

The Nexus between Poverty, Inequality and Economic Growth in Nigeria, (1980-2018).

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Abstract:

The study examined the nexus between poverty, inequality and economic growth in Nigeria between 1980 to 2018. ARDL method of estimation was used to achieve the objective the study; and the result established that there exist a relationship between poverty, inequality and economic growth in Nigeria. Hence, the result shows that income inequality had positive but insignificant effect on economic growth both in short run and long run, while the short run result for absolute poverty revealed a negative and significant relationship with the economic growth; but the long run result though also negative but it was insignificant. The result further shows a positive and significant relationship between the population growth rate and the economic growth both in short run and long run; and lastly the short run result for gross capital formation shows a positive but insignificant relationship with the economic growth. While, its long run result is significant but negative.

However, based on the findings of this study, it is recommended that the government at all levels need to create program to solve the problem of poverty and income inequality in Nigeria; and one of the solution to the problem is the development of sound infrastructure in Nigeria. Equally significant is the development of educational and health facilities to build the abundance of human resources available in the country.

In addition, the issue of corruption, mismanagement and misappropriation of public fund should be seriously addressed; this is because it dumps economic development, even in the presence of abundance.

Keywords: Poverty, Inequality and Economic Growth

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I. Introduction

The aim of every national development is to achieve a sustainable macroeconomic goals, such as full employment, stability of price level, high and sustainable economic growth and balance of payment. However, the realization of these goals undoubtedly is not automatic but requires policy guidance (Adefeso and Bolaji, 2010). Economic growth and off cause development is considered to be the necessary framework for realizing such objectives. Therefore, the objective of reducing the simultaneous problem of poverty and inequality among the poor economies of the world resulted into the framework of Millennium Development Goals (MDG) whose subsequent expansion in Nigeria led to the formation of National Economic Empowerment and Development Strategies (NEEDS) and Sustainable Development Goals (SDGS). Yet, the objectives of these policies may not be achieved if the impediments to a rising domestic investment and employment creation are still evident in the socio-economic environment; to this ends the rising rate of income inequality in Nigerian economy is usually one of the unpleasant results of economic growth without development (Roland and Adesoji, 2012).

Therefore, this reflects a new trend in development policy which sees inequality and by extension poverty as inimical to the achievement of the desired level of economic growth and development in all regions of the world. Indeed, it is expected that economic growth should not only involve increase in the magnitude of national or aggregate outputs (GDP) alone, but also lead to increase in the welfare of the masses through reduction in poverty and inequality. Therefore, in improving the welfare of the community; it is necessary to increase economic growth and income distribution equally. To this ends, economic development is defined as increase in output and changes in the technical and institutional arrangement by which the output is produced and distributed with the aim of improving the wellbeing of the citizens (Jhingan,1997). Hence, the primary objectives of the economic development effort besides creating the most top growth should also be to eradicate and reduce poverty, income inequality and unemployment rates. This is because employment opportunities for the residents will provide income to meet their living needs (Todaro and Smith, 2009). Also Siregar (2009), said that increasing economic growth is a requirement to reduce unemployment and poverty; but the condition is not enough. Hence, provision of sufficiency to improve the quality of economic growth, to have a higher absorptive

capacity of the workforce, to spread the benefits of such growth more evenly, to encourage the empowerment of the sustainable poor is more vital (Akhmad et al, 2012).

1.2 Statement of Research Problem

In any context the concept of inequality refers always to comparability between elements. The comparison is usually based on specific characteristics which can be measured using adequate indexes or indicators. Thus, the term is reduced to comparisons between quantities; and to this effect inequality relates to differences in the quantities. In these terms, inequality seems to be a straightforward concept which, as Cowell (1995) states, suggests a departure from the simple idea of equality. However, difficulties arise when the concept is framed into the social context and in connection with economic problems. In this context, the concept is generally related to differences in income, consumption or wealth and associated with social welfare.

In the same vein, poverty is the economic condition in which people lack sufficient income to obtain certain minimal levels of health services, food, housing, clothing and education which are necessities for standard of living (World Bank, 2011). However, the various definitions and measures of poverty lead to two perspectives which are income poverty and lack of basic need poverty. Income poverty occurs when an individual does not have enough money to meet up with the a certain standard of living while lack of basic need poverty occurs when one is unable to meet some of the basic needs such as food, shelter and clothing as identified by united nations, children's fund (unicef, 2010).

To this effect, poverty reduction has been and will continue to be the ultimate goal of economics and social development for many countries all over the world (Renata, 2004). However, the achievement of this goal is becoming of increasing importance for many economies e.g Nigeria. Therefore, (Chen and Wang, 2001) conclude that; high and sustained positive economic growth is a necessary prerequisite for substantial poverty reduction. Still, positive economic growth does not necessarily imply poverty reduction; thus poverty is not only growth-sensitive but also inequality-sensitive (Bruno, Ravallion and Squire, 1998). Hence, deciding which of the factors are the most important for poverty reduction is crucial to devising effective programs and policies of poverty reduction in Nigeria. Therefore, the questions of inequality and poverty and their relationship to economic growth are critical issues in the literature of development economics and the subject matter has pre-occupied a central position on the academic research agenda.

Also, it can be deduced from the reviewed literatures below that the topic of poverty, inequality and economic growth has been widely studied from different perspectives. However, the researchers had not been unanimous in studying the topic and also there is no consensus among the empirical literatures reviewed on the effect, the direction of the relationship and causality between poverty, inequality and the economic growth both in the short-run and long –run. E.g Ramudzuli (2019), Olohunda and Dauda (2019) and Nwosa (2019) found that income inequality and poverty has a positive relationship with the economic growth; while Hong et al (2018), Omoniyi (2018) and Darma and Ali (2014) found a negative relationship between income inequality and economic growth.

Therefore, given the arguments above; this study seeks to contribute to the existing body of knowledge on the topic by conducting a study on the nexus between poverty, inequality and economic growth in Nigeria and also by analyzing the trends of inequality, poverty and economic growth in Nigeria.

II. Empirical and Theoretical Literature Review

2.1 Theoretical Literature Review

Simon Kuznet in 1955 introduced the phenomenon of the relationship between economic growth and income inequality. Kuznet found that at the beginning of the growth stage, income distribution (welfare) tends to worsen. But in the next step, the income distribution improves with increasing per capita income (reversed curve U). In the early stages of development, economic growth is usually concentrated in the modern sector and focused in already developed areas (Mankiw 2003, McCann 2001, Romer 2001). In addition, Todaro and Smith (2009) explained that high growth rate does not always worsen the distribution of income; given the example of Taiwan and South Korea that experienced a high growth rate of Gross Domestic Products (GDP) and an even distribution of income.

Similarly; Gini Coefficient can be used to explain inequality. It refers to as the universal and statistical index of income or economic inequality propounded by an Italian statistician called Carrado Gini in 1912 and it is also refer to as Gini index. Gini index is expressed through the Lorenz curve that was advanced by Max Lorenz in 1906. Lorenz curve is used to explain the proportion of income earned by any given percentage of the total population. Gini index is usually specified between zero and one in which the zero index implies perfect equal income in the economy and the coefficient value of one depict perfect inequality, that is, single entity or few individuals benefitting from the whole income in an economy. However, Gini index do not measure absolute income of the country but it measures only the magnitude of income inequality in the country.

To graphically represent Gini index. Lorenz curve is usually used. The line at 45° angle depicts perfect equality, while the other line represents the actual income distribution.

2.2 Empirical Literature Review on the Nexus between Poverty, Inequality and Economic Growth.

Ramudzuli (2019): Examined the relationship between income inequality, economic growth and poverty in South Africa. The panel mean group (MG) model, based on the panel Autoregressive Distributed Lag (ARDL) approach, was employed to test the co-integration among the variables. The error correction model (ECM) was used to determine the adjustment of the system to the equilibrium. Due to the presence of cross-sectional dependency, the common corrected effects model (CCEMG) was employed as an advanced technique of the MG estimator. The findings of the study revealed that in the long-run, GDP growth and poverty have a negative relationship whilst income inequality and economic growth have a positive relationship. Furthermore, the human development index has a positive relationship with income inequality and a negative relationship with poverty in the long-run. In order to contribute to the discussion, Olohunlana and Dauda (2019); studied the Implications of financial development on poverty and inequality: Evidence from Nigeria. The paper examines the short and long run implications of the four measures of financial development on poverty reduction and income inequality in Nigeria within the period 1996-2017. The study employs the Autoregressive distributed lag (ARDL) long run co-integration approach. The results revealed a positive but economic insignificant relationship between financial development, poverty and inequality both in the short and long run. The study further revealed that corruption and inflationary levels exhibited positive effect on poverty reduction and income inequality. In the same vein, Nwosa (2019) conducted a study on Income inequality and economic growth in Nigeria: Implication for economic development (1981-2017); an autoregressive distributed lag estimation technique was employed. The results of the study showed that economic growth had positive but insignificant impact on income inequality in Nigeria.

While on the other hand, Hong et al (2018); considered the factors that affect income inequality and economic growth in middle-income countries. The Granger causality test and a system generalized method of moments (GMM) are utilized in this study. The findings from this study indicate that causality is found from economic growth to income inequality and vice versa in both samples of countries. In addition, the study also revealed that income inequality contributes negatively to the economic growth in the middle-income countries during the research period. Similarly, Adinde (2017); examined the impact of income inequality on economic growth: A Case Study on Nigeria. Ordinary least square method was used to estimate the impact of income inequality on economic growth in Nigeria. The research works found out that as the economic growth increases, the level of inequality get worsen in Nigeria. In the same vein, Darma and Ali (2014): An Empirical Analysis of the Effect of Income Inequality on Economic Growth in West Africa (1980-2011). The study used panel data from various secondary sources. The fixed effect and random effect, generalized method of moments (GMM), and granger causality models were applied in the study. The dependent variable is real per capita GDP while the independent variables are Gini-coefficient, poverty, human capital and openness. The findings based on the adopted GMM model revealed that inequality and poverty have significantly negative effect on economic growth in West Africa while human capital and openness are positively related to economic growth in the region.

Furthermore, Omoniyi (2018) examined the causes and effects of poverty on economic growth in Nigeria. The article employed an error correction model as estimation technique to analyze the time series data collected. The article revealed a positive and significant relationship between inflation, life expectancy and economic growth, while investment proved insignificant. Conversely, poverty, corruption, debt, mortality, human capital development and unemployment presented negative relationships with economic growth. Corruption, life expectancy and mortality rate were significant, while poverty, debt, human capital development and unemployment proved insignificant; and lastly, Lucky and Sam (2018) explore the relationship between poverty and income inequality in Nigeria: An illustration of Lorenz curve from NBS survey. The study revealed that significant proportions of Nigerian population are living below the poverty line adopted in the study; and also that, there is a wide gap between the rich and the poor in Nigeria.

III. Data And Methodology

3.1 Sources of data

The study utilized time series secondary data spanning between 1980 to 2018 to obtain values for the variables in the model. Data on economic growth proxy by real gross domestic product, poverty and inequality, gross capital formation and population growth rate were obtained from World Bank indicators year 2018 publications.

3.2 Trends of Poverty, Inequality and Economic Growth in Nigeria between 1980 to 2018.

Fig 1: Trend of Economic Growth between 1980-2018

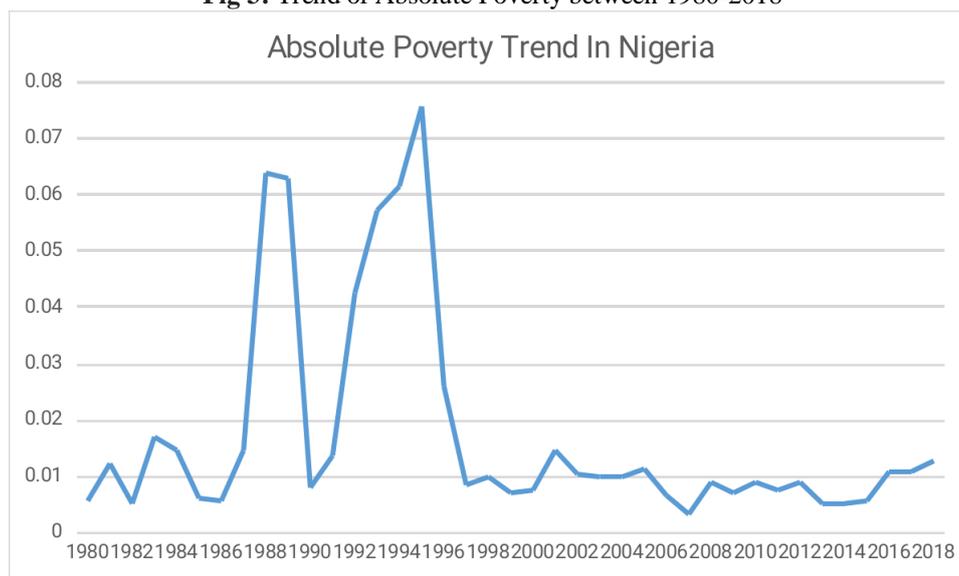


Source; Authors' Computation, 2020.

Fig 2: Trend of Inequality between 1980-2018



Fig 3: Trend of Absolute Poverty between 1980-2018



Source; Authors' Computation, 2020.

3.2 Definition and measurement of variables

| Variables | Description | Measurement | Source |
|-----------|-------------------------|---|----------------------|
| GDPPC | Economic Growth | Gross Domestic Product Per-Capita | World Bank Indicator |
| APOV | Absolute Poverty | Individual Consumption Expenditure divided by price | World Bank Indicator |
| GNI | Inequality | Income Inequality | World Bank Indicator |
| GCF | Gross Capital Formation | Investment on Infrastructure | World Bank Indicator |
| POPG | Population Growth Rate | Control Variable | World Bank Indicator |

3.4 Research Methodology

To examine the nexus between economic growth, income inequality and poverty, the study employs the classical theory which emphasize a positive link between the variables;

thus a simple model is specified as: $GDPPC_t = f(GNI_t, APOV_t) \dots \dots \dots (1)$

Introducing other control variables as used in Delbianco et al. (2014) equation (1) above becomes thus: $GDPPC_t = f(GNI_t, APOV_t, GCF_t, POPG_t) \dots \dots \dots (2)$

Now linearizing equation (2), it becomes thus;

$$GDPPC_t = \alpha_0 + \alpha_1 GNI_t + \alpha_2 APOV_t + \alpha_3 GCF_t + \alpha_4 POPG_t + \ell_t \dots 3$$

The apriori expectations are $\alpha_1, \beta_1, \beta_2, \dots, \beta_6 > 0$; this shows that dependent variables have positive functional

relationships with independent variable captured by Gross Domestic Product per capital. Where, e_t is the error term that captures other factors that may affect economic growth. However, equation (3), GNI is a measure of income inequality, GDPPC is economic growth measured by the annual growth rate of gross domestic product per capital, APOV is a measure of poverty derived by individual consumption expenditure divided by the price. GCF is the measure of government investment on the infrastructure; while, POPG is population growth measured by the annual growth rate of the population and lastly ℓ_t is the stochastic error term.

3.5 Model Specification

The generalized ARDL (p,q) model is shown as follows (Green, 2003):

$$Y_t = c + \gamma_t + \alpha_0 Y_{t-1} + \dots \alpha_p Y_{t-p} + \beta_0 X_t + \dots \beta_q X_{t-q} + e_t \dots 3.5$$

Where c, t, and e_t are intercept, time trend and white noise error terms respectively and Y_t and X_t are stationary variables. The above model is called “autoregressive” since it includes p lags of dependent variable. At the same time, it is also a “distributed lag” model because it includes q lags of explanatory variable.

After testing the existence of a long run relationship between the variables through the Bound Testing, Error Correction model (ECM) will be formed.

Therefore, following the ARDL approach proposed by Pesaran and Shin (1997, 1999 and 2001), the following model is specified in order to determine or test the long run co-integration relationships between the variables.

$$\Delta \ln GDPPC_t = \beta_0 + \lambda_1 \ln GDPPC_{t-1} + \lambda_2 \ln APOV_{t-1} + \lambda_3 \ln GNI_{t-1} + \lambda_4 \ln GCF_{t-1} + \lambda_5 \ln POPG_{t-1} + \beta_1 \sum_{i=1}^n \Delta \ln GDPPC_{t-i} + \beta_2 \sum_{i=0}^n \Delta \ln APOV_{t-i} + \beta_3 \sum_{i=0}^n \Delta \ln GNI_{t-i} + \beta_4 \sum_{i=0}^n \Delta \ln GCF_{t-i} + \beta_5 \sum_{i=0}^n \Delta \ln POPG_{t-i} + e_t \dots 3.6$$

Where,

$\lambda_1, \lambda_2, \lambda_3, \dots, \lambda_7$ are coefficients that measure long run relationships.

While,

$\beta_1, \beta_2, \beta_3, \beta_4, \dots, \beta_7$ are the coefficients that measure short run relationships.

To test whether there is a long run equilibrium relationship between the variables; bounds test for co-integration was carried out as proposed by Pesaran and Shin (1999 and 2001). The hypotheses are shown below;

$H_0 = \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = \lambda_6 = \lambda_7 = 0$. This means there is no long run relationship among the variables

$H_a \neq \lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq \lambda_6 \neq \lambda_7 \neq 0$. This means there is a long-run relationship among the variables.

The non – standard F- statistics is used to test the above hypothesis. The critical values of the F-statistics for this test are available in Pesaran and Shin, and Smith (2001). If the computed F-statistics is higher than the appropriate upper bound of the critical value, the null hypothesis of no co-integration will be rejected. If it is below the appropriate lower bound, the null hypothesis cannot be rejected, and if it lies within the lower and upper bounds, the result would be inconclusive.

After confirming the existence of long run relationship among the variables, the following stable long run model is estimated

$$\ln GDPPC_t = \beta_0 + \beta_1 \sum_{i=1}^n \Delta \ln GDPPC_{t-i} + \beta_2 \sum_{i=0}^n \Delta \ln APOV_{t-i} + \beta_3 \sum_{i=0}^n \Delta \ln GNI_{t-i} + \beta_4 \sum_{i=0}^n \Delta \ln GCF_{t-i} + \beta_5 \sum_{i=0}^n \Delta \ln POPG_{t-i} + e_t \dots 3.7$$

The next step is to estimate the error correction model that indicates the short run dynamic parameters (adjustment parameters that measure the speed of correction to long run equilibrium after a short run disturbance). The standard ECM is estimated as follows:

$$\Delta \ln GDPPC_t = \beta_0 + \beta_1 \sum_{i=1}^n \Delta \ln GDPPC_{t-i} + \beta_2 \sum_{i=0}^n \Delta \ln APOV_{t-i} + \beta_3 \sum_{i=0}^n \Delta \ln GNI_{t-i} + \beta_4 \sum_{i=0}^n \Delta \ln GCF_{t-i} + \beta_5 \sum_{i=0}^n \Delta \ln POPG_{t-i} + \beta_6 ECT_{t-1} + e_t \dots 3.8$$

Where,

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$, and β_6 = Coefficients that represent the short run dynamics of the model.

ECT_{t-1} = Error correction term lagged by one period.

e_t = vector of white noise error terms and $(n - g)$ denotes the optimal lag length of each variable in the autoregressive process.

δ = Error correction parameter that measure the speed of adjustment towards the long run equilibrium.

IV. Regression Estimate and Discussion of Results

The study commenced its regression estimate by conducting the unit root test using the Augmented Dickey Fuller test. The result of ADF test is presented in table 1 below;

Table 1: Unit Root Test
4.1 Augmented Dickey-Fuller (ADF) Test

| Variables | Level | After Differencing | Status |
|-----------|---------------------|---------------------|--------|
| LGDPCC | -1.3149 (0.6116) | -4.1499 (0.0025) | I(1) |
| GNI | 1.8869 (0.9997) | -3.3815 (0.0188) | I(1) |
| APOV | -3.37403 | -6.3859 | I(0) |

| | | | |
|------|----------------------|----------------------|------|
| | (0.0185) | (0.0000) | |
| LGFC | -1.36552 (0.5881) | -5.6823 (0.0000) | I(1) |
| POPG | -1.28997 (0.6232) | -3.94027 (0.0046) | I(1) |

Source: Authors' Computation, using E-views 9, 2020.

Note: * and ** denote 1% and 5% critical values respectively.

The unit root test showed that all the variables were integrated of order one, indicating that the variables were I(1) variables except absolute poverty which was integrated of order zero, indicating that the variable is I(0) series. The mix in the order of co-integration indicates the need for the testing of the co-integration through the use of bound co-integration technique.

4.2 ARDL Bound Co-integration Test

Sequel to the mix in the result of the unit root tests presented in table 1 above, the study carried out the co-integration test using the Auto-Regressive Distributed Lag Bound Co-integration test. Pesaran, Shin and Smith (2001) provide two asymptotic critical values (lower and upper) bounds for testing the existence of co-integration when the regressors are purely I(0) or I(1). A lower value assumes the regressors are purely I(0) while an upper value assumes the regressors are purely I(1).

If the F-statistic falls outside the critical values, then a conclusive statement can be made regarding the nature of co-integration among the variables in the ARDL model; without a priori information on the order of integration of the independent variables. For instance, if the F-statistic is higher than the upper critical value, then the null hypothesis of no co-integration is rejected, suggesting the existence of co-integration among the variables. Conversely, if the F-statistic is lower than the lower critical value, then the null hypothesis of no co-integration cannot be rejected, suggesting the absence of co-integration among the variables. However, if the F-statistic falls between the upper and lower critical values, then the result is inconclusive.

Table 2: ARDL Bound Co-integration Test

| Estimated Model | F- Statistics | Co-integration |
|--------------------------|---------------|----------------|
| F(RGDP,INQ,PCI,LGXP,POP) | 16.03541 | Co-integration |
| Critical Values | Lower Bound | Upper Bound |
| 1% | 3.74 | 5.06 |
| 5% | 2.86 | 4.01 |

Source: Authors' Computation, using E-views 9, 2020.

Note: ** implies five percent significance level From the co-integration result presented in table 2 above, it was observed that the value of the F-statistics for the estimating model which is approximately 16.03541 is higher than the upper bound critical value at 5%, suggesting the presence of co-integration among the variables in the model.

4.3 The ARDL Result

Therefore, the study presents both the long run and short run ARDL regression estimates below. From the long run estimate presented on table 3 below;

Table 3: ARDL Regression Estimates on Economic Growth, poverty and Income Inequality in Nigeria.

ARDL Cointegrating And Long Run Form

Dependent Variable: LGDPPC

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

Date: 03/16/20 Time: 02:02

Sample: 1 39

Included observations: 36

| Cointegrating Form | | | | |
|--------------------|-------------|------------|-------------|--------|
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| D(APOV) | -0.677419 | 0.350116 | -1.934841 | 0.0632 |
| D(GNI) | 0.027409 | 0.029275 | 0.936249 | 0.3572 |
| D(LGCF) | 0.032865 | 0.051879 | 0.633488 | 0.5316 |
| D(POPG) | 0.382587 | 0.119498 | 3.201612 | 0.0034 |
| CointEq(-1) | -0.393762 | 0.092386 | -4.262128 | 0.0002 |

$$\text{Cointeq} = \text{LGDPPC} - (-0.5975 * \text{APOV} + 0.0696 * \text{GNI} - 0.2637 * \text{LGCF} + 0.9716 * \text{POPG} + 5.7074)$$

| Long Run Coefficients | | | | |
|-----------------------|-------------|------------|-------------|--------|
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| APOV | -0.597469 | 0.827396 | -0.722107 | 0.4762 |
| GNI | 0.069608 | 0.061009 | 1.140938 | 0.2636 |
| LGCF | -0.263695 | 0.145392 | -1.813684 | 0.0805 |
| POPG | 0.971621 | 0.307974 | 3.154884 | 0.0038 |
| C | 5.707437 | 0.648610 | 8.799490 | 0.0000 |

4.4 Discussion of the result

The result shows that GNI (i.e income inequality) had positive but insignificant effect on economic growth (GDP); both in short run and long run in Nigeria. This indicates that increase in income inequality has the tendency to increase the level of economic growth in Nigeria but such impact is insignificant. However, the short run result for absolute poverty revealed a negative and significant relationship with the economic growth; while its long run result also revealed negative but it was insignificant. This means an increase in economic growth in the country will reduce the level of poverty among the citizens by the proportion of it co-efficient. The result further shows a positive and significant relationship between the population growth rate and the economic growth both in short run and long run. Hence a unit increase in the quality of human capital in the country will increase the economic growth by the proportion of the POPG (i.e Population growth rate) coefficient both in the short run and long run; this shows that human resources is the force that drive the economic growth in this 21st century which is knowledge driven economy. The short run result for the lag of gross fixed capital formation shows a positive but insignificant relationship with the economic growth. While, its long run result is significant but negative. Though it was expected that the result for LGFC (i.e lag of gross fixed capital formation) should be positive and significant but it was otherwise; this could be as a result of high level of corruption, embezzlement and diversions of public funds that is very rampant among the people at the arms of affair in the country and; Finally, (ECM term(-1)) had the expected negative signed and is statistically significant. The coefficient estimate of the error correction term of -0.393762 implied that the regression estimate corrects its short-run disequilibrium by about 39 percent speed of adjustment in order to return to the long-run equilibrium.

4.5 Diagnostic Test Statistic

To ensure the robustness of the regression estimate, some diagnostic tests (such as normality and heteroskedasticity ARCH tests) were conducted. The normality test results showed that the probability value of the Jarque-Bera statistics is greater than 5%, indicating that the residuals from the estimates are normally distributed while the heteroskedasticity (ARCH test) also showed the absence of serial correlation in the estimates. This is because the probability value is greater than 0.05. The results of the diagnostic tests showed the appropriateness of the regression estimates.

V. Conclusions and Policy Implications

5.1 Conclusion

The level of absolute poverty in Nigeria has decreased as shown by the trend of poverty in figure two above and also by the ARDL analysis. The decline in the absolute poverty rate in Nigeria could be partly due to the improved economic condition marked by an average economic growth in recent years. On the other hand, income inequality got rising as the economic growth increases. This shows that the economic growth in Nigeria is yet to lead to development in that it lacks quality. This also reflect on the result of gross fixed capital formation which was insignificant in the short run and negatively significant on the long run.

5.2 Policy implications

Base on the findings of this study that a relationship exist between poverty, inequality, gross fixed capital formation, population growth rate and economic growth both on a short run and long- run. Therefore, the government at all levels need to create program to solve the problem of poverty and income inequality in Nigeria. One of the solution to the problem is the development of sound infrastructure in Nigeria. The infrastructure consists of the construction of ports, road improvements, the addition of power and electricity

capacity, the development of hospitals and health centers that are reliable. Also, equally significant is the development of educational facilities and infrastructure to build the abundance of human resources available in the country.

In addition, the issue of corruption, mismanagement and misappropriation of public fund should be seriously addressed; this is because it dumps economic development, even in the presence of abundance. Therefore, without addressing these issues; it will be difficult for Nigeria to catch up with the developed countries.

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