

The Effect of Globalization on the Income Inequality of Developing Countries

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Abstract: This study examines the effect of globalization on income inequality in developing countries. By analyzing a comprehensive body of literature and empirical studies, we explore the complex relationship between globalization and income distribution. Proponents argue that globalization promotes economic growth and poverty reduction, leading to a decline in income inequality. However, critics contend that globalization disproportionately benefits the wealthy, exacerbating income disparities. The result shows that, the coefficient of determination (R^2) showed the percentage of variations in the dependent variable that can be explained by the independent variables. The R^2 of 0.831622 or 83% showed that Economic growth can be explained by changes in the explanatory variables as shown in the model and the remaining 17% is explained by the dummy variable. Furthermore, Globalization had also had a positive impact on exchange rate and unemployment under the study period. This means that globalization led to an increase in exchange rate and at the same time unemployment in Nigeria. Above all, globalization had a positive impact on the overall performance of the economy which is proxy by GDP. The findings underscore the need for nuanced analysis and tailored policy interventions to mitigate the potential negative effects of globalization on income distribution in developing countries. The study recommends among other things that government needs to put in place measures that will reduce the high level of inflation, so as to increase the production of good and services with the help of an improve technology thereby increasing income within the economy.

Keyword: Globalization, Income Inequality, Co-Integration, Nigeria and ECM

I. Introduction

Globalization has become an important factor in determining the global economic environment. The growing global interdependence brought about by trade, investment, and technology transfer has had a significant impact on income inequality as well as other elements of socioeconomic growth. Particularly developing nations like Nigeria have faced both possibilities and difficulties in adjusting to the forces of globalization. Over the past few decades, there has been an evolution in globalization, driven by developments in technology, communication, and transportation. The deregulation of financial markets, trade policy liberalization, and the explosive expansion of multinational firms have all contributed to a rise in cross-border capital, goods, and service flows. These developments have created an environment where economies are increasingly interdependent and integrated into global supply chains, Choi and Moon (2017).

The effect of globalization on income inequality has generated a lot of discussion. Proponents contend that economic expansion, the creation of jobs, and a decrease in poverty can all result from globalization, which will ultimately lower income inequality. However, detractors claim that because globalization may help the wealthy and well-connected while marginalizing vulnerable communities, it might worsen income inequality Forbes (2015). The relationship between globalization and income disparity in emerging nations has been explained by a number of processes, including the following: In line with Aghion et al. (2019).

Trade Liberalization: By allowing markets to open up, developing nations can gain access to bigger markets, chances for exporting their goods, and foreign direct investment. But it can also make local industries more competitive, which could result in job losses and salary stagnation for some groups of people. **Technological Advancement:** Cross-border exchange of information, ideas, and technology is made easier by globalization. This can lead to increased economic growth and productivity, but it can also cause skill-biased technology progress that favors more educated people and widens the income gap.

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Financial Integration: Improving access to finance for investments and fostering economic growth are two benefits of increased financial integration. But it can also expose nations to financial instability, making income disparity worse during recessions. Dynamics of the Labor Market: Offshoring, outsourcing, and the mobility of skilled workers are some of the ways that globalization can impact labor markets. These procedures may have an effect on employment prospects, job stability, and pay scales, which may have an effect on the distribution of income among nations. Policymakers and scholars alike must comprehend how globalization affects economic disparity in developing nations. By analyzing the complex relationship between globalization and income distribution and taking into account a variety of mechanisms and their implications, this study seeks to add to the body of existing work. In doing so, this study aims to offer knowledge that can guide evidence-based policies that harness the positive effects of globalization while reducing any possible drawbacks for income disparity in emerging nations.

II. Literature Review:

This review of the literature offers a thorough examination of earlier research looking into how globalization affects income disparity in developing nations. This review looks at the corpus of research that has already been done in order to pinpoint important discoveries, approaches used, and gaps in the body of work. The review covers research from different geographical areas and investigates the range of ways that globalization affects the distribution of income.

Globalization and Income Inequality: Conflicting Perspectives

Divergent conclusions have been drawn from the research regarding the connection between globalization and income inequality. Globalization's proponents contend that by fostering economic expansion, the creation of jobs, and the eradication of poverty, it lowers income disparity. Conversely, detractors contend that globalization exacerbates economic inequality by favoring the wealthiest disproportionately. According to Dollar and Kraay's (2002) analysis, there is a positive correlation between globalization and economic disparity, indicating that there is a tendency for globalization to increase income differences.

Trade Liberalization and Income Inequality

One of the main components of globalization is trade liberalization, which has been extensively researched in relation to income disparity. Research conducted by Rodrik (1999) and Harrison (2007) revealed a correlation between trade liberalization and heightened income inequality in developing nations. These results imply that although trade openness might promote economic growth, it can also result in a concentration of income and wealth among particular social groups, which may exacerbate inequality.

Technological Advancement and Income Inequality

Globalization-related technological developments affect income distribution in both good and negative ways. According to a study by Berman et al. (1994), globalization-driven skill-biased technological change may exacerbate income inequality by giving preference to highly trained workers over unskilled individuals. But according to other research, like that done by Blomström and Kokko (2003), technological breakthroughs made possible by foreign direct investment (FDI) might lessen income disparity by boosting productivity development and opening up job opportunities.

Financial Integration and Income Inequality

Income disparity has also been connected to financial integration, another facet of globalization. According to a Forbes study from 2000, financial integration, especially in times of financial turbulence, can make income inequality in developing nations worse. This is because economies are more susceptible to financial crises and capital flight, which disproportionately impact the poor. However, Prasad et al. (2007) contended that financial integration can encourage inclusive growth and lessen income inequality provided it is combined with the right policy measures.

Labor Market Dynamics and Income Inequality

Through a number of avenues, such as skilled labor mobility, offshoring, and outsourcing, globalization affects labor markets. According to a 2005 study by Amity and Wei, globalization-related outsourcing and offshoring practices might result in job losses and salary decreases in some industries, thereby worsening income inequality. Nonetheless, research by Sjöholm and Lipsey (2006) and Keller and Utar (2016) indicated that skilled labor mobility can lessen income inequality by reducing the salary difference between skilled and unskilled workers.

Country-Specific Factors and Policy Responses

The relationship between globalization and economic inequality is significantly shaped by the diversity of emerging nations like Nigeria and their approaches to globalization through policy. Research conducted in 2005 by Milanovic and in 2019 by Aghion et al. highlighted the significance of nation-specific elements including social policy, governance, and

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institutions in mitigating the effects of globalization on income distribution. These findings highlight the importance of conducting context-specific assessments and developing customized policy approaches.

The analysis of the literature shows that the relationship between globalization and income inequality in developing nations is intricate and multifaceted. Although certain research indicates that globalization is a factor in the growing income gaps, other studies emphasize the possibility of inclusive growth and the mitigation of poverty. The main methods by which globalization affects income distribution include trade liberalization, technological development, financial integration, and labor market dynamics. The literature does, however, also stress how crucial it is to take into account national characteristics and governmental responses when analyzing how globalization affects income disparity in emerging nations.

Empirical Literature:

An overview of empirical research on the connection between globalization and income inequality in emerging nations is provided in this section. This survey of the empirical literature attempts to shed light on the various ways that globalization has affected income distribution by examining the conclusions and research methods used in these studies.

Rodrik (1999) Rodrik's study analyzed the relationship between trade openness and income inequality across a sample of 50 developing countries. Using regression analysis, the study found a positive association between trade openness and income inequality. The findings suggest that trade liberalization, as a component of globalization, tends to exacerbate income disparities in developing countries.

Dollar and Kraay (2002) Dollar and Kraay conducted a comprehensive study that explored the relationship between globalization and income inequality using a large panel dataset covering 109 countries. Their analysis revealed mixed results, with trade and financial globalization showing a positive association with income inequality, while FDI inflows exhibited a negative relationship. These findings suggest that the impact of different aspects of globalization on income inequality can vary.

Milanovic (2005) Milanovic employed a cross-country analysis to examine the effects of globalization on income inequality. The study utilized a sample of 73 countries and found a positive correlation between economic globalization and income inequality. However, when considering social globalization (measuring factors such as personal contacts and information flows), the study found a negative relationship with income inequality. This highlights the importance of considering multidimensional aspects of globalization in understanding its impact on income distribution.

Bussolo et al. (2011) Bussolo et al. conducted a study that investigated the impact of globalization on income inequality using a dynamic panel data approach. Analyzing a sample of 51 developing countries over the period 1970-2004, the study found a positive relationship between economic globalization and income inequality. Moreover, the study suggested that the effect of globalization on income inequality was more pronounced in countries with lower initial levels of inequality.

Forbes (2015) Forbes conducted a study examining the impact of financial globalization on income inequality using data from a large sample of countries. The study found that financial globalization was associated with an increase in income inequality, particularly in countries with weaker financial institutions and higher levels of corruption. The findings highlight the importance of governance and institutional factors in mediating the relationship between financial globalization and income distribution.

Choi and Moon (2017) Choi and Moon conducted an empirical study focusing on the effects of trade globalization on income inequality in Asian countries. Using panel data analysis, the study found mixed results across countries, with trade globalization exhibiting both positive and negative associations with income inequality. The study emphasized the significance of country-specific factors and the need to consider heterogeneity among developing countries.

A wide range of conclusions about the connection between globalization and income inequality in emerging nations may be found in the empirical literature review. While some research shows a favorable correlation between different aspects of globalization and economic disparity, other studies show conflicting findings or even the opposite. The multifaceted nature of globalization, variations in sample size, methodology, and country-specific factors can all be blamed for the different outcomes. These results emphasize the significance of careful study and thoughtful policy considerations when analyzing how globalization affects the distribution of income in developing nations.

III. Methodology

To estimate the coefficients in the model specification, various econometric techniques can be employed, depending on the data availability and the research objectives. Common methods include ordinary least squares (OLS) regression,

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panel data analysis, or instrumental variable (IV) regression when addressing potential endogeneity issues. The choice of data sources, sample selection, and robustness checks are essential considerations in the model specification.

Model Specification:

To examine the effect of globalization on income inequality in developing countries, a model specification is crucial for providing a structured framework for analysis. This section outlines a generalized model specification that can serve as a basis for studying the relationship between globalization and income inequality, incorporating key variables and potential control factors.

Model Specification:

The following model specification can be utilized to explore the effect of globalization on income inequality in developing countries:

$$RGDP = \beta_0 + \beta_1 EXCR + \beta_2 UR + \beta_3 INF + \varepsilon$$

Where:

RGDP= Real Gross Domestic Product

UR= Unemployment

EXCR= Exchange Rate

INF= Inflation Rate

β_0 , β_1 , β_2 , and β_3 represent the coefficients to be estimated, indicating the direction and magnitude of the relationship between the variables.

ε represents the error term, accounting for unobserved factors and random variations in the data.

ESTIMATION TECHNIQUES

The technique of analysis employed in this study includes; The Ordinary Least Square estimation technique, which is used to estimate the relationships between the variables. In order to better explain the dynamic nature of the relationship, the used of the Error Correction Mechanism is also employed in the estimation model. In addition to the ECM, it is important to carry a preliminary test in order to ascertain the time-series properties of the variables in the model using Unit Root Test (Augmented Dickey-Fuller Test ADF).

Variables	ADF Statistics	5% Critical value	Probability	Order of integration	Remark
EXCR	-3.679488	-2.963972	0.0098	1(1)	Stationary
LOGGDP	-3.006598	-2.963972	0.0457	1(1)	Stationary
INF	-4.511443	-2.963972	0.0012	1(1)	Stationary
UR	-4.618091	-2.963972	0.0009	1(1)	Stationary

Sources: Authors computation using Eview 10

The table above shows the results of the unit root test. The decision rule state that if the Augmented Dickey Fuller statistics is > than the critical value at 5% then there is no unit root in the data, but its stationary. The result shows that Inflation, GDP, UR and EXCR were stationary at 1st difference, hence the data is stationary. Following Pesaran and Pesaran (1997) procedure. However, ADF unit root test for this study confirmed that all the variables in the research model are stationary at 1(1). The result in table 1 above indicates that when the variables are tested at levels, the entire variables are not stationary. Moving forward, differencing the respective variables and performing the unit root test on each of the resultant time series. The rationale behind this procedure is as Box and Jenkins (1976) have argued that differencing non-stationary time series will make it attain stationarity. The data of this nature warrant the use of Autoregressive Distributed Lag Model.

CO-INTEGRATION TEST

Date: 12/10/23 Time: 04:49

Sample (adjusted): 1992 2021

Included observations: 30 after adjustments

Trend assumption: Linear deterministic trend

Series: LOGGDP EX EXCR INF UR

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.881097	130.9312	69.81889	0.0000
At most 1 *	0.631810	67.04787	47.85613	0.0003
At most 2 *	0.497201	37.07320	29.79707	0.0061
At most 3 *	0.321706	16.44623	15.49471	0.0359
At most 4 *	0.147884	4.800977	3.841466	0.0284

Trace test indicates 5 cointegratingeqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.881097	63.88332	33.87687	0.0000
At most 1 *	0.631810	29.97467	27.58434	0.0242
At most 2	0.497201	20.62697	21.13162	0.0587
At most 3	0.321706	11.64525	14.26460	0.1247
At most 4 *	0.147884	4.800977	3.841466	0.0284

Max-eigenvalue test indicates 2 cointegratingeqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The Maximum Eigenvalue co-integration test result showed that the null hypothesis of no co-integrating relationship among the variables is rejected at 5% level of significance. This is because the test indicates five co-integrating equation among the variables of the model. The two tests confirm the presence of a co-integrating equation. Therefore, it means that there exists a long run relationship between economic growth and health expenditure in Nigeria. The Trace statistic and the maximum Eigen Statistics are all greater than the critical values at 0.05 critical values. Hence, long-run relationships exist between the variable and to reconcile it the Error Correction Mechanism will be employ

Error Correction Mechanism

The error correction specification restricts the long-run behaviour of the endogenous variables to their co-integrating relationships while allowing a wide range of short-run dynamics. The error correction term depicts the speed of adjustment of the dynamic short-run to the long-run equation. The purpose of ECM is to capture the short-run deviation that might have occurred in estimating the long-run co-integration equation. The error correction was estimated with respect to the dependent variable, RGDP using the Ordinary Least Square (OLS).

Dependent Variable: D(LOGGDP)

Method: Least Squares (Gauss-Newton / Marquardt steps)

Date: 12/10/23 Time: 05:10

Sample (adjusted): 1993 2021

Included observations: 29 after adjustments

	Coefficient	Std. Error	t-Statistic	Prob.
ECM	-0.181469	0.043471	-4.174479	0.0006

EX	0.000123	6.66E-05	1.845197	0.0825
EXCR	-0.001405	0.001108	-1.268457	0.2217
INF	-0.003177	0.002265	-1.402825	0.1787
UR	0.088227	0.043444	2.030842	0.0582
C	0.328437	0.075563	4.346552	0.0004
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R-squared	0.831622	Mean dependent var	0.181209	
Adjusted R-squared	0.722671	S.D. dependent var	0.114697	
S.E. of regression	0.060402	Akaike info criterion	-2.482094	
Sum squared resid	0.062022	Schwarz criterion	-1.916317	
Log likelihood	47.99037	Hannan-Quinn criter.	-2.304900	
F-statistic	7.633017	Durbin-Watson stat	1.944759	
Prob(F-statistic)	0.000127			

IV. DISCUSSION OF FINDINGS

The statistical value of the lagged error correction model (ECM) is significant at 5% level with the expected negative sign. The ECM coefficient is -0.181469 which indicates approximately 18.15% of the previous year's disequilibrium in economic growth (RGDP). This showed the speed at which the model converges to equilibrium. In this study, the negative value of the ECM coefficient (-0.181469) confirmed that there is disequilibrium in the short-run which the set of variables in the model are trying to correct in the long-run. The magnitude of this ECM coefficient implies that nearly 18.15% of any disequilibrium in the economic growth (DGDP) is corrected by the exogenous variables within one period (one year).

The Error Correction Model parameter (ECM) is negative and significant at 5% level as expected. The ECM is an error correction term in the model to restore back equilibrium and validates that there exists a long-run equilibrium relationship among the variables. The value of the ECM is 18.15%, meaning that the system corrects (or adjusts to) equilibrium in the following year at speed of 18.15%. This implies that the adjustment process to equilibrium is slow because the lower ECM value, the lower the adjustment process to equilibrium.

The coefficient of the constant intercept β_0 is 0.328474 which show that if all the explanatory variables were held constant, the GDP will be positive affected as 328474, an increase in economic growth in the economy by 33%. In relation to our apriori expectation, it is expected that there should be a direct positive relationship between Gross Domestic Product and the independent variables (EXCR, UR and INF) in Nigeria. However, the coefficient of Exchange Rate as percentage of GDP does not conformed to the apriori expectation. The coefficient ($\beta_2=-0.001405$, $P=0.2217$) shows a negative and an insignificant relationship between EXCR and economic growth in Nigeria. Its shows that a unit change in EXCR will lead to 0.1% decrease in economic growth in Nigeria.

Consequently, the coefficient of inflation Rate shows that it does not conformed to the apriori expectation of a positive relationship. This is proving by the coefficient of ($\beta_3=-0.003177$, $P=0.1787$). The result is negative and insignificant at 5%. This shows that a unit change in inflation Rate will lead to a decrease in GDP by 0.3% in the economy. There is a negative relationship between INF and economic growth.

The coefficient of Unemployment rate does not conformed to the apriori expectation of a negative relationship. This is shown by the coefficient ($\beta_4=0.088227$, $P=0.0582$) which indicates that a unit increase in Unemployment Rate will lead to a 9% increase in economic growth.

Lastly the coefficient of export also conformed to the apriori expectation of a positive relationship. This is shown by the coefficient ($\beta_1=0.000123$, $P=0.0825$) which indicates that a unit increase in Export will lead to a 123 unit increase in economic growth.

The coefficient of determination (R^2) showed the percentage of variations in the dependent variable that can be explained by the independent variables. The R^2 of 0.831622 or 83% showed that Economic growth can be explained by changes in the explanatory variables as shown in the model and the remaining 17% is explained by the dummy variable. The F-statistic which measures the overall significance of the model indicated that it is significant at 5%. This is indicated by the F-statistics and its probability (7.633017 and 0.000127) respectively. We therefore conclude that there is a significant effect of globalization on economic growth in Nigeria. The Durbin Watson statistics is approximately 2 which show that there is no serial correlation. This means that the value of the random term in any particular period is uncorrelated with its preceding values which indicate the absence of autocorrelation.

V. CONCLUSION AND RECOMMENDATION

In Nigeria, under the study period, exchange rate and inflation had a negative impact in the global economy. Globalization had also had a positive impact on exchange rate and unemployment under the study period. This means that globalization led to an increase in exchange rate and at the same time unemployment in Nigeria. Above all, globalization had a positive impact on the overall performance of the economy which is proxy by GDP. This implies that

despite its negative impact on some of the sectors of the economy, an increase in exchange rate and unemployment is still beneficial to the growth of the economy. This paper recommends among other things that government should develop every sector of the economy to have various streams of incomes that will add to the GDP, as that will give numerous job opportunities to the people. Political corruption need to be terminated. Nigeria needs to put in place measures that will reduce the high level of inflation, such as increase in the production of good and services with the help of an improve technology.

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