

# The Determinants of Income Inequality in Nigeria: An Autoregressive Distributive Lag Approach

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This study investigates the determinants of income inequality in Nigeria by conducting an empirical analysis of some selected variables using Autoregressive Distributed Lag (ARDL) bounds approach for the period 1990 to 2016. The findings show evidence of co-integration between income inequality and its determinants in Nigeria. It also indicated that the Gini coefficient is relatively high in Nigeria, showing a high level of income inequality in the country. Furthermore, the critical determinants of income inequality as revealed by the study are economic growth, education level and real GDP per capita in Nigeria. The study recommends policies that will be geared toward equity and equality.

**Key words:** *Income inequality, Socio-economic, ARDL, Nigeria.*

**JEL:** B22, C32, C39, E00

## Introduction

The disparity of income is a global issue. In the Nigeria context, the level of inequality is relatively high. The richest Nigerians earned 8,000 from their wealth higher than 10 per cent of what ordinary poor Nigerians spend on their necessary consumption. Nigeria is among the 30 countries of the world with unequal distribution of income (British Council, 2012). World Bank (2009) reported that only 22 per cent of the country's national resources go to poor.

Despite the GDP growth recorded in the Nigeria economy, only a negligible (privilege) percentage of the population benefits much from the wealth. At the same time, the majority of people continue to undergo hardship.

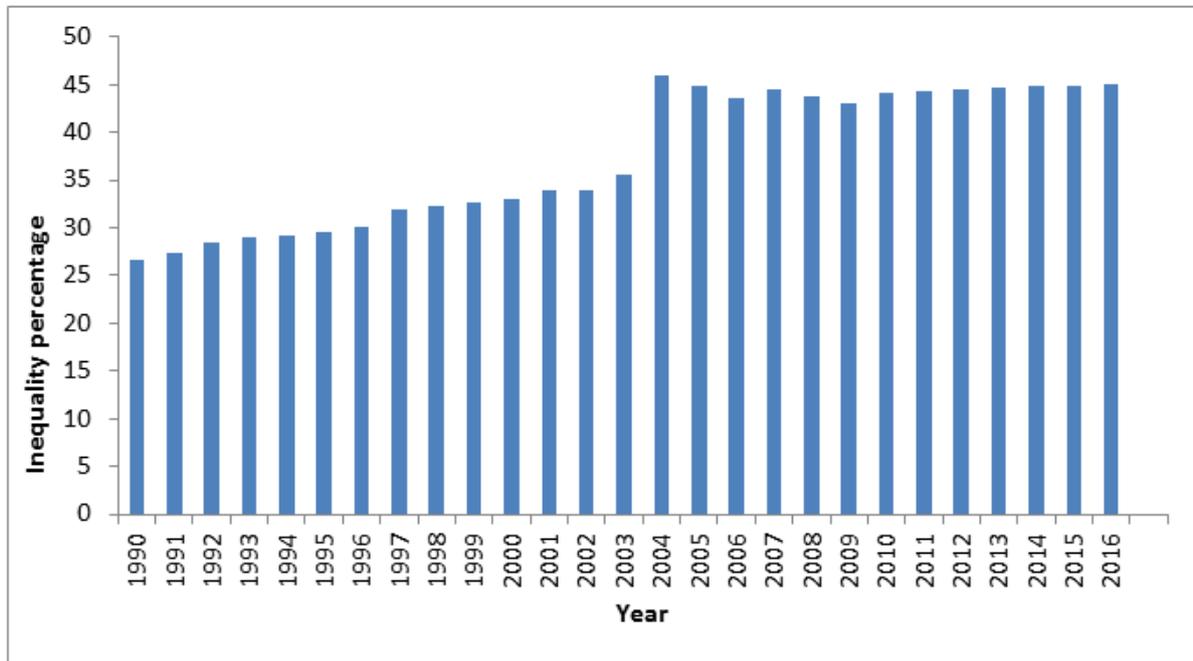
(Okonjo-Iweala, 2013) argues that “in Nigeria, the top 10 per cent of the population access the larger part of the national income. Whereas people at the bottom are left miserable, constituting 60 per cent of the total Nigerian population. If we do not put our minds to this problem, the whole economy may be in danger”. Furthermore, the gap is too broad and to the extent that the richest Nigerian annually earning is sufficient to remove 2 million Nigerians out of their economic hardship (Oxfam, 2014).

In the past two decades of return to democracy from the military rule, Nigeria’s legislature is the highest-paid legislatures in the world. For instance, a Nigeria legislature earned an annual pay of N37 million, which is equivalent to \$118 thousand, leaving the electorates to benefit less from the nation’s resources. This situation resulted in socio-economic conditions such as income inequality, unemployment rate and rural-urban migration in the country. These unequal socio-economic growth opportunities for citizens resulted in the rising level of crime and violence such as religion crises, political violence, militancy, and communal crises.

Income inequality entails unequal income distribution among individuals in a society. It is measured in percentage of income to a percentage of the population. Some of the methods used in measuring income inequality are; Hoover index, Theil index, and Gini index. The most popular method is utilising the Gini Index developed in 1992 by an Italian economist. The range of measurement is between 0-1 with 1 having maximum inequality while 0 denotes maximum equality. Income inequality is estimated to remain noticeable in coming years (Economic Forum, 2014), especially in less developed countries.

Nigeria has been a developing country, and income inequality is relatively high and on the increase. Nigeria is among the countries with high-income inequality among its populace and in the world at large (WDI, 2016). For more than a decade, the country has recorded an average Gini index of more 0.46, which is quite high. Recently, within the period under study 1990-2016, the average Gini index stood at 0.36, which is considered to be relatively high during the period under study 1990-2016. During this period, also, the average percentage increase in income inequality in Nigeria was 0.27 per cent (WDI, 2017). Figure 1 below present the inequality of Income measured by the Gini Index in Nigeria from 1990 to 2016.

**Figure 1.** The Gini Index in Nigeria from 1990 – 2016



**Source:** Author's computation using WDI data from World Bank.

From figure 1 above, present the Gini Index in Nigeria for the period under study, which ranges between 0.27 and 0.46, indicating an increase in the level of income inequality in Nigeria. The percentage of income inequality between the periods covered is 27 per cent and 46 per cent respectively, and this is an amazingly high Index in the country. Whenever a country experiences high inequality, it may lead to low economic development and investment (Kuznets 1955 and Kaldor 1957). In Nigeria, a high level of unequal income distribution is due to the high rate of corruption and poor governance (Ogbeide and Agu, 2015). The Nigerian economy is characterized by subsistence agriculture by the two-third of the country population, and most of them are low-income earners which account for about 60 per cent of the total population (NBS, 2017). Therefore, a high level of income inequality constituted by a few privileged high-income classes has continued to show an influence on redistribution of income in the country (Alayande, 2003).

Based on the Kuznets theory, at the first stage of economic development, inequality of income rises (positive) and later fall (negative) when the economy becomes industrialized (Kuznets, 1955). The portion of country capital compared to wealth, is known as income (Kaldor, 1957). Therefore, inequality concepts mean to compare among elements, which is usually positioned on an exact structure that can be measured using indices.

Given the past studies discussed, the main question is that; is there any association between income inequality and it's determining variables in Nigeria? Because none of the past studies attempted to explain the relationship using time-series data to the best of our knowledge. This

research is to fill the missing knowledge left by the previous studies, by incorporating the credit to the private sector (financial development) as one of the determinants of income inequality.

## Literature Review

Professor Simon Smith Kuznets is the leading economists that invented the Kuznets theory of the inverted U-shape, on the association between income inequality and economic growth. He suggests that income inequality rises in the first stage of development and a subsequent decline in the industrialisation stage of the economy (Kuznets, 1955). The following are some studies on the link between income inequalities and economic growth.

(Malinen, 2012) investigate the long-term relation on income inequality and development in Latin American. The findings revealed that the uneven distribution of income in both short and long run in Latin American economic growth is positive and negative. (Bahmani-Oskooee & Gelan 2008), reported that at the development stage (short-run), economic growth is positively linked to income inequality, but has a negative link when the economy is in the industrialised stage (long-run). (Shahbaz, 2010) after using a time-series data in Pakistan from 1971 to 2005, Using ARDL bound test to determine the linkage of economic growth to income distribution in Pakistan. The findings show that inequality of income is significant and positively related to economic growth in Pakistan. (Gelan and Price, 2003) researched Sub-Saharan African using the Kuznets hypothesis to assess the causal relationship between economic growth and income inequality. Their empirical findings showed that in Sub-Saharan African countries, the relationship is a definite and long-term positive, which defied Kuznets theory.

Education is a capital resource that every human in society needs to acquire to increase income-generating opportunities of an individual in the labour market, particularly in the living environment. Whenever the educational level of individual rises, his ability and opportunities to earn more income increases due to added value of human capital (Muller, 2002) Cingano, 2014), (Abdullah et al. 2015); (Yang, J., & Qiu, 2016). However, the increase in the education level of people's involvement in the labour force gives them more advantage in acquiring higher income. (Park, 1996) argued that an increase in human capital resource increases the opportunity in the labour market for an individual's more chances of employment. (Celikay and Sengur 2016) examine the impact of education level in 31 European nations from 2004 to 2011. Their results revealed that a per cent increase in education level reduces the level of income disparity among its citizens in the country. Therefore, a high level of education affects income inequality negatively. (Palaz et al. 2013) also confirmed in their study that education has a positive effect on the inequality of income in

the society. Some of the previous research confirmed that an increase in education expenditure of a country reduces the widening gap of income among individuals in society.

Another determinant of inequality is the unemployment level in a country. It is considered as the primary determining factor that induces income inequality in a country. The existing empirical studies found that unemployment level has a positive connection with income inequality (Ewubare and Okpani, 2018); (Onafowora and Owoye, 2017); (Ukpere, and Slabbert, 2009). (Ewubare and Okpani, 2018) investigate the link between poverty, unemployment level and income distribution in Nigeria from 1980-2017. They employed OLS and Granger Causality to test long term effect. Their findings showed that the unemployment level has a positive correlation with inequality because as unemployment level rises, inequality also rises. (Onafowora, O., & Owoye 2017.) carried out an investigation on income inequality dynamics for 58 states in the USA from 1981 to 2011. They employed a Vector Autoregression (VAR) model. Their results showed that unemployment has a significant effect on income inequality. (Ukpere and Slabbert, 2009) their study, also confirmed that an increase in the unemployment rate in a country increases the merging between the rich and poor individuals in an economy. Unemployment is incorporated in our model to control the variation between the rich and the poor individuals in a society. High unemployment is always presumed to be positively related to the uneven distribution of income in the economy. Therefore, low-income earners with relative low-level of skills are affected (Mocan, 1999).

On financial development, it is the driven engine of economic development of every country of the world. Most of the previous studies revealed that financial deepening reduce the inequality gap in the country. Strong financial institutions in the country stimulate high growth and development. Some of the studies that found positive relations between financial development and income inequality are; (Kim and Lin, 2011); (Gimet, and Lagoarde-Segot, 2011); (Baligh and Pirae, 2013). For instance, (Ang, 2010) conducted an investigation into the significant financial growth in India from 1951 to 2004 to minimise inequality. Findings show that financial progress had a positive impact on income inequality as a result of high economic growth. (Kim, D. H., & Lin, 2011) in their study also confirmed that financial development increases the level of growth and development in a country trade openness and the long-run decrease inequality margin. (Gimet, C., & Lagoarde-Segot, 2011) study the significance of financial progress in the European Union from 1995 - 2000, and also another study in 49 countries in Europe from 1994-2002. Their results showed that financial development impacted positively in reducing inequality of income in European countries and also improved growth and development. (Hamori and Hashiguchi, 2012) and (Prete, 2013), argue that financial development decreases income inequality and accelerate investment opportunities. (Khan et al., 2018) examine the causal link between income inequality and

financial developments. Their findings showed that deepening financial growth is decreasing a country's income disparity.

## Methodology and Data Source

### *Data Description*

This research uses time-series dataset for Nigeria from 1990-2016. Income inequality entails the inequitable distribution of country income. The percentage of income defines income inequality to population. Income inequality *INEQ* is measured by the Gini index ranging from 0-1 and 1 having the maximum inequality. *GDP* per capita measures by of real GDP per capita.  $GDP^2$  is multiplication term of real GDP per capita and itself (real GDPC  $\times$  real GDPC). Education level (*EDUC*) is the average years schooling per person(s) measured by the human capital index. Unemployment level *UNEM* is measured by the total number of the unemployed person(s) to the percentage of the entire population in the country. Financial development *FIDE* is the percentage of credit to private sectors to GDP. The data are sourced from the Nigeria Bureau of Statistics (NBS, 2017) and the World Bank database.

### *Estimation Technique*

The study relates income inequality and some determinant factors such as per capita GDP growth, unemployment level, education level and financial development. This relationship is in a linear empirical model below:

$$INEQ = f(GDP \text{ } GDP^2 \text{ } EDUC \text{ } UNEM \text{ } FIDE) \quad (1)$$

To estimate equation (1), we take the natural logarithm of all the variables which later transform to equation (2). Regarding the empirical model presented above, to estimate equation (1), we take the natural logarithms of both variables.

$$\ln INEQ_t = \beta_0 + \beta_1 \ln GDP_t + \beta_2 \ln GDP^2_t + \beta_3 \ln UNEM_t + \beta_4 \ln EDUC_t + \beta_5 \ln FIDE_t + \varepsilon_t \dots \dots \dots (2)$$

The investigation of the long-run relation will start with the model specification and testing for non-stationarity of the variables. However, before estimating the regression, a test for cointegration between the determinants factors and income inequality is carried out before using an ARDL bounds test approach to estimate long-run relation. An Autoregressive distributed lag (ARDL) approach propounded by (Pesaran et al. 2001) is used to transform equation(2) above into an ARDL model presented as follows;

$$\begin{aligned}
 \ln INEQ_t = & \beta_0 + \sum_{i=1}^p \beta_1 \ln INEQ_{t-1} + \sum_{i=0}^q \beta_2 \ln GDP_{t-1} + \sum_{i=0}^r \beta_3 \ln GDP^2_{t-1} \\
 & + \sum_{i=0}^s \beta_4 \ln UNEM_{t-1} + \sum_{i=0}^t \beta_5 \ln EDUC_{t-1} + \sum_{i=0}^u \beta_6 \ln FIDE_{t-1} \\
 & + \beta_7 \ln INEQ_{t-1} + \beta_8 \ln GDP_{t-1} + \beta_9 \ln GDP^2_{t-1} + \beta_{10} \ln UNEM_{t-1} \\
 & + \beta_{11} \ln EDUC_{t-1} + \beta_{12} \ln FIDE_{t-1} \\
 & + \varepsilon_t \dots \dots \dots (3)
 \end{aligned}$$

Selection of the appropriate lag length of ARDL model in equation (3) uses Schwarz Information Criteria (SIC) because the numbers of observation are less than 30 years. The null hypothesis for non-cointegration among the determinants in equation (3) is as follows;

Ho:  $\beta_7 = \beta_8 = \beta_9 = \beta_{10} = \beta_{11} = \beta_{12} = 0$ , against the alternative  
 Ha:  $\beta_7 \neq \beta_8 \neq \beta_9 \neq \beta_{10} \neq \beta_{11} \neq \beta_{12} \neq 0$ .

The computed F-statistic is to compare with standard critical values developed by (Narayan, 2005). If the calculate F-statistic exceeds the upper case  $I(1)$ , then we conclude there is cointegration among the variables of the study. That is, there is long-term relation and reject the null hypothesis of no cointegration and estimate the long-term and ECM. If computed F-statistic is less than the lower bound value  $I(0)$ , we conclude that there is no cointegration among the variables and estimate the short-run. Lastly, if calculated F-statistic falls in between lower and upper bounds, it is inconclusive.

Once the cointegration is determined, then the short-run dynamic is being estimated. The ECM of the ARDL model in equation (3) is as follows:

$$\begin{aligned}
 \Delta \ln INEQ_t = & \beta_0 + \sum_{i=1}^p \beta_1 \ln INEQ_{t-1} + \sum_{i=0}^q \beta_2 \ln GDP_{t-1} + \sum_{i=0}^r \beta_3 \ln GDP^2_{t-1} \\
 & + \sum_{i=0}^s \beta_4 \ln UNEM_{t-1} + \sum_{i=0}^t \beta_5 \ln EDUC_{t-1} + \sum_{i=0}^u \beta_6 \ln FIDE_{t-1} + \varphi ECM_{t-1} \\
 & + \varepsilon_t \dots \dots \dots (4)
 \end{aligned}$$

Where  $\varphi$  the speed of adjustment,  $ECM_{t-1}$  is the residual value and  $\varepsilon_t$  is the error term of the model.

$$ECM_t = \ln INEQ_t - \left[ \beta_0 + \sum_{i=1}^p \beta_1 \ln INEQ_{t-1} + \sum_{i=0}^q \beta_2 \ln GDP_{t-1} + \sum_{i=0}^r \beta_3 \ln GDP^2_{t-1} + \sum_{i=0}^s \beta_4 \ln UNEM_{t-1} + \sum_{i=0}^t \beta_5 \ln EDUC_{t-1} + \sum_{i=0}^u \beta_6 \ln FIDE_{t-1} \right] \dots \dots \dots (5)$$

From equation (4)  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  and  $\beta_6$ , are the short-run coefficients in the model that converge to equilibrium at the long-run.

## Results and Discussions

### Unit Root Test

We use the unit root test to determine the stationarity or otherwise of the variables. ARDL approach requires that all variables be stationary in  $I(0)$  or  $I(1)$  or both. The study utilises the unit root tests technique proposed by ADF and PP. The stationarity test results are now presented in Table 2 below:-

**Table 1:** Unit Root Test Results

Variables	ADF Level $I(0)$		PP	
	Intercept	Intercept & Trend	Intercept	Intercept & Trend
$INEQ_t$	-1.316514	-1.676629	-1.329811	-1.764255
$GDPC_t$	0.475715	-1.763055	0.241200	-1.763775
$UNEM_t$	-8.892658	-2.414574	-0.892658	-2.543104
$EDUC_t$	-0.146920	-2.231235	0.493950	-2.390328
$FIDE_t$	0.140416	0.217343	0.140416	-0.188992
<b>First Difference <math>I(1)</math></b>				
$INEQ_t$	-4.896663***	-4.916598***	-4.924817***	-4.983600***
$GDPC_t$	-4.327790***	-5.54773***	-4.368058***	-5.547608***
$UNEM_t$	-6.052460***	-6.071710***	-6.049037***	-6.071710***
$EDUC_t$	-3.36607**	-3.228847	-3.352533**	-3.213355
$FIDE_t$	-4.384195***	-4.176170**	-4.570313***	-4.302369**

Note: \*\*\* and \*\* indicate the significance at 1 percent and 5 percent levels. Augment Dickey-Fuller (ADF) and Phillips-Perron (PP) test. (Eviews 10) were used.

### *Descriptive Statistics and Correlation Analysis*

In achieving the objective of this research, the analysis of the estimation also starts with the preliminary examination of the data set by presenting the descriptive statistics, which demonstrates the spread of the dataset. Correlation analysis was also made to test any apparent connection between the inequality of income and its determinants. The results of the descriptive statistics report that the dataset in the series exhibited considerable variation within the country. On the other parts, the relation of income inequality and determinant variables in the dataset ranged from 3.28278 to 3.82864. This indicated that income inequality correlates with some determinant variables in the dataset. However, the correlation between inequality of income and economic growth is 0.17876. This validates the expectation of the study that income inequality and real GDP per capita are correlated. The descriptive statistics report that the probability value for financial development is significant at 1 per cent level. Therefore, all determinant factors, except financial development, are normally distributed.

**Table 2:** Descriptive Statistics

<b>Variables</b>	<b>GINI</b>	<b>GDP<sup>C</sup></b>	<b>GDP<sup>2</sup></b>	<b>UNEM</b>	<b>EDUC</b>	<b>FIDE</b>
<b>Mean</b>	3.60469	1.77691	3.55383	2.63030	0.41184	0.97464
<b>Median</b>	3.57037	1.75478	3.50956	2.51769	0.35466	1.32788
<b>Maximum</b>	3.82864	2.10055	4.20111	3.23080	0.65253	2.88651
<b>Minimum</b>	3.28278	1.49869	2.99738	2.12823	0.13565	-3.31918
<b>Std Dev.</b>	0.19667	0.17876	0.35753	0.38202	0.15755	1.34029
<b>Prob.</b>	0.205331	0.531633	0.531633	0.242994	0.333068	0.00000
<b>Observ.</b>	27	27	27	27	27	27

**Table 3:** Correlation Matrix

Variables	GINI	UNEM	EDUC	GDPC	FIDE	GDP <sup>2</sup>
<b>GINI</b>	1.0000					
<b>UNEM</b>	0.8024	1.0000				
<b>EDUC</b>	0.9478	0.9338	1.0000			
<b>GDPC</b>	0.6036	0.8648	0.7529	1.0000		
<b>FIDE</b>	0.0753	0.0513	0.0261	0.0737	1.0000	
<b>GDP<sup>2</sup></b>	0.6038	0.8828	0.7645	0.9965	0.0566	1.0000

***ARDL Bounds Test Cointegration***

From the results presented in Table 4 below, the calculated  $F$  – statistics is 7.639702, which exceeded the upper case value of 6.370, indicating the presence of a long-run link between income inequality and its determinant variables.

**Table 4:** Result of the Bound test for cointegration

<b>Calculated F-Statistics= 7.639702</b> INEQ = F(GDPC GDP <sup>2</sup> UNEM EDUC FIDE)		
<b>(n=27, k=5) Unrestricted constant and no trend</b>		
	<b>Lower Bound</b>	<b>Upper Bound</b>
<b>1% significant level</b>	<b>4.537</b>	<b>6.370</b>
<b>5% significant level</b>	3.125	4.608
<b>10% significant level</b>	2.578	3.858

Note: \*\*\* denotes significant at 1% level. Estimation based on ARDL Lag selection (1,0,0,1,1,1). Narayan. (2005).

### *The Long-Run Coefficient*

**Table 5:** Long-run Results of ARDL

<b>Dependent Variable: Income Inequality</b>		
<b>Independent Variables</b>	<b>Coefficients</b>	<b>T-stats [Prob]</b>
<b>GDPC</b>	-8.994663 (2.549461)	-3.555670 [0.0122]**
<b>GDP<sup>2</sup></b>	0.001674 (0.025958)	0.064478 [0.9504]
<b>UNEM</b>	-0.596637 (0.203491)	-2.172727 [0.0663]
<b>EDUC</b>	-0.98006 (0.31957)	-3.06680 [0.0041]***
<b>FIDE</b>	-2.174715 (0.629749)	3.453307 [0.0106]**
<b>Constant</b>	0.422112 (0.117915)	3.57982 [0.0017]***

**Note:** \*\*\* and \*\* indicated 1% and 5% significant levels. The figures in parentheses [...] are the probability values. Unrestricted intercept and no trend (Eviews 10)

Table 5 above reported the coefficients of the determinants of income inequality. The estimated coefficients showed that the primary determinant of income inequality in Nigeria is real GDP per capita growth, financial development and education level. The per capita GDP showed a positive and vital coefficient on income inequality in Nigeria. This relationship indicates that a rise in GDP per capita reduces income disparities in Nigeria. As a 1 per cent increase in GDP per capita growth in Nigeria induces a -8.99 per cent decrease in the level of income disparity, and the relationship is significant at 5 per cent. The outcome is in tandem with previous studies (Malinen, 2012); and (Bahmani-Oskooee, M., & Gelan, 2008)), who found a definite link of economic growth and equality of income based on the Kuznets theory considered in the study.

The coefficients of financial development indicated a negative link with income inequality (Gini index). In row 5 of Table 5, the results show as 1 per cent increases of financial development in the economy will reduce income inequality by 0.17 per cent (Gini index). However, these results are in line with the research conducted by (Ang, 2010); (Baligh, N. and Pirae, 2013); (Hamori, S., & Hashiguchi, 2012) and (Prete, 2013), that found financial development to improve the economy through diversification and new investment opportunities in Nigeria.

The coefficient results of education level indicted a negative sign on the inequality of income in the model. A 1 per cent increase on the level of education in Nigeria spurs -0.98 per cent decrease in the inequality of income and impact is significance at 1 per cent. These findings are consistent with the expectation of the study and previous studies by (Abdullah et al. 2015) and (Yang and Qiu, 2016). Human capital (education) that every individual in a society acquired reduces the disparity of income.

### *Short-run Results*

**Table 6:** Short-run Coefficient and ECM

<b>Dependent Variable: Income Inequality</b>		
<b>Independent Variables</b>	<b>Coefficients</b>	<b>T-stats [Prob]</b>
<b><math>\Delta GDP</math></b>	6.471604 (2.021626)	3.201188 [0.0108]**
<b><math>\Delta GDP^2</math></b>	0.002288 (0.003975)	0.575597 [0.65832]
<b><math>\Delta UNEM</math></b>	-0.700768 (0.146008)	-4.799532 [0.0010]***
<b><math>\Delta EDUC</math></b>	-1.276984 (1.422004)	-0.898017 [0.0026]***
<b><math>\Delta FIDE</math></b>	0.252086 (0.170828)	1.475670 [0.15640]
<b>ECT</b>	-1.112100 (0.153475)	-7.246129 [0.0000]***
<b>Constant</b>	0.013444 (0.028679)	0.468784 [0.6504]

**Note:** \*\*\* and \*\* indicated 1% and 5% significant levels. The figures in parentheses [...] are the probability values. Unrestricted intercept and no trend (Eviews 10)

Table 6 above reports the short-run correlation among the determinant factors of the study and ECM. The error correction coefficient shows how the variables get back to an equilibrium position at 11.21 per cent. The ECM coefficient is negative and statistically significance as expected and more appropriate in determining cointegration as indicated by (Banerjee et al., 1998). All the variables in the table indicated a significant correlation with income inequality at 1 and 5 percent significance except  $GDP^2$  and financial development.

**The Diagnostic and Stability Results**

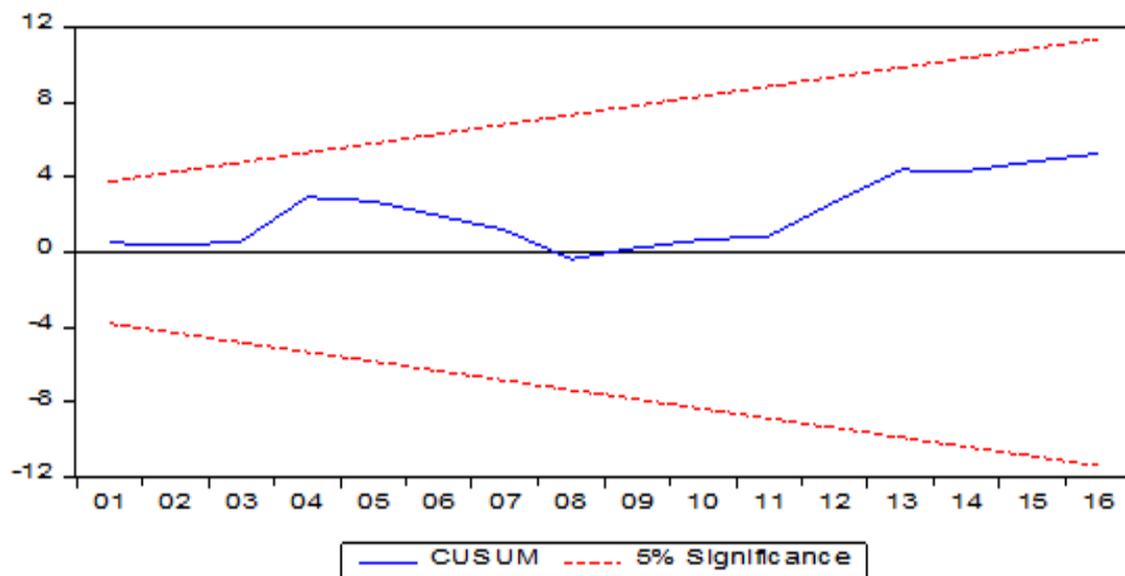
**Table 7:** Diagnostic Results

Test Statistics	F-Version [Prob]
Serial Correlation	0.159395 [0.6953]
Normality	Jarque-Bera 0.933736 [0.266963]
Heteroskedasticity	0.798421 [0.6234]

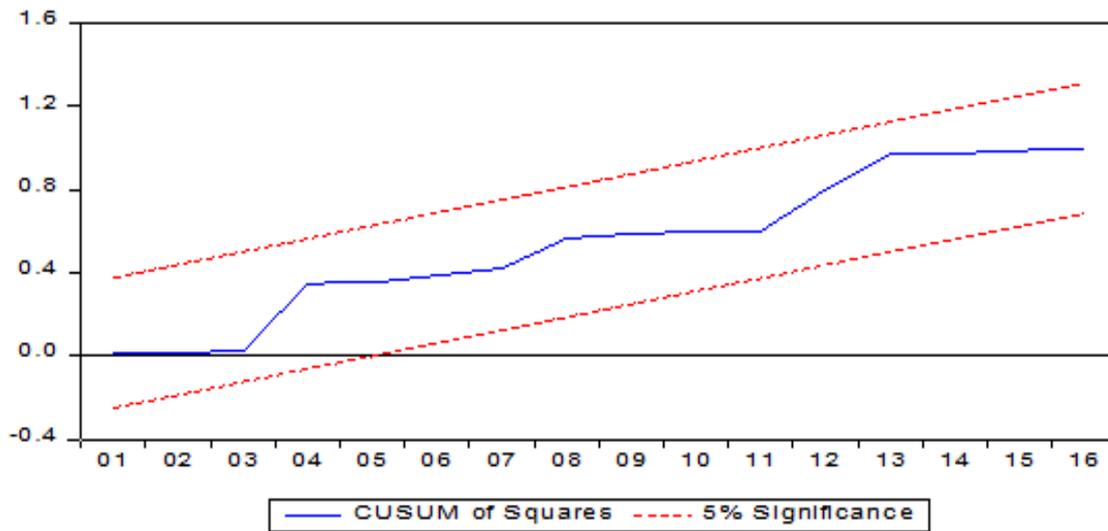
values in parentheses [...] are probability values.

Table 7 above presents the diagnostic check results of the model presented above, which includes serial correlation, normality test and heteroskedasticity. The findings showed the model is free from serial correlation and heteroskedasticity problem based on the *p-values* of the F-version, which are more than 0.05. The results also showed that the series is normally distributed based on the probability of the Jaque-Bera, which is 0.9337. Based on this analysis, the result in this study is reliable, consistent and in line with theories and some previous studies. Whereas, financial development and level of educational attainment impact positively and negatively on income inequality in Nigeria, and their impacts are significance at 1 per cent, respectively. The CUSUM and CUSUMSQ are within the 5 per cent level indicating the model is stable.

**Figure 2.** Cusum



**Figure 3.** Cusum Square



### Conclusion and Policy Recommendations

The objective of the research is to investigate the main determinant factors of inequality of income in Nigeria from 1990-2016. This study contributes to the existing empirical studies on the determinants of the unequal distribution of income in Nigeria by employing an ARDL bound test approach to determine the long-run effect of determinant factors. The findings revealed that GDP per capita growth, education level and financial development are the major socio-economic determinant factors on income inequality in Nigeria. Increase in the output growth rate reduces the inequality gap in the economy by increasing the income and wealth of the nation. The negative coefficient of the ECM is indicative that variation of income inequality depends on variations in the entire determinant variable. From the empirical results and theory, the following recommendations are made in order to minimise the unequal distribution of income in the economy.

From the empirical results, increase in output growth in the economy minimises the level of inequality of income in the economy through an increase in income. The government should, therefore, work towards revitalising the economy to increase the national output (GDP). Secondly, the government should review the financial sector policy (i.e. financial inclusion), to make it easy for small and medium scale enterprises to access credit facilities and loans at a low-interest rate. Increased access to credit and loans will make the less privileged individuals have more income opportunities. Thirdly, educational policy review can, in turn, reduce inequality of income to a minimum level through the provision of necessary facilities in the education sector and monitoring and evaluation in the country. Financial sector reforms and regular supervision of anti-monopolistic policies, especially in the banking sector, should be in place to have opportunities for financial inclusion in the economy.

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