

Rethinking the Distributional Effects of Economic Globalization in Nigeria: A Focus on Income Inequality

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Abstract: The development effects of economic globalization have remained a source of controversy in macroeconomic debate. Thus, this paper provides insights into the distributional effects of economic globalization in Nigeria between 1986 and 2017 with a focus on income inequality. The sub-indexes of economic globalization comprising actual flows and restrictions which followed the KOF globalization framework form basis for the disaggregation of economic globalization. In addition to the sub-indexes of economic globalization, financial integration was introduced into the model as part of the explanatory variables. Annual time series data on the variables were analyzed using descriptive statistics, dynamic least squares (DOLS) and pairwise Granger causality test. It was found that actual flows have significant positive relationship with income inequality. A percentage increase in actual flows will, on the average, lead to about 1.215 percent increase in income inequality. This finding suggests that increased flow of trade, FDI, portfolio investment and income payments to foreign nationals are the main explanations for growing income gap in Nigeria. It however, contrasts with the postulation of Heckscher-Ohlin model and Stolper-Samuelson theorem that globalization is helpful for reducing income inequality in developing countries. The result further reveals that insignificant negative relationship exist between economic restrictions and income inequality over the study period. The pairwise causality shows that unidirectional causality flows from income inequality to actual flows. Given the findings, it is recommended that policy makers should ensure that the increasing wave of economic globalization provides opportunities for more equal spread of income amongst the Nigerian population.

Keywords: Economic globalization, Actual flows, Restrictions, Financial integration, Income inequality and Nigeria.

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I. INTRODUCTION

The link between globalization and income inequality has remained a matter of controversy amongst policy makers and researchers. Essentially, economic globalization is believed to benefit individual economies around the world by making markets more efficient, increase global competitiveness and create opportunities for spreading wealth more equally. From a broad perspective, economic globalization involves cross-border mobility of goods and services and reduction of various forms of cross-border control. It has been described as helpful for flow of goods and services which increase the potentials of inclusive growth. Mallick (2017) describes economic globalization as a good source of technology transfer, production efficiencies and substantial inflows of foreign direct investment (FDI). It is believed that inflows of FDI associated with economic globalization provides a pathway for shifting from traditional methods of production to modern economy and improved managerial skills in the recipient countries, which increase the marginal productivity of labour and development process.

As an integral part of overall globalization, economic globalization is expected to provide opportunities for economic take-off by shifting economic activities away from agriculture to manufacturing and services with net benefits of improvements in aggregate output and incomes. Jayasooriya (2017) argues that economic activities in the past few decades have been revolutionized due to globalization. This is associated with increasing opportunities for improved income redistribution. However, many developing economies seem not to adequately optimize the benefits associated with economic globalization. Atif, Srivastav, Sauytbekova & Arachchige (2012) posit that on one hand globalization is perceived as a source economic growth and social progress, while on the other, it is blamed for growing income inequality and environmental degradation, causing social degeneration and difficulty of competition. The period of increasing exposure of countries to globalization through increased flows of goods, services, capital and labour across international border has resulted to growing income gap (Pavcnik, 2011). It is important to note that the wave of active economic opening policy in developed and developing countries played a crucial role in the development

process. To tap into the Many countries made efforts to lower tariff and non-tariff barriers with several rounds of international trade discussions and agreements.

Historically, the concern about the negative effects of international trade and capital movements on income distribution emerged in 1980s, when the wage gap widened rapidly. Afterwards, several developed economies including America experienced an increase in Gini coefficients. This is in accordance with the Heckscher-Ohlin theorem that international trade would lower the share of workers in advanced countries where capital goods are relatively abundant. Wood (1994) argues that the effects of globalization on inequality could be considerable since technological progress could be affected by international competition and globalization. It has been argued that the neoliberal economic policy in the form of labor market reform and globalization are increasing sources of rising income inequality (Cornia&Kiski, 2001). Again, Kang-Kook (2014) argues that there is a growing concern that globalization may worsen income distribution and hinder poverty alleviation.

Starting from 1986, the Nigerian economy witnessed substantial integration to the global economy following the policy advice of the Washington Consensus. This heralded the Structural Adjustment Programme (SAP) which allowed for market forces driven foreign exchange system, trade liberalization and outward oriented public policies. Thus, economic globalization becomes very pronounced with increased flow of goods and services across the national boundaries. Although economic globalization has contributed to technology transfer and somewhat production efficiencies in various sectors in Nigeria, there is growing controversies that rising distributional inefficiency is associated with the growing pace of economic integration. Based on the foregoing, this paper explores the distributional effect of income inequality with particular emphasis on income inequality. Following the introduction above, the rest of this paper is organized as follows: section two is devoted to the review of related literature which includes theoretical framework, stylized facts on the economic globalization and income inequality and empirical evidence from previous studies. In section three, the empirical model was developed, nature and sources of data were defined and the tools for data analysis were provided. Section four is devoted to results and discussion of findings while section five sets out the conclusion and recommendations.

II. REVIEW OF RELATED LITERATURE

2.1 Theoretical Underpinnings

The theoretical foundation of the distributional effects of globalization is linked to the Heckscher-Ohlin model and the Stolper-Samuelson theorem. The Heckscher-Ohlin model assumes that countries export products that use their abundant and cheap factors of production and import products that use the countries' scarce factors. This implies that economies on the rank of low-income specialize in the production of less skill-intensive products, while their rich trading partners specialize in high capital intensive products. Consequently, trade reduces the income gap between low-skill and high-skill workers within developing countries; but trade widens the inequality within developed countries. Additionally, Heckscher-Ohlin model provides a simple and popular way of analyzing relations between supplies of factor input and the composition of trade which provides a better understanding of the functioning of international trade. The Heckscher-Ohlin model is considered as very appropriate in explaining linkages between factor inputs and trade composition if its domains are limited to overall product categories. However, despite various impressive clarifications provided by Heckscher-Ohlin model, it is been criticized for making some unrealistic assumptions in terms of the existence of homogenous production function, constant return to scale and absence of qualitative disparity in factor inputs among others. Again, the two countries, two commodities and two factor inputs (2x2x2) model proposed by the theory is very restrictive considering the existing realities in the contemporary world.

Similarly, the Stolper-Samuelson theorem is based on the argument that a rise in the relative price of a good will lead to a rise in the return to the factor which is used most intensively in the production of the good, and conversely, to a decrease in the return to the other factor. Hence, globalization is considered as being beneficial to abundant factor owners but detrimental to scarce factor owners. Given that labor and capital are the abundant factors in developing countries and in developed countries, respectively. Thus, increased level of economic globalization is believed to result to increase in inequality in developed countries, but the decline of inequality in developing countries. Among many applications, the Stolper-Samuelson theory has been used to address the "trade and wages" debate. This asks to what extent globalisation in general, and increased imports from low-wage countries in particular, are responsible for widening the differential between skilled and unskilled wages in developed countries. With the two factors reinterpreted as skilled and unskilled labor, the simple version of the model is consistent with a widening differential. More so, Rogowski (1989) utilized the Stolper-Samuelson theorem in explaining the political economy of responses to changes in countries' exposure to trade. Applying an extended model with three factors, labor, land and capital, he deployed a wide range of historical evidence to show how differences in factor endowments could explain cross-country variations in the impact of trade on nations' internal political cleavages.

2.2.1 Stylized Facts on Economic Globalization and Income Inequality

The trends and dimensions of economic globalization which defines actual flows comprising proportions of trade, FDI, portfolio investments and income accruable to foreign nationals in addition to the extent of restrictions such as tariffs, import barriers and capital account restrictions have varied over time as presented in figure 1.

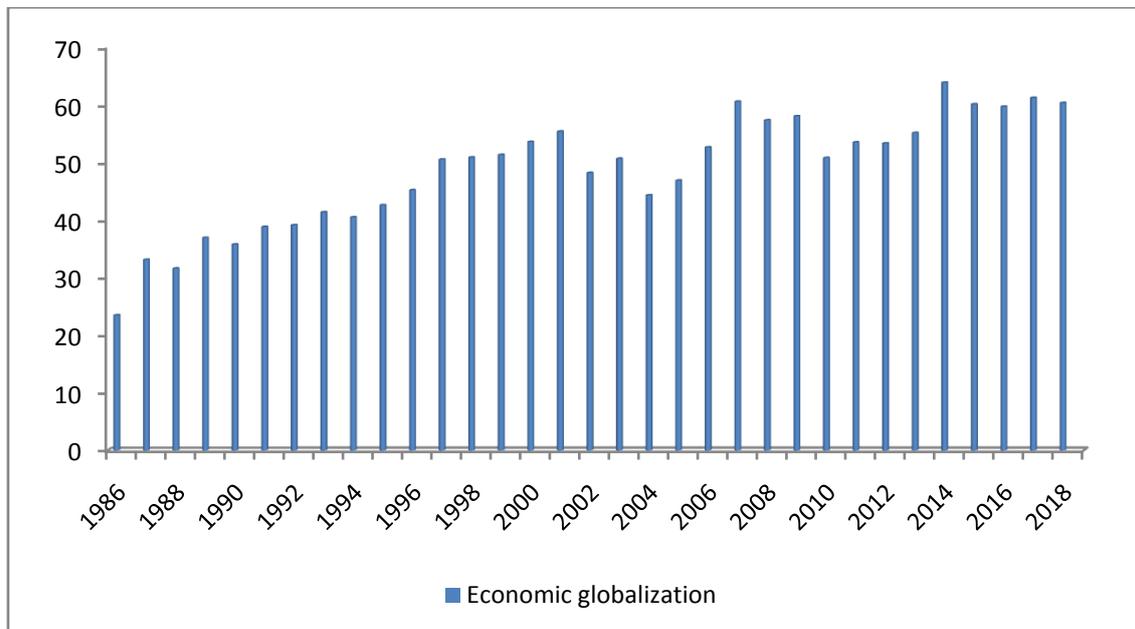


Figure 4.3: Trends of economic globalization index in Nigeria, 1986-2018.

Source: Constructed by the Author based on data extracted from Dreher(2006).

The trends of index of economic globalization showed in Figure 4.3 indicate that it witnessed continuous increase from 1986 to 2001 before declining in 2004. It fluctuated between 46.84 and 60.53 from 2005 and 2007. It reached an all-time high value of 63.84 in 2014. This is indicative that the Nigerian economy has, on the averaged, remained on the path of growth over the study period.

In addition to economic globalization, the variations of income inequality measure by Gini index in Nigeria between 1986 and 2018 are reported in figure 2.

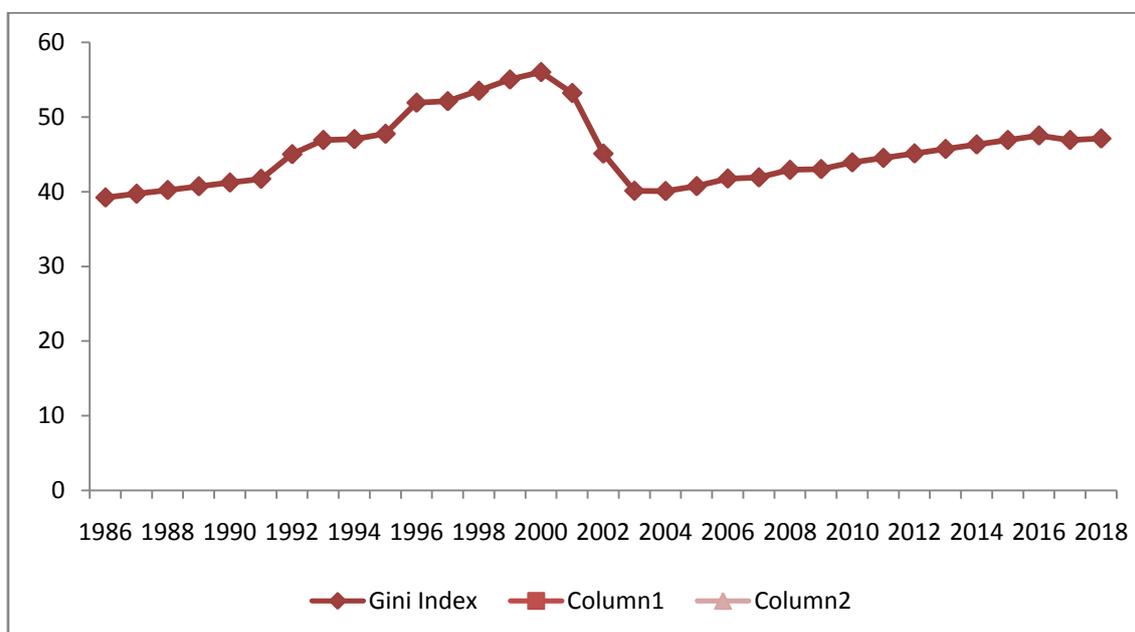


Figure 2: Nigeria's Gini index over period, 1980-2018.

Source: Author's illustration based on data adapted from the World Bank.

The trend of Gini index provides insights into the level of income inequality in Nigeria. Starting from 1986, the Gini index rose from 39.2 percent to maximum level of 56 percent in 2000. The upward trend in the value of Gini index is a pointer that growth in the Nigerian economy is associated with growing income inequality. The value of Gini index declined to 40.1 percent in 2003. This could be linked to the efforts of the civilian administration in promoting the participation and share of the Nigerian population in the growth process. The Gini index witnessed a steady increase from 2004 to 2018. This is an indication of growing gap in income distribution within the Nigerian economic environment.

2.3 Empirical Literature

A large body of empirical literature has focused attention on the relationship between globalization and income inequality with varying results and conclusions. Some of these studies are reviewed below:

Zhou, Biswas, Bowles & Saunders (2011) offered some insights into the impact of globalization on income inequality using a broadly defined measure for globalization that is based on a combination of economic integration, personal contact, technology connection and political engagement. It was observed from the results that globalization played a significant impact in reducing income inequality. In a related study, Pillai (2011) explored the link between globalization and domestic income inequality in OECD and low-income countries separately. The study introduced trade globalization and FDI as part of the explanatory variables. It was revealed from the empirical analysis that low-income countries benefited from increased trade whereas the FDI created more inequality in low-income countries.

Jaumotte, Lall, & Papageorgiou (2013) studied the role of technology and globalization in rising income inequality. The result showed that the increase in inequality was mainly due to technological changes while globalization played a limited role. The results of the analysis also provided some evidence that increased trade reduced income inequality while financial globalization, especially FDI increased the inequality in the distribution of income. In a related study, Nascia & Pianta (2009) examined the income distributional effect of economic integration for Europe. The result revealed that the largest benefits of globalization have gone to firms and consumers in the form of greater profits and lower prices while workers have experienced a slower growth of real wages, employment losses in medium and low skill jobs. It was also found that greater wage disparities exist amongst the labour force.

Baek & Shi (2016) examined the link between income inequality and globalization by decomposing economic globalization into trade intensity and financial integration, and also by differentiating the effect of globalization across developed and developing countries. The study employed panel data on 26 developed countries and 52 developing countries between 1990 and 2010. It was found that financial integration affects the income inequality differently from trade intensity and the effect is in contrast across two groups of countries. Specifically, it was observed that an increase in trade intensity would widen income inequality in developed countries, but it would reduce the inequality in developing countries. On the other hand, deepening of the financial integration would reduce the income inequality in developed countries but increase the inequality in developing countries. These results suggest that income inequality of developing countries would deteriorate with an imprudent dependence on foreign financing or a rapid opening up of their financial markets to foreign investors.

Mohanty (2017) estimates the effect of economic globalization on income inequality in both cross-country and country-specific framework using panel data techniques and policy simulations. The areas of the study include developed, developing and least-developed countries in the post-liberalization period. The findings reveal that on the whole, globalization has helped in reducing inequality in the advanced economies but has the opposite effect in low-income economies. Trade and FDI have offsetting experiences; trade worsens income distribution whereas FDI is beneficial in all the economies and helps to reduce income inequality. FDI is found to have a greater impact on reducing income inequality. The policy simulations indicate that the adoption of the strategies of high income and middle income economies is helpful for reducing income inequality.

Asteriou, Dimelis & Moudatsou (2014) examine the nexus between income inequality and globalization, with both trade and financial variables for the European Union countries. The results reveal that while trade openness exerts an equalizing effect, financial globalization through FDI, capital account openness and stock market capitalization is the driving force of inequality. Overall, it was found that FDI has the highest contribution to inequality over the study period. The study, however, recommends that policy makers should optimize the benefits of globalization with a view to reducing the widening income gap.

Bukhari & Munir (2016) analyze the relationship between globalization and income inequality in selected Asian economies comprising Bangladesh, China, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, Singapore, South Korea and Thailand. Specifically, the effects of trade globalization, financial globalization and technological globalization on income inequality was estimated using panel data for selected Asian countries from 1980 to 2014. The study relied on pooled OLS and instrumental variable least square

technique for estimation and found that trade and technological globalization in the selected Asian economies significantly contributes to reduction in income inequality while financial globalization increases income inequality. Education has inverse impact on income inequality while FDI has positive relationship with income inequality. In view of the findings, the study recommends that government should promote education, invest in research and development activities, establish efficient financial system, reduce trade restrictions and provide subsidies that help to increase the trade relations.

Ogunyomi, Daisi&Oluwashikemi (2013) estimates the impact of economic globalization on income inequality and economic growth in Nigeria from 1986 to 2010. The study relied on static linear econometric model and it was found that economic globalization had caused a widening income inequality as well as reduced economic growth of Nigerian economy due to much emphasis on financial globalization and other macroeconomic imbalances rather than trade globalization. It is therefore recommended that government should demonstrate good governance at all levels of through protectionist domestic policy, fiscal efficiency, political stability, adequate infrastructural provisions and encourages entrepreneurship development in non-oil sectors in order to optimize the gains of globalization.

III. METHODOLOGY

3.1 Research Design

Considering the nature of this paper, an ex-post facto design research was adopted. This is considered appropriate in estimating the long term impacts of economic globalization and income inequality in Nigeria over the study period, 1986-2018.

3.2 Model Specification

This model set up for this paper builds on the work of Ogunyomi, Daisi&Oluwashikemi (2013) with an improving following the use KOF index of economic globalization and its subsequent decomposition into actual flows and restrictions as well as the introduction of financial integration as part of the explanatory variables. The functional form of the model is expressed as:

$$Gindex = f(Acf, Ret, Fint) \tag{1}$$

Where: Gindex = Gini index, measure of income inequality, Acf = Actual flows, Ret = Restrictions and Fint = Financial integration. The dynamic least squares (DOLS) model for this study is expressed as:

$$Gindex_t = \alpha_0 + \alpha_1 Acf_t + \alpha_2 Ret_t + \alpha_3 Fint_t + \sum_{p=-y}^n \phi_1 \Delta Acf_{t-y} + \sum_{p=-y}^n \phi_2 \Delta Ret_{t-y} + \sum_{p=-y}^n \phi_3 \Delta Fint_{t-y} + \sum_t \tag{2}$$

$\alpha_0 = Intercept$

$\alpha_1 - \alpha_4 = Long\ run\ Multipliers$

$n\ and\ y = Optimal\ lag\ and\ lead\ lengths\ respectively$

$\Delta = First\ difference\ operator$

$\sum_t = White\ noise\ error\ process$

3.3 Variable Description

The description of the variables in the model is summarized in table 1.

Table 1: Description of variables and data source

Variable	Description	Data source
Gini index	Gini index is closely related to the representation of income inequality through the Lorenz Curve. Basically, Gini index is a representation of the Gini coefficient in percentage. High Gini index indicates high inequality incidence while low value defines low incidence of inequality.	World Bank
Actual flows	This sub-index on economic globalization includes data on trade (percent of GDP), FDI (percent of GDP), portfolio investment (percent of GDP) and income payments to foreign nationals (percent of GDP).	Dreher, (2006), Dreher <i>et. al.</i> (2008); and Gygli, Haelg and Sturm (2018).
Restrictions	This refers to restrictions on trade and capital using hidden import barriers, mean tariff rates, taxes on international trade (as a share of current revenue) and an index of capital controls. The derivation of the indices on mean tariff rates and hidden import barriers is based on the configuration by Gwartney <i>et al.</i> (2015). Based on the restriction index, a country with higher revenues from	Dreher, (2006), Dreher <i>et. al.</i> (2008); and Gygli, Haelg and Sturm (2018).

	tariffs is considered as less globalized.	
Financial integration	This defines the index of capital account openness which depends on information regarding restrictions in the International Monetary Fund's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER).	Chinn & Ito (2008)

Source: Author's compilation, 2019.

3.4 Data Analysis Techniques

The Dynamic Least Squares (DOLS) developed by Stock & Watson (1993) formed basis for analysing the long term relationship between the economic globalization and income inequality. The choice of the DOLS is due to its improvement on the Ordinary least Squares (OLS) as it allows for estimating a robust result and coping with small observations and dynamic sources of bias in large sample. Additionally, the DOLS is helpful in correcting for serial correlation and endogeneity in the explanatory variables by adding leads and lags to first differences of the explanatory variables.

IV. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics for the each of the series over is summarized in table 2.

Table 2: Summary of descriptive statistics

	GINDEX	ACF	RET	FINT
Mean	45.41688	64.18813	31.36125	0.203993
Median	45.04000	65.80500	35.38500	0.267004
Maximum	56.00000	72.87000	57.60000	0.303010
Minimum	39.20000	41.95000	4.260000	0.000000
Std. Dev.	4.783204	6.650416	19.64349	0.129137
Observations	32	32	32	32

Source: Authors' computation based on data from World Bank, Dreher(2006), Dreheret. al. (2008), Gygli, Haelg and Sturm (2018) and Chinn & Ito (2008).

The descriptive statistics reveal that Gini index averaged 45.41 percent whereas the average values of actual flows and restriction are 64.188 and 31.361 points respectively. It was further observed that financial integration has a mean value of 0.2039. The descriptive statistics also reveal that Gini index ranged from 39.2 to 56 percent. This is a pointer that the Nigerian economy has in the past three decades witnessed widening income gap. As observed from the descriptive statistics, each of the variables converged around their respective mean values. This result provides appreciable insights into the distribution of the series over the study sample.

4.2 Pre-estimation Test Results

The pre-estimation tests focused mainly on the unit root and cointegration tests. The results of these tests are summarized in table 3-4.

Table 3: ADF unit root test results

Series in the model	Levels test result	First difference test result	Order of integration
	t-statistic	t-statistic	
Gindex	-2.751 (0.0775)	-3.299 (0.0243)	I (1)
Acf	-4.414 (0.0015)	NC	I (0)
Ret	-0.870 (0.7841)	-4.4096 (0.0016)	I (1)
Fint	-1.217 (0.6544)	-4.966 (0.0004)	I (1)

Source: Authors' computation based on data from World Bank, Dreher (2006), Dreheret. al. (2008), Gygli, Haelg and Sturm (2018) and Chinn & Ito (2008).

Note: Figures in parenthesis are the MacKinnon (1996) one-sided p-values while NC implies not computed.

The unit root test result is very revealing as it shows that actuals flows as a sub-index of economic globalization is stationary at levels. Thus, its first difference test was not computed. The evidence of levels stationarity in actual flows is indicative necessitates the rejection of the null hypothesis of unit root. On the contrary, it was observed from the unit root test result that Gini index, economic restrictions and financial

integration are not stationary at levels. Consequently, the null hypothesis of unit root for each of the variables is retained. Following their nonstationary process at levels, they variables were differenced and are found to be integrated of order one. The outcome of the unit root test prompted the test for cointegration.

Table 4: Summary of cointegration test result

Series: GINDEX ACF RET FINT				
Lags interval (in first differences): 1 to 2				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.800216	98.86177	47.85613	0.0000
At most 1 *	0.582419	52.15668	29.79707	0.0000
At most 2 *	0.477549	26.83167	15.49471	0.0007
At most 3 *	0.241192	8.004176	3.841466	0.0047
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.800216	46.70509	27.58434	0.0001
At most 1 *	0.582419	25.32501	21.13162	0.0121
At most 2 *	0.477549	18.82749	14.26460	0.0089
At most 3 *	0.241192	8.004176	3.841466	0.0047

Source: Authors’ computation based on data from World Bank, Dreher (2006), Dreher*et. al.* (2008),Gygli, Haelg and Sturm (2018) and Chinn & Ito (2008).

Note: * denotes rejection of the hypothesis at the 0.05 level while ** represents MacKinnon-Haug-Michelis (1999) p-values.

The lag order for the cointegration was selected as 2 and the trace test result revealed that four cointegration vectors exist in the model. Similarly, it was found that the Maximum eigenvalue test shows evidence of four integrating vectors at 5 percent level of significance. The outcome of the cointegration test provides appreciable empirical evidence for the rejecting null hypothesis of no cointegration. It therefore, follows that the variables have long run relationship.

4.3 Model Estimation

Following the evidence of long run relationship between income inequality and sub-indexes of economic globalization and financial integration, the cointegrating regression model was estimation using DOLS. The result of the estimated cointegrating regression model is summarized in table 5.

Table 5: Cointegrating regression result

Dependent Variable: GINDEX				
Method: Dynamic Least Squares (DOLS)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACF	1.215228	0.148105	8.205172	0.0000
RET	-0.082052	0.092727	-0.884877	0.3893
FINT	21.80480	14.36956	1.517430	0.1487
C	-36.59748	10.26891	-3.563912	0.0026
R-squared	0.903993	Mean dependent var		45.77724
Adjusted R-squared	0.831989	S.D. dependent var		4.750761
S.E. of regression	1.947298	Sum squared resid		60.67154
Long-run variance	4.562065			

Source: Authors’ computation based on data from World Bank, Dreher (2006), Dreher*et. al.* (2008),Gygli, Haelg& Sturm (2018) and Chinn & Ito (2008)

The estimated cointegrating regression equation reveals that actual flows, a sub-index of economic globalization have significant positive relationship with income inequality. A percentage increase in actual flows will, on the average, lead to about 1.215 percent increase in income inequality. This finding suggests that increased flow of trade, FDI, portfolio investment and income payments to foreign nationals have remained a source of widening income gap within Nigerian economy.The positive effect of actual flows on income inequality is not in conformity with the postulations of Hechscher-Ohlin model andStopler-Samuelson theorem which assume that globalization is helpful for reducing income inequality in developing countries. However,

this finding aligns with the results of Ogunyomi, Daisi&Oluwashikemi (2013) for Nigeria and Mohanty (2017) for low-income economies. On the contrary, it was found that insignificant negative relationship exist between restrictions as a sub-index of economic globalization and income inequality over the study period. This indicates that Nigeria has not optimized gains associated with the imposition import barriers, tariff rates, taxes on international trade and capital controls in reducing growing gap in the distribution of income. The result further revealed that financial integration does not contribute significantly in the reduction of income inequality. This could be linked to the underdeveloped nature of the Nigerian financial system and its poor linkage to the international financial landscape. The adjusted coefficient of determination is very revealing as it indicates that about 83.19 percent of the system variations in income inequality are due to collective changes in sub-indexes of economic globalization and financial integration.

4.3.1 Post-estimation Test Results

Table 6: Wald test result

Test Statistic	Value	df	Probability
F-statistic	25.67145	(3, 16)	0.0000
Chi-square	77.01434	3	0.0000
Null Hypothesis: C(1)=C(2)=C(3)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C(1)	1.215228	0.148105	
C(2)	-0.082052	0.092727	
C(3)	21.80480	14.36956	

Source: Authors’ computation from cointegrating regression result

The Wald test result provides insights into the joint significance of the explanatory variables. It was observed from the result that the F-statistic (25.67) is associated with low probability value (0.000). This indicates that the regressors are collectively significant in explaining variations in income inequality. Thus, the overall model is adjudged to be statistically significant.

Table 6: Serial correlation test result

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
. **.	. **.	1	0.293	0.293	2.7633	0.096
. *.	. .	2	0.108	0.024	3.1518	0.207
. .	. *.	3	-0.047	-0.093	3.2289	0.358
. ** .	. * .	4	-0.207	-0.189	4.7663	0.312
. * .	. .	5	-0.134	-0.018	5.4412	0.364
. * .	. * .	6	-0.140	-0.078	6.2059	0.401

Source: Authors’ computation from cointegrating regression result

The correlogram based test for serial correlation shows that for the six lag, the Q-statistic is associated with high probability values which exceed 0.05. Thus, the null hypothesis of no serial correlation in the residuals is maintained at 5 percent level. The model is therefore, considered as having the capacity of providing forecast with high degree of reliability.

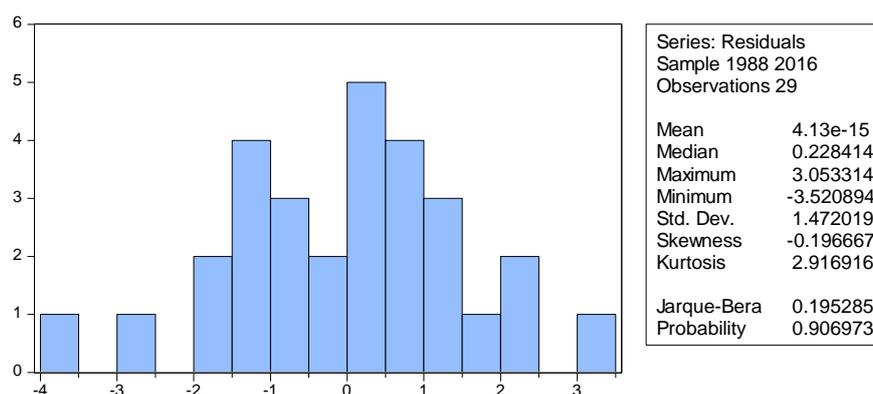


Figure 1: Plot of normality test

Source: Authors’ computation from cointegrating regression result

The normality plot reveals that the Jarque-Bera statistic (0.1952) is associated with an impressive probability value (0.907). This suggests that the residuals are normality distributed at 5 percent significance. This provides enough empirical evidence for retaining the null hypothesis of normal distribution of the residual. This adds to the empirical validity of the model for both policy and prediction purposes.

4.4 Granger Causality Tests

The causal relations between economic globalization and income inequality are presented in table 7.

Table 7: Pairwise causality test results

Null Hypothesis:	Obs	F-Statistic	Prob.
ACF does not Granger Cause GINDEX	29	1.61792	0.2139
GINDEX does not Granger Cause ACF		7.05847	0.0017
RET does not Granger Cause GINDEX	29	0.40888	0.7482
GINDEX does not Granger Cause RET		2.46002	0.0896
FINT does not Granger Cause GINDEX	29	4.81931	0.0100
GINDEX does not Granger Cause FINT		1.26755	0.3099
RET does not Granger Cause ACF	29	1.03534	0.3963
ACF does not Granger Cause RET		3.91328	0.0222
FINT does not Granger Cause ACF	29	0.95470	0.4315
ACF does not Granger Cause FINT		3.55008	0.0310
FINT does not Granger Cause RET	29	0.84989	0.4815
RET does not Granger Cause FINT		9.98669	0.0002

Source: Authors' computation based on data from World Bank, Dreher (2006), Dreher *et. al.* (2008), Gygli, Haelg & Sturm (2018) and Chinn & Ito (2008)

The causal links between the variables reveal that unidirectional causality flows from Gini index to actual flows. This provides basis for rejecting the null hypothesis. It was also found that financial integration Granger causes Gini index. This implies that integration has forecasting power for income inequality. It was also found that unidirectional causality runs from actual flows to economic restrictions. Additionally, the pairwise causality test reveals that unidirectional causality runs from actual flows and economic restriction to financial integration. Hence, the null hypothesis is rejected as 5 percent level of significance.

V. CONCLUSION

Growing income gap within the Nigerian economy has remained a central issue in public debate. Thus, this paper deepens the understanding on the nexus between economic globalization and income inequality in Nigeria. As evidenced in the cointegrating regression result, actual flows as sub-index of economic globalization have significant positive relationship with income inequality. This indicates that growth in cross-border trade, flows of FDI, portfolio investment and income payments to foreign nationals is associated with growing income inequality. However, the contribution of economic restrictions to reduction in income inequality is statistically insignificant at 5 percent level. It therefore, follows some degree of restrictions on trade and controls on cross-border capital movement have not offered the expected opportunity for improved income distribution. On the basis of the findings, it is concluded that actual flows in the forms of increased flow of trade, FDI, portfolio investment and income payments to foreign nationals have remained a key channel through which economic globalization widens the gap in income distribution amongst the Nigerian population. Thus, it is recommended that policy makers should ensure that the increasing wave of economic globalization provides opportunities for more equal spread of income amongst the Nigerian population. Again, economic restriction should give more attention to areas that Nigeria enjoys comparative advantage in order to ensure that the opportunities it creates for improve income redistribution are optimized.

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