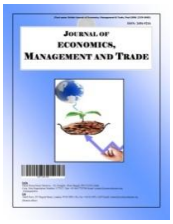

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Economic Globalisation and Economic Growth Dynamics in Nigeria

Nwofia, Chibueze Chinedu[1*] and Aworinde, Olalekan[1]

[1]Department of Economics, Veronica Adeleke School of Social Sciences, Babcock University, Ilishan Remo, Ogun State, Nigeria.

Authors' contributions

This work was carried out in collaboration between both authors. Author NCC designed the study, performed the statistical analysis, wrote the protocol, wrote the first draft of the manuscript and managed the literature searches. While author AO managed the analyses of the study. Both authors read and approved the final manuscript.

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ABSTRACT

Globalisation has been a topical issue both in the industrialized and developing nations of the world, this is not unconnected with the impacts it had on the attainment of macroeconomic objectives of these nations. This connotes that globalisation is crucial because it is typically affected by exogenous shocks such as political regime shifts, international conflicts or trade liberalization and unexpected changes to business condition. It is on this premise that the study examined the impact of globalisation on economic growth in Nigeria. This study adopted ex post facto research design. The data were obtained from the KOF globalisation index of Swiss economic institute and World development Indicator of World Bank for the period 1970-2017 for Nigeria representing a total of forty-eight observations. The documents were already exposed to the scrutiny of the appropriate regulatory agencies and the data were analyzed using descriptive and inferential statistics employing the time series techniques of asymmetric co-integration. The study found that economic globalisation had long-run asymmetric cointegrating effect on economic growth in Nigeria (ϕ = 11.965, R^2 =0.24, KOFECGI = 1.657, t- Stat = (46) = 3.784, $p<0.05$). The study further recommends that government policy should be designed in such way that it reduce overdependence on the highly industrialized economy, so as to avoid international shocks that might affect the economy negatively.

**Corresponding author: E-mail: chinedunwofia2@gmail.com;*

Keywords: Real Gross Domestic Product (GDP); economic globalization; social globalization; political globalization; asymmetric co-integration.

1. INTRODUCTION

Nigeria is the Sub Saharan Africa's largest economy and, its economic growth has been driven by growth in the agricultural, telecommunication, and service sectors. Despite its strong fundamental natural resources such as oil, which is one of the main sources of foreign exchange earnings and government revenue, the country has been hobbled by inadequate power supply, lack of infrastructure, delays in the passage of legislatives reforms, insecurity and corruption [1].

The World Bank Biannual report for 2018 [2] reveals that Nigeria still remains dependent on the oil sector which contributes about 10 per cent of the national Gross Domestic Product (GDP), and is the major source of foreign exchange earnings. The oil price shock of 2014 pushed the economy into recession and the country is slowly recovering from it. The World Bank annual economic update for [3] revealed that the real GDP grew by 1.9 percent in 2018, which was above 0.8 percent in 2017, and recorded that the non-oil sector was the main driver of growth in 2018. Despite this, the oil sector and the non-oil sector still remain relatively weak, nearly a quarter of the workforce in the economy was unemployed in 2018, and 20 percent were under employed, with 3.9 million net entrants into the labour force (now 90.5 million people) during 2018 (4.5 percent growth), yet there is still no growth in the stock of jobs.

There are several concerns about how globalisation can help improve economic growth. Ewubare, Brown and Promise-Keje [4] examined on the effect of globalisation and economic growth in Nigeria, their study revealed that globalisation has a positive effect on economic growth. According to Didigwu [5] growth is concerned with the measure of quantitative changes that has taken place over a period of time, which could be negative or positive. The greatest concern about globalisation is its integration of economic activities, which is believed to liberalize national economics by creating global market place for all nations aimed at increasing national economic growth, and international investment in different countries. The activities in the global economy have shown a challenging utilisation of opportunities presented by globalisation in most countries. Some authors support and identify the opportunity of globalisation, while some express fear about globalisation, the demonstrator's fears there could be a negative effect on economic growth.

Any adverse global shock in an interdependence world economy affects Nigeria. The programme mechanism of the oil glut of 1982, 1998 and even 2015 as recorded by Didigwu [5] brought decline in the import volume and change in the real price of commodities (oil). As a result of over-dependency on oil as the main source of income or foreign exchange earning the economy suffered from that global shock.

The effect of globalisation is the fear of uncertainty and volatility on capital formation and productivity growth with its negative consequence on economic growth. There is economic instability as a result of the tax on growth and prosperity recently. This problem of uncertainty is not from within but is externally generated and Nigeria does not have a good mechanism that can absorb the shocks.

According to Ude and Agodi [6], the advantages of globalisation for Nigeria lie in the capacity for wealth creation through export-led growth and the gains of expanded international trade of goods, services, and access to new products. Even though globalisation provided opportunities for development and growth, these opportunities are associated with serious problems that can be managed using appropriate fiscal policies. The macro-economic instability in Nigeria is as a result of globalisation. The fall in the price of crude oil, which is the major source of Nigeria revenue, affected the exchange rate and invariably, both federal and states budgets.

Although the political, cultural, social and economic aspects of globalisation are no doubt important, the economic aspect is perceived to be at the heart of the globalisation process [7]. Economic globalisation fosters the advancement of a global mentality and conjures the picture of a borderless world bringing growing tendency towards the universal homogenization of ideas, cultures, value and lifestyle through trade, banking, communication, and transport [8].

In the western world, globalisation is seen as a phenomenon which has positive effect on

developing nations, it allows for increase in productivity by comparative advantage. Olubukola [9] found that in spite of all these opportunities presented by globalisation, developing countries are still far from reaping its benefits. Also Ukpere [10] and Ajudua and Okonkwo [11] found that the progress of globalisation is practices of unfair rules in the global economy. Osabuohien [12] states that the progress of globalisation should not be limited only to the practices of unfair rules (policies) as pointed out by Ukpere [10] and Ajudua and Okonkwo [11], but rather the social impact of economic policies also affects the practice of globalisation in developing the economy. He also holds that the adverse effects of globalisation were sometimes strikingly similar in different parts of the world.

Ukpere [10] and Tamuno and Edoumiekumo [13] are of the view that there is still a high rate of unemployment in Africa, regardless of it's activates with other nations, and domestic industries are yet to expand. Cultural diversification has increased over the years resulting from globalisation, social activities have been found to be taken over by western way of life, technological enhancement adopted from the developed nations, world intervention on security issues, international policies, international funding, Nigeria is yet to achieve sustainable growth.

The main contribution of this study is to investigate if there is a long-run relationship between the variables of economic globalisation and real output, since macroeconomic variables are typically affected by exogenous shocks such as political regime shifts, international conflicts or trade liberalisation and unexpected changes to business condition. The variation between globalisation and real output is expected to be time-varying, therefore it is expected that this study should be able to examine the long-run relationship between economic globalisation and economic growth in Nigeria.

2. EMPIRICAL REVIEW

2.1 Theoretical Review

2.1.1 The growth theories

Growth theories originate from representatives of mercantilism (15th - 17th centuries). Mercantilists considered the accumulation of wealth as the main source of economic growth and the main purpose of economic activities of traders and the state [14]. While representatives of the early mercantilism preferred precious metals and coins, as absolute liquid materials, later mercantilists considered the economic power of the nation in terms of total amount of the goods produced and were in favor of a trade surplus.

According to the views of the mercantilists [15], the opportunities to profit from the production of goods and access to credit contribute to the multiplication of wealth. The presence of a sufficient amount of metallic money, particularly of gold and silver coins, provided the necessary access to credit facilities and relatively low interest rates on loans in the country. For this reason, early mercantilists insisted on restricting the export of gold from the country. Thus, the presence of gold and silver coins in circulation was elevated to a necessary fundamental principle of the economic growth, while active trading activity was seen as a prerequisite for such growth.

This approach can be considered as historical pattern, based on the simple fact that all the capital at that time was presented as trade capital, while there wasn't any significant amount of industrial capital yet. Based on the above position, the mercantilists welcomed the export of goods, as it is a source of metal money inflow into the country, and at the same time advocated for the restriction of imports of goods into the country. This policy was designed to ensure a trade surplus, a sufficient amount of metal money, and thus sustained economic growth [15]. In the second half of the 18^{th} century, physiocrats came to replace the mercantilists.

In the second half of the 18thcentury, physiocrats came to replace the mercantilists. Physiocracy (from the Greek for "Government of Nature") is an economic theory developed by a group of 18th century enlightened French economists, who believed that the wealth of nations was derived solely from the value of "land agriculture" or "land development" and that agricultural products should be highly priced. The most significant contribution of the Physiocrats was their emphasis on productive work as the source of national wealth. The Physiocratic school of economics was the first to see labor as the sole source of value.

However, for the Physiocrats, only agricultural labor created this value in the products of society. All "industrial" and non-agricultural labor

was "unproductive appendages" to agricultural labor [16]. Physiocrats considered the economic life as a natural process that has its own internal laws, and established the principle of "natural order." They opposed to state's intervention in economic processes [15].

2.1.2 Dependency theory

Dependency theory is a mixture of various theories, including world system theories, historical structure theory, and neo-Marxist theory. Collectively, these theories contrast modernization theory, an earlier theory of state development that ceded much of its explanatory ground during the 1960s through 1970s. the emphasizes of this theory was based on the role of external relationships in the development process, such that the relationship of the less industrialized economy, with the highly industrialized economies are viewed as a barrier to development in less developed economy. The theory holds that economic growth is controlled by exogenous factors.

The theory is focused more on individual nations, their role as suppliers of raw materials, cheap labor, and serves markets for expensive manufactured goods from industrialized countries. The unequal exchange relationship between developed and developing countries was viewed as contributing to poor economic growth, as a result of overspecialization in small number of commodities for export, the unchecked economic influence of external organizations, and political power wielded by local agents of capital, countries on the periphery of the global capitalist system continue to be characterized by high level of economic inequality, low level of democracy and stunted economic growth.

This theory can be seen as a critique based on the following question or problem; why do some countries become rich while others remain poor? The dependency theory believes that economic prosperity in particular countries, however, often resulted in deep problems in terms of underdevelopment. Dependency theory holds expected outcomes for peripheral countries; which are economically, the outcome of development is continued underdevelopment, socially. The outcome of inequality and conflict, and politically, the outcome is the reinforcement of authoritarian government. It is based on this theory that the model for this work is derived from and the model is well clearly specified and defined in Section 3.

2.2 Empirical Review

Review of recent empirical studies show quite an interesting scenario with various scholars viewing the impact of globalisation from different perspective. Onyeonoru [17] in his study adopted Engle and Grenger [18] to investigate the effect of globalisation and industrial performance, from 1970-1992, the objective of the study was aimed at verifying if globalisation projection was associated with a process of deindustrialization, the claim of the study was in line with the claims of World Bank as of then. The study found that the position of globalisation project which was aimed at economic transformation was rather associated with deindustrialization. The study used the Radical organization theory, the study selected the theory because of its usefulness for explaining the relationship between the economic crisis and macro socio economic element of globalisation. Similar studies was carried out by Tamuno and Edoumiekumo [13] which also revealed that globalisation has a positive impact on industrial sectors, nevertheless its effect on the short run was not accounted for. Meanwhile Onyeonoru [17] in line with Tamuno and Edoumiekumo [13] objective extended its analysis to check for the short run effect, the result was also in line with the previous finding with most authors. Nevertheless, this study filed to take into account other determinants that may contribute to industrial performance, such as economic structure of an economy (import and export) which has a significant effect on the operations of the domestic industries.

Globalisation and Employment Generation, in manufacturing sector was examined by Ogunrinola and Osabuohien [12] while adopting Autoregressive distributed lag (ARDL). The study covered the period of 1990-2006. The result of their analysis showed that several employment and globalisation related variables are positively influenced the manufacturing sector, nevertheless the need for efficient structural policy is needed to hence the performance of this sector in the global market. Pigka-Balanika, V. [19], carried out a similar study using a panel data from 10 developing countries and found globalisation induces labor in the manufacturing sector, nevertheless both of the studies did not take into account the effect of highly industrialized economy and how it affects the domestic manufacturing industries.

Alimi and Atanda [20] investigate the effect of globalisation on economic growth; from 1970-

2010, by reviewing the cyclical fluctuations in foreign investments. Autoregressive models was employed for the in the study. And the result from the analysis revealed that, trade integration as a proxy of globalisation has a significant, positive effect on real output growth as a measure of economic growth. This indicates that globalisation leads to a rise in trade, increases living standards, investment and more capital flows as well as facilitates technology transfer to some extent. It also recorded that the process has also led to an increase in inequality and poverty levels which have deteriorated the level of development. The finds of this result was not in line with the findings of Sede and Izilein [22], which was of the view that FDI, is a measure factor for economic growth during the period of study. Nevertheless Nwakanma and Ibe [21] still supports the finds from Alimi and Atanda (2011), but still believe that there is till need to improve the policy reform. Needless to that a counties growth could not be effectively measure, if limited to one proxy. Therefor the need to extend this study to include other factor not accounted for will beef up the findings.

The impact of globalisation on the Nigeria industrial sector was carried out by Tamuno and Edoumiekumo [13], their research adopted the index of industrial production as performance indicator of the Nigeria industrial sector and external debt, foreign direct investment (FDI), nominal exchange rate and degree of openness as proxy variable for globalisation, while gross fixe capital formation was used as a measure of domestic investment. The study adopted the ordinary least square statistical technique. Their study also adopted the product life cycle theory. Their study found that gross capital formation and degree of openness negates the countries priori expectations, also that the domestic investment is weak and unreliable. The findings of this study was not in line with Onyeonoru [17] which believes that the effect of globalisation as it relates to openness has improved the macro economic sectors of the economy. Olubukola [9] also adopted to does findings as it has a negative effect on small scale domestic firms. Nevertheless the study recommended that Nigeria should encourage the production of non-primary export commodities and formulate policies that would attract foreign direct investment.

Sede and Izilein [22] studied the impact of Economic growth and Globalisation, from the period of 1960-2010, while adopting time serials data, OLS estimation result revealed that the null hypothesis of globalisation not granger causing economic growth was not accepted. This in a way still confirms that negligent effect of globalisation in the Nigeria economy, and therefore calls for all necessary policy efforts at positioning the economy in a form that can make her maximize the advantages of globalisation. The variable adopted by Sade and Izilein [22], does not take into account FDI and trade openness which was adopted by Shuaib, Ekeria and Ogedengbe [23] to support a significant effect of globalisation. While Nwakanma and Ibe [21] has revealed in there study that indeed globalisation promotes economic growth, due the study of Nwakanma and Ibe [21] was more focused on trade openness. Nevertheless, actual effect of globalisation on the economy with respect to economic growth will need to be extended to various sectors that are necessary for economy growth and development.

Adeleke, Akinola and Chris [24] investigated globalisation and economic development. Adopting the co-integration technique and granger causality tests the result showed that FDI is a component of globalisation and had an important influence on the level of economic growth in Nigeria, from 1967-1997. In pervious study by Potrafke [25], also revealed that globalisation lad toeconomic development in developing countries, thus there proxy for masuring economic growth was centered on inequality, while Adeleke et al. [24] and was proxy on FDI.

Nwakama and Ibe [21] studied globalisation and economic growth in Nigeria. The study spanned the 1981–2012 period. Time series data was adopted, the stationary of the variables were tested using the Augmented Dickey-Fuller and Phillips Perron unit root tests. They were found to be integrated of order I. Hence, the null hypotheses of having a unit root were rejected and all the series were used in our co-integration test after first difference. The variables used in the model were GDP, Financial integration, human resource development and trade openness. The co-integration test revealed that there is insignificant relationship between financial integration, human resource development and trade openness, while Gross fixed Capital Formation had a negative and insignificant impact on trade openness. Likewise, Shuaib, Ekeria, and Ogedengbe [23], adopted the same methodology and revealed that there is a significant relationship on economic growth.

The findings of this study is in line with Chioma and Anokwuru [26] view, though they believed that more still needs to be done to ensure that the full benefits of globalisation are fully utilized in Nigeria economy. Which has been supported by Alimi and Atanda [20], Shuaib Ekeria, and Ogedengbe [23] that trade integration resulting from trade openness promotes economic growth.

The impact of globalisation on economic growth in Nigeria was the focus of the study by Shuaib, Ekeria and Ogedengbe [23]. The study covered from 1960-201, ordinary least squares (OLS) was used. The result showed that globalisation had a significant impact on economic growth in Nigeria. A similar analysis carried out was focused on industrial sector in 2011 by Tamuno, and Edoumiekumo, revealed that gross capital formation and degree of openness negates the countries priori expectations, also the domestic investment is weak and unreliable, likewise Ogunrinola, and Osaduola [27], was of the view that manufacturing sectors has shown a progressive turn over, resulting from the activate in the global market. Meanwhile, the effect on small scale sectors wasn't taken into consideration, from does studies.

Chioma and Anokwuru [26] examines the effect of globalisation on economic growth, for the period 1981-2016. Also the study investigates the relationship between Imports, Exports, Foreign Direct Investment and Gross Domestic Product. The findings suggests that Foreign Direct Investment is ineffective in driving actual growth in Nigeria, The findings of this paper indicate that Nigeria is not yet enjoying the full benefits of Globalisation. Thus the Nigeria authorities should formulate and implement policies that will reduce the level of import into the country and also undertake policy measures and reforms as well as providing sound macroeconomic policies, that will create a more stable and conducive environment for investment and the expansion of economic activity to strive ensuring e that Foreign Direct Investment impacts positively on Economic Growth. In developed countries [28], revealed that the process of globalisation has seems to have affected SSA countries with respect to equality. Nevertheless the study of Chioma, and Anokwuru [26], omitted some important variable which is important variables to consider for economic growth. Thus this study will take that into consideration.

Nwokah, and Adiele [29], assessed the socio-economic impact of globalisation, by comparing its impact in both the public, and private sector. Their study adopted a survey method through the use of close-ended questioner and a total number of 233 staff from each sector. The study found skill development, commitment to and positive work attitude as major area globalisation has impacted socio-economic development in Nigeria public and private sectors. Statistical evidence from this paper shows significant differences in the socio-economic impacts of globalisation Nigeria private and public sectors were identified, with the private sector being more committed than Nigeria public sector. Also, [30] in a similar study, is revealed that the impact of globalisation is numerous.

3. ECONOMIC GLOBALISATION INDEX

Economic globalization index was captured using KOF globalization index of Swiss Economic Institute, which measures the economic, social and political dimensions of globalization for every country in the world, the index was introduced by Dreher [31] and updated in 2008. The second revision of the index distinguishes between de factco and de jure measures along the economic dimension of globalization. Thus economic globaisation refers to policies that facilitate and promote trade flow among countries. It is measured using following variables such as: Trade regulation which includes the average of two subcomponents which are the prevalence of non-tariff trade barriers and compliance costs of exporting, trade taxes which measure the income of taxes on international trade as a share of total income in a country, tariff rates which refer to the unweight mean of tariff rates. It is important to note that the variables trade regulation, trade taxes, and tariff rates are calculated as the inverse of the normalized values such that higher values relate to a higher level of de jure trade globalisation, free trade agreements which refer to the stock of multilateral and bilateral free trade agreements.

Discussions on globalisation usually culminate with an understanding that it is about an increasing integration of economic activates. Osabuohien [12] certainly the world is one market in the sense that goods and services produced in one country can be sold in all other countries subject to government-imposed trade barriers, transport and transaction cost. It has led to an increasing global culture in which people consume similar goods and services, and use a common language of business, also it has led to increased openness of national economies to

international trade, financial flows, and foreign direct investment (FDI).

The institution that develops and organises the rules of engagement in international trade is the World Trade Organisation (WTO). It was established on January 1, 1995, as the successor to the General Agreements on Tariffs and Trade (GATT) as an outcome of the Uruguay Round (1986–1994). Nigeria signed the GATT Agreements in 1960 and joined the WTO in 1995. The objectives of the WTO are to set and enforce rules of international trade; provide a forum for negotiating and monitoring further trade liberalisation; handle disputes that arise as a result of trade engagements; increase transparency of decision-making processes; and cooperate with other major international organisations in the process of creating a borderless world with the aim of driving growth and development among member nations.

As a signatory to the GATT agreement, the government of Nigeria agreed to abide by the rules governing international trade in a manner that enabled trade flows while it retained the responsibility to protect its national economic space. The enablers of trade as prescribed by GATT and WTO were tariff and nontariff barrier reductions. One of the underlying justifications for trade liberalisation was that it held the potential of ensuring growth and development. In more recent debates, there are disagreements about whether nations that have been members of the WTO have experienced improvements in their economic development indicators.

As shown in the graph above, economic index of globalisation takes into policies that facilitate and promote trade flows for De jure, while De facto measures globalisation using export and import of goods and services, both measured as a share of GDP. KOF economic globisation index (KOFECGI) in Fig. 1 was at 53.5 at the second quintile, which marks the height rise of KOFECGI, while a decline was recorded at the rate of 40.7 still at the second Quintile, there is a sluggish rise at the third (3rd) quintile. Thus Economic Globalisation recorded the highest increase at the second, nevertheless it is a low level of KOFECGI recorded on the third quintile, while Real Gross Domestic Product (RGDP) increases overtime.

4. METHODOLOGY

To examine the probability of non-linearity between globalisation and economic growth, the study uses the Enders and Skilos [32] asymmetric co-integration methodology which is based on the Engle-Granger [18] two stage co-integration procedure. A linear relationship between globalisation and economic growth can be tested using the Engle and Granger [18] methodology by estimating a lung-run equilibrium relationship of the form;

$$LRGDP_{t=} \propto_0 + \propto_1 KOFECGI_t + \epsilon_t \quad (3.1)$$

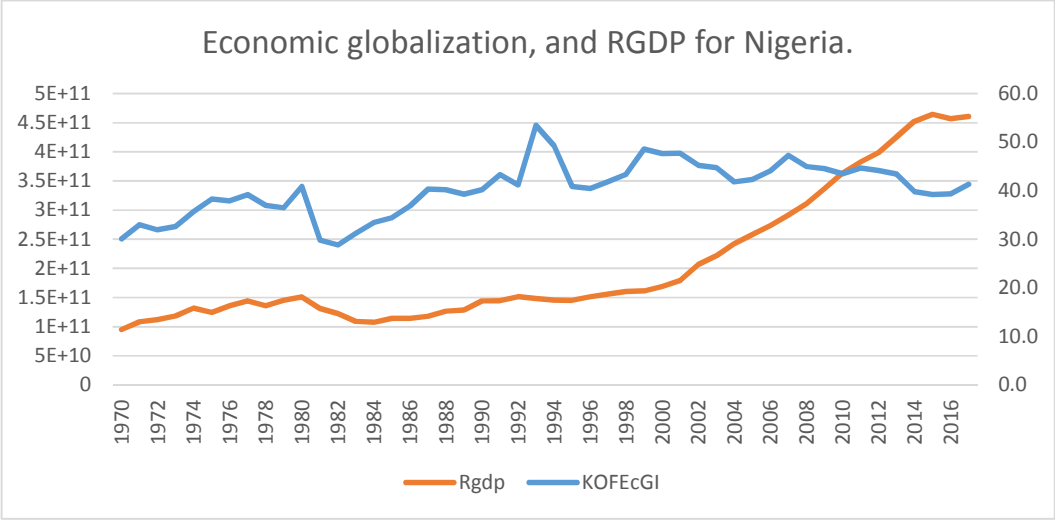

Fig. 1. Source: KOF index, and World indicator, 1970-2017
Source: Author's Computation, 2020

From the equations above L$RGDP_t$ is the real GDP, while KOF $EOGI_t$, represent economic globalisation index $\propto_0 \propto_1$are parameters, $\in_t$ is the stochastic error term. After, performing the long-run linear regression from the equations (3.1), the next test is to perform the unit root test on the residual series $\in_t$ which might be serially correlated. The standard Dickey and Fuller [31]

$$\Delta \in_t = p \in_{t-1} + \mathrm{V}_t \quad (3.2)$$

Where $\{\in_t\}$ contains the regression residuals from equations (3.1) and assumed to be purely white noise with a zero mean and a constant variance and V_t is an independent and identically distributed disturbance with zero mean. If the null hypothesis **ρ** = 0 can be rejected then $\{\in_t\}$ is stationary. The model assume a symmetric adjustment process. According to equation (3.2), the change in $\in_t$ is p_{t-1} regardless of whether $\in_{t-1}$ is positive or negative. But, if the macro factors from globalisation are asymmetric, the equation (4.3) is mis-specified. Enders and Siklos propose two test of asymmetries; a threshold autoregressive (TAR) model and momentum- threshold Autoregressive (M-TAR) model. Following Enders and Siklos [34] two different hypotheses can be tested.

The first hypothesis is KOFECGI, have a positive effect on economic growth (LRGDP), when they are temporarily above $\in_t \geq 0$, than when they are below the $\in_t < 0$. The first hypothesis is best tested with the use of threshold autoregressive (TAR) model modification of the Engle and Granger [18] test given as;

$$\Delta \in_t = I\mathcal{P}_1 \in_{t-1} + (1 - I_t) P_2 \in_{t-1} + \mathrm{V}_t \quad (3.3)$$

Where I_t is the Heaviside indicator such that

$$I_t = \begin{Bmatrix} 1 \; if \; \in_{t-1} + \geq \tau \\ 0 \; if \; \in_{t-1} < \tau \end{Bmatrix} \quad (3.4)$$

Where τ is the value of threshold and it is endogenously determined using the Chan [35] method. The Chan method arrange the values, $(\in_t)$ and $(\Delta \in_t)$ for the TAR and the M- TAR model respectively in ascending order and excludes the smallest and the largest 15% and τ is the consistent estimate which yields the smallest residual sum of squares over the remaining 70%.

The second hypothesis examines where economic growth is corrected instantaneously with global changes when the factors increases relative to $\in_t \geq 0$, than when they decrease relative to the $\in_{t-1} < 0$. The second hypothesis is tested using the M-TAR model of Enders and Siklos [34] which is of the from;

$$\Delta \in_t = M_t \mathcal{P}_1 \in_{t-1} + (1 - M_t) P_2 \in_{t-1} + \mathrm{V}_t \quad (3.5)$$

Where M_t is the Heaviside indicator function of the form;

$$M_t = \begin{Bmatrix} 1 \; if \; \Delta \in_{t-1} + \geq \tau \\ 0 \; if \; \Delta \in_{t-1} < \tau \end{Bmatrix} \quad (3.6)$$

As stated by Petrucelli and Woolford [36] the necessary condition for the stationary of $\in_t$ are that $p_1 < 0, p_1 < 0 \; and m \; (1 + p_1)(1 + p_2) < 1$. If $\in_{t-1}$ is above the long- run equilibrium value, then adjustment is at the rate p_2. Adjustment is symmetric if $p_1 = p_2$. If the null hypothesis Ho ; $(p_1 = p_2)$ is rejected then using the TAR model we can capture signs of asymmetry. The M-TAR model is useful when the adjustment exhibits more momentum in one direction than other, that is the speed of adjustment depend on whether $\Delta \in_{t-i}$ is increasing or decreasing. If $/p_1/ < /p_2/$, then an increase in $\Delta \in_{t-i}$ tend to persist, whereas decreases revert to the threshold quickly.

Enders and Siklos [34] propose to test the two set of test using the null hypothesis Ho: $p_1 = p_2$ for both the TAR and M- TAR model. Where, the F-statistic does not follow a standard distribution it is compared with the ϕ_u for the M-TAR model table ϕ_u^* table for the M-TAR model computed through Monte Carlo simulation by Ender and Siklos [34]. If the null hypothesis is rejected, that is if co- integration is established it is possible to test for asymmetric adjustment. The F-statistic for the null hypothesis of symmetric adjustment is Ho: $p_1 = p_2$, and this is compared to the standard F- distribution. Since there is no presumption whether to use TAR or M-TAR model, the recommendation is to use the AIC or SBC to select the best adjustment mechanism.

If the errors in equations 3.3 and 3.5 are serially correlated, the equation could be replaced by the following equation.

$$\Delta \in_t = I_t \mathcal{P}_1 \in_{t-1} + (1 - I_t) P_2 \in_{t-i} + \sum_{i=i}^{p} \beta_i \in_{t-i} + \mathrm{V}_t \quad (3.7)$$

$$\Delta \in_t = M_t \mathcal{P}_1 \in_{t-1} + (1 - M_t) P_2 \in_{t-i} + \sum_{i=i}^{p} \mathrm{Y}_i \Delta \in_{t-i} + \mathrm{V}_t \quad (3.8)$$

Equation 4.1 is for the TAR model and equation 4.11 is the M-TAR model. If co-integration is established, the asymmetric version of the error correction model (ECM) is given as the followings.

$$\Delta \mathrm{LRGDP}_{t=} P_{11} I_t \in_{t-1} + P_{12}(1 - I_t) \in_{t-1} + \sum_{i=1}^{p} \delta_k \Delta KOF\mathrm{ECGI}_{t-1} + \sum_{i=1}^{p} \square_k \Delta \mathrm{LRGDP}_{t-1} + \mathrm{V}_{1t} \quad (3.9)$$

$$\Delta \mathrm{LRGDP}_{t=} P_{11} M_t \in_{t-1} + P_{12}(1 - M_t) \in_{t-1} + \sum_{i=1}^{p} \delta_k \Delta \mathrm{KOFECGI}_{t-i} + \sum_{i=1}^{p} \square_k \Delta \mathrm{LRGDP}_{t-i} + \mathrm{V}_{1t} \quad (3.10)$$

Equations (3.9) is the TAR models while equations (3.10) represent the M-TAR model and they describe the dynamic relationship between economic globalisation and economic growth, by examining the speed of adjustments back to equilibrium. The parameters p_{it} represent the error correction coefficients.

It is expedient to state clearly the major reason for the choice of Enders and Siklos [34] asymmetric co-integration test in this study while others have used different econometric approach such as ordinary least square, vector autoregressive model in examining the relationship between globalisation and economic growth in Nigeria, there is no study to the best of our knowledge that have examined this effect using asymmetric co-integration.

5. EMPIRICAL RESULTS AND DISCUSSION

The objective here is to present the analytical procedure, methods, result and the discussion of findings. The study adopted the RAT's software for the analysis, while the date for the study was gotten from World Bank Development Indicator, and the KOF globalisation Index. Emphasis on this study was based on the Agumented Dickey-Fuller (ADF) and the Phillip-Perron (PP) unit root test, as well as the Lee and Strazicich [37] two break test. Before the study engaged in the required analysis, it found it essential to know the time series properties of the data set.

i. Step 1: We perform two standard unit root tests, namely the augmented Dickey Fuller (ADF, 1979) and the Phillips and Perron [38] on each series. However, because the ADF and PP fail to account for structural breaks. Thus, we use the Lee and Strazicich [37] unit root test with two unknown breaks.
ii. Step 2: We proceed by examining the long-run relationship between economic globalisation and economic growth only if the individual series are found to be non-stationary I(1), using the Engle-Granger residual based test of co-integration.
iii. Step 3: We utilize the threshold autoregressive (TAR) and momentum threshold autoregressive (MTAR) models of Enders and Siklos [34] as there could be some asymmetries in the adjustment process towards the long-run equilibrium.
iv. Step 4: If TAR and MTAR co-integration is found we estimate the threshold VECM.

5.1 Descriptive Statistics

The descriptive statistics were carried out to describe the variables used in the study and the data are from 1970-2017 for Nigeria. The result of the descriptive statistics is presented in Table 1.

Table 1. Descriptive statistics result

	KOFECGI	LRGDP
Mean	40.3316	25.9264
Median	40.6551	25.7327
Maximum	53.489	26.8638
Minimum	28.8298	25.2791
Std. Dev.	5.50219	0.4793
Skewness	-0.1777	0.79403
Kurtosis	2.73081	2.23596
Jarque-Bera	0.39756	6.21137
Probability	0.81973	0.04479
Sum	1935.92	1244.47
Sum Sq. Dev.	1422.88	10.7974
Observations	48	48

Source: Author's Computation, 2020

The mean value of the descriptive result simply show the average value for each of the variables. economic globalisation index (KOFECGI), mean values stood at 40.332 per cent, while log of RGDP at 25.733 per cent.

The highest and low values for the variables was represented in the maximum and minimum value revealed that the KOFECGI, maximum value stood at 53.489 per cent and the minimum value at 28.829 per cent, while LRGDP is at 26.863 for the maximum value, and 25.279 for the minimum value.

The sample mean deviation from the variables was captured in the standerd deviation, which is recorded as follows. KOFECGI has a standerd deviation of 5.502, while RGDP has a standerd deviation of 0.479.

The skewness measures the degree of asymmetry of the series and the result shows that KOFECGI is negatively skewed, which implies that the distribution will have a long left tail, lesser than the sample mean, while LRGDP are positively skewed which also implies that the distributions will have a long right tail, this means that there are higher values than the sample mean.

Kurtosis this measures the peakness or flatness of the distribution of the series. The kurtosis value of the distribution shows that although the variables mirrors normal distribution; it is clearly platykurtic; this because 2.731 and 2.236 < 3. This implies that the series will have a lower value below the sample mean.

Jarque-Bera this is the test statistic that measures the difference of the skewness and the kurtosis of the series with those from the normal distribution.

Probability it is the probability that a jarque-Bera statistic exceeds (in above value) the observed value under the null hypothesis; a small probability value leads to the rejection of the null hypothesis of a normal distribution. Therefore from the result of the probability, it reviles that political, and economic globalisation index are normally distributed, this is because KOFECGI is greater than 5% level of significant. Therefore we do not reject the null hypothesis, which implies that the distributions are normally distributed. While for real gross domestic product, the values are less than 0.05 (5%) level of significant, therefore we do not accept the null hypothesis. This implies that the distributions is not a normal distribution.

5.2 Unit Root Test

The Augmented Dickey-Fuller and Phillips Perron (PP) unit root test are reported in Table 2; shows that the real GDP (RGDP), economic globalisation index (KOFECGI), where not statistically significant at levels (i.e the series were not integrated of order 0) for both ADF test statistics and PP test. However after taking the first difference the variables became statistically significant (i.e. the series were integrated of order 1). This therefore shows that the variables were non-stationary but it became stationary after taking the first difference.

5.3 Structural Break Test

One of the main concerns in this study is the implications of structural breaks on unit roots. Given the inability of standard ADF and PP to capture the impact of structural break, to circumvent this, the LM [39] two breaks test which has greater or comparable power to the lumsdaine and peapell test was used and the result is presented in Table 3, the result revealed that real gross domestic product, economic globalisation index and cultural globalisation index was not significant at levels, while social globalisation index, and political globalisation index where significant at levels, while the real gross domestic product, economic globalisation index, and cultural globalisation index were significant in their first differences.

Table 2. Unit root test (1970-2017)

Variables	ADF	PP	Remarks
KOFECGI	-2.909	-2.909	
ΔLKOFECGI	-7.398***	-8.412***	I(1)
LRGDP	-1.220	-1.079	
ΔLRGDP	-5.109***	-5.266***	I(1)

Source: Author's Computation, 2020

*Note: ADF = Augmented Dickey Fuller test, PP = Philip- Perron test, 1(1) indicates significant at first difference. *, **, *** indicates significant at 10, 5, and 1 percent (%) respectively*

Table 3. Structural break test (1970-2017)

Variable	Statistics	Break Dates	Critical values
LRGDP	-4.410	1988, 2007	0.4, 0.8 (-6.42, -5.65, -5.32)
ΔLRGDP	-5.740**	1985, 2000	0.4, 0.8 (-6.42, -5.65, -5.32)
KOFECGI	-5.071	1980, 1990	0.2, 0.4 (-6.41, -5.74, -5.32)
ΔLKOFECGI	-7.763***	1982, 1990	0.2, 0.4 (-6.41, -5.74, -5.32)

Source: Author's Computation, 2020

5.4 Timing of the Break Dates

From the result gotten from our test of structural break, the study observed that structural break occurred in the data, from 1988, 1985, 1980, and 1982, furthermore, in 2007, 2000, and1990, respectively. Thus the laugh of the Structural Adjustment Programme (SAP) in the 1986 mark a structural break in Nigeria Economy. Specifically, the programme lade to a large shift of export promotion strategy and attempts to provide the enabling environment to attract foreign investment. In the manufacturing sector, while the basic objective of the programme was to restructure and diversify the production base of the economy, increase capacity utilization, streamlining the admiration of import licensing by involving the manufactures themselves, and so on. The fixed exchange rate regime adopted since independence was replaced by floating exchange rate after the devaluation of Nigeria Naira in 1986. In the 1987, government amended rate so that there a now market determined. The 1987 revised traffic policy was replaced by 198-1994 tariff policy to bring a measure the stability, consistency, and predictability.

The bank of industry (BOI) was introduced in 2000 with the aim of accelerating industrial development through the provision of term loans, equity fiancé and technical assistance to industrial enterprises, thereby ensuring industrial diffusion and promote of indigenous entrepreneurship and employment. Also the small and medium industries equity investment scheme (SMIEIS) was introduced. However, these policies have generally been of limited impact as heavy reliance on oil export hindered the sustainability of the growth of manufacturing output and its share in GDP generally declined between the 1990s and 2000s, firms lacked the capability to export competitively and became less efficient, causing the migration of more competitive firms out of the country while the contribution of the manufacturing industry to GDP and its share of total employment declined despite all the strategies earlier adopted. These trends are consistent with a large body of literature that point to the potentials problems arising from rich natural resource base, where the economy's incentives are biased in favors of natural resource exploitation at the expense of manufacturing a phenomena known as neutral resource curse on Ditch disease.

As shown in the Tables 2 and 3, the null hypothesis of non-stationary for both economic globalisation and economic growth at levels cannot be rejected, but were stationary in their first differences. The results show that economic globalisation and economic growth follows a unit root process, thus gives way for testing for possible long-run co-integrating relationship among the variables. Thus, the Engle-Granger [18] cointegrating equation is estimated.

The Engle-Granger co-integration test in Table 4, rejects the null hypothesis of no co-integration at the 1 per cent level of significance. In addition, the regression equation denotes that there is positive relationship between economic globalisation and economic growth, which implies that a unit increase in economic globalisation will lead to 1.657 increases in economic growth. The Engle-Granger test assumes a symmetric adjustment process around the economic growth disequilibrium, but if economic globalisation and economic growth adjustments in response to growth disequilibrium are asymmetric, then equation (4.5) is mis-specified. In view of the possibility of an asymmetric adjustment process, the threshold autoregressive (TAR) and momentum-threshold autoregressive (M-TAR) models of Enders and Siklos [34] are examined.

Table 5 reports the asymmetric co-integration tests. In the second column of Table 5, we fail to reject the null of no co-integration for the TAR model because the *F*-statistic of 4.34 is less than the critical value of 7.25, at the 5 per cent significance level. However, the study rejects the null of symmetric conitegration under the TAR model, at the 5 per cent significance level. Column three of Table 5 reports the MTAR model. Here, the null of no co-integration was rejected, because the *F*-statistic of 11.965 is

greater than the critical value of 8.06, at the 5 per cent significance level. The null of symmetric co-integration was also rejected at the 5 per cent level of significance.

Given that $|p_1|$ is stationary and that $|p_1| < |p_2|$ in the MTAR model, the speed of adjustment is faster when the economic growth is worsening that when the economic growth is improving.

Since co-integration isestablished between economic globalisation and economic growth as well as evidence of asymmetric adjustment under the MTAR model, then the asymmetric version of the error correction model (ECM) is estimated and presented in Table 6 In the short-run there is evidence that economic globalisation responds economic growth. The results show that economic globalisation responds to both an improving growth (p_{11}=|0.421|) and a worsening growth (p_{12} =|0.328|). This result further confirms the speed of adjustment results for the MTAR model reported in Table 5.

The study rejects the null hypothesis that economic globalisation has no significant effect on economic growth in Nigeria, using the asymmetric co-integration results reported in Table 5, where the *F*-statistic of 11.965 is greater than the critical value of 8.06, at the 5 per cent significance level. Thus, the study accept the alternative hypothesis that economic globalisation has significant effect on economic growth in Nigeria. This was in line with the finding of Kazeem, Raheem and Simpice (2018), which holds that globalisation has a significant effect on dollarization in developed nation, also the findings of Chang, Lee and Hsieh (2015) also holds that globalisation promotes real output, their study support that globalisation has a significant relationship between globalisation and economic growth, while Dreher (2005) believes that globalisation has a negative effect of Leeways economy such that its effect on tax policy is undetermined. In Nigeria this finding was in line with the findings of Nwakanma and Ibe [21] and Okey [40], while Nwakanma and Ibe

Table 4. Long run estimates for economic globalisation and economic growth

Variable	Coeff	SE	T-test	Prob	ADF
Constant	8.606	0.702	12.679	0.000	-5.270***
KOFECGI	1.657	0.438	3.785	0.000	

Source: Author's Computation, 2020

RGDP= 8.606+1.657 KOFECGI

Table 5. Estimates for economic globalisation and economic growth asymmetric co integration

Parameters	TAR consistent	MTAR consistent
p1	0.065 (1.094)	0.321 (6.698)***
p2	-0.267 (-2.947)***	-0.372 (-2.368)**
Tests		
Ho:F(p1=p2=0)	4.339	11.965
Ho:F(p1=p2)	8.594	10.848
Threshold	-0.114	-0.049
AIC	-81.698	-79.18
Ho:No serial correlation	1.023 (0.906)	1.192 (0.879)

Source: Author's Computation, 2020

*Note: Results are from the estimation of Eqs. (4.10) and (4.11) for economic globalisation and economic growth and critical values were from Wane et al. (2004). ***, ** and * denote significance at the 1, 5 and 10 per cent levels, respectively*

Table 6. Asymmetric error correction model for economic globalisation and economic growth

Variable	Coefficient	Std. error	t-Statistic	Prob.
C	1.006	0.022	45.916	0.000
DKOFECGI	0.302	0.101	2.985	0.005
DKOFECGI(-1)	-0.001	0.001	-0.558	0.580
DKOFECGI(-2)	0.002	0.001	1.111	0.273
P_{11}	-0.421	0.121	-3.473	0.000
P_{12}	-0.328	0.119	-2.751	0.009

Source: Author's Computation, 2020

believes that globalisation has a positive impact on financial integration, human resource development and trade openness, but negative and insignificant relationship with financial integration.

6. CONCLUSION

The objective of this study was to empirically examine the impact of globalisation on economic growth in Nigeria from 1987 to 2017, while the specific objective of this study was to examine the trend of economic, social, political and cultural globalisation on economic growth in Nigeria.

The study acknowledged several studies in line with the objective of this study. The study found several gaps among those literature, among which were; the scope of those studies, the use of a proxy such as; trade openness, manufacturing performance, and foreign direct investment" to measure the effect of globalisation on economic growth in Nigeria. However this study found the need to extend the existing literatures; while taking the impact of economic, social, political and cultural globalisation on economic growth, using data from KOF Index. Secondly, the study adopted the asymmetric cointgration analysis in other to determine the structural breaks in these models, which was carried out using the RAT's analysis.

In other to achieve the objectives, the study carried out a descriptive statistics to determine the quality of the variables, the unit root test was conducted to determine the stationarity of the variable as well as the order of integration. The result revealed that all the variables were significant at order one. The study also examined for the presence of structural breaks using the Lee and Strazicich [37] two break test. The asymmetric coingreation of Engle and Granger fond that long run exist for the variables, the TAR model, and the MTAR model were considered for the study, the M-TAR model established co-integration between the variables of economic globalisation, which implies that in the short run the variables response to economic growth. In other words economic, social, political, and cultural globalisation response to improving economic growth.

From the findings of the study, the study concludes that economic globalisation has significant effect on economic growth in Nigeria, yet in reality we still struggle to achieve sustainable growth in Nigeria. The study further recommends that government policy should be designed in such way that it reduce overdependence on the highly industrialized economy, so as to avoid international shocks that might affect the economy negatively. Finally this study suggests that further studies should determine the impact of globalisation in developing countries, mostly in Africa, while adopting similar methodology and variables.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Akeju, Olanipekun Unemployment and economic growth in Nigeria. Journal of Economics and Sustainable Development. 2014;5(4):138-144.
2. World Bank. The World Bank Annual Report 2018 (English). Washington, D.C.; 2018.
3. World Bank. Nigeria biannual economic update. Supply, Sanitation and Hygiene- A wake up call; 2019.
4. Ewubare DB, Promise-Keje B. Effect of globalisation on economic development in Nigeria. Journal of Research in Agriculture and Animal Science. 2018;5(2):23-31.
5. Didigwu Aygustus US. The effect of globalisation on Nigeria youths and the economy. International Journal of Environment and Pollution Research. 2015;3(5):9-16.
6. Ude DK, Agodi JE. Does trade openness make sense? Investigation of Nigeria trade policy. African Journal of Business Management. 2015;4(4):6-21.
7. Obadan M. Globalisation: Concepts, opportunities and challenges for Nigeria development; 2010.
8. Adeleke O. Akinola, Chris I. Globalisation and economic development in Nigeria. Journal of Research in Humanities and Social Sciences. 2013;1(4):06-14.
9. Olubukola S. Adesina. The negative impact of globalisation on Nigeria. International Journal of Humanities and Social Science. 2012;2(15):193-201.
10. Ukpere W. Globalisation and unemployment, income inequality and poverty in Africa. African Journal of Business Management. 2011;5(15):6072-6084.

11. Ajudua O, Okonkwo N. Empirical review of globalisation and Nigerian economic performance. European Journal of Business and Management. 2014;6(33):36-45.
12. Osabuohien E. Globalisation, government and economic growth in West Africa: The case of Cote D'Ivoire and Nigeria. Journal of Economic Thought. 2007;2(1):1-18.
13. Tamuno S, Edoumiekumo G. Industrialization and trade globalisation: What hope for Nigeria? An African Journal of Philosopy. 2012;13(2).
14. McDermott J. Mercantilism and modern growth. Journal of Economic Growth. 1999;4(1):55-80.
15. Osipian A. Economic growth: Education as a factor of production. KEHI Press, Kramatorsk; 2007.
16. Marx K. Theories of surplus value. Amherst, Prometheus Books, N.Y.; 2000.
17. Onyeonoru Ifeanyi. Globalisation and industrial performance in Nigeria. Africa Development. 2003;28(3):36-66.
18. Engle Robert F, Clive W. J. Granger. Co-integration and error correction: Representation, estimation and testing. Econometrica. 1987;55(2):25176.
19. Pigka-Balanika V. The impact of trade openness on economic growth in developing countries. Research Journal of Finance and Accounting. 2013;7(10):2222-1697.
20. Alimi Y, Atanda A. Globalisation, business cycle and economic growth in Nigeria. African Journal of Scientific Research. 2011;7(1):344-357.
21. Nwakanma PC, Ibe RC. Globalisation and economic growth. An econometric dimension drawing evidence from Nigeria. International Review of Management and Business Resarch. 2014;3(2):771-778.
22. Sede I. Peter and Izilein I. Elizabeth. Economic growth and globalisation in Nigeria: A causality analysis. Asian African Journal of Economic and Econometrics. 2013;13(2):145-159.
23. Shuaib IM, Ekeria OA, Ogedengbe AF. The impact of globalisation on the growth of Nigerian error correction model analysis. British Journal of Economics, Management and Trade. 2015;7(1):63-73.
24. Adeleke O. Akinola, Chris I. Globalisation and economic development in Nigeria. Journal of Research in Humanities and Social Sciences. 2013;1(4):06-14.
25. Potrafke N. Impact of globalisation and labor market institutions. Ifo Institute - Leibniz Institute for Economic Research at the University of Munich. 2013;154.
26. Chioma C, Anokwuru G. Economic globalisation and growth of the Nigerian economy. International Journal of Economics and Business Management. 2018;4(2):51-60.
27. Ogunrinola IO, Osabuohien SC. Globalisation and employment generation in Nigeria's manufacturing. European Journal of Social Sciences. 2010;12(4):581-593.
28. Baliamoune-lutz M. Globalisation and gender inequality: Is Africa different? Journal of African Economies. 2006;16(2):301-348.
29. Nwokah Gladson, Adiele Kenneth. The socio-economic impact of globalisation in Nigeria. Journal of Economic and Sustainable Development. 2015;6(10):238-242.
30. Dreher A. Does globalisation affect growth? Evidence from a new index of globalisation. Applied Economics. 2005;38(10):1091-1110.
31. Dreher A. The influence of globalisation on taxes and social policy. European Jouranl of Political Economy. 2006;22(1):179-201.
32. Enders Walter, Pierre L. Siklos. Co-integration and threshold adjustment. Journal of Business & Economic Statistics. 2001;19(2):166-76.
33. Dickey D, Fuller WA. Distribution of the estimators for autoregressive time series with a unit root. Journal of the American Statistical Association. 1979;74:427-431.
34. Enders W, Siklos Pierre L. Co-intergation and threshold adjustment. Journal of Business & Economic Statistics. 2001;19(2):166-76.
35. Chan KS. Consistency and limiting distribution of the least squares estimator of a threshold autoregressive model. The Annals of Statistics. 1993;21:520-533.
36. Petrucelli J, Woolford S. A threshold AR(1) model. Journal of Applied Probability. 1984;21:270-286.
37. Lee Junsoo, Mark C. Strazicich. Minimum lagrange multiplier unit root test with two structural breaks. The Review of Economics and Statistics. 2003;85(4):1082-1089.
38. Phillips P, Perron P. Testing for a unit root in time series regression. Biometrica. 1988;75:335-346.

39. Lee J, Stazicich M. Minimum lagrange multiplier unit root test with two structural breaks. The Review of Economics and Statistics. 2003;85(4): 1082-1089.

40. Okey O. Does globalisation contribute to economic growth in developing countries? Some empirical lessons from Nigeria. Global Journal of Social Sciences. 2005;5(2):37-42.

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