

## Income Inequality and Economic Growth In Nigeria: Implication For Economic Development\*

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**Abstract:** This study examined the relationship between income inequality and economic growth in Nigeria and its implication for economic development. The study covered the period 1981 to 2017 and employed the autoregressive distributed lag estimation technique. The results of the study showed that economic growth had positive but insignificant impact on income inequality in Nigeria. Thus, the study recommends the need for the government to ensure equitable distribution of economic gains among the poor citizens. The budgetary preparation and allocation should also be pro-poor based and tailored towards improving the welfare of the larger population and not at further enriching the few rich ones. The implementation of the above and other welfare enhancing policies would contribute to increasing the level of economic development in Nigeria.

**Keywords:** Income inequality; economic growth; ARDL; Nigeria

**JEL Classification:** E64

### 1. Introduction

The discourse on the link between income inequality and economic growth has been polarized into two distinct stands. On the one hand, scholars stressed that economic growth is inimical to reduction in income inequality while on the other hand, others emphasized that economic growth leads to more income inequalities due to the lopsided distribution in the gains of economic growth among members of the society at which few individuals get large share of economic growth at the expenses of the larger proportion of the society. Empirical studies on income inequality and economic growth have equally produced mixed results. While studies<sup>2</sup> have showed a positive relationship between income inequality and economic growth; other studies<sup>3</sup> showed a negative relationship between income

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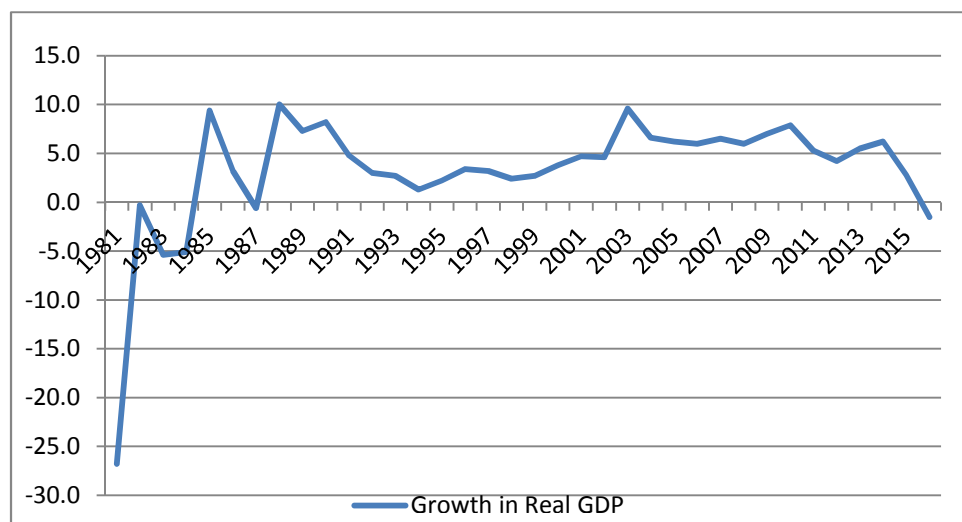
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<sup>2</sup> See (Penalosa & Turnovsky, 2006; Forbes, 2000; Li & Zou, 1998; Partridge, 1997).

<sup>3</sup> See (Grundler & Scheuermeyer, 2015; Zouhler & Imen, 2012; Deininger & Squire, 1998; Persson & Tabellini, 1994).

inequality and economic growth. In addition, Delbianco, Dabus and Caraballo (2014) noted that the relationship between income inequality and economic growth depends on income level of the country. Available data on Nigeria suggests that the growth rate of the country has not been stable overtime as shown on fig 1 below; however, the extent of the influence of economic growth on the level of income inequality remained uncertain owing to the lack of empirical studies on the issue. Existing studies have largely focused on the link between poverty and economic growth. It is no doubt that widening income inequality increasing poverty level and declined economic development, thus examining this issue provides a better understanding on the relationship between poverty and economic growth in Nigeria.

In addition, examining the link between income inequality and economic growth is vital because, widening income inequalities have prompted incessant labour unions agitation for increased minimum wage; widening income inequalities have increased social and political unrest; and rising poverty level which is accompanied by decline in standard of living among others. All of these have contributed to worsening the economic development in the country. In the light of the above issues concerning the consequences of rising income inequalities on the socio-economic development, this study therefore examines the relationship between income inequality and economic growth in Nigeria.



**Figure 1. Economic Growth in Nigeria 1981 to 2016**

*Source: Authors' Computation 2018 using E-views 9, 2018*

## 2. Literature Review

From the theoretical perspectives, the developmentalist emphasized that income inequality results from absence of economic growth while “class-based” or Marxist theory posited that inequality in income results from uneven development and exploitation, resulting in skewed asset and income distribution (Angelsen & Wunder, 2006). In explaining the link between income inequality and economic growth, the classical economists emphasize a positive relationship between the variables. According to the classical, increase in income inequality results in increase in economic growth given that it is the rich that undertakes saving and investment which are pivotal to economic growth. In contrast to the classical position, proponents of the “political economy” theory argued that income inequality is detrimental to economic growth via different channels such as credit market imperfections, social instability or rent-seeking activities (Delbianco, Dabus & Caraballo, 2014). The Kuznet (1955) hypothesis explained the link between income inequality and economic growth as inverted U shaped. The Kuznet hypothesis noted that at the earlier stages of economic growth, inequality in income increases, as the economy grows further; inequality reaches its peak and then finally declines with continuous economic growth. Thus, the Kuznet hypothesis noted that in the short run there exist a positive relationship between income inequality and economic growth while in the long the relationship between income inequality and economic growth is negative.

From empirical literatures, Grundler and Scheuermeyer (2015) examined the relationship between income inequality, economic growth and the effect of redistribution for a group of 154 countries. Employing system GMM methods, the study observed that income inequality had negative effect on economic growth. Holding net inequality as constant, the study observed that public redistribution negatively affects economic growth. Combining the negative direct growth effect and the indirect positive effect operating through lower net inequality, the study observed that the overall impact of redistribution on economic growth is insignificant. In Tunisia, Mnif (2015) observed a negative relationship between income inequality and economic growth. Delbianco et al. (2014) examine the relationship between the income inequality and the economic growth for a group of 20 Latin American and Caribbean countries over the period 1980-2010. The results of the study showed that the relationship between income inequality and economic growth depends on the income level. In general, the study observed that income inequality is harmful to economic growth. However, when it comes to the upper tail of the richer countries’ income distribution, higher inequality encourages economic growth and the relation becomes positive. Nasfi and Malek (2014) examine the link between economic growth and income inequality in Tunisia over the period 1984 – 2011. The study observed that income inequality had negative effect on economic growth after the acceleration of the process of opening

exchange. Banya (1995) found evidence for the Kuznet inverted U curve using data from a group of developing countries. Empirical evidence from the reviewed literature showed that there still exist controversy on the relationship between income inequality and economic growth. Also, most studies on this issue have focused on panel studies while the few country specific studies focused on developed and other developing countries excluding Nigeria. Consequently, this study intends to bridge the gap in knowledge by carrying a country specific study on the relationship between income inequality and economic growth in Nigeria over the period 1981 to 2017.

### 3. Methodology

#### 3.1. Model Specification

To examine the impact of economic growth on income inequality, this study employs the classical theory which emphasize a positive link between the variables, thus a simple model is specified as:

$$INQ_t = f(GRT_t) \quad (1)$$

Introducing other control variables used in Delbianco et al. (2014) and Levine and Renelt (1992), equation (1) becomes:

$$INQ_t = f(GRT_t, PCI_t, GXP_t, OPN_t, POP_t) \quad (2)$$

Linearizing equation (2) becomes

$$INQ_t = \delta_0 + \delta_1 GRT_t + \delta_2 PCI_t + \delta_3 GXP_t + \delta_4 OPN_t + \delta_5 POP_t + \varepsilon_t \quad (3)$$

From equation (3), *INQ* is income inequality measured by the Gini coefficient, *GRT* is economic growth measured by the annual growth rate of the real gross domestic product, *PCI* is per capita income measured by the ratio of real GDP to total population, *GXP* is aggregate government expenditure measured by the sum of capital and recurrent expenditure, *OPN* is trade openness measured by the ratio of total trade to real GDP, *POP* is population growth measured by the annual growth rate of the population and  $\varepsilon$  is the stochastic error term.

### 4. Regression Estimate and Discussion

The study commenced its regression estimate by conducting the unit root test using the Augmented Dickey Fuller test and the result presented on table 1. The unit root test showed that all the variables were integrated of order one, indicating that the

variables were I(1) variables except economic growth rate and population growth rate. Both the growth rates of the economy and population were integrated of order zero, indicating that the variables are 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 Johansen-Juselius bound co-integration technique.

**Table 1. Unit Root Test**

Augmented Dickey-Fuller (ADF) Test			
Variables	Level	After Differencing	Status
INQ	-2.7583	-5.0142*	I(1)
GRT	-8.4744*	-	I(0)
PCI	-0.5609	-3.0702**	I(1)
LGXP	-1.1531	-7.2053*	I(1)
OPN	-0.4828	-5.5637*	I(1)
POP	-8.7959*	-	I(0)

*Source: Authors' Computation 2018 using E-views 9, 2018*

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

Sequel to the mix in the result of the unit root tests presented in table 1 above, this 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	
	27.4695	
Critical Values	Lower Bound	Upper Bound
1%	3.41	4.68
5%	2.62	3.79

*Source: Authors' computation using e-views 9, 2018*

**Note:** \*\* implies five percent significance level

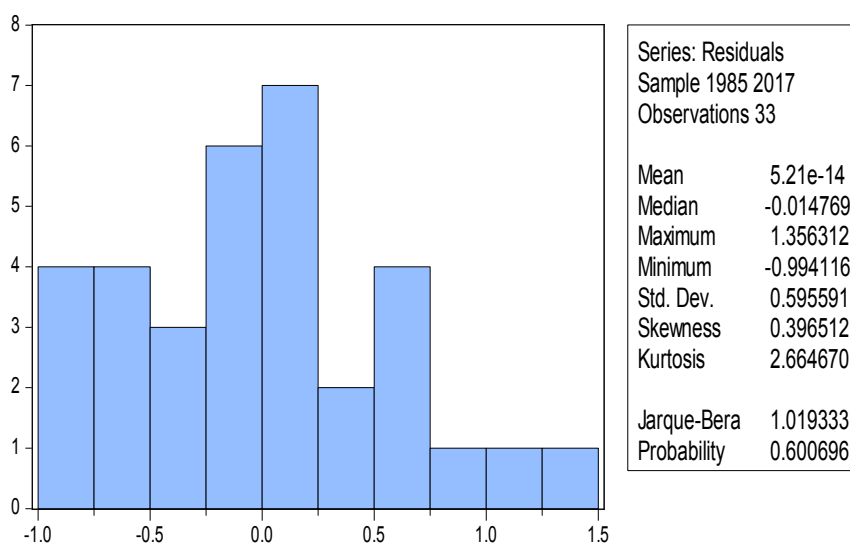
From the co-integration result presented in table 2 above, it was observed that the value of the F-statistics for the estimating model which is approximately 27.47 is higher than the upper bound critical value at 5%, suggesting the presence of co-integration among the variables in the model, thus the study presented both the long run and short run ARDL regression estimates. From the long run estimate presented on table 3 below, the study observed that economic growth (GRT) had positive but insignificant impact on income inequality in Nigeria, indicating that increase in economic growth has the tendency to increase the level of income inequality in Nigeria but such impact is insignificant. The study also observed that government expenditure (LGXP) and population growth (POP) had positive and significant impact on income inequality. Statistically, a unit increase in government expenditure and population growth is expected to increase income inequality by 7.78 and 24.01 units in the long run. The significant impact of government expenditure and population growth on inequality can be attributed to the fact that the yearly increase in budgetary expenditures of the government have not impacted on the poor in terms of jobs creations and improvement in the standard of living. With respect to population growth, increases in population without a corresponding increase in income level and welfare packages will definitely increase poverty level and the level inequality in the country. Furthermore, the result of the study showed that openness had negative and significant impact on inequality, indicating that a unit increase in openness is expected to reduce income inequality by 112.8 units. Since the mid 1980s, the Nigerian government had liberalized the economy for greater access to international trade; this may have contributed to reducing income inequality in Nigeria. Finally, the study observed that per capital income has an insignificant impact on income inequality in Nigeria. This outcome can also be attributed to the insignificant contribution of economic growth in reducing income inequality in the country. The results from the short run estimate showed that the error correction term (*ECM term(-1)*) had the expected negative signed and is statistically significant. The coefficient estimate of the error correction term of -0.76 implied that the regression estimate corrects its short-run disequilibrium by about 76 percent speed of adjustment in order to return to the long-run equilibrium.

**Table 3. ARDL Regression Estimates on Income Inequality and Economic Growth in Nigeria**

Variables	Coefficients	Std. Error	t-Statistics	Prob.
C	-118.4550	22.7012	-5.2180	0.0012
GRT	1.5538	0.6886	2.2564	0.0586
PCI	0.5242	8.5064	1.0351	0.3350
LGXP	7.7801	1.1808	6.5886	0.0003
OPN	-112.8146	32.5375	-3.4672	0.0104
POP	24.0094	3.5935	6.6813	0.0003
ECM term(-1)	-0.7624	0.1281	-5.9509	0.0006

Source: Author's Computation using e-views 9, 2018.

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.



**Figure 2. Normality Test**

*Source: Authors' Computation 2018 using E-views 9, 2018*

**Table 4. Heteroskedasticity Test: ARCH**

F-Statistics	1.0712	Prob. F(1,30)	0.3090
Obs*R-squared	1.1032	Prob. Chi-Square(1)	0.2936

*Source: Authors' Computation 2018 using E-views 9, 2018*

## 5. Conclusion and Recommendations

This study examined the relationship between income inequality and economic growth in Nigeria and its implication for economic development. The study covered the period 1981 to 2017 and employed the autoregressive distributed lag estimation techniques.

The results of the study showed that economic growth contributed positively in increasing income inequality in Nigeria, however its impact was insignificant. The implication of this result is that the increase in growth achieved over the years has

the tendency of fuelling or widening the income inequality gap between the rich and poor which is detrimental to economic development. In view of the findings, it was recommended that there is the need for the government to ensure equitable distribution of economic gains among the poor citizens.

The budgetary preparation and allocation should also be pro-poor based and tailored at improving the welfare of the larger population and not at further enriching the few rich ones. Also, the provision of employment opportunities and the payment of unemployment benefits to the unemployed would also contribute to reducing income inequality. The implementation of the above and other welfare enhancing policies would contribute to increasing the level of economic development in Nigeria.

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