate on instalment buying is of relatively less significance than the size of required down-payments, the length of the period over which the balances must be repaid.

**e) Deferred payment:**

Sometimes, particularly during war time, consumer spending declines due to restraint on spending. Once such restraints are removed, backlog of pent- up consumer demand might get exposure leading to a rise in spending.

**2. Subjective Factors**

Subjective factors are psychological and are not subject to estimation. Keynes attached importance to the psychological or subjective factors which consist of basic values, attitudes, states of mind, etc. These are not quantifiable or specific like economic factors. Motives behind consumption, according to Keynes, are enjoyment, short-sightedness, generosity, miscalculation, extravagance and ostentation. However, these elements do not change significantly in the short run (Dutta, 2016). Despite this, these subjective and cultural factors are capable of changing the shape and the level of the function. Of all these subjective factors, expectations and attitudes of consumers do play an important role. Rational behaviour suggests that a consumer who expects a rise in income or in the price level may consume more than who expects no such change in near future. Again, among similar individuals (same age) with the same level of incomes, it may be found that some individuals consume more than others because of the differences in their attitudes towards thrift. Further, in a status-symbol society, consumption spending is greatly influenced by the consumption pattern of the society in which the individual lives. According to Keynes, "to keep up with the Joneses", individuals imitate consumption patterns of their neighbours and workmates so that their status is not impaired. Duesenberry calls such imitating consumption pattern "demonstration effect" (Dutta, 2016).

**3. Structural factors**

Structural factors such as income distribution, demographic factors, etc., do have some

influence on the total consumption expenditure in the long run. The first vital structural factor is the income distribution. It is said that the marginal propensity to consume (MPC) is high for low-income families and low for high-income families. Thus, if there is a redistribution of income in favour of the poor-income families, aggregate consumption would rise since the MPC of these people is high. Secondly, demographic factors are responsible for differences in consumption spending with identical incomes. Demographic factors include size of family, stage in the family life cycle, place of residence, occupation, race, etc. It is true that large families or families with more children and aged persons consume more than small families.

**4. Fiscal policy**

Finally, Keynes paid attention to fiscal policy variable as another determinant of aggregate consumption. Tax-expenditure and revenue programmes of the government can influence consumption spending. If rich people are asked to pay more taxes and if these revenues are given as subsidies to poor people, aggregate consumption would rise. High taxes curtail consumption by reducing disposable income.

## 2.2 EMPIRICAL REVIEW

In conformation with the Absolute Income Hypothesis (AIH) proposed by Keynes, Fasoranti (2012) showed that current income, expected pension fund, shares and durable assets were positively related to consumption while expected future income and deposits in banks were negatively related. In a similar study, Iyoha (2001) perceived consumption as a function of disposable income and lagged value of income. In another study, Akekere & Yousuo (2012) found a significant relationship between gross domestic product (a proxy of income) and private consumption expenditure. Oduh *et al.* (2012) showed that consumer confidence, current income, income expectation, expected change in the prices of food and durables, and exchange rate are the determinants of consumption expenditure in Nigeria.

On the other hand, macroeconomic fluctuations as measured by inflation, exchange rate, debt service ratio and unemployment may influence level of welfare. For instance, it is a well-known fact that the level of unemployment affects the rate of welfare. An increase in unemployment will first affect those marginal low skilled, low wage earners that are the main candidates to fall into poverty (Deutsch & Silber, 2005). Based on this premise, Fabiosa & Jensen (2002) explained that macroeconomic shock influenced the level of household welfare via low private consumption expenditure and inflation may also affect measure of welfare if the income of low income families responds slowly to increases in the price level.
In a more recent study, Ezeji & Ajudua (2015) found a positive relationship between consumption expenditure and income in conformation to Keynesian consumption model. From the findings, interest rate, price level and exchange rate were significant variables influencing consumption behaviour in Nigeria. Babalola, Danladi, Akomolafe & Ajiboye (2015) concluded that inflation rate and interest rate has a negative effect on economic growth but neither inflation nor interest rate granger caused economic growth, while Udude (2015) & Wilcox (1990) concluded that interest rates is a core determinant of savings and consumption expenditure.

Ibiwoye, Ideji & Oke (2010) revealed that real gross domestic product and structural adjustment programme (SAP) positively and significantly influenced Life Insurance consumption (LIC) in Nigeria while indigenization policy and domestic interest rate were statistically significant but inversely related to Life Insurance Consumption. Similarly, Chukwulozie (2006) concluded that low level of income, low level of education, lack of insurance awareness, high inflation rate, lack of reliable Actuarial data for research and

underdeveloped financial market had affected savings for life insurance consumption.

## 3.0 METHODOLOGY

The *ex-post facto* research design was adopted to enable the researchers make use of secondary data to estimate the cause-effect relationship of aggregate consumption expenditure and its determinants in Nigeria. The annual data used for the analysis were sourced from the Central Bank of Nigeria Statistical Bulletin 2015 edition. The secondary annual data were observed over the period, 1981 to 2015.

As earlier noted, the primary objective thrust of this work is to investigate the relationship subsisting between determinants of consumption expenditure and aggregate consumption expenditure in Nigeria. As such, a multiple regression model was employed to achieve this objective. These became necessary in order to adequately account for the total effect of the determinants of aggregate consumption expenditure in Nigeria.

Following the Keynesian theory of consumption in consonance with the empirical works of Ezeji & Ajudua, (2015), Fasoranti (2012), Akekere & Yousuo (2012) the most appropriate model to carry out an empirical investigation on the determinants of consumption expenditure and aggregate expenditure was specified in log linear form as follows:

$$logCONS = \beta_0 + \beta_1 logGDP + \beta_2 logINFR + \beta_3 logINTR + \beta_4 logGOVR + \varepsilon \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where,
$\beta_0$ = Constant
$\beta_{1.....}$ $\beta_4$ = Population parameters
*log* = Natural logarithm
CONS = Aggregate consumption expenditure
GDP = Gross domestic product (a proxy for domestic income)
INFR = Inflation rate
INTR = Interest rate
GOVR = Government revenue
$\varepsilon$ = Estimated error term (assumed to capture the influence of other exogenous factors)

**Description of research variables**

- **Aggregate consumption expenditure (CONS)** is the purchase of goods and services for use by households, firms and governments. In this study, aggregate consumption represents the dependent variable.
- **Gross domestic product (GDP)** was used to proxy income since it is the basic factor that determines propensity to consume based on the absolute income hypothesis proposed by Keynes (Akekere & Yousuo, 2012). When real income increases, consumption expenditure also increases but by a smaller amount, and *vice versa*.
- **Inflation rate (INFR):** If consumers expect that prices will rise in the near future, they hasten to spend large sum out of a given income to take advantage of current low prices. Hence, when prices are expected to be high in the future, the propensity to consume increases or the consumption function shifts upward.
- **Interest rates (INTR):** Changes in the rate of interest exert influence on the propensity to consume. When the interest rate is raised, it generally induces people to decrease expenditure and save more for lending purposes. On the other hand, when the interest rate is reduced, it usually encourages expenditure as lending then becomes less attractive.
- **Government revenue (GOVR):** Changes in government revenue affects the propensity

to consume and disposable income through taxation. For instance, when government revenue increases (i.e. through increased taxation), disposable income will reduce hence, consumption expenditure will be affected.

## 4.0 RESULTS AND DISCUSSIONS

### 4.1 UNIT ROOT TEST

The Augmented Dickey Fuller (ADF) unit roots test was employed to test the time series properties of model variables. The null hypothesis is that the variable under investigation has a unit root against the alternative that it does not. The choice of lag length was based on Schwartz- information criteria. The decision rule is to reject the null hypothesis if the ADF statistic value exceeds the critical value at a chosen level of significance (in absolute term). These results are presented in Table 1.

**Table 1: Unit root test results for Augmented Dickey Fuller**

| Variables | Levels | 1st Difference | Decision |
|---|---|---|---|
| Log(CONS) | -5.361984*** | -- | I(0) |
| Log(GDP) | -2.945021 | -7.876440*** | I(1) |
| Log(INFR) | -4.100627** | -- | I(0) |
| Log(INTR) | -3.527556* | -6.512651*** | I(1) |
| Log(GOVR) | -4.607886*** | -5.265214*** | I(1) |
| Critical values | 1%: -4.252879<br>5%: -3.548490<br>10%: -3.207094 | 1%: -4.273277<br>5%: -3.557759<br>10%: -3.212361 | |

**Source: Authors computations using Eviews 9.0**

*Note: ***, **, and * denote 1%, 5% and 10% levels of significance, respectively.*

From Table 1 above, the Augmented Dickey Fuller test results shows that all variables were stationary at first difference except aggregate consumption expenditure and inflation rate which were stationary at levels. Since all the variables were not stationary at the same level, that is, there is mixed order of integration [I(0) and I(1)], it became preferable to proceed to Autoregressive Distributed Lag (ARDL) bounds testing approach to co-integration.

### 4.2 AUTOREGRESSIVE DISTRIBUTED LAG (ARDL) BOUND TEST

The bound test enables us to test for long run dynamic relationship among the variables in ARDL modeling approach. The result of the ARDL bound test was presented in Table 2 below:

**Table 2: ARDL Bounds test for co-integration**

| Significance | Lower Bounds | Upper Bounds |
|---|---|---|
| 5% | 2.86 | 4.01 |
| 1% | 3.74 | 5.06 |
| F-statistic | 6.211417 | |

**Source: Authors computations using EViews 9.0**

Table 2 reveals that the F-statistic is 6.211417 which exceeds the upper bounds at both 5% and 1% critical values. This implies that there was evidence of co-integration or long run dynamic relationship among the variables used for the study. As such, we proceeded to the ARDL error correction model (ECM). The investigation was based on long-run and short-run analyses of ARDL to determine the dynamic relationship as shown in Tables 3 and 4 below.

## 4.3 ESTIMATED LONG RUN COEFFICIENTS

Once the long run co-integration relationship has been tested and determined, the long run form of equation (1) was estimated using the ARDL approach as presented in Table 3.

**Table 3: Estimated long run coefficients**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| Log(GDP) | 1.210351 | 0.183796 | 6.585289 | 0.0000*** |
| Log(INFR) | 0.117450 | 0.098637 | 1.190733 | 0.2523 |
| Log(INTR) | -0.758375 | 0.337553 | -2.246688 | 0.0401** |
| Log(GOVR) | -0.252693 | 0.167914 | -1.504895 | 0.1531 |
| C | 1.954293 | 0.892963 | 2.188549 | 0.0449** |

**Source: Authors computations (2016)**

*Note: ***, **, and * denote 1%, 5% and 10% levels of significance, respectively.*

The long run estimates in Table 3 conforms to the Keynesian theory that aggregate consumption expenditure is a function of income. A close inspection of the results reveals that gross domestic product (a proxy of income) is positive and highly significant at 1 percent level. The positive coefficient of gross domestic product (GDP) implies that one percent change in gross domestic product (a proxy of income) caused approximately 1.21 percent increase in aggregate consumption expenditure in Nigeria. This result is in tandem with the empirical works of Fasoranti (2012), Akekere & Yousuo (2012), Ezeji & Ajudua (2015), Odionye *et al.* (2015) who agreed with the theory of Lord Keynes that changes in income influences the consumption expenditure of people.

On the other hand, while inflation rate (INFR) and government revenue (GOVR) was not significant in influencing aggregate consumption expenditure in Nigeria, interest rate (INTR) was found to be significant at 5 percent level. The results indicate that one percent change in interest rate accounted for approximately 0.75 percent change in aggregate consumption expenditure. This could be due to the fact that interest payments on loans are more expensive during periods of high interest rates. As such, people who already have loans will have less disposable income because they spend more on interest payments; hence, other areas of consumption will fall. Similarly, a rise in interest rates discourages investment; it makes firms and consumers less willing to take out risky investments and purchases (Cromb & Corugedo, 2004, Kapoor & Ravi, 2009, Ezeji & Ajudua, 2015).

The positive coefficient of the constant (C) implies that *ceteris paribus* aggregate consumption expenditure will be increasing at 5 percent level of significance. From the results, all things being equal, aggregate consumption expenditure will increase by approximately 1.95%. This is due to other determinants of aggregate consumption expenditure such as the subjective factors (enjoyment, short-sightedness, generosity, miscalculation, extravagance and ostentation) not included in the current study.

## 4.4 ESTIMATED SHORT RUN COEFFICIENTS

The results of the short run dynamic coefficients were given in Table 4 below.

**Table 4: Short run Estimates**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| DLog(CONS(-1)) | 0.432339 | 0.175623 | 2.461739 | 0.0264** |
| DLog(GDP) | 1.461244 | 0.234909 | 6.220479 | 0.0000*** |
| DLog(GDP(-1)) | -0.741062 | 0.324366 | -2.284649 | 0.0373** |
| DLog(INFR) | -0.017467 | 0.145418 | -0.120114 | 0.9060 |
| DLog(INTR) | -0.319103 | 0.529293 | -0.602885 | 0.5556 |
| DLog(GOVR) | -0.425374 | 0.287365 | -1.480257 | 0.1595 |
| ECM (-1) | -0.683364 | 0.290048 | -5.803735 | 0.0000*** |

**Source: Authors computations (2016)**

*Note: ***, **, and * denote 1%, 5% and 10% levels of significance, respectively.*

From the short run results presented in Table 4, three main findings were made. First, the results suggest that the relationship between inflation rate, interest rate and tax on aggregate consumption expenditures was weak and insignificant in the short run. However, the coefficient of inflation rate, interest rate and government revenue suggests that aggregate consumption expenditure decreased by approximately 0.017 percent, 0.319 percent and 0.425 percent given changes in inflation rate and interest rate respectively.

Secondly, gross domestic product (a proxy of income) was highly significant in influencing aggregate consumption expenditure. Going through the results, changes in current income (as proxied by GDP) accounted for approximately 146 percent increase in aggregate consumption. It was also found that previous year's income (one year lag of GDP) caused aggregate consumption expenditure to depress by about 0.74 percent in the short run. This further lends strong support to the absolute income hypothesis (AIH) proposed by Lord Keynes in 1936.

The third point is that the error correction term (ECM) is negative and statistically significant, which corroborates results of the *F*-statistic derived from the ARDL bounds test of co-integration. This term, capturing the extent to which the deviation from the long-run equilibrium is corrected through partial short-run adjustments. In fact, the error correction term of 0.68 indicates that roughly 68 percent of last year's deviation was corrected this year.

## 4.5 ARDL DIAGNOSTIC TEST

Table 5 below provides the diagnostic test results for the model based on the ARDL estimation.

**Table 5: ARDL diagnostic tests**

| Test statistics | Statistics | Probability |
|---|---|---|
| Serial correlation LM test | 0.244973 | 0.7863 |
| Normality test | 4.775820 | 0.091821 |
| Hetereoscedasticity ARCH | 0.464864 | 0.8880 |

**Source: Authors Eviews computations (2016)**

The results in Table 5 confirmed the absence of serial correlation, autoregressive conditional heteroskedasticity. Also, it was found that the residual term was normally distributed. These confirmations were based on the probability values of the test statistics which were not significant at neither 1 percent nor 5 percent levels.

## 4.6 STABILITY TESTS

In other to check the stability of the model, we run cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) stability tests as shown respectively in Figures 1 and 2.

**Figure 1: CUSUM Test**

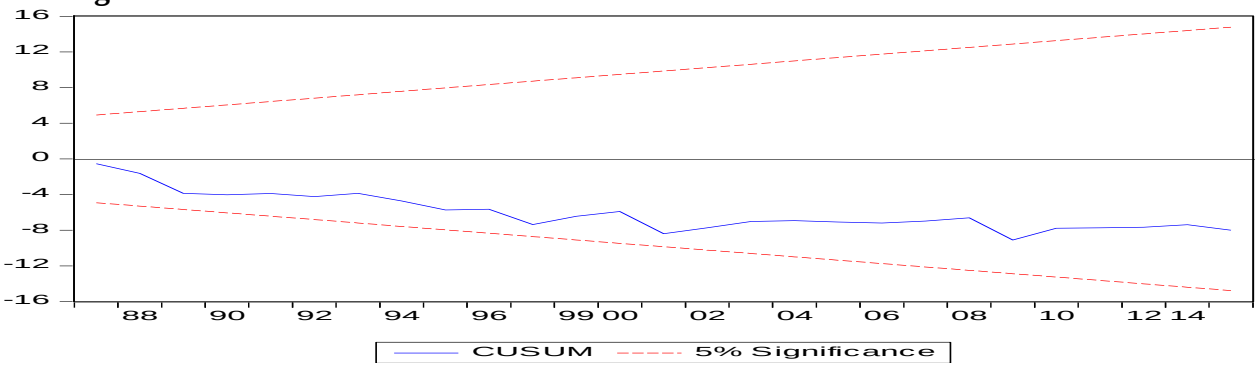
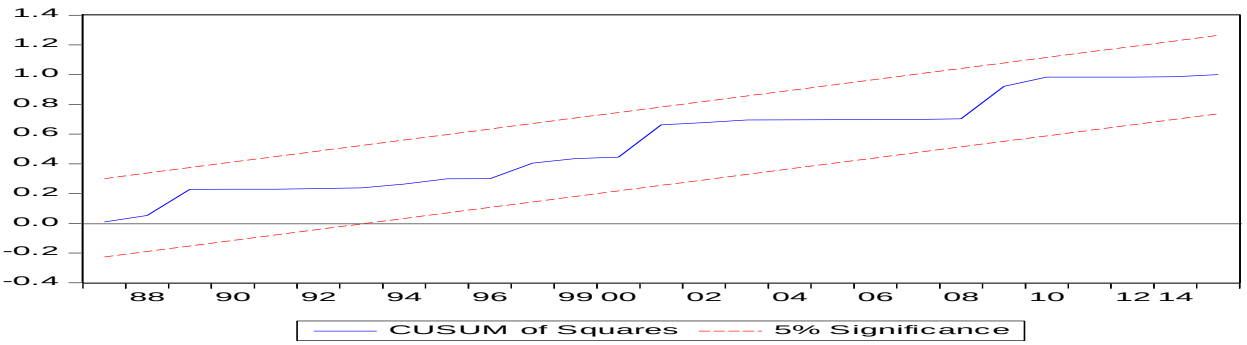



**Figure 2: CUSUMSQ**




As shown in Figure 1, the CUSUM test suggests the stability of the estimated parameters associated during the considered period. Similarly, the CUSUMSQ (Figure 2) moves within the 5% critical bounds, suggesting no existence of structural break in the model specification. Hence, the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) plots which was shown in Figure 1 from a recursive estimation of the model also indicate stability in the coefficients over the sample period.

## 4.6 GRANGER CAUSALITY

Granger causality test was conducted as shown in Table 6.

**Table 6: Granger causality test results**

| Direction of causality | F-statistic | P-value | Decision |
|---|---|---|---|
| Log(GDP) → Log(CONS) | 1.86562 | 0.1796 | Reject |
| Log(CONS)←Log(GDP) | 1.21504 | 0.3167 | Reject |
| Log(INFR) → Log(CONS) | 3.65586 | 0.0434** | Accept |
| Log(CONS)←Log(INFR) | 0.91825 | 0.4147 | Reject |
| Log(INTR)→ Log(CONS) | 0.51077 | 0.6073 | Reject |
| Log(CONS)←Log(INTR) | 0.13376 | 0.8755 | Reject |
| Log(GOVR) → Log(CONS) | 0.59006 | 0.5632 | Reject |
| Log(CONS)←Log(GOVR) | 0.11249 | 0.8941 | Reject |

**Source: Authors computations (2016) using Eviews 9.0**

The Granger causality result shows that a unidirectional (one way) relationship exist between inflation rate and aggregate consumption expenditure. For instance, inflation rate granger caused aggregate consumption expenditure with no reserve causality from aggregate consumption expenditure to inflation rate. The F-statistic is significant at 5 percent level and the null hypothesis of no causality running from INFR to CONS was rejected. This implies that inflation rate was a strong predictor of aggregate consumption expenditure in Nigeria over the period of study. This finding is in line with the theory that "with high price level, consumers consumption expenditure will decline, because additional consumption calls for a higher percentage of a person's income and *vice versa*" (Oladapo, Danladi, Akomolafe & Ajoboye, 2015; Fabiosa & Jensen, 2002).

## 5.0 CONCLUSION AND RECOMMNDATIONS

### 5.1 Conclusion

One of the most important topics in economics and finance is the determinants of sustained economic growth. The national income theory tells us that even a small addition to national income creates huge improvements in living standards for subsequent generations, evident in accelerated consumption expenditure of households, firms and government. This is in line with the Keynesian theory that consumption is a function of income, a theory known as the Absolute Income Hypothesis. It is based on this premise that the current study examined the determinants of consumption expenditure and aggregate consumption in Nigeria.

From the regression results, it was revealed that gross domestic product (a proxy of income) accounted for significant changes in aggregate consumption expenditure in both the long run and short run. Thus, it was concluded that the Keynesian theory of Absolute Income Hypothesis (AIH) holds true for Nigeria even when other macro-economic variables such as inflation rate, interest rate, and government revenue were duly considered in the study. Also, interest rate was significant in turning the level of consumption expenditure in the long run.

Further findings from the Granger causality test revealed that inflation rate was a strong predictor of consumption, income (as proxied by GDP). This means that inflation could affect aggregate consumption through the multiplier effect of inflation, income and interest rate relationship in the economic process.

### 5.2 Recommendations

Based on the findings and conclusions of this study, the following recommendations were made:

1. Since income (as proxied by gross domestic product) is a significant factor that influences aggregate consumption in Nigeria, policies that improves gross domestic product should be pursued such as encouraging small businesses and foreign investors by creating a friendly investment environment in the Nigerian economy.
2. Interest rate was found to be significant in the long run, hence, monetary authorities should make efforts towards reducing domestic interest rate as such would enhance corporate and individual borrowings which in turn encourages investments and consumption expenditures in the Nigerian economy.
3. Finally, it was found that a causal relationship exist between inflation rate and consumption expenditure. Hence, inflation-adjusted interest rate policy should be pursued in order to accelerate domestic income level. Hence, aggregate consumption expenditure will increase.

## 5.3 CONTRIBUTION TO KNOWLEDGE

The study revealed that though fiscal policy was identified as a determinant of consumption expenditure, government revenue was found to be insignificant in Nigeria. Also, the current study confirmed that the absolute income hypothesis (AIH) have a force to bear in Nigeria.

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