



An Empirical Investigation of the Impact of Government Expenditure on Poverty in Nigeria

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Abstract

This research investigates the relevance of public expenditure on poverty reduction in Nigeria. The main objective is thus to investigate whether the poverty reduction efforts through government spending has actually translated into a reduction in the poverty level. The study covered the period between 1987 to 2017. Secondary source of data collection was used, quantitative analysis of variables and adopted Autoregressive Distribution Lag (ARDL) – Bounds co-integration technique was used to analyse the time series data. The findings reveal that, government expenditure in education (GEED) and inflation rate (INFR) do not impact poverty reduction over the period under study, the efforts of current political dispensation to wipe out poverty are not yielding the desired result. More should be done to increase education allocation in Nigeria's yearly budget and decrease the inflation from its current level downward. While government expenditure on health (GEHL), government expenditure on agriculture (GEAG) and government expenditure on transport (GETR) has a positive impact on poverty reduction in the study period respectively. Healthcare, agriculture and transport should be encouraged by increased funding and monitoring to improve their quality in the country. the coefficient of the co integrating equation (-0.010444) has a low magnitude and is negatively statistically significant. This shows that the speed of adjustment is low as the disturbance/disequilibrium converges back to the equilibrium. Meanwhile within a long period hence it denotes a long run relationship. The study then recommends among others that, government should increase its level of expenditure, thereby providing more funding in the agricultural sector to raise its productivity and increase its contributions in poverty reduction in Nigeria.

Keywords: Government Expenditure, Poverty, ARDL Approach

JEL Code: E31, H5

Contribution/Originality:

This study is one of very few studies which have investigated the impact of government expenditure on poverty in Nigeria using Autoregressive Distribution Lag (ADRL). The outcome of this result will guide government expenditure based on specific sector needs.

1.0 Introduction

Public expenditure has continued to rise due to the huge receipts from production and sales of crude oil in Nigeria and the increased demand for public (utilities) goods like roads, communication, power, education and health. Besides, there is increasing need to provide both internal and external security for the people and the nation, (Binuyo, 2014). Available statistics show that total government expenditure (capital and recurrent) and its components have continued to rise in the last decades. More so, government spending can have direct or indirect effect on poverty. The direct effect arises in form of benefits the poor receive from expenditure; on employment and welfare programmes. The indirect effects arise when government investment in rural infrastructure, agricultural research, health and

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education of rural people, which stimulate agricultural and non-agricultural growth, leading to greater employment and income earning opportunities for the poor.

Furthermore, the various components of capital expenditure (that is, defense, agriculture, transport and communication, education and health) also show a rising trend of N5004.60m and N759,323 00m respectively between 1977 and 2007 (CBN 2010). Unfortunately, rising government spending has not translated to meaningful growth and poverty reduction, as Nigeria ranks among the poorest countries in the world. Moreover, macroeconomic indicators like balance of payments, import obligations, inflation rate, exchange rate, and national savings reveal that Nigeria has not fared well in the last couple of years, (Paun & Brezeanu, 2013). Poverty becomes an issue of global dimension with nations striving either to reduce or eliminate poverty in the economy. The complexity of the phenomenon and its impacts on national economies has attracted the attention of international organization and agencies with government in different nations embarking on policies aimed at reducing poverty.

Consequently, Nigerian fiscal policies especially as regard expenses in the areas that have positive impact on the well-being of the poor, have progressively being on the increase over the years. It is therefore necessary to critically examine the components of public expenditure and how they relate to and impact on poverty reduction in Nigeria. It is against this background that this study is pursued. The objective of the study is thus; to assess the correlation between government expenditure on pro- poor sectors and poverty index in Nigeria; to examine the short run and long run impact of pro- poor public spending on poverty index in Nigeria. Other than this introductory section, the rest of the paper is made up of four sections. The second section is on the literature review while the third section is on methodology. The fourth section is on the results and findings and the last section is on the conclusion and recommendations.

2.0 Literature Review

2.1 Theoretical Background

The study adopted Trickle –down theory which stems from the belief that the accumulation of wealth by the rich is good for the poor. The choice has become important because increased wealth of the rich will trickle down to the poor (Aghion & Bolton, 1997). More formally, it advocates that the economic benefit of any policy will flow from the macro level (government) to the micro level (household). The effort by the government to stimulate economic growth is good for the society even though such effort will increase government expenditure. Thus, increase in government expenditure on social and economic development such as roads, water, education and subsidies in the manufacturing of some essential commodity will reduce poverty. This is because expenditure on agriculture is expected to increase production of food and hence reduce hunger, expenditure on education is expected to reduce illiteracy, expenditure on health is expected to reduce child and maternal mortality rate while expenditure on transport is expected to reduce the number of accidents caused by bad roads, to mention just a few. The combined effects of all these expenditures are expected to have an impact on the citizens well-being by bringing about reduction in the level of poverty.

2.2 Empirical Review

Many empirical studies have been carried out to investigate the impact of public expenditure on poverty in both developed and developing economies. For instance, Edrees et al. (2015), after investigating the impact of public expenditure on poverty reduction, concluded that; public spending on health and education has a positive and significant impact on poverty reduction. Ritwik & Joydeb, (2016), concurred this after examining the impact of public expenditures, economic growth and poverty



alleviation in India, concluded that expenditures on infrastructures like roads, irrigation, power, transport and communication, increase per capita income and incidence of poverty is also lowered.

The study by Gukat & Gboro, (2017) on the impact of public spending on economic growth, revealed that government spending has not been converted into meaningful economic growth in Nigeria, let alone increasing income that will reduce poverty. Stephanie (2017) investigated the relationship between economic growth and poverty reduction in Nigeria. The study used the descriptive statistic and found that over 70 percent of Nigerians lack money and material possessions to access basic facilities like health, education, etc. that provides happiness.

Moreover, Kolawole et al. (2015), examine the relationship among poverty, inequality and economic growth in Nigeria using time series data spanning from 1980 to 2012. They adopted Ordinary Least Square and error correction mechanism (ECM). The data were exposed to unit root test, co-integration test using Johansen approach. GDP growth rate, per capita income, literacy rate, government expenditure on education, and government expenditure on health were used as variables. The study argues that gross domestic product should be boosted and that government investment on education and health infrastructure should be increased along-side economic programmes that are pro-poor should be put in place to reduce poverty and inequality in Nigeria.

Also Ukpong et al. (2013). examine issues of poverty and population growth in Nigeria using ordinary least squares (OLS) regression. Augmented Dickey-Fuller tests and Engle Granger and Johansen's co-integration tests were carried out to test for co-integration and stationarity of the time series data on all the variable; poverty rate, population growth and gross domestic product (GDP) real growth rate in Nigeria. The Augmented Dickey-Fuller tests and Engle. Granger and Johansen's co-integration tests show that the variables are trended and co-integrated. Also, their findings reveal positive relationship between poverty rate and population growth, and negative relationship between GDP real growth rate and poverty rate in Nigeria. It was submitted by the researchers that policies should be adopted by the Government to reduce the growth rate of the population and encourage investment in human capital development, agriculture and technology to boost productivity so as to reduce poverty.

Omodero and Azubike (2016) examined the extent to which the Nigerian GDP affects the government expenditure on education, social and community services and the number of school enrolment within the period 2000-2015. Secondary data employed were from the education for All 2015 reports and CBN bulletin published in 2016. Multiple regression analysis result indicates that expenditure on education is significant and impacts on the economy. The conclusion is that, the anti-graft fight by the present government to encourage proper use of resource allocation has to be encouraged by all good citizens and lovers of education.

Emori. Duke and Nneji (2015), investigated the impact of government expenditure on the Nigerian economy using ADF unit root test and OLS regression test. They found that public expenditure had a significant effect on the Nigerian economy.

3.0 Methodology

3.1 Sources of Data and Description

The data for this study consists of secondary time series from 1987 through 2017. The variables under consideration are: government expenditure on agriculture (GEAG), government expenditure on education (GEED), government expenditure on health (GEHL), government expenditure on transport

(GETR), inflation rate (INFLR) and proxy poverty. The variables are obtained from Central Bank of Nigeria (CBN) Statistical Bulletins and National Bureau of Statistics (NBS).

3.2 Method of Data Analysis

This study involves quantitative analysis of variables and adopted Autoregressive Distribution Lag (ARDL) – Bounds co-integration technique to achieve the stated objectives. Unlike OLS method of data analysis which allows only for integration of variables in the same order I (0), the ARDL co-integration technique developed by Persaran, Shin, & Smith (2001) is preferable when dealing with variables that are integration of different order I (0), I (1) or combination of both and robust when there is a single long run relationship between the variables. The model is also useful for forecasting and to disentangle long run relationships from short run dynamics.

EViews Statistical Software was used to estimate the coefficients of the variables used in the study. Furthermore, diagnostic tests such as unit root test, autocorrelation test, homoscedasticity test, stability test, were conducted to overcome the problem of spurious correlation often associated with non-stationary time series data and make the estimates robust.

Model Specification

In order to study the empirical analysis of public expenditure on poverty reduction in Nigeria, we proxy poverty, government expenditure on agriculture, government expenditure on education, government expenditure on health, government expenditure on transport and inflation. The functional form of this postulation can be expressed as:

$$POV = f(GEAG, GEED, GEHI, GETR, INFLR) \quad (1.1)$$

For estimable purposes we specify the model as

$$\log POV_t = \beta_0 + \beta_1 \log GEAG_t + \beta_2 \log GEED_t + \beta_3 \log GEHI_t + \beta_4 \log GETR_t + \beta_5 \log INFLR_t + \beta e_t \quad (1.2)$$

The use of log which is the best fit equation was informed by the variables at hand in order to get the best and reliable result.

Log = natural logarithm

GEAG= government expenditure on agriculture at time t.

GEED = government expenditure on education at time t.

GEHL= government expenditure on health at time t

GETR = government expenditure on transport at time t.

INFLR = inflation rate at time t

e = error term.

t = time

Apriori Expectations

The economic prior test was conducted to enable us examine the magnitude and size of the parameter estimates. This evaluation is guided by economic theory to ascertain if the parameter estimate conforms to expectation. Based on economic theory, it is expected that an increase in government expenditure on agriculture, government expenditure on education, government expenditure on transport, government expenditure on health, and inflation rate will reduce poverty rate. These imply that:

$$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 < 0$$

4.0 Result and Discussion

The analysis of the result starts with the unit root test. The result of the ADF unit root test is shown in the table below:

Table 4.1: Unit Root Test result (ADF)

| Variables | Level (Without Trend) | | | 1 st difference (Without Trend) | | | |
|-----------|-----------------------|-------------|--------|--|-----------------|--------|----------------------|
| | Test values | 5% critical | Prob. | Test | 5% | Prob. | Order of Integration |
| | | Values | | Values | critical values | | |
| POV | -2.1282 | -2.9631 | 0.2356 | -5.5571 | -2.9678 | 0.0001 | I(1) |
| GEAG | -0.5970 | -2.9678 | 0.9871 | -6.6967 | -2.9678 | 0.0000 | I(1) |
| GEHL | -1.4240 | -2.9678 | 0.5568 | -9.3626 | -2.9678 | 0.0000 | I(1) |
| GETR | -2.8264 | -2.9678 | 0.0670 | -4.3296 | -2.9678 | 0.0020 | I(1) |
| GEED | -3.1021 | -2.9631 | 0.0371 | | | | I(0) |
| INFLR | -3.6274 | -2.9980 | 0.0132 | | | | I(0) |

Source: Author's computation using Eviews 10

The results of unit root test for all the indices used in analyzing the impact of public expenditure and poverty reduction in Nigeria. The Augmented Dickey-Fuller (ADF) was estimated with constant without trend and the results reveal that the index of poverty (POV), government expenditure on agriculture (GEAG), government expenditure on health (GEHL), and government expenditure on transport (GETR) became stationary after first difference d (1). In addition, government expenditure on education (GEED) and inflation (INFLR) were found to be stationary at level, I- (0) at 5 percent level of significance as indicated by its probability values of 0.0372 and 0.0132. The significance levels of all the variables used in this study have been confirmed by both the probability values and critical values of the parameters.

Therefore, based on the mixed order of integration of the variables, I(0) and I(1), we proceeded to use Bounds test co-integration approach developed by Pesaran *et al.* (2001) to determine if long-run relationship exist by jointly examining the variables.



ARDL Co-Integration Test Result

The ARDL estimation for the Bound test was based on the assumption of unrestricted intercept and no trend. From above, our results shown that long-run relationship holds for all the estimated co-integrating equations. This is because the computed F-statistics were found to be greater than the upper critical value at 5 per cent significant level for the estimated equation.

Table 4.2 ARDL Co-Integration Test Result

ARDL Bounds Test

| Test Statistic | Value | K |
|-----------------------|----------|----------|
| F-statistic | 5.169234 | 5 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.08 | 3 |
| 5% | 2.39 | 3.38 |
| 2.5% | 2.7 | 3.73 |
| 1% | 3.06 | 4.15 |

The ARDL bound test was employed to ascertain the level of co-integration among the variables used in the study, i.e., H_0 : Government expenditure on pro- poor sectors has no significant long run relationship with poverty index in Nigeria is rejected, because the F-statistic for the bound test in table 4.2. is 5.169234; this result is above the 1 percent critical value (3.06 & 4.15) for both upper and lower bounds. This suggests that poverty (POV), government expenditure on education (GEED), government expenditure on agriculture (GEAG), government expenditure on health (GEHL), government expenditure on transport (GETR) and inflation (INFLR) are co- integrated in the long run.

Long Run ARDL Result

The result of the long run ARDL estimates are shown below and analysed thereafter.

Dependent Variable: (POV)

Selected Model: ARDL(1, 0, 0, 0, 0, 0)

Note: final equation sample is larger than selection sample

Table 4.3: Long run ARDL Result



| Variable | Coefficient | Std. Error | t-Statistic | Prob.* |
|--------------------|-------------|-----------------------|-------------|--------|
| POV(-1) | 0.729556 | 0.127284 | 5.731698 | 0.0000 |
| GEED | -0.293086 | 0.177472 | -1.651449 | 0.1122 |
| GEHL | -0.051045 | 0.325097 | -0.157016 | 0.0466 |
| GETR | -0.008362 | 0.035064 | -0.238480 | 0.8136 |
| INFLR | 0.015383 | 0.038192 | 0.402773 | 0.6908 |
| GEAG | -0.083536 | 0.452099 | -0.184774 | 0.8550 |
| C | 15.02367 | 9.887677 | 1.519434 | 0.1423 |
| R-squared | 0.676934 | Mean dependent var | 56.43567 | |
| Adjusted R-squared | 0.592656 | S.D. dependent var | 4.874491 | |
| S.E. of regression | 3.111071 | Akaike info criterion | 5.308775 | |
| Sum squared resid | 222.6116 | Schwarz criterion | 5.635721 | |
| Log likelihood | -72.63162 | Hannan-Quinn criter. | 5.413368 | |
| F-statistic | 8.032149 | Durbin-Watson stat | 1.995143 | |
| Prob(F-statistic) | 0.000095 | | | |

*Note: p-values and any subsequent tests do not account for model

selection.

The coefficient of poverty POV (-1) is 0.73 and it gives a positive and significant relationship with current output. The coefficient of government expenditure on education (GEED) is -0.29 and it gives a negative and insignificant impact on POV at 5 percent level of significance as indicated by its probability value of 0.1122. This shows that one percentage increase in government expenditure on education will lead to 0.29% decrease in poverty. The result indicates that government expenditure on education decreases the rate of poverty level in Nigeria. And the coefficient of government expenditure on health (GEHL) is -0.051 (negative) is statistically significant at 5 per cent level as indicated by its probability value of 0.0466. This shows that percentage increase in (GEHL) will lead to -0.05% decrease in poverty. The coefficient of government expenditure on agriculture (GEAG) is -0.084 and it has a negative sign and statistically has insignificant impact on poverty at 10 per cent level of significance as indicated by its probability value of 0.8550. This shows that percentage increase in government expenditure on agriculture will lead to -0.084% decrease in poverty. The coefficient of government expectation on transport is -0.0084 and it has a negative sign and statistically significant at 10 per cent level of significant as indicated by its probability value of 0.8136. This shows that percentage increase in government expenditure on transport will lead to -0.0084% decrease in poverty. The coefficient of inflation is 0.0153 and it has a positive sign and statistically significant impact on

poverty at 10 per cent level of significance as indicated by its probability value of 0.6908. This shows that percentage increase in inflation will lead to 0.0153% increase in poverty.

From the above result, R^2 shows that all the explanatory variables explained 0.68 variability in the poverty (POV). This implies that the model explains 68% of the changes in POV and the remaining 32% was contributed by other variables outside the model or that are captured by the error term. Durbin Watson statistic, the benchmark for DW is 2 given the DW to be 1.995143 which can be approximated to 2 shows that the model is free from autocorrelation problem. To check if the independent variables are jointly significant to explain the dependent variable or the overall significance of the model, F-statistic was used. So, given the F-statistic value to be 8.032149 with the F-Probability value of 0.000095, it can be concluded that there was statistically significant relationship between the explanatory variables and the dependent variable. This is because the probability value of 0.000095 is less than 0.05 i.e. at 5% level of significance which led to the rejection of the null hypothesis which states that there exists no significant relationship between the explanatory variables and the dependent variable; hence, the acceptance of alternative hypothesis which states otherwise.

ARDL Error Correction Mechanism (ECM) Result

The result of the short run ARDL Error Correction estimates is shown in Table 4.4, and analysed thereafter.

Table 4.4: Estimated short-run error correction model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------|-------------|------------|-------------|---------|
| D(INFLR) | 0.056879 | 0.147151 | 0.386538 | 0.0027 |
| D(GETR) | -0.030919 | 0.128356 | 0.240900 | 0.0118 |
| D(GEHL) | -0.818874 | 1.229584 | 0.153505 | 0.1793 |
| D(GEED) | 1.083722 | 0.746907 | 1.450947 | 0.1603 |
| D(GEAG) | -0.308885 | 1.692428 | 0.182510 | 0.0468 |
| CointEq(-1) | -0.010444 | 0.089387 | -2.025532 | -0.0060 |

CointEq = POV - (0.0463*INFLR -0.0207*GETR -0.0877*GEHL + 0.0467*GEED

-0.2049*GEAG+0.1047)

The co-integration test is employed to show the error correction (speed of adjustment) in the long run i.e. the period at which shocks that occur in the system is adjusted over time. The result from Table 4.4 shows that the coefficient of the co integrating equation (0.010444) has a low magnitude and is negatively statistically significant. This shows that the speed of adjustment is low as the disturbance/disequilibrium converges back to the equilibrium within a long period hence it denotes a long run relationship. The result further revealed that inflation (Δ INFLR) had a significant positive relationship with the change in the poverty (Δ POV). Change in government expenditure on transport

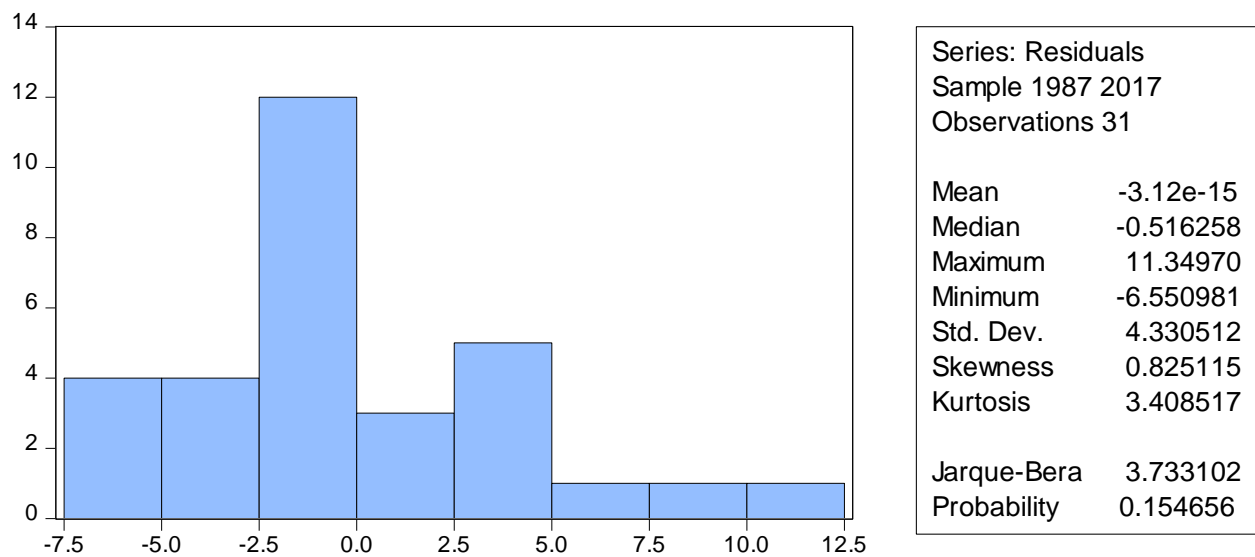


(Δ GETR) has a negative and significantly relates with change in poverty (Δ POV). The government expenditure on health (Δ GEHL) has a negative and insignificant relationship with change in poverty (Δ POV). Change in government expenditure on education (Δ GEED) has a positive insignificant relationship with change in poverty (Δ POV), Change in government expenditure on agriculture (Δ GEAG) has a negative and significant relationship with change in poverty (Δ POV).

Diagnostic Tests

Table 4.5

Normality Test



The Jarque-Bera statistic of 3.733102 and the corresponding probability value of 0.154656 indicated that the data of the model were normally distributed.

Table 4.6 Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

| | | | |
|---------------|----------|---------------------|--------|
| F-statistic | 0.085239 | Prob. F(2,21) | 0.9186 |
| Obs*R-squared | 0.241579 | Prob. Chi-Square(2) | 0.8862 |

Serial correlation (LM) test revealed that there is no serial correlation or autocorrelation in the model of this study because the null hypothesis of no serial correlation is accepted. This is indicated by the high probability value of the Chi-Square and the F-statistic of 0.8862 and 0.9186 respectively.

Heteroscedasticity Test

Table 4.7 Heteroscedasticity Test: Breusch-Pagan-Godfrey

| | | | |
|---------------|----------|---------------------|--------|
| F-statistic | 3.041773 | Prob. F(6,23) | 0.0944 |
| Obs*R-squared | 13.27299 | Prob. Chi-Square(6) | 0.0889 |



Scaled
explained SS 15.79801 Prob. Chi-Square(6) 0.3149

Heteroscedasticity test revealed that there is no heteroscedasticity in the model of this study because the null hypothesis of no heteroscedasticity is rejected. This is indicated by the high probability value of the Chi-Square and the F-statistic of 0.0889 and 0.3149 respectively in the table.

Table 4.8 Ramsey's RESET Test

Equation: UNTITLED

Specification: POV POV(-1) GEED GEHL GEAG GETR INFLR

Omitted Variable: Squares of fitted values

| | Value | Df | Probability |
|-------------|----------|---------|-------------|
| t-statistic | 0.853894 | 22 | 0.4024 |
| F-statistic | 0.729136 | (1, 22) | 0.4024 |

F-test summary:

| | Sum of Sq. | Df | Mean Squares |
|------------------|------------|----|--------------|
| Test SSR | 7.141235 | 1 | 7.141235 |
| Restricted SSR | 222.6116 | 23 | 9.678766 |
| Unrestricted SSR | 215.4704 | 22 | 9.794108 |

The Ramsey's RESET Test result in the table above revealed that the model of this study and the variables of the study are stable. The null hypothesis of stability in the model was accepted as indicated by the probability of T-statistics and F-statistics of 0.4024 and 0.4024 respectively

4.4.1 Stability Test

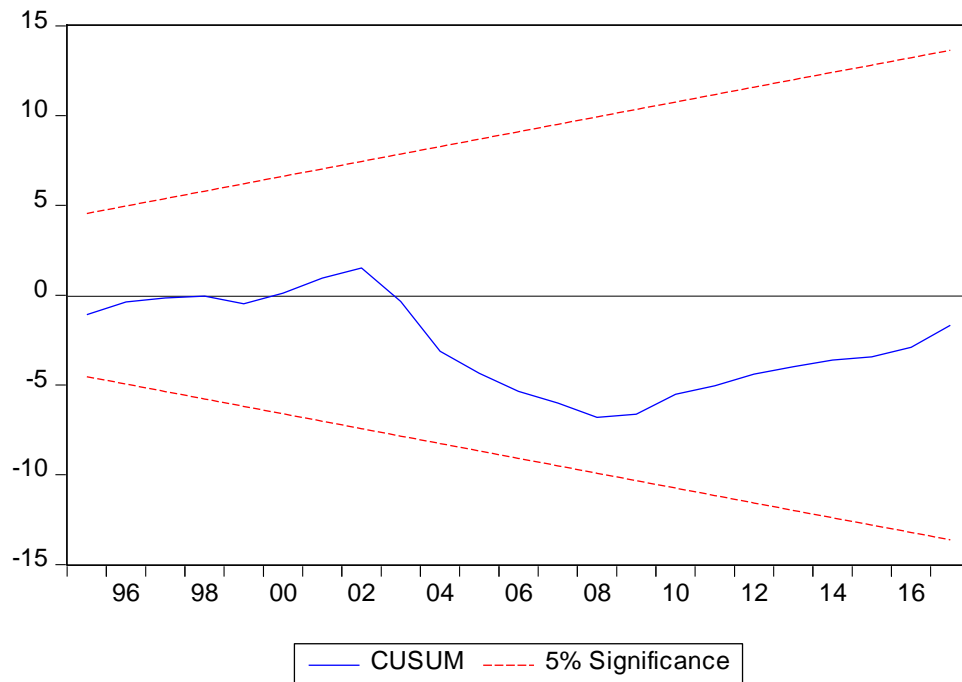


Figure 4.4.2: CUSUM Test

The CUSUM stability test result can be seen from the plot that CUSUM line stays within the critical 5% bounds that confirms the long-run relationships among variables and thus shows the stability of coefficient.

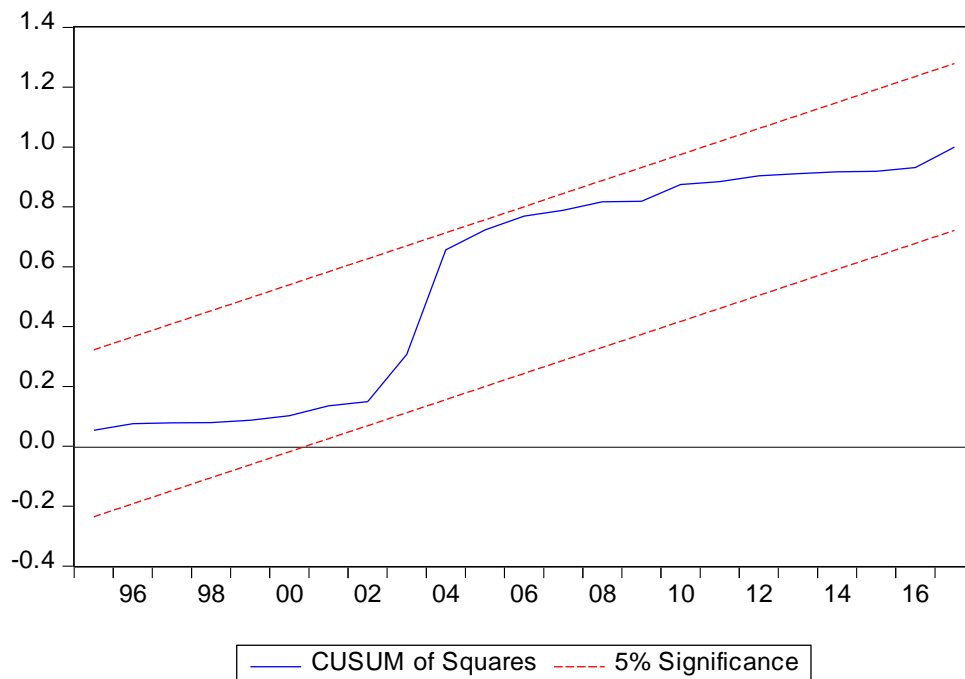


Figure 4.4.3: CUSUMS Test



The CUSUMSQ stability test result can be seen from the plot that CUSUMSQ line stays within the critical 5% bounds that confirms the long-run relationships among variables and thus shows the stability of coefficient.

5.0 Conclusion and Policy Recommendations

In the short run, with the current public expenditure on agriculture, health, education and transport, the poverty index in the country seems to be high, however at the long run public expenditure on the aforementioned sectors is promising in reduction of poverty considering the significant relationship between sectoral expenditure and poverty.

From empirical findings, the following recommendations were made:

- i. The study recommends that, since government expenditure on education, health, agriculture and transport has direct impact on people's welfare, there is need for government to increase its spending on these sectors by implementing policies that will boost agricultural sector, free education to the less privilege, free medical care and construction and rehabilitation of roads to ease transportation system. This will create employment, improved standard of living, hence reducing the level of poverty in Nigeria.
- ii. Secondly, since inflation increase poverty, this study recommends that, there is need for the government to implement policies that will continue to keep inflation rate down by price control. This will lead to an increase in the level of economic growth and hence a decrease in poverty in Nigeria.

Reference

- Aghion, P., & Bolton, P. (1997). A Theory of Trickle-down Growth and Development. *The Review of Economic Studies*, 64 (2), 151-172
- Binuyo, B.O. (2014). Impact of Poverty Programme on Economic Development Evidence from Nigeria. *Arabian Journal of Business and Management Review*, 4(1), 26-28.
- Emori, E. G. Duke, S. B. & Nneji, I. D. (2015). Impact of Public Expenditure on Economic Growth in Nigeria. *International Journal of scientific research and management (IJSRM)* 3(2) 3694-3700.
- Edrees, A., Azali, M., Azman, H. & Nor, N. (2016). " The Impact of Government Spending, Trade, Foreign Aid and Foreign Direct Investment on Poverty Reduction in Africa. *International Journal of Economics and Management Sciences*, 2162-6359.
- Kolawole. B.O., Omobitan1. O.A. and Yaqub. J.O. (2015) Poverty, Inequality and Rising Growth in Nigeria: Further Empirical Evidence. *International Journal of Economics and Finance*; 7(2) 1916-9728
- Omedero, C.O. and Azubike, J. U. (2016). Empirical Review of Government Expenditure on Education and Economic development in Nigeria (2000-2015), *International Journal of Development and Economic Sustainability*, 4(5) 13-25
- Paun, S. & Brezeanu, E. (2013), Public Spending and Outcomes: Does Governance Matter? *ELSEVIER Journal of Development Economics*, 86, 96-111



Persaran, M. H., Shin, Y., Smith, R.J. (2001) Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics* 16(3)289-326

Ritwik, S. & Joydeb, S. (2016). Public expenditures, Economic growth and Poverty alleviation. *International Journal of Social Science*, 43(6), 604–618

Stephanie, G. (2017). Relationship between economic growth and poverty reduction in Nigeria. *Pyrex Journal of Business and Economic Management Review*, 3(2) 6-12

Ukpong. I.G., Ekpebu. I.D. and Ofem. N.I. (2013) Co-integration inferences on issues of poverty and population growth in Nigeria. *Academic Journals*, 5(7), 277-283.