

SOCIO-ECONOMIC GLOBALIZATION AND STRUCTURAL TRANSFORMATION IN NIGERIA

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Abstract

This paper examined the role of socio-economic globalization in the process of structural transformation in Nigeria with a focus on the impacts economic and social globalization as well as financial integration on manufacturing and services valued added. Data were collected over the sampled period, 1986-2017 from World Bank World Developments Indicators, Dreher (2006), Gygli, Haelg and Sturm (2018) and Chinn and Ito (2008). Descriptive statistics, pairwise correlation and Autoregressive Distributed Lag (ARDL) model formed basis for data analysis. The unit root test results show evidence of mixed integration $[(I(0) \text{ and } I(1))]$. The ARDL bounds test results indicate that long run nexus exists among the variables in each of the models. It was found from the ARDL estimates that social globalization is significant in influencing structural transformation in both short run and long run. Whilst the short run result shows that an increase in social globalization index induces 0.202 percent increase in manufacturing value added, the long run estimate shows evidence of higher outcome as an increase in social globalization index boots manufacturing value added by 1.394 percent. Accordingly, policy makers should ensure that the design and implementation of globalization policies demonstrate adequate sensitivity to the structural constraints prevalent in Nigeria in order to successfully shift economic activities towards productive and diversified investments in manufacturing and services.

Keywords: Socio-economic globalization, Financial Integration, Structural Transformation, ARDL Bounds test

INTRODUCTION

The global fragmentation of the production process has placed socio-economic integration at the core of structural transformation, thus, providing opportunities for global value chain. The structural change associated with the integrated global economic environment is perceived by Johnston and Gabre-Madhin (1999) as a transformation from predominantly agrarian economy to a diversified and productive economy dominated by manufacturing and service sectors. Mallick (2017) argues that globalization and economic integrations are good sources of technology transfer, production efficiencies and substantial inflows of foreign direct investment (FDI). It is believed that inflows of FDI associated with globalization provides a pathway for shifting economic activities from traditional methods of production to modern economy and improved managerial skills in their host countries, which are expected to increase the marginal productivity of labor and the process of structural change.

In accordance with the global value chain, Gereffi and Fernandez-Stark (2011) observe that economic activities are increasing being carried-out within the global production networks and as such are fragmented across countries without being limited to only one economy or single firm. This makes globalization crucial for structural transformation. As a key determinant of structural change, socio-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. Economic activities worldwide in the past few decades have been revolutionized due to globalization (Jayasooriya, 2017), yet many developing economies seem not to adequately optimize the benefits that globalization creates in the process of structural transformation.

Since the late 1980s, the Nigerian economy has become more integrated into the global economy following the policy advice of the Washington Consensus. Although globalization has contributed to technology transfer and somewhat production efficiencies in various sectors in Nigeria, very diverse outcomes have been observed between Nigeria and some emerging market economies in Asia. For instance, the experience of South-east Asia suggests that the benefits of globalization in terms of structural change have been optimized following rapid expansion in high productive employment opportunities. Consequently, the economies of South-east Asia have successfully leveraged on globalization to bolster structural change, thus emerging as examples of successful economic take-off in modern history. On the contrary, the Nigeria's experience has intensified the controversy on whether globalization fosters reallocation of economic activities from low-productive sectors to high-productive sectors. The trajectories of structural transformation in Nigeria and some Asian economies during 1996-2015 are summarized in Table 1.

Table 1. Trends of structural transformation in Nigeria and three Asian economies

Country	Agriculture value added		Manufacturing value added		Services value added	
	(% of GDP)		(% of GDP)		(% of GDP)	
	1996-2005	2006-2015	1996-2005	2006-2015	1996-2005	2006-2015
China	14.93	9.65	31.96	31.25	39.20	45.01
Indonesia	15.95	13.74	27.26	23.71	39.24	40.32
Singapore	0.098	0.041	25.70	21.19	66.79	72.62
Nigeria	35.75	26.49	4.06	5.98	23.24	42.45

Source: Author's compilation based on data from World Bank WDI

As reported in Table 1, during 1996-2005, there was a substantial transformation of the selected Asian economies from agriculture to productive manufacturing sector as manufacturing share of the GDP in each of the three countries (China, Indonesia and Singapore) exceeded 20 percent. Contrarily, a diverse experience was observed in Nigeria as manufacturing share of GDP averaged 4.06 percent between 1996 and 2005. Its average contribution to GDP increased marginally to 5.98 percent between 2006 and 2015. This dismal performance in manufacturing as it accounts for less than 10 percent of GDP is a pointer that the Nigerian is yet to experience the required structural transformation in the economic front. It was also observed in Table 1 that the share of services in GDP in each of the Asian countries grew rapidly in the periods of 1996-2005 and 2006-2015. This could be attributed to their successes in manufacturing which have been identified in economic literature to drive a service-oriented economy.

Similarly, Nigeria experienced higher growth in services during the period covered as the service value added to GDP averaged 23.24 percent between 1996 and 2005, and 42.45 percent during 2006-2015. This is suggestive that the process of structural transformation seems not to follow the necessary steps, hence, increasing the controversies surrounding the successful transformation of the Nigerian economy. In view of the foregoing, the key questions for this study include: How has Nigeria tapped into the opportunities offered by globalization to foster the process of structural transformation along the convention path? What opportunities or constraints do economic integration offers for structural change in Nigeria? How helpful has social integration been in the process of structural transformation? This study is therefore, designed to provide required answers to these questions and more with the specific objectives of examining the impacts of measures of economic and social globalization on manufacturing and services value added in Nigeria between 1986 and 2017.

REVIEW OF LITERATURE

Theoretical Literature

World system theory

This theory is credited to Wallerstein (1974) and it assumes that a multicultural territorial division of labor exist in which the production and exchange of basic goods and raw materials are necessary for the wellbeing of the population. The theory also assumes that there is a global economy which all countries belong. Thus, countries are interdependent and development in one country depends on the country's position in the global economy. A country's position is often mirrored in the level and depth of its integration in the global economic environment. Irogbe (2010) acknowledged that the interdependent relationships of countries across borders and argued that poverty and social backwardness in peripheral countries are caused by the position of these countries in the international division of labor. He further argued that globalization allows for the financial and technological penetration of the periphery and semi-periphery countries by the center.

The proponents of world system theory are of the viewpoint that the factors that trigger structural transformation and national development of low income countries are the new global systems of communications, the new world trade mechanisms, the international financial system and technology transfer. These are core components of socio-economic globalizations. Onimode (2004) identified technology as a determinant factor in narrowing the gap across countries worldwide. This is necessary for successful economic take-off to engender a diversified, sustained and inclusive growth in countries classified as semi-periphery and periphery, where structural rigidities abound. Odekunle (2008) also identified the role played by poor socio-economic structure in constraining development in low income countries by not lifting them from their subordinate characteristics.

Structural Economics Theory

The structuralist theory is associated with the work of Rosenstein-Rodan (1943). The key assumptions of this theory include incidences of structural heterogeneity and predominance of manufacturing in modern economic activities amongst others. Historically, the contribution of the structuralist school to development economics began in the 1940s and 1950s. It is built on the idea that the virtuous circle of economic development depends on structural transformation. The structural heterogeneity associated with the structuralist theorist implies that in developing economies, modern economic activities with highly productive and advanced technologies coexist with traditional economic activities with low productivity and high informality. This is exemplified in the dual sectors or economies models as illustrated by Lewis (1954) and Ranis

and Fei (1961). In these models, structural change mainly involves the reallocation of labour from traditional economy to modern economy with capacities of driving rapid and sustained growth.

The structuralist school emphasized on the shift from agriculture to manufacturing based on assumption that manufacturing facilitates rapid and diversified growth of the economy. Kaldor (1957) outlined the relevance of manufacturing in the process of development and structural transformation to include:

- i. The rapid growth rate of manufacturing output triggers rapid GDP growth rate;
- ii. The rapid growth rate of manufacturing output induces faster growth rate of labour productivity in manufacturing; and
- iii. The rapid growth rate of manufacturing output facilitates the growth rate of overall labour productivity in the economy.

In addition to the Kaldor's law on manufacturing, the proponents of structural theory are of the viewpoint that manufacturing is the core of structural transformation as it offers better opportunities for capital accumulation due its capital-intensive production technique. Szirmai (2012) finds evidence to support the claim that capital intensity in manufacturing is much higher than in agriculture, thus providing incentives for prioritizing the process of structural transformation towards manufacturing. It is also identified that manufacturing has stronger linkages to other sectors of the economy given that manufactured goods are not only sold to final consumers but also widely used in the other sectors, thus, creating linkages, between various industries (Hirschman, 1958 and Cornwall, 1977 amongst others). Specifically, Hirschman (1958) outlined two types of linkages comprising backward linkages and forward linkages. The backward linkages involve a firm sourcing its input within the industry while forward linkages occur when investment in an industry triggers investment in downstream industries that use the output of the upstream industry. This emphasis of the structuralist school on manufacturing has been criticized on the basis that an export-oriented diversification strategy towards manufacturing does not necessarily solve the problem of unfavorable terms-of-trade, thus, shifting emphasis to the increasing role of technological change.

New Structural Economics Theory

Lin (2011) popularized the new structural economic theory as an extension of the neoclassical theory of comparative advantage and in accordance with the structuralist tradition. The theory is based on three basic propositions. First, an economy's structure of factor endowments tends to develop from one developmental stage to another. Thus, the industrial structure of a given economy varies across over different levels of development with each industrial structure

requiring corresponding infrastructure to enhance its operations and transactions. Second, each level of economic development represents a continuous process from a low-income agrarian economy to a high-income post-industrialized state. Third, at a given developmental level, the market provides the required mechanism for effective resource allocation.

Furthermore, the new structural economic model emphasizes that the economic structure of an economy depends on its factor endowment structure and that sustained economic development is propelled by changes in factor endowments and continuous technological innovation. Globalization has been identified in economic literature to facilitate the process of technological innovation through technological upgrading in sectors, which drives the process of structural transformation. Lin (2011), and Lin and Treichel (2014) observe that structural changes should rely on firms specializing in industries consistent with comparative advantages driven by factor endowments. Although Lin's analysis focused on China, it is also considered very applicable for all low- and middle-income countries including Brazil, Nigeria, and Indonesia. The two outstanding premise of Lin's analysis is that the market should determine prices, and the state should make relevant policies and investments that promote innovation in the level of economic activity. Despite its relevance to the economic literature of development, this theory has been criticized for emphasizing on factor endowment for achieving structural transformation as this could be achieved through the acquisition of new types of capacity prior to the right factor endowments.

Conceptual Discourses

Structural transformation has received increased attention in development economics literature due to partly the growing proposition that sectoral reallocation of productive activities in low income countries is inefficient and requires the intervention of the public sector to address the problem. As an integral feature of modern, diversified and sustained growth, structural transformation encompasses the transition from agricultural-driven growth to more productive economy powered by increasing manufacturing and service related economic activities. Kelbore (2014) opined that structural transformation defines a stylized fact in development economics literature involving reallocation of productive activity across three broad sectors of agriculture, manufacturing, and services which are often associated with the process of modern economic growth. This conceptualization is in accordance with Kuznets (1973) view, which classifies structural transformation as one of the six key components of modern economic growth. The reallocation process mainly involves transition from lower productivity to higher productivity. The structural heterogeneity prevalent in developing economies makes structural transformation particularly relevant in these countries.

Herrendorf et al. (2014) argue that the structural transformation literature is rooted in the long-standing empirical observation that economic structure across countries differs systematically by the stage of development. The expansion of this literature necessitated the proposition of specific models of development that perceive structural transformation as an endogenous process in response to factor accumulation and wealth creation amongst others (Ketels, 2017). Other studies have conceptually linked structural transformation to changes in inequality (Timmer and Akkus, 2008) and urban development (Michaels *et al.*, 2012). Contributing to the new structural economics literature, Lin (2016) outlined the pre-conditions for structural transformation to include countries learning from the experience of their peers with common initial factor endowments and evidences of increased prosperity; focusing on promoting market opportunities and dismantling barriers to sector-specific competitiveness. Johnston and Gabre-Madhin (1999) offered distinctive insight into the concept of structural transformation as they opined that it embodies transition from predominantly agricultural oriented economic activities to a diversified and productive economy characterized by manufacturing and service sectors.

Notably, globalization has increasingly become a dominant concept in socio-economic and political discourses. It is conceptualized as the growing worldwide inter-dependence of people and countries. This interdependence affects the economic, political, social and cultural relations across the globe. The United Nations Development Programme (UNDP, 2011) views globalization as a multidimensional phenomenon involving rapid and revolutionary growth in the extensiveness and intensity of interconnections at a global perspective. This is mirrored in the globalization of democracy, global technological revolution through information and communication transfer, and more importantly, globalization of the economy. The outstanding attributes of globalization have manifested in huge increases in international trade flows and investments (Yumkella *et al.*, 1999). Thus, globalization defines a process of increased integration of a national economy with the rest of the world to create a more coherent global economy.

Stylized Facts of the Dynamics of Structural Transformation in Nigeria

The pace of structural transformation in Nigeria between 2001 and 2015, more or less deviated from the intended objectives of economic policy reforms as the share of manufacturing in value added and employment has remained dismal. In other words, the expected economic take-off from traditional agriculture to modern economic growth driven by productive and diversified manufacturing is yet to be achieved. The pattern of structural transformation depicted in sectoral value added is summarized in Figure 1.

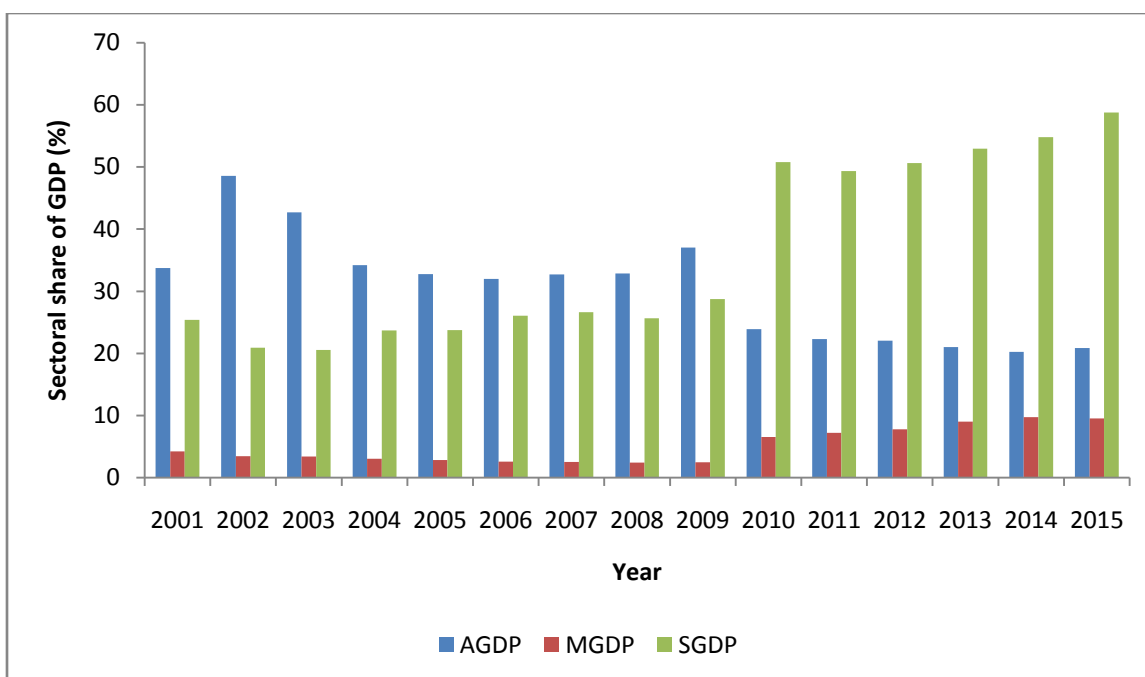


Figure 1: Sectoral distribution of value added (% of GDP), 2001-2015

Source: Author's construction based on data extracted from World Bank WDI

Figure 1 shows the value added of the agricultural, manufacturing and service sectors in Nigeria over the period 2001-2015. The share of agriculture (AGDP) to GDP revealed that agriculture production increased rapidly during 2001-2009 with an average value addition of 36.29 percent. It reached a record high of 48.57 percent in 2002. The contribution of the manufacturing sector (MGDP) to GDP was very dismal. Its value addition to GDP averaged 2.98 percent between 2001 and 2009. Its annual share of GDP during 2001-2009 stood below 5 percent. However, the service sector's share of GDP during 2001-2009 increased along with agricultural activities with an average value of 25.37 percent. Starting from 2010, the agricultural share in valued declined, while that of service sector increased substantially peaking at 58.76 percent in 2015. The manufacturing value added witnessed a marginal increase during 2010-2015, but it remained less than 10 percent. This dismal performance of the manufacturing sector is noteworthy as it indicates that the process of structural transformation in Nigeria has been largely biased towards the service sector. This is indeed a deviation from the conventional path of structural transformation in economic literature which requires that countries move out of agriculture, transit to productive manufacturing activities and end up service-driven economy. The drift of Nigerian economy out of the conventional direction of structural change following the dominance of the service sector in the GDP value addition at the expense of manufacturing sector could be

attributed to the rapid growth achieved in the telecommunications subsector, which was reported in the CBN (2014) to contribute 24.4 percent of real GDP growth during 2011-2012.

Empirical Literature

The globalization effects of structural transformation have evolved from country case studies to multi-country investigations with varying findings.

Warburton (2012) investigated the consequences of globalization on structural changes in the US manufacturing sector. Manufacturing growth was utilized as the dependent variable while changes in employment in manufacturing and service sectors, manufacturing imports, change in real GDP and corporate tax receipts are the included in the model as explanatory variables. The data were analyzed using vector autoregressive (VAR) model. It was found that the US productivity in the manufacturing sector has increased, but the performance of the sector is mainly dependent on changes in US national income. The result reveals that the variability in the US manufacturing output responds adversely to shocks in the national income and manufacturing import, but the adverse implication of the income shock on US manufacturing supersedes that of the manufacturing import shock. The results also reveal that a dual-causal relationship exists between variations in national income and employment changes in the US manufacturing sector. The study therefore, concluded that manufacturing output seems not be completely dependent on globalization, but a combination of factors, of which changes in national income and domestic and foreign absorption are very dominant.

Mallick (2017) examined the link among globalization, structural change and interregional productivity growth in the emerging countries between 1993 and 2010. Secondary data at the state level in India and provinces in the Peoples Republic of China (PRC) were utilized. The generalized method of moment (GMM) system was applied for analyzing the data. The findings indicate that low-income regions have a higher structural change effect on labor productivity growth (LPG) than the regions with high and middle-income. More so, the study revealed that human capital, investment in fixed assets, and FDI are positively linked to LPG. Based on the findings, the study suggested that policymakers should consider the role of structural change effects along with the neighborhood relationship, human capital, physical investment, and FDI for designing policies in order to reduce disparities in productivity growth, boost economic growth and drastically reduce middle-income trap.

Jayasooriya (2017) analyzed the relationship between structural transformation and sectoral interdependencies in Sri Lanka with a view to providing evidence for policy making. The analysis is based on secondary data from the Central Bank of Sri Lanka and the Institute of Policy Studies publications. A time-series econometric method of vector autoregressive

procedure was used in addition to causality analysis, and Gregory-Hansen cointegration, for estimating a long-run relationship in sectoral growth. The findings indicate that unidirectional causality runs from agricultural to industrial GDP, and bidirectional causality exist between agricultural and service GDPs. The outcome of Gregory-Hansen co-integration test indicates that long-run relationship exists in the model. The result also shows that structural change through open economic policies exerted significant influence between pre-open economic and post-open economic policies for a drastic economic growth. The study recommended for reforms in order to revive the growth of the economy and promoting service sector-related economic systems.

Mallick (2015) empirically explored the reallocation effect and the direct effect of globalization on labour productivity growth in BRICS countries comprising Brazil, Russia, India, China and South Africa. The study also investigated the relative role of consumption factors and other factors for the structural development in the globalization era. The analytical techniques focused on shift–share analysis, dynamic panel data method and input-output tables. From the results, it was uncovered that the contribution of structural change is relatively significant in China and India. The indicators of globalization such as external trade and FDI are found to have significant impact on labor productivity growth in BRICS. In view of the findings, the study concluded that the aggregate output has been increased substantially following the successful linkage of the BRICS to the global economy.

Konyeaso (2016) examined the consequences of globalization on Nigerian economy between 1986 and 2013. Multiple regression procedure was adopted for the data analysis and the results indicate that globalization and economic growth are positively related. This finding agrees with the theoretical expectations, thus necessitating the rejection of the null hypothesis. The study therefore, concluded that globalization mainly due to FDI and trade openness is beneficial to the Nigerian economy. The study also recommended for further integration of the Nigerian economy into the global business environment.

Valli and Saccone (2015) analyzed the nexus between structural change, the process of globalization and economic growth in China and India using highly disaggregated dataset over the period 1987-2009. The data analysis followed a multiple regression approach and it was found that China had a longer and more intensive productivity growth than India. However, the growth in India is somewhat more balanced. Evidence of with-in-sector growth was found in both countries than between-sectors growth. The result also shows that important feedbacks between structural change, globalization and economic growth exist over time. Hence, the study recommended for new policies to drive labor movement across sectors and areas in order to

reduce the wage-productivity differentials and to integrate the informal sector into the formal markets.

RESEARCH METHOD

Research Design

Following the use of already existing data for the empirical analysis, an ex post facto research design was employed in this study. The unique characteristic of this research design makes it appropriate for this study.

Model Specification

This study employed two auto-regressive distributed lag (ARDL) models. In the first model, manufacturing value added (% of GDP) was employed as the response variable while service value added (% of GDP) served as the response variable in the second model. In each of the models, the indexes of economic and social globalizations as developed by Dreher (2006) and expanded by Dreher et al. (2008) under the KOF framework were utilized as the explanatory variables. Additionally, the Chinn and Ito (2008) index of financial openness is included in each of the models as a check variable. Based on the foregoing, the functional specifications of the models are provided as:

$$MVA = f(EGN, SGN, FOP) \quad (3.1)$$

$$SVA = f(EGN, SGN, FOP) \quad (3.2)$$

Where: MVA and SVA define manufacturing value added and service value added respectively while EGN, SGN and FOP represent economic globalization, social globalization and financial openness respectively. Using the notations for each of the series in equations (3.1) and (3.2), the ARDL models are expressed as:

$$MVA_t = Y_0 + \sum_{i=1}^m Y_{1i} \Delta MVA_{t-1} + \sum_{i=1}^m Y_{2i} \Delta EGN_{t-1} + \sum_{i=1}^m Y_{3i} \Delta SGN_{t-1} + \sum_{i=1}^m Y_{4i} \Delta FOP_{t-1} + Z_{1i} MVA_{t-1} + Z_{2i} EGN_{t-1} + Z_{3i} SGN_{t-1} + \beta_{4i} FOP_{t-1} + U_{1t} \quad (3.3)$$

$$SVA_t = Y_0 + \sum_{i=1}^m Y_{1i} \Delta SVA_{t-1} + \sum_{i=1}^m Y_{2i} \Delta EGN_{t-1} + \sum_{i=1}^m Y_{3i} \Delta SGN_{t-1} + \sum_{i=1}^m Y_{4i} \Delta FOP_{t-1} + Z_{1i} SVA_{t-1} + Z_{2i} EGN_{t-1} + Z_{3i} SGN_{t-1} + \beta_{4i} FOP_{t-1} + U_{2t} \quad (3.4)$$

Where: MVA, SVA, EGN, SGN and FOP are as described previously in equations (3.1) and (3.2), Y_0 denotes the concept term, $Y_1 - Y_4 =$ short run dynamic coefficients of the explanatory

variables while $Z_1 - Z_4$ = long run slope coefficients, U_{1t} and U_{2t} = white noise error process, Δ = first difference operator, m = order of lag [automatically selected using Bayesian information criterion (BIC)], i and t represent the choice country (Nigeria) and study sample respectively.

Variable Description

Description of the variables in both models and their data sources are summarized in Table 2.

Table 2. Description of variables and sources of data

Variable	Description
Manufacturing value added (MVA)	Net of manufacturing to GDP measured in percentage after summing up all manufacturing outputs and deducting intermediate inputs
Service value added (SVA)	Net of services to GDP measured in percentage after summing up all service outputs and deducting intermediate inputs
Economic globalization (EGN)	This involves an index for actual flows comprising proportions of trade, FDI and income accruable to foreign nationals. It also captures the extent of restrictions such as tariffs, import barriers and capital account restrictions.
Social globalization (SGN)	Social integration is the index that captures the extent of personal contact, information flows and cultural proximity.
Financial openness (FOP)	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).

Source of Data

The data for each of the variables were collected from secondary sources. Data on manufacturing and services value added were sourced from World Bank WDI whereas data on the indexes of economic and social globalization were collected from Dreher, (2006), Dreher *et al.* (2008); and Gygli, Haelg and Sturm (2018). More so, the observations for index of financial integration were sourced from Chinn and Ito (2008) index of capital account openness.

Data Analysis Techniques

The ARDL method developed by Pesaran and Shin (1999) was applied in analyzing the time series data. The choice of this technique was driven by its unique characteristics of integrating both short run and long run behaviors of the explanatory variables in a single equation set-up

and allowing for the inclusion both fractionally and mixed integrated series in a model. Again, the ARDL model has been found from previous studies (Pesaran, Shin and Smith, 2001; Omoniyi and Olawale, 2015; Rahmouni and Debbiche, 2017; Och, Baerbig and Jadamba, 2017 amongst others) to produce robust results for both small and large samples and allows for assigning different lag to different variables in a model, which provides basis for overcoming the problem of endogeneity often associated with time series data. Summary statistics comprising mean, standard deviation, minimum and maximum values were applied for the descriptive analysis of the variables.

Diagnosics Tests

i. Unit root test: The Phillips and Perron (1988) test for stationary was applied in this study. The null hypothesis of unit root was tested against the alternative hypothesis of no unit root at the conventional 5 percent significance level. It is worth noting that the ARDL process requires the series to be stationary at levels [I(0)] or first difference [I(1)] or combination of both [I(0) and I(1)], but not at second difference [I(2)]. The unit root test model is specified as:

$$\Delta Y_t = b_0 + b_1 Y_{t-1} + \sum_{i=1}^q \beta_i \Delta Z_{t-i} + u_t \quad (3.5)$$

Where: Y= series in the model, b_1 and β_i = estimated coefficients, q= order of lag, Δ , u_t and t are as described earlier in equations (3.3) and (3.4).

ii. Bounds test for cointegration: The bounds test procedure to co-integration was used in examining if the variables have long run relationship or not. The bounds test specifically tested the null hypothesis of no cointegration against the alternative hypothesis of cointegration using F-statistic. The computation of this test statistic was carried out at 5 percent level.

iii. Autocorrelation and Heteroscedasticity Tests: Breusch (1978) and Godfrey (1978) higher order test for autocorrelation was applied in this paper following the dynamic nature of the models. It was considered necessary to authenticate the results for purposes of prediction and policy direction. In addition to the autocorrelation test, autoregressive conditional heteroscedasticity (ARCH) test was also conducted using Engel (1982) procedure. In line with conventional requirement for social science research, the test statistic was computed at 0.05 level.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 3. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
MVA	32	5.745	2.356	2.410	9.754
SVA	32	32.052	13.572	19.736	60.42
EGN	32	47.318	9.156	22.97	61.2
SGN	32	19.506	2.707	15.14	26.74
FOP	32	0.204	0.129	0	0.303

From the summary statistics in Table 3, it was observed that averaged values of manufacturing value added and service value added are 5.745 percent and 32.052 percent respectively. This suggests that contrary to expectations, the shift effects activities are directed towards services. The figures also indicate that economic globalization index, social globalization index and financial openness index respectively averaged 47.318, 19.506 and 0.204. It was established from the standard deviation that each of the series converged around their corresponding mean values. As observed from the minimum and maximum values of the series, manufacturing value added ranged from 2.410 percent to 9.754 percent while service value added ranged from 19.736 percent to 60.42 percent. More so, economic globalization ranged from 22.97 to 61.2, social globalization ranged from 15.14 to 26.74 whereas financial openness ranged from 0 to 0.303.

Correlation-based Test for Multicollinearity

The pairwise correlation was applied to determine the possibility of regressing the variables together without experiencing the problem of multicollinearity. The results are showed in Table 4.

Table 4. Pairwise correlation results for the series

	MVA	SVA	EGN	SGN	FOP
MVA	1				
SVA	0.739	1			
EGN	-0.216	0.395	1		
SGN	0.289	0.654	0.267	1	
FOP	0.043	0.509	0.521	0.441	1

The correlation matrix in Table 4 reveals that a negative correlation exists between economic globalization and manufacturing value added while social globalization and financial integration are positively correlated with manufacturing value added. The result also indicates economic and social globalization and financial integration have positive correlation with service value added. The magnitude of correlation (as capture by the correlation coefficients) among the explanatory variables themselves reveals that regressing them together may not pose an econometric problem of multicollinearity in each of the models. Therefore, the individual effect of the regressors can be clearly separated.

Test for Unit Root

The unit root process in each of the series was determined using Phillips and Perron (1988) method. The test statistic (Adjusted t-statistic) was computed at 5 percent level and the results are reported in Table 5.

Table 5. Unit root test results

Variable	Results of Levels test	Results of 1 st difference test	Order of integration
	Adjusted t-statistic	Adjusted t-statistic	
MVA	-1.674 (0.739)	-6.365 (0.000)	I (1)
SVA	-1.863 (0.649)	-6.194 (0.000)	I (1)
EGN	-3.5597 (0.050)	-15.106 (0.000)	I (0)
SGN	-1.896 (0.632)	-4.471 (0.006)	I (1)
FOP	-2.567 (0.297)	-4.970 (0.002)	I(1)

Note: Figures in parenthesis denote MacKinnon (1996) one-sided p-values

The results in Table 5 indicate that the series are mixed integrated. The pattern of the mixed integration are order zero I(0) and order one I(1). Specifically, only economic globalization is I(0) while the other variables are I(1). Hence, economic integration is stationary at levels while the other variables are first difference stationary. This necessitated the application of the bounds test approach to cointegration as proposed by Pesaran and Shin (1999).

Cointegration Test

The bounds test for cointegration was applied in this study to determine whether a long run nexus can be achieved by linear combinations of the series. The test statistic and the associated upper (I1) and lower (I0) critical bounds computed at 5 percent level are reported in Tables 6 and 7.

Table 6. ARDL bounds test result for model A

Series: MVA EGN SGN FOP		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	4.987	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Note: k represents the number of explanatory variables in the model

Table 7. ARDL bounds test result for model B

Series: SVA EGN SGN FOP		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	4.678	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Note: k represents the number of explanatory variables in the model

From the result in Table 6, it was found that the computed F-statistic (4.987) is greater than the upper critical bound value (4.35) for model A (manufacturing value added model). Similarly, the result in Table 7 also revealed that the calculated F-statistic (4.678) exceeded the upper critical value (4.35) in model B (service value added model). Thus, it is established from these findings

that long run nexus exists among the variables in each of the models. Consequently, the null hypothesis of no long run relationship is rejected at 5 percent level.

Model Estimation and Diagnostics Tests

The short run and long run regression coefficients were estimated using the ARDL method. The results are reported in Tables 8 and 9.

Table 8. ARDL estimates for model A

Dependent Variable: MVA		ARDL process (1, 0, 0, 0)		
Short run estimates				
Regressor	Coefficient	Std. Error	t-Statistic	P-value
D(EGN)	0.0077	0.0183	0.424	0.675
D(SGN)	0.202	0.066	3.075	0.005
D(FOP)	-0.323	1.646	-0.196	0.846
CointEq(-1)	-0.145	0.073	-1.978	0.059
Long run estimates				
Regressor	Coefficient	Std. Error	t-Statistic	P-value
EGN	0.054	0.133	0.401	0.691
SGN	1.394	0.814	1.713	0.099
FOP	-2.229	11.766	-0.189	0.851
C	-23.717	16.949	-1.399	0.174
R-squared	0.816	Adjusted R-squared	0.788	
F-statistic	28.858	Prob.(F-stat.)	0.000	
Diagnostics tests				
Test type	Test Statistic	Value	P-value	
Breusch-Godfrey Serial Correlation LM Test	Chi-square	1.361	0.5065	
Heteroskedasticity Test (ARCH)	Chi-square	1.282	0.2576	

The results in Table 8 reveal that economic globalization has insignificant positive impact on manufacturing value added in both short and long run. This suggests that the proportions of trade, FDI and income accruable to foreign nationals are inadequate in driving the process of transformation in Nigeria. This also indicates that the extent of restrictions comprising tariffs, import barriers and capital account restrictions may be harmful to reallocation of economic activities from agriculture to manufacturing. More so, social globalization exerts positive impact on manufacturing value added in both short and long run at 5 and 10 percent levels respectively. Whilst the short run result shows that a unit increase in social globalization induces

0.202 increases in manufacturing value added, the long run estimate shows evidence of higher outcome as a unit increase in social integration enhances manufacturing value added by 1.394 percent. This finding is suggestive that the increasing flows of information, personal contact and cultural proximity are important in moving the Nigerian economy away traditional agriculture to modern economy driven by manufacturing. On the contrary, capital mobility has an insignificant negative impact on value addition in the manufacturing sector. In other words, the level of achievement in financial openness seems not to foster diversified and productive growth in manufacturing. The F-test for joint significant reveal that the economic and social globalizations as well as financial integration are collectively significant in explaining changes in manufacturing value added. The error correction estimate indicates that the dynamic short run model converges at a speed at 10 percent level with a speed 14.5 percent. The coefficient of multiple determinations reveals that 81.6 percent variations in manufacturing are explained by changes in the regressors. The diagnostics test results show that the residuals are uncorrelated and homoscedastic.

Table 9. ARDL estimates for model B

Dependent Variable: SVA				
ARDL Process (1, 0, 0, 0)				
Short run estimates				
Regressor	Coefficient	Std. Error	t-Statistic	Prob.
D(EGN)	0.118	0.103	1.155	0.258
D(SGN)	1.095	0.398	2.751	0.010
D(FOP)	1.464	3.499	0.418	0.679
CointEq(-1)	-0.162	0.073	-2.226	0.034
Long run estimates				
Regressor	Coefficient	Std. Error	t-Statistic	Prob.
EGN	0.732	0.562	1.302	0.204
SGN	6.749	2.574	2.623	0.014
FOP	9.023	20.908	0.432	0.669
C	-132.419	46.596	-2.842	0.009
R-squared	0.914	Adjusted R-squared	0.901	
F-statistic	68.97	Prob.(F-stat.)	0.000	
Diagnostics tests				
Test type	Test Statistic	Value	P-value	
Breusch-Godfrey Serial Correlation LM Test	Chi-square	4.061	0.131	
Heteroskedasticity Test (ARCH)	Chi-square	0.909	0.340	

The results in Table 9 show that economic globalization and capital mobility are insignificant in influencing changes in services value added while social globalization contributed positively to value addition in service sector. Although the regression estimates agree with the theoretical expectation, only the coefficient of social globalization satisfies the statistical criteria. However, the joint significant of the explanatory variables was established at 5 percent level, indicating that the underlying regressors are collectively important in explaining changes in services value added. The error correction coefficient (-0.162) indicates that any short run deviations in the system can be reconciled at a velocity of 16.2 percent. The model is properly fitted as evidenced in the R-squared (0.914), indicating that the explanatory variables jointly accounted for 91.4 percent changes in services value added. Both the serial correlation and heteroscedasticity tests results suggest that the hypotheses of uncorrelated residuals and homoscedasticity cannot be rejected at 5 percent level.

CONCLUSION AND RECOMMENDATIONS

This study empirically explored the nexus between globalization and structural transformation in Nigeria with emphasis on the net effects of economic and social globalization, and financial integration on manufacturing and services value added. The ARDL model served as the data analysis technique in this study. The results revealed that social globalization is significant in influencing structural transformation in both short run and long run. Although economic globalization is positively related to both manufacturing and services value added, its impact is statistically insignificant at 5 percent level. Similarly, financial integration does not significantly affect manufacturing and services value added. Owing to the findings, it is concluded that social globalization in the forms of information flow, cultural proximity and personal contact play important role in the process of structural transformation. Also, the nature and depth of economic globalization in Nigeria seem not to adequately foster structural transformation. The recommendations proffered based on the findings are:

1. Policy makers should ensure that the design and implementation of globalization policies in Nigeria demonstrate adequate sensitivity to the structural constraints prevalent in the economy in order to successfully shift economic activities towards productive and diversified investments in manufacturing and services.
2. Governments at all levels should sustain the progress already made in the aspects social globalization of the Nigerian economy to allow for increased information flows, improved personal contact and cultural proximity that aid the process of structural transformation.

3. The monetary authorities and other stakeholders in Nigerian financial system should renew interest on financial integration to allow for sufficient inflows of capital necessary for achieving the core targets of transformation.

Further studies should disaggregate economic and social globalization into their sub-indexes and include political globalization as part of the predictor variables in order to gain more specific insights into the implications of globalization in Nigeria.

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