

# External Financing Inflow, Growth, and Trade in the Gambia and Nigeria

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**Abstract** This paper examined the dynamic impact of external financing inflows on growth and trade in The Gambia and Nigeria. External Financing Inflow is proxy by Foreign Direct Investment Inflow (FDII), Official Development Assistance Inflow (ODAI), and Inflow loans from World Bank (IBRDI). Similarly, growth is proxy by Real Gross Domestic Product (RGDP), and trade is decomposed into trade percentage of Gross Domestic Product (TRD), multilateral trade (MLT), and trade robustness (TRB). Time series data obtained from World Development Indicators for the period covering 1970-2017 were employed for this study. We adopted a Non-Linear Autoregressive Distributed Lag framework pioneered by Shin et al (2011). The study found a mixed impact of external financing inflows on selected macroeconomic in the Gambia and Nigeria. Specifically, (i) the study found that FDII inflows positively impact RGDP in the Gambia and negatively impact RGDP in Nigeria, (ii) the sign of the impact of ODA inflow (ODAI) on RGDP in the Gambia and Nigeria are similar, (iii) FDI inflow into the Gambia and Nigeria has negative impact on TRD (iv) ODA inflow (ODAI) impact on TRD is negative in the Gambia and mixed in Nigeria, (v) dynamical nature of FDI Inflow (FDII) in The Gambia and Nigeria has a positive impact on MLT in both countries, (vi) the impact of ODAI on MLT is negative in Nigeria and mixed in Gambia (vii) on TRB in the Gambia and Nigeria, FDII negatively impact TRB in the Gambia and positively impact TRB in Nigeria. Lastly, ODA inflow into the Gambia generates a negative impact on TRB and a mixed impact on TRB in Nigeria.

**Keywords** External financing, Nonlinear ARDL, Growth, and Trade

## 1. Introduction

The interdependence of the global economy and the signs of a global recession portends that the global economies are not insulated from the disruption in economic activities caused by lockdown shock as a result of COVID-19 pandemic (IMF, 2020). According to the World Investment Report, the health-related shock e.g., COVID-19 presently ravaging global economies has disrupted global reinvestment earning (UNCTAD, 2020). What is the nature of external financing inflows into The Gambia and Nigeria economies? How would trade and growth respond in the Gambia and Nigeria due to changes in external financing inflows? Globally, external financing inflow is an important revenue-source component for development for low-income countries e.g., The Gambia, and low-middle-income countries e.g., Nigeria. However, the external financing that flows into developing economies depends on the structure, magnitude, and size of global reinvested earnings. Sadly, the losses in global reinvested earnings in wake of COVID-19 pandemic have stirred interest in the dynamical impact of

fluctuation in external financing inflow (a major determinate of global reinvested earnings) on developing economies a case study of the Gambia and Nigeria.

Additionally, an important area to consider, which has motivated this study is the direction of trade in the Gambia and Nigeria. From the direction of trade statistics, Gambia's export free on board (fob) rose from 0.7 in 2012 to 0.9 in 2014 and dropped to 1.0 in 2017. Similarly, import cost, insurance, and freight (cif) grew from 0.1 in 2012 to 0.2 in 2017 (IMF, 2018). For Nigeria, export (fob) grew from 20.8 in 2012 to 27.0 in 2014 and dropped to 20.0 in 2017. Also, import (cif) in Nigeria grew from 28.5 in 2012 to 20.8 in 2017 (IMF, 2018). Subsequently, it is therefore imperative to assert whether the dynamical external financing is responsible for these changes in trade values in The Gambia and in Nigeria? It is on this basis; the study tries to seek answers to the dynamic impact of external financing on growth and trade in the Gambia and Nigeria.

Overtime, the vexed interests on the impact of external financing on both the recipient and the donor economies exist without a non-linear examination. Several studies have focused on the impact of global external financing on the economic behaviour of global economies. The studies on the impact of external financing as a critical component of

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economic growth and development include viz; external financing: hurts growth (Gourinchas and Obstfeld, 2012); slows productivity (Reis, 2013), and improves growth (McKinnon and Shaw, 1973). On the disaggregated level, Foreign Direct Investment (FDI) and growth have a mixed relationship viz FDI hurt growth (Carkovic & Levine, 2002; Agbanike 2012), FDI, and growth relationship (Moyo, 2013) and FDI crowd out domestic investment (Agosin and Mayer, 2000). Studies on Official Development Assistant (ODA) on the economy could be understood from the positions that ODA has linked with the Dutch Disease argument (Nkusu, 2004); ODA, and growth relationship (Moyo, 2011). Nevertheless, the debates on the impact of external financing inflows on the recipient's economic outlook are inconclusive.

The findings of previous studies are robust and divergent. Based on the current economic shock caused by COVID-19 pandemic (health-related shock) and the associated lockdown. With the recent happenings, revisiting the foregoing debate viz-a-viz on the global imperativeness of external financing is apt for emerging and developing economies. Information from the dynamical impacts of external financing on developing economies e.g., The Gambia and Nigeria, would provide a springboard to explore the effectiveness of globalization policy (economic openness) on the character and dimension of economic activities in the Gambia and Nigeria economies. It is in furtherance to the inevitability of external financing inflows on the development needs of The Gambia and Nigeria that this paper considers an evaluation of the impacts of positive (increase) external financing (exogenous) inflows and negative (decrease) external financing on growth and trade performances in The Gambia and Nigeria. This is because the comparative-dynamical impacts of external financing inflows on the growth and trade in the Gambia and Nigeria remain silent. The findings of how dynamical external financing impact macroeconomic behaviour in The Gambia and Nigeria would richly improve the debates surrounding the global imperativeness of external financing in developing economies. This gap explains the exigency of this study.

The Gambia and Nigeria are members of the West African Monetary Zone (WAMZ), in broad frontier members of the Economic Community of West African State (ECOWAS), nevertheless the global income classification. It is imperative to assess the impact of FDI inflow and ODA inflow on WAMZ. This is because the region seeks to achieve trade and growth inclusiveness and regional trade growth in its Macroeconomic Convergence Criteria and in its African Free Trade Continental Agreement (AfTCA). Thus, this study significantly connects with the policy strategy (pillar III) of WAMZ's Banjul Action Plan (BAP) of 2009. Pillar III of BAP focuses on global financial integration with an aim towards leverage on financial intermediation which in turn would strengthen markets fundamental through the process of risk-sharing and diversification of capital. The impact of external financing on the economic outlook of The Gambia

and Nigeria would provide a purview of how exposed the region is to globalization. This paper meets the evolving global debate on the healthiness and responsiveness of developing countries to globalization policy. More so, major concern on globalization policy has squarely focused with how developing countries perform under the dynamical environment of external financing. Hence, the question whether external finance inflow improves trade and growth in the Gambia and Nigeria.

This paper aims to foster a robust understanding of the dynamical impact of external financing inflows on growth and trade amongst selected West African Monetary Zone (WAMZ) countries, e.g. The Gambia and Nigeria. This examination, in turn, would deepen the discourse on the role of external financing as an integral component of capital account liberalization policy and globalization. External financing in terms of Foreign Direct Investment (FDI) inflow, Official Development Assistant (ODA) inflow, International Bank for Reconstruction and Development (IBRD) and International Development Assistance credits (IDA) inflows, remittances, foreign portfolio investment inflows, external borrowing, etc play a critical role in the development policy of developing economies. To account for the impacts of dynamic changes in external financing on economic behaviour in the Gambia and Nigeria, we attempted an assumption that only FDI inflow and ODA inflow are two important external financing variables.

The Gambia and Nigeria are performing economies in WAMZ in terms of macroeconomic convergence criteria, notwithstanding the perceived limitations in the two economies. The leadership position of Nigeria and the Gambia would be leveraged to investigate how external financing impacts growth and trade in WAMZ. Therefore, the motivating question adduced for this paper becomes, does FDI inflow and ODA inflow hurts growth and trade in The Gambia and Nigeria? The focus of this paper is to empirically investigate the impact of increase (decrease) in FDI inflow and increase (decrease) in ODA inflow on growth, on trade (% of GDP), on multilateral trade, and trade robustness (openness) in The Gambia and Nigeria. This paper is divided into the following sections namely viz; **I.** Introduction, **II.** Literature Review, **III.** Method, **IV.** Analytical framework, **V.** Results Discussion, **VI.** Conclusion, **VII.** Limitation of the Study.

## 2. Literature Review

Romer (1986) and Lucas (1988) in endogenous theories posit that openness affects growth. Also, Romer (1994), Grossman and Helpman (1991), and Barro and Sala-i-martin (1995) provides a robust argument on the empirical significance that economic openness generates development. We based our analytical framework on endogenous growth theory (see Romer, 1994).

Amaefule, Onuchuku, Kalu & Shoaga (2019) found in the NARDL framework that ODA does not have a long-run

impact on trade. The study found a negative impact of both an increase in ODA inflows and a decrease in ODA inflows on trade size in WAMZ. Thus, ODA does not matter to cause long-run trade growth in The Gambia, Ghana, Nigeria, and Sierra Leone. The result implies that dependence on ODA inflows could distort trade volume. And ODA inflows do not reduce trade cost in WAMZ, which in turn could reduce the capacity of WAMZ to benefit from the African Continental Free Trade Agreement (ACFTA) and Aid for Trade (AFT). Sedai (2019) in a study of why so serious about foreign capital, the study found a strong casualty FDI equity flows and a weak and lagged causality between short-term capital flows and economic growth. In the short term, there exists bi-directional causality in growth and equity flows.

Combes *et al* (2017) the study examined the impact of capital inflows on growth and real exchange rate on developing economies. The study adopted GMM. The study found that (i) a 1 percent increase in total net capital inflows appreciates the real exchange rate by 0.5 percent; (ii) the real exchange rate appreciation effect of remittances is twice as big as the effect of aid, and ten times bigger than the effect of FDI; (iii) overall, capital inflows are associated with higher economic growth after netting out the negative impact of real exchange rate appreciation. Doubling capital inflows per capita would increase growth by about 50 percent, resulting in a gain of roughly 2 additional percentage points on top of the 3.7 percent annual growth rate observed within the sample over the period 1980-2012. Igan, Kutan & Mirzaei (2016) in a study of the real effect of capital inflows in 22 emerging markets found that capital inflow generated faster disproportionate growth in the pre-crisis period of 1998-2007. They conclude that a stable financial system is required for an emerging market to harness the growth benefits of capital inflows. Mileva (2008) this study employed a dynamic panel technique. The study found that FDI has a spillover effect and portfolio flows into transition economies have no effect on capital formation. In this partial adjustment setup, capital flows can have contemporaneous and long-term effects on investment.

To deepen the study initiated by Igan, Kutan, and Mirzaei (2016), we adopted Shin, Yu, and Greenwood-Nimmo's (2011) asymmetric cointegration framework. We expanded on Igan, Kutan, and Mirzaei (2016) by investigating how dynamical external financing inflows impact growth and trade in selected countries in West Africa e.g., in the Gambia and Nigeria.

### 3. Method

This study employed an *ex post facto* research design. The hypotheses for this study from the foregoing analyses are (i) Dynamical external financing (exogenous inflows) improve growth in The Gambia and Nigeria, (ii) Dynamical external financing (exogenous inflows) improve trade in the Gambia

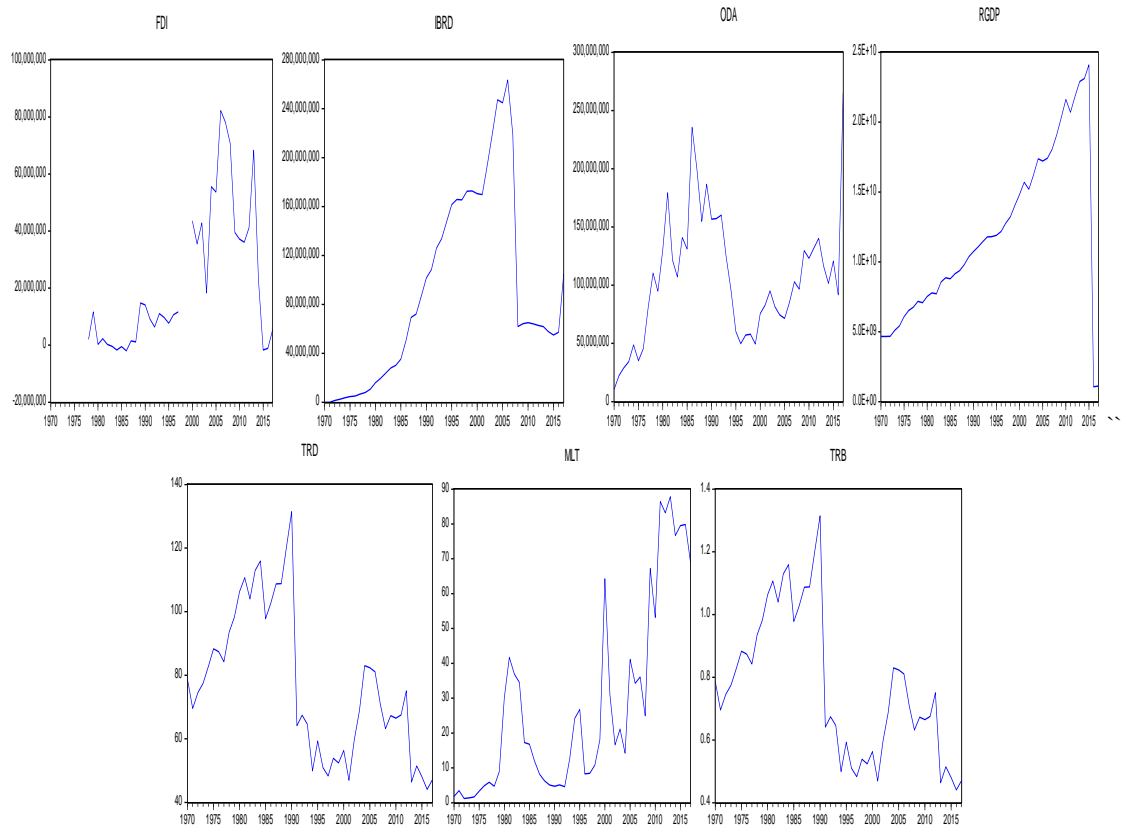
and Nigeria. The research design would enable the researchers to conduct a control experiment on the impact of regressors (external financing) on the regressands (growth and trade) whereby some factors are held constant. *Ex post facto* research design provides us with a template to investigate the hypothesis for this study.

This study is purely a time series of secondary data analysis. We adopted a quasi-experimental design. In line, with the research design, we empirically examined the dynamical impact of external financing on growth and trade outcomes in The Gambia and Nigeria. We employed a controlled experiment whereby other factors that account for dynamic changes in external financing on growth and trade in The Gambia and Nigeria are held constant. The basic significance of this study is to determine the impact of the dynamical effect of external financing proxy by FDI inflow and ODA inflow on growth and trade in the Gambia and Nigeria.

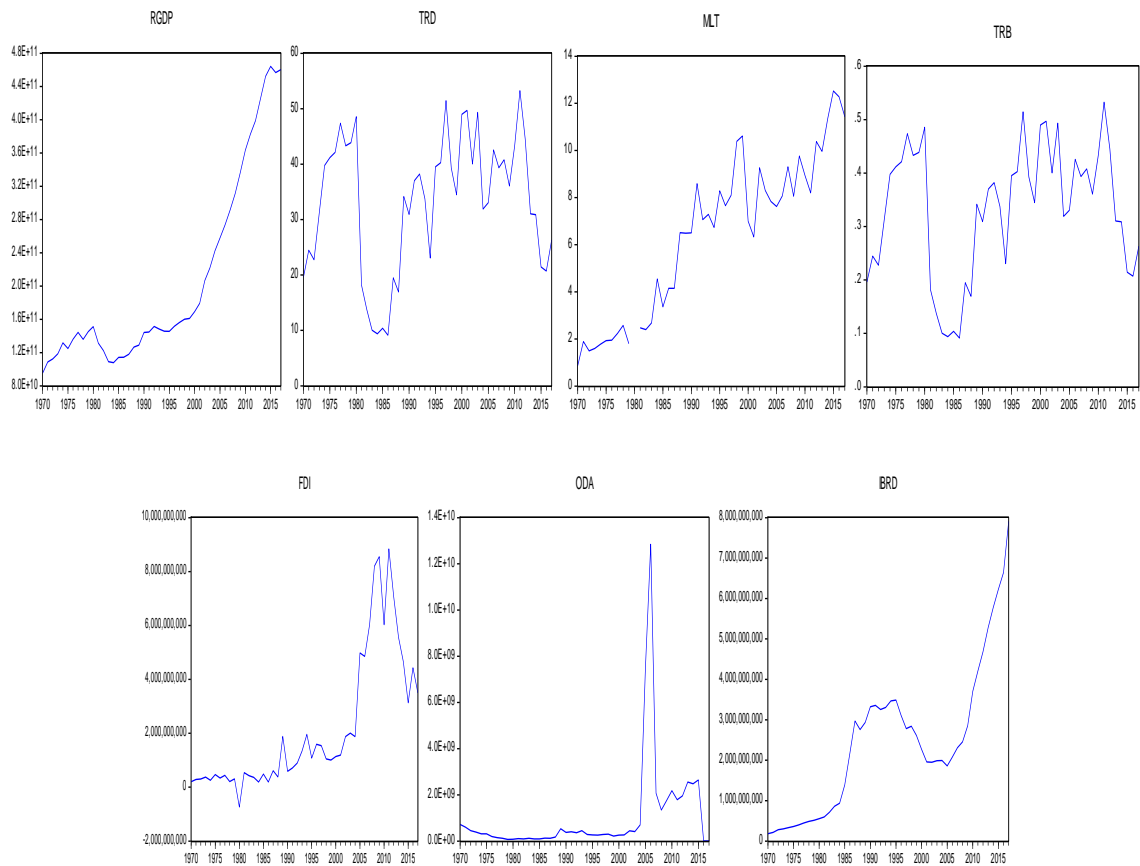
External financing inflows into the Gambia and Nigeria has been observed to be dynamic. Hence to fill the existing gap in the literature which has focused on explicit external financing in this study we estimate the impact of increase and the impact of a decrease of external financing. It is imperative to explore these dynamic changes in external financing in FDI inflow and ODA inflow on growth and trade in the Gambia and Nigeria. In fact, every economy is essentially part of the global economy. Efforts to investigate how developing economies perform in the global economy would suffice to improve the global economy.

To undertake this empirical task, we adopted Nonlinear Autoregressive distributed Lag (NARDL). The justification for utilizing NARDL is that NARDL provides robust instrumentation in measuring and estimating the impact of the dynamical changes in the regressors on the regressands. NARDL is preferable to Autoregressive Distributed lag (ARDL) in that the latter does not account for the dynamical changes in the explanatory. ARDL is a one-way dynamical model while NARDL is a two-dimensional tool applied to evaluate the impact of increase and decrease of external financing. It is understandable from this point that NARDL is suitable to evaluate exogenous inflows because of its unstable nature.

Additionally, the time series data sourced from World Development Indicators were primarily used for this study for the period covering from 1970-2017. For data analysis, we conducted a descriptive statistic (see appendix) and trend analyses (see figures) for The Gambia and Nigeria. We found that the trend analysis is the first test to ascertain the non-stationary of the data set, hence the justification to conduct a unit root test. The presence of trends in the figures below is the rationale for conducting the ADF unit root test to avoid issues of spurious and misleading results. The graphical result below is the visual representation of variables for the Gambia and Nigeria.



**Figure 1.** Trend Analysis in the GAMBIA (Source: Eviews)



**Figure 2.** Trend Analysis in Nigeria (Source: Eviews 9)

#### 4. Analytical Framework

Given a simple dynamic two-gap model depicting a functional relationship between growth (trade)  $y_{t-1}$  and external finance inflow variable  $x_{t-1}$  of the form

$$y_{t-1} = \alpha_t + \beta_t x_{t-1} + \mu_t \quad (1)$$

where  $\beta_t$  measures the external finance elasticity of the growth (trade) in which based on the two-gap model takes a positive magnitude. The nexus becomes that any perceptible increase in external finance inflow impacts positively on growth (trade). To capture the impact of the dynamic behaviour of external finance inflow simultaneously on growth, we adopt the Non-linear ARDL model developed by Shin *et al* (2011). Non-linear Autoregressive Distributed Lag Model (NARDL) captures the asymmetric effects of positive and negative changes in the explanatory variables on the

dependent variables, hence permit the application of non-linear model. Unlike, the ARDL techniques the impact of the explanatory variables is the same and has a linear functional relationship in the model. However, the ARDL provides the analytical background for NARDL as given in Pesaran and Shin (1998).

Thus, given the Pesaran and Shin (1998) ARDL, Nonlinear ARDL ( $p, q$ ) model is therefore established as

$$\delta_t = \sum_{j=1}^p \phi_j \delta_{t-j} + \sum_{j=0}^q (\theta_j^+ \tau_{t-j}^+ + \theta_j^- \tau_{t-j}^-) + \varepsilon_t \quad (2)$$

Following Pesaran *et al* (2001) ARDL in equation (2), Shin, Yu, Greenwood-Nimmo (2011) developed a Non-linear ARDL (NARDL), using a dynamic autoregressive scheme;

Therefore;

$$\begin{aligned} \Delta \delta_t &= \rho \delta_{t-1} + \theta^+ \tau_{t-1}^+ + \theta^- \tau_{t-1}^- + \sum_{j=1}^{p-1} \gamma_j \Delta \delta_{t-j} + \sum_{j=0}^{q-1} (\theta_j^+ \Delta \tau_{t-j}^+ + \theta_j^- \Delta \tau_{t-j}^-) + \varepsilon_t \\ &= \rho \xi_{t-1} + \sum_{j=1}^{p-1} \gamma_j \Delta \delta_{t-j} + \sum_{j=0}^{q-1} (\theta_j^+ \Delta \tau_{t-j}^+ + \theta_j^- \Delta \tau_{t-j}^-) + \varepsilon_t \end{aligned} \quad (3)$$

From equation 3, we observe the presence of decomposition into partial sum processes been infused into an asymmetric cointegration relationship. The NARDL framework identifies  $X_t^+$  and  $X_t^-$  and implying partial changes in the explanatory variable (inflow). Under the NARDL  $X_t$  denoting external financing inflow is defined as

$$X_t^+ = \sum_{j=1}^t \Delta X_j^+; X_t^- = \sum_{j=1}^t \Delta X_j^-; \quad (4)$$

Equation 4 explains the asymmetrical movement of external finance inflow variables, the superscript + and -

$$\Delta y_t = \rho y_{t-1} + \theta X_{t-1} + \sum_{j=1}^{p-1} \sigma_j \Delta y_{t-j} + \sum_{j=0}^{q-1} \pi_j X_{t-j} + \varepsilon_t \quad (5)$$

$$\Delta y_t = \rho y_{t-1} + \theta X_{t-1} + \sum_{j=1}^{p-1} \sigma_j \Delta y_{t-j} + \sum_{j=0}^{q-1} (\pi_j^+ X_{t-j}^+ + \pi_j^- X_{t-j}^-) + \varepsilon_t \quad (6)$$

$$\Delta y_t = \rho y_{t-1} + \theta X_{t-1} + \pi_j^+ X_{t-j}^+ + \pi_j^- X_{t-j}^- + \sum_{j=1}^{p-1} \sigma_j \Delta y_{t-j} + \sum_{j=0}^{q-1} \pi_j X_{t-j} + \varepsilon_t \quad (7)$$

Model 5-7 shows the various dynamical movement that occurs in the long-run and short-run in the NARDL framework. However, we adapted the NARDL framework to explain how dynamic changes in external finance inflow affect growth and trade variables in the Gambia and Nigeria.

We established our relationship as target macroeconomic variables

$$(\text{Growth, Trade}) = f(\text{External financing inflows}) \quad (8)$$

where Growth is proxy by Real Gross Domestic Product (RGDP), Trade is decomposed into Trade percentage of GDP (TRD), Multilateral trade (MLT), and Trade Robustness (TRB), external financing inflows proxy by FDI inflow and ODA inflow, IBRD is the control variable.

##### Justification of the Variables in the Model

Growth and trade represent key macroeconomic variables to measure the performance of the economy in the Gambia and Nigeria. Growth is used to measure internal performance

and trade is used to the measure external performance of the Gambia and Nigeria economies. Growth is proxy by Real GDP, whilst trade is proxy by TRB, MLT, and TRD. For simplicity, two external finance inflows were utilized in this paper. They are FDI inflow and ODA inflow. The third component of external financing inflows is the World Bank Loans (IBRD inflow) which is held constant (used as check variable) in this paper. FDI inflow and ODA inflow into The Gambia and Nigeria are key external resources employed to address developmental finance gaps. They are significant to growth and development in developing economies (see Chenery and Strout, 1966; McKinnon and Shaw, 1973).

The NARDL of Shin, Yu, Greenwood-Nimmo (2011, 2014) was developed within the time-variant symmetry and asymmetric models. They are decomposed into the following chambers namely;

and trade is used to the measure external performance of the Gambia and Nigeria economies. Growth is proxy by Real GDP, whilst trade is proxy by TRB, MLT, and TRD. For simplicity, two external finance inflows were utilized in this paper. They are FDI inflow and ODA inflow. The third component of external financing inflows is the World Bank Loans (IBRD inflow) which is held constant (used as check variable) in this paper. FDI inflow and ODA inflow into The Gambia and Nigeria are key external resources employed to address developmental finance gaps. They are significant to growth and development in developing economies (see Chenery and Strout, 1966; McKinnon and Shaw, 1973).

##### Model Specification

We, therefore, transform equation 1 into the NARDL framework in model 3. Therefore, based on modification, the NARDL model framework employed for this paper is represented below viz;

$$\begin{aligned} \Delta \text{LnRGDP}_{m1-2t} &= \sigma + \phi_0 \text{LnRGDP}_{t-1} + \phi_1 \text{LnFDI}_{t-1}^+ + \phi_2 \text{LnFDI}_{t-1}^- + \phi_3 \text{LnODA}_{t-1}^+ + \phi_4 \text{LnODA}_{t-1}^- + \phi_5 \text{LnIBRD}_{t-1}^{CV} \\ &+ \sum_{i=1}^p \theta \Delta \text{LnRGDP}_{t-1} + \sum_{i=0}^q (\gamma_i^+ \Delta \text{LnFDI}_{t-1}^+ + \gamma_i^- \Delta \text{LnFDI}_{t-1}^-) + \sum_{i=0}^q (\phi_i^+ \Delta \text{LnODA}_{t-1}^+ + \phi_i^- \Delta \text{LnODA}_{t-1}^-) + \mu_t \end{aligned} \quad (9)$$

$$\Delta \text{LnTRD}_{m1-2t} = \sigma + \phi_0 \text{LnTRD}_{t-1} + \phi_1 \text{LnFDI}_{t-1}^+ + \phi_2 \text{LnFDI}_{t-1}^- + \phi_3 \text{LnODA}_{t-1}^+ + \phi_4 \text{LnODA}_{t-1}^- + \phi_5 \text{LnIBRD}_{t-1}^{CV} + \sum_{i=1}^p \theta \Delta \text{LnTRD}_{t-1} + \sum_{i=0}^q (\gamma_i^+ \Delta \text{LnFDI}_{t-1}^+ + \gamma_i^- \Delta \text{LnFDI}_{t-1}^-) + \sum_{i=0}^w (\phi_i^+ \Delta \text{LnODA}_{t-1}^+ + \phi_i^- \Delta \text{LnODA}_{t-1}^-) + \mu_t \quad (10)$$

$$\Delta \text{LnMLT}_{m1-2t} = \sigma + \phi_0 \text{LnMLT}_{t-1} + \phi_1 \text{LnFDI}_{t-1}^+ + \phi_2 \text{LnFDI}_{t-1}^- + \phi_3 \text{LnODA}_{t-1}^+ + \phi_4 \text{LnODA}_{t-1}^- + \phi_5 \text{LnIBRD}_{t-1}^{CV} + \sum_{i=1}^p \theta \Delta \text{LnMLT}_{t-1} + \sum_{i=0}^q (\gamma_i^+ \Delta \text{LnFDI}_{t-1}^+ + \gamma_i^- \Delta \text{LnFDI}_{t-1}^-) + \sum_{i=0}^w (\phi_i^+ \Delta \text{LnODA}_{t-1}^+ + \phi_i^- \Delta \text{LnODA}_{t-1}^-) + \mu_t \quad (11)$$

$$\Delta \text{LnTRB}_{m1-2t} = \sigma + \phi_0 \text{LnTRB}_{t-1} + \phi_1 \text{LnFDI}_{t-1}^+ + \phi_2 \text{LnFDI}_{t-1}^- + \phi_3 \text{LnODA}_{t-1}^+ + \phi_4 \text{LnODA}_{t-1}^- + \phi_5 \text{LnIBRD}_{t-1}^{CV} + \sum_{i=1}^p \theta \Delta \text{LnTRB}_{t-1} + \sum_{i=0}^q (\gamma_i^+ \Delta \text{LnFDI}_{t-1}^+ + \gamma_i^- \Delta \text{LnFDI}_{t-1}^-) + \sum_{i=0}^w (\phi_i^+ \Delta \text{LnODA}_{t-1}^+ + \phi_i^- \Delta \text{LnODA}_{t-1}^-) + \mu_t \quad (12)$$

In a simplified equation, we transformed the equation into  $\text{FDI}^+$ ,  $\text{FDI}^-$ ,  $\text{ODA}^+$ , and  $\text{ODA}^-$  which are the respective partial sums of positive and negative changes in the regressors. IBRD is held constant. Thus, FDI and ODA are calculated as follows;

$$\text{LnFDI}_t^+ = \sum_{i=1}^t \Delta \text{FDI}_t^+ = \sum_{i=1}^t \max(\Delta \text{FDI}_t, 0) \text{ and}$$

$$\text{LnFDI}_t^- = \sum_{i=1}^t \Delta \text{FDI}_t^- = \sum_{i=1}^t \min(\Delta \text{FDI}_t, 0) \quad (13)$$

$$\text{LnODA}_t^+ = \sum_{i=1}^t \Delta \text{ODA}_t^+ = \sum_{i=1}^t \max(\Delta \text{ODA}_t, 0) \text{ and}$$

$$\text{LnODA}_t^- = \sum_{i=1}^t \Delta \text{ODA}_t^- = \sum_{i=1}^t \min(\Delta \text{ODA}_t, 0) \quad (14)$$

Where  $\Delta$  is the difference,  $\beta_i$  account for slope coefficient,  $EC_i$  speed of convergences,  $X_{it}$  represents regressors,  $DUM_i$  captures dummy variables in intercept, and  $Y_{it}$  regressand (dependent variable), FDI = foreign direct investment, IBRD = International bank for reconstruction and development, ODA = official development assistance, GDP = gross domestic product, TRD = trade size, MLT = multilateral trade, TRB=trade robustness. m1 = Gambia, m2 = Nigeria.

## 5. Results Discussion

It is pertinent to restate the two fundamental research questions were proposed in this paper.

1. What is the nature of external financing inflows into the Gambia and Nigeria economies?
2. How would trade and growth values in the Gambia and Nigeria respond to the dynamism in external financing inflows?

Based on the nature of the trend illustrated in Fig 1 and Fig 2 above, we were able to establish a dynamic pattern of external financing inflows into the Gambia and Nigeria economies. From Fig. 1, FDI inflow into the Gambia depicts missing data. However, the study adjusted the trend through the interpolation method. Table 1 was conducted to determine the extent of stationarity in the data whether it is suitable for empirical analysis. For clarity, each model has dual effects based on FDI inflow and ODA inflow. So, therefore, Table 2-9 illustrates the NARDL output showing the asymmetric impact of FDI inflow and ODA inflow on Real GDP, TRD % GDP, MLT, and TRB. In order words, the results justify the rationale for eight tables presented in the paper.

Based on the graphical results in the foregoing section, the ADF unit root test was conducted on time series data obtained from World Development Indicators for The

Gambia and Nigeria. Table 1 illustrates that the data were stationary at level  $I(0)$  and at the first difference  $I(1)$ . Thus, the time-series data are suitable for empirical analyses after differencing.

**Table 1.** ADF UNIT ROOT TESTS

Country	RGDP	TRD	MLT	TRB	FDI	IBRD	ODA
The GAMBIA	I(1)	I(1)	I(1)	I(1)	I(0)	I(1)	I(1)
NIGERIA	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(0)

Source: Author's computation from Eviews 9

In this paper, dynamical change is referred to as both positive (increase) or negative (decrease) changes. Thus, NARDL helps us to measure how positive (pos.) change and how negative (neg.) change in external financing inflows impact growth and trade in the Gambia and Nigeria.

Table 2 illustrates the dynamic changes captured by the positive (increasing) and negative (decreasing) of FDI inflow impacts on Growth. Growth is proxy by RGDP. Our Bound F-statistic (stat.) test showed that FDI inflow and Growth have a long-run relationship in the Gambia and Nigeria. The F-statistic in the Gambia is higher than the upper and lower bound at 5 percent i.e.,  $5.674 > 2.86, 4.01$ ; and F-statistic in Nigeria is greater than the upper and lower bound level i.e.,  $7.4056 > 2.86, 4.01$  (see table 2). This implies that FDI inflow is a long determinate of growth in the Gambia and Nigeria. FDI inflow is a determinate of growth based on the fact that equilibrium relationships exist between FDI inflow and growth in the Gambia and Nigeria. In terms of the short-run to long-run adjustment mechanism, the coefficients were negative -1.0589 in Gambia and -1.6238 in Nigeria. At a corresponding p-value which is less than 5%.

From table 2, any perceptible changes in FDI inflow into the Gambia and Nigeria, growth increases by 19.9 percent in the Gambia, and growth decrease by 0.64 percent in Nigeria. Similarly, a decrease in FDI inflow causes an increase in growth by 41.4 percent and decreases growth by 4.2 percent in Nigeria. However, the corresponding p-values from positive FDI inflow and negative FDI inflow into the Gambia and Nigeria are more than 5 percent except for decreasing FDI inflow for the Gambia with p-values of  $0.034 < 0.05$ . The result implies that the increase and decrease in FDI inflow on growth have a different impact on the Gambian economy and the Nigerian economy. Based on the relative performances of FDI inflow on the economies of the Gambia and Nigeria, we can infer that the Gambian economy

is less susceptible to the dynamic changes in FDI inflows than dynamical changes in FDI inflow into the Nigerian economy. ODA and IBRD generated a negative impact on The Gambia and the Nigerian economy (see table 2).

**Table 2.** FDI impact on Growth

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	5.674	7.4056
%5	<b>I0</b>	2.86	2.86
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-1.0589	-1.62388
<b>LongRunForm</b>	<b>Pvalue</b>	(0.0001)	(0.000)
	<b>FDIpos</b>	0.19934 (0.1657*)	-0.00642 (0.7268)
	<b>FDIneg</b>	0.4144 (0.0340)	-0.04247 (0.0912*)
	<b>ODA</b>	-0.07598 (0.7830*)	-0.02322 (0.0676*)
	<b>IBRD</b>	-0.0532 (0.7956*)	-0.0828 (0.004)
<b>Diagnostics Pvalues</b>	<b>Ramsey RT Stability</b>	0.000*	0.0088*
	<b>HTBPG</b>	0.0581	0.9111
	<b>LMT</b>	0.8598	0.977
	<b>Normality</b>	0.000*	0.5329
	<b>CUMSUM</b>	NWB*	WB
	<b>CUMSUM SQUARES</b>	WB	WB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(1,0,3,1,0)	(4,3,3,4,0)

Source: Author's computation from Eviews 9, NWB=Not Well Behaved; WB= Well Behaved

In table 3, the Bound F-test illustrates that there is the presence of a long-run relationship between ODA inflow and growth in Gambia and Nigeria. The Bound F-statistic of 61.85 in the Gambia and 6.995 in Nigeria is greater than the upper and lower bound levels of 2.46 and 4.01 respectively. The corresponding adjustment coefficients appeared with the appropriate sign and it is statistically significant in both Gambia and Nigeria with the coefficient of -2.18713 (0.0107) and -1.33529 (0.0002) respectively. The impact of positive and the impact of negative ODA inflow on growth in the Gambia and Nigeria was examined. Table 3 reveals that positive ODA inflow had a positive impact on growth in the Gambia and Nigeria. The impact of positive ODA inflow on growth is 34.5 in the Gambia and 1.4 percent in Nigeria. The corresponding p-values show that the impact of positive ODA inflow on growth is statistically insignificant. Thus, negative (decreasing) ODA inflow caused a decline in growth in the Gambia by 1.74 percent and Nigeria by 3.97 percent. This implies that the size and magnitude of the impact of ODA inflow on growth produced a similar impact in the Gambia and Nigeria.

We could that table 2 has a CUSUM problem in the Gambia, whereas table 3 has a CUSUM squares problem in

Nigeria. To remedy this situation, we incorporated structural breakpoint dates into the model. These dates took the form of dummy variables as in 1 for breakpoint after and 0 for breakpoint before. We observed that the second-order test we fully met hence the model was corrected of any second-order test problems.

**Table 3.** ODA impact on Growth

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	61.85	6.995
%5	<b>I0</b>	2.46	2.46
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-2.18713	-1.33529
<b>LongRunForm</b>	<b>Pvalue</b>	(0.0107)	(0.0002)
	<b>FDI</b>	-0.05095 (0.0772*)	-0.06157 (0.0381)
	<b>ODAp0s</b>	0.3452 (0.0615*)	0.01415 (0.1442*)
	<b>ODAneg</b>	-0.01744 (0.330)	-0.03976 (0.0248)
	<b>IBRD</b>	0.03112 (0.0374)	-0.0435 (0.0015)
<b>Diagnostics Pvalues</b>	<b>Ramsey RT Stability</b>	0.3200	0.2565
	<b>HTBPG</b>	0.3392	0.4730
	<b>LMT</b>	0.6016	0.1572
	<b>Normality</b>	0.9827	0.7566
	<b>CUMSUM</b>	WB	WB
	<b>CUMSUM SQUARES</b>	WB	NWB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(3,3,3,3,2)	(4,1,2,4,2)

Source: Author's computation from Eviews 9, NWB=Not Well Behaved; WB= Well Behaved

In table 4 the study evaluated the positive FDI inflow and negative FDI inflow negative impact on trade size. Trade size in the Gambia and Nigeria is proxy by Trade (% of GDP). This is defined as the sum of exports and imports of goods and services measured as a share of gross domestic product (World Bank, 2019). From the bound test result in table 4, we established that there is no long-run relationship between FDI inflow and trade size in the Gambia. Conversely, there is a long-run relationship between FDI inflow and trade size in Nigeria. From the result, every one percent increase in FDI inflow caused trade size to decline by 13.9 percent in Gambia and 16.13 percent in Nigeria. Also, for every one percent decrease in FDI inflow, this fall in FDI inflow weakened trade size by 17.3 percent in Gambia and 24.2 percent in Nigeria. Jointly FDI inflow(s) generate a similar impact on trade size in the Gambia and Nigeria. Thus, both countries could operate a similar external financing inflow policy to attract capital inflows. Additionally, based on the results obtained from the coefficient of the impact of dynamical FDI inflow. We established that there is the

presence of the same degree of impact on trade size in the Gambia and Nigeria. The CUMSUM and CUMSUM squares were well-behaved. Thus table 4 and table 5 at levels do not require modifications as was the case in Tables 2 and 3.

**Table 4.** FDI impact on TRADE SIZE

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	2.034*	7.263
%5	<b>I0</b>	2.86	2.86
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-0.95129	-1.78515
<b>LongRunForm</b>	<b>Pvalue</b>	(0.0134)	(0.0000)
	<b>LnFDIpos</b>	-0.13965 (0.0718*)	-0.1613 (0.118*)
	<b>LnFDIneg</b>	-0.17377 (0.0909*)	-0.2427 (0.0747*)
	<b>LnODA</b>	-0.92713 (0.3350*)	0.173272 (0.0146)
	<b>LnIBRD</b>	0.10566 (0.1445*)	-0.18493 (0.0818*)
<b>Diagnostics Pvalues</b>	<b>Ramsey RT Stability</b>	0.0216*	0.4976
	<b>HTBPG</b>	0.7056	0.9680
	<b>LMT</b>	0.3472	0.3870
	<b>Normality</b>	0.2255	0.7620
	<b>CUMSUM</b>	WB	WB
	<b>CUMSUM SQUARES</b>	WB	WB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(3,3,2,0,0)	(2,3,3,4,1)

Source: Author's computation from Eviews 9, WB= Well Behaved

As in table 4, we investigated the impact of ODA inflow on trade size in the Gambia and Nigeria in table 5. We observed that the Bound F-test showed that a long-run relationship exists between ODA inflow and trade size in the Gambia and Nigeria. Also, the cointegration-adjustment coefficients appeared with the appropriate sign. From table 5, the result showed that the dynamical changes in ODA inflow caused a corresponding decline in trade size. Therefore, positive ODA inflow caused a 14.3 percent fall in trade size in the Gambia and a 0.9 percent fall in trade size in Nigeria. On the other hand, a negative (decrease) in ODA inflows led to a 21.1 percent decline in trade size in the Gambia and a 0.2 percent decline in trade size in Nigeria. Positive (increase) and negative (decline) in ODA inflow affect the direction of trade size in the Gambia and Nigeria. The outcome of the impact of ODA inflow on trade size is similar in both countries. As in table 4, table 5 shows the stable result as both the CUMSUM and CUMSUM squares operate within the bound limit, thus it is well behaved.

Multilateral trade was used to capture the gains accruable to the Gambia and Nigeria from global trade. FDI inflow is decomposed into two dynamical forms namely an increase in

FDI inflow and a decrease in FDI inflow. In table 6, the impact of FDI inflow on multilateral trade for the Gambia and Nigeria was investigated. The Bound F-test statistic is higher than the upper and lower levels bound at 5 percent. Thus, we can confirm that long-run relationships exist between FDI inflow and multilateral trade for both countries under review e.g., the Gambia and Nigeria. This implies that FDI inflow is an important explanatory variable to augment multilateral trade in the Gambia and Nigeria in the long-run. The corresponding adjustable cointegrating equation appeared with appropriate signs and the p-values were statistically significant.

**Table 5.** ODA impact on TRADE SIZE

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	7.840	14.46
%5	<b>I0</b>	2.86	2.86
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-1.2643	-1.19717
<b>LongRunForm</b>	<b>Pvalue</b>	(0.0000)	(0.0000)
	<b>FDI</b>	-0.08110 (0.2688*)	0.17186 (0.1560*)
	<b>ODAp0s</b>	-0.1438 (0.249*)	-0.0999 (0.0838*)
	<b>ODAneg</b>	-0.2111 (0.1801*)	-0.0200 (0.2207*)
	<b>IBRD</b>	-0.00413 (0.9387*)	0.05936 (0.3964*)
<b>Diagnostics Pvalues</b>	<b>Ramsey RT Stability</b>	0.0074*	0.2346
	<b>HTBPG</b>	0.6467	0.9650
	<b>LMT</b>	0.6171	0.1808
	<b>Normality</b>	0.0694	0.0000*
	<b>CUMSUM</b>	WB	WB
	<b>CUMSUM SQUARES</b>	WB	WB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(1,0,2,1,0)	(1,2,1,0,3)

Source: Author's computation from Eviews 9, WB= Well Behaved

In a similar vein, a positive inflow of FDI generated a 19.7 percent increasing (positive) impact on multilateral trade in the Gambia and a 0.5 percent increasing (positive) impact on multilateral trade in Nigeria. This impact is positive but not statistically significant. Also, a one percent decrease in FDI inflow produced a 24.7 percent change in multilateral trade in the Gambia and a 2.8 percent change in multilateral trade in Nigeria. The implication is that FDI inflow impacts on multilateral trade generate homogenous to degree zero changes in The Gambia and Nigeria. From the results, the increase and decrease in FDI inflow generated an unchanged positive impact on multilateral trade in the Gambia and Nigeria (see table 6).



**Table 6.** FDI impact on MULTILATERAL TRADE

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	7.45	9.31
%5	<b>I0</b>	2.86	2.86
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-1.56114	-2.4767
<b>LongRunForm</b>	<b>Pvalue</b>	(0.0000)	(0.0000)
	<b>LnFDIpos</b>	0.1972 (0.0870 <sup>*</sup> )	0.00598 (0.7086 <sup>*</sup> )
	<b>LnFDIneg</b>	0.24718 (0.0917 <sup>*</sup> )	0.02866 (0.2975 <sup>*</sup> )
	<b>LnODA</b>	-0.14663 (0.4090 <sup>*</sup> )	0.00023 (0.9273)
	<b>LnIBRD</b>	-0.2033 (0.0696 <sup>*</sup> )	-0.18493 (0.1771 <sup>*</sup> )
<b>Diagnostics Pvalues</b>	<b>Ramsey RT Stability</b>	0.7123	0.8145
	<b>HTBPG</b>	0.7086	0.9616
	<b>LMT</b>	0.0770	0.2438
	<b>Normality</b>	0.3115	0.5053
	<b>CUMSUM</b>	WB	WB
	<b>CUMSUM SQUARES</b>	WB	WB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(3,1,0,0,0)	(3,3,1,0,0)

Source: Author's computation from Eviews 9, WB= Well Behaved

**Table 7.** ODA impact on MULTILATERAL TRADE

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	4.30	8.549
%5	<b>I0</b>	2.86	2.86
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-1.9610	-2.5232
<b>LongRunForm</b>	<b>Pvalue</b>	(0.0060)	(0.0000)
	<b>FDI</b>	1.3889 (0.048)	0.00085 (0.9852 <sup>*</sup> )
	<b>ODAp0s</b>	-1.1206 (0.209 <sup>*</sup> )	-0.01190 (0.5609 <sup>*</sup> )
	<b>ODAneg</b>	0.5311 (0.132 <sup>*</sup> )	-0.0200 (0.4477 <sup>*</sup> )
	<b>IBRD</b>	-0.8123 (0.733 <sup>*</sup> )	0.031396 (0.0943 <sup>*</sup> )
<b>Diagnostics Pvalues</b>	<b>Ramsey RT Stability</b>	0.9196	0.7076
	<b>HTBPG</b>	0.7230	0.4581
	<b>LMT</b>	0.1108	0.4678
	<b>Normality</b>	0.7375	0.78638
	<b>CUMSUM</b>	WB	WB
	<b>CUMSUM SQUARES</b>	WB	WB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(2,2,1,3,3)	(3,3,1,1,3)

Source: Author's computation from Eviews 9, WB= Well Behaved

On the other hand, the ODA inflows impact on multilateral trade is presented in table 7. The results showed that ODA inflow and multilateral trade have a long-run relationship, like FDI inflow and multilateral trade. The cointegrating equilibrium equations coefficient has a negative coefficient -1.9610 in Gambia and -2.5232 in Nigeria. The corresponding p-values are less than 0.05 percent. An increase in ODA inflow generates a negative impact of -112 percent and -1.1 percent impacts on multilateral trade in the Gambia and Nigeria respectively. More so, the decrease in ODA inflow impact on multilateral trade generates an increase of 53.1 percent in the Gambia and declined multilateral trade by 0.2 percent in Nigeria. The coefficients of the impact are statistically insignificant, P-values > 0.05% in table 7.

**Table 8.** FDI impact on Trade Robustness

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	9.935	6.1095
%5	<b>I0</b>	2.86	2.86
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-1.9065	-2.6530
<b>LongRunForm</b>	<b>Pvalue</b>	(0.000)	(0.0000)
	<b>LnFDIpos</b>	-0.14711 (0.0006)	0.1758 (0.0001)
	<b>LnFDIneg</b>	-0.0392 (0.4144 <sup>*</sup> )	0.2259 (0.0054)
	<b>LnODA</b>	-0.92713 (0.010)	-0.00813 (0.1188 <sup>*</sup> )
	<b>LnPOP</b>	0.65761 (0.0344)	-0.22786 (0.5901 <sup>*</sup> )
<b>Diagnostics Pvalues</b>	<b>Ramsey RT Stability</b>	0.0234 <sup>*</sup>	0.8532
	<b>HTBPG</b>	0.2063	0.9409
	<b>LMT</b>	0.3555	0.9379
	<b>Normality</b>	0.68562	0.6369
	<b>CUMSUM</b>	WB	WB
	<b>CUMSUM SQUARES</b>	NWB	WB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(2,2,1,1,0)	(3,0,4,1,4)

Source: Author's computation from Eviews 9, NWB=Not Well Behaved; WB= Well Behaved

Table 8 and Table 9, portrays the impact of FDI inflow and ODA inflow on trade robustness. Trade robustness (otherwise called trade openness) is the ratio of export and import to GDP. This indicator is an important value to measure the contribution of a country's external trade position on the domestic economy. How the Gambia and the Nigerian economy's sum of trade ratio do to GDP performs as fluctuation occurs in FDI inflow and ODA inflow? FDI inflow and trade openness has a long-run relationship based on the Bound F-test and upper (lower). An increase (decrease) in FDI inflow produced a negative impact on trade openness

in the Gambia of 14.7 percent and 3.9 percent. And an increase (decrease) in FDI inflow produced a positive impact on trade openness in Nigeria with 17.5 percent and 22.5 percent. These impacts are statistically significant save for the coefficient of decrease in FDI inflow impact on trade openness in the Gambia (see table 8). Gambian model showed traces of instability in its CUMSUM square values. But after incorporating structural breakpoint in exogenous inflows the model afterward was well-behaved.

In table 9, ODA inflow impact and trade openness has a long-run relationship Bound F-test > upper and lower bound level at 0.05 percent. ODA inflow impact on trade openness in the Gambia and Nigeria is negative. This implies that an increase and decrease (dynamical change) in ODA inflow into the Gambia and Nigeria, trade robustness (openness) is threatened. Thus, an increase and decrease in ODA inflow cause the declining impact of 13.5 percent and 0.93 percent in the Gambia, and 11.3 percent and 46.6 percent in Nigeria. Thus, from the results, ODA inflows could affect the ratio of the sum of export and import on GDP.

**Table 9.** ODA impact on Trade of Robustness

		<b>GAMBIA</b>	<b>NIGERIA</b>
<b>Bound Test</b>	<b>Fstat</b>	5.5980	5.832
%5	<b>I0</b>	2.86	2.86
	<b>I1</b>	4.01	4.01
<b>Cointeg EQ</b>	<b>Coeffient</b>	-1.63745	-2.3256
<b>LongRunForm</b>	<b>Pvalue</b>	(0.0001)	(0.0000)
	<b>LnFDI</b>	-0.02734 (0.2812*)	0.1265 (0.0163)
	<b>LnODAp0s</b>	-0.13598 (0.3495*)	-0.11328 (0.0738*)
	<b>LnODAneg</b>	-0.09290 (0.3684*)	-0.46626 (0.0002)
	<b>LnPOP</b>	-0.73021 (0.2139*)	-2.2229 (0.0000)
<b>Diagnostics</b>	<b>Ramsey RT</b>	0.0247*	0.4626
<b>Pvalues</b>	<b>Stability</b>		
	<b>HTBPG</b>	0.0231*	0.9331
	<b>LMT</b>	0.2794	0.0923
	<b>Normality</b>	0.4094	0.0026*
	<b>CUMSUM</b>	WB	WB
	<b>CUMSUM SQUARES</b>	WB	WB
<b>Selected Model</b>	<b>Akaike Info Criterion</b>	(2,0,0,0,2)	(4,4,3,0,4)

Source: Author's computation from Eviews 9, WB= Well Behaved

## Discussion of Findings

The Table 2-9 shows the elasticity values of trade and growth in The Gambia and Nigeria to changes in FDI inflow and ODA inflow. Our assumption, in this paper is that external financing inflows consist of FDI inflow and ODA inflow ceteris paribus. The outcomes in Table 2-9 shows dynamic responses of trade and growth to increase in FDI

inflow (ODA inflow) and decrease in FDI inflow (ODA inflow). The erratic reactions of the dynamical external financing largely impact growth and trade values in The Gambia and Nigeria. Based on the results in table 2 to table 9 this study empirically revealed that the dynamical nature of FDI inflow and dynamic nature of ODA inflow has a mixed impact on growth and trade climate in the Gambia and Nigeria. Thus, on the examination of whether FDI inflow and ODA inflow hurt growth and trade in The Gambia and Nigeria could not be empirically established. This is because the results showed both positive and negative impacts in the Gambia and Nigeria. The dynamical nature of FDI inflow and ODA inflows measured in terms of increase (positive) in FDI inflow and decrease (negative) in FDI inflow into the Gambia and Nigeria have a disproportionate impact on growth and trade respectively. The study could not directly confirm whether the dynamical nature of external financing into the Gambia and Nigeria could account for the differences in trade volume. Other factors beyond this study could have been responsible for the differences.

The findings in table 2 to table 9 further implies that to strengthen the global economic outlook the degree of economic openness and economic exposure of the global economy should be taken into consideration. This opinion is consistent with Stiglitz (1999). Stiglitz (1999) contended on the inevitability of the adverse effects of external financing on developing economies. The fact garnered from the findings of the results implies that on average external financing generates long-run negative impacts on growth and trade in the Gambia and Nigeria. Macroeconomic outlook in the Gambia and Nigeria behave differently with inelastic changes in growth and trade indicators. A one percent change in either FDI inflow or ODI inflow occurs in The Gambia and Nigeria. The finding obtained from Tables 2-9 improves the results obtained by Igan et. al. (2016).

The study also reveals that the impact of external financing differs between The Gambia and Nigeria. Gambian macroeconomic outlook to a greater extent has greater responsiveness to changes in external financing than the macroeconomic outlook in Nigeria. These findings could explain the rationale for exogenous inflows to flow into economies with greater marginal efficiency of capital. The difference between the productiveness of FDI inflow and ODA inflow in the Gambia and Nigeria could mean that the state of the marginal efficiency of capital in both countries differs. Furthermore, the result is consistent with Egbuna et al (2013) in terms of divergence impacts of FDI inflow and ODA inflow into selected countries in WAMZ. However, on average both economies e.g. The Gambia and Nigeria are susceptible to the dynamical nature of external financing. The impact negative impact of external financing on the Gambia and Nigeria consistently links to the findings in Rajan and Subramanian (2005). Additionally, it suffices to assert that the problems of over-borrowing, corruption, institutional characteristics, and Dutch Disease could be liable to explain the negative impact of external financing on the macroeconomic environment in the Gambia and Nigeria

viz-a-viz on growth and trade.

The Gambia and Nigeria's bilateral trade relationship must be developed to be consistent with realities in both countries. Also, the impact of exposure emanating from the countries' independent globalization policy and economic openness implies that government policymakers should consider the broad implication of exogenous inflows e.g. external borrowing beyond debt-to-GDP to debt-to-tax ratio and debt-to-welfare ratio. Thus, rethinking economic policy especially external borrowing (exogenous) policy would provide an alternative option for developing countries to deal with exposure problems locally i.e. through expanding the frontiers of local productivity and accelerated innovative and idea-driven economic systems. This singular act would to a large extent create an even ground to ensure developing countries e.g. The Gambia and Nigeria are insulated from the dynamical changes in external financing on growth and trade. We, therefore, conclude that dynamical changes in external financing are a threat to growth and trade in the Gambia and Nigeria. Thus, policymakers should develop policy framework to improve the benefit of attracting exogenous inflows over its associated cost for attracting external financing into the Gambia and Nigeria. Additionally, robust fiscal policies and local-productive-external borrowing policies are required to cushion the economies of the Gambia and Nigeria from occasioned fluctuation in exogenous inflows. The evidence from NARDL clearly showed that developing economies are not insulated from changes experienced on exogenous inflow behaviour that characterised the global economy. Hence, for economic openness policy to benefit developing economies; it should be stable. It should be directed toward improving local productivity and exploring the creative capacity of The Gambian and Nigerian people. This, in turn, would help these countries withstand attendant shocks generated from the dynamical changes in the exogenous inflows that flow into The Gambia and Nigeria.

## 6. Conclusions

From the findings, we can state that dynamical changes in external financing affect growth and trade in The Gambia and Nigeria. This further implies that Nigeria and The Gambia are susceptible to the impact of COVID-19. Specifically, through the changes in the structure and magnitude of external financing. COVID-19 generally

disrupted economic trends in emerging economies through its impact on global reinvested earnings (a major component of external financing (exogenous inflows)). Based on the result we can infer that in the long-run COVID-19 could disrupt domestic investment through a decline in external financing and labour participation through social distancing that in turn cause shocks that would lead to a decline in productivity, GDP, and trade hence recession in The Gambia and Nigeria. The study, therefore, concludes that The Gambia and Nigeria are susceptible to global fluctuation in external financing (external financing inflows) and global reinvested earnings. Thus, fiscal tightening and expansionary monetary policy are needed to insulate the developing economies from dynamical changes inherent of the global economy as such as experienced due to COVID-19 (health-economic shock) of 2020 and unpredictable plummeting global oil price (supply) in the long-run. Thus, it is important to recognize that this paper, carried out the post-diagnostic adjustment process by adjusting the models to recognize structural breaks in the Gambia and Nigeria. After the process, the results were well behaved and normality outcome satisfactory stable and efficient (see table 2, table 3, and table 8).

## 7. Limitation of the Study

This paper did not consider asymmetric cumulative shocks of external financing inflows on growth and trade called the dynamic multiplier effects of a unit change in  $X_t$  on  $y_t$  which exist due to adjustment dynamism in the NARDL framework ( $p, q$ ). Also, the time range, 1970-2017 did not fully capture the COVID-19 period of 2020. The idea of the COVID-19 was conceptualized and introduced in this paper to motivate the study, as well as denote the inevitability of global shock that causes dynamical movement of external finance inflows. In fact, the dynamical movement necessitated the credence to the choice for NARDL over the ARDL framework. We adjusted the missing data in the FDI inflow values for the Gambia. This adjustment might have some effect on the outcome of the result for the Gambia *ceteris paribus*. Due to the presence of heterogeneity, this result cannot be generalized as true for other WAMZ and developing economies. The result is a pointer to the impact of external financing inflows on developing economies taking into account the trade and growth responses in the Gambia and Nigeria.

## Appendix

The GAMBIA

	RGDP	GDP	FDI	ODA	IBRD	MLT	TRD	TRB	POP
Mean	1.20E+10	5.71E+08	22053873	1.05E+08	89878304	27.84456	76.90266	0.769027	1090856.
Median	1.13E+10	6.01E+08	11365906	99095000	64176500	17.03721	72.74072	0.727407	1022594.
Maximum	2.41E+10	1.49E+09	82208103	2.66E+08	2.63E+08	87.86628	131.4854	1.314854	2100568.
Minimum	1.06E+09	52296837	-1990000.	10480000	0.000000	1.212310	44.07639	0.440764	447285.0

	RGDP	GDP	FDI	ODA	IBRD	MLT	TRD	TRB	POP
Std. Dev.	6.01E+09	4.12E+08	24965678	54142190	77540943	27.20252	23.24968	0.232497	492707.1
Skewness	0.328923	0.520642	0.995875	0.688680	0.639010	1.003776	0.459088	0.459088	0.446575
Kurtosis	2.227075	2.347003	2.814198	3.563182	2.244806	2.677763	2.198829	2.198829	2.022822
Jarque-Bera	2.060351	3.021358	6.335847	4.428589	4.407309	8.268205	2.969846	2.969846	3.505187
Probability	0.356944	0.220760	0.042091	0.109231	0.110399	0.016017	0.226520	0.226520	0.173324
Sum	5.75E+11	2.74E+10	8.38E+08	5.05E+09	4.31E+09	1336.539	3691.328	36.91328	52361075
Sum Sq. Dev.	1.70E+21	7.99E+18	2.31E+16	1.38E+17	2.83E+17	34778.93	25405.74	2.540574	1.14E+13
Observations	48	48	38	48	48	48	48	48	48

#### Nigeria

	RGDP	GDP	ODA	FDI	IBRD	TRD	MLT	TRB	POP
Mean	2.06E+11	1.45E+11	1.03E+09	2.15E+09	2.44E+09	33.27361	6.441065	0.332736	1.10E+08
Median	1.50E+11	6.18E+10	3.15E+08	1.07E+09	2.29E+09	35.25827	7.064414	0.352583	1.04E+08
Maximum	4.64E+11	5.68E+11	1.29E+10	8.84E+09	7.91E+09	53.27796	12.52967	0.532780	1.91E+08
Minimum	9.52E+10	9.18E+09	13.43188	-7.39E+08	1.82E+08	9.135846	0.863391	0.091358	55981400
Std. Dev.	1.14E+11	1.58E+11	2.14E+09	2.52E+09	1.84E+09	12.28075	3.392712	0.122808	39548062
Skewness	1.192779	1.320292	4.208361	1.330121	0.895736	-0.438576	-0.116541	-0.438576	0.421257
Kurtosis	2.980633	3.378216	22.05178	3.607575	3.598044	2.187816	1.804755	2.187816	2.026850
Jarque-Bera	11.38253	14.23145	867.6229	14.89208	7.134059	2.858075	2.904089	2.858075	3.313703
Probability	0.003375	0.000812	0.000000	0.000584	0.028240	0.239539	0.234091	0.239539	0.190739
Sum	9.88E+12	6.94E+12	4.93E+10	1.03E+11	1.17E+11	1597.133	302.7300	15.97133	5.30E+09
Sum Sq. Dev.	6.12E+23	1.17E+24	2.16E+20	2.98E+20	1.59E+20	7088.391	529.4826	0.708839	7.35E+16
Observations	48	48	48	48	48	48	47	48	48

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