DUTSE JOURNAL OF ECONOMICS AND DEVELOPMENT STUDIES (DUJEDS)
DEPARTMENT OF ECONOMICS AND DEVELOPMENT STUDIES
FEDERAL UNIVERSITY DUTSE
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DOES FOREIGN AID ENHANCE ECONOMIC GROWTH IN NIGERIA?

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Abstract
The present article examines the dynamic impact of foreign aid on economic growth in Nigeria during 1960-2013. The study adopts the Ordinary Least Square (OLS) methodology. The main empirical finding reveals that, there is a positive and significant impact of foreign aids on economic growth in Nigeria. Foreign aid serves as a stimulus that promotes economic growth in the country. The finding based on other control variables shows that; financial development also has a positive and significant impact on economic growth, this signifies that an improvement in the overall financial market stimulates the overall economic growth in Nigeria. While, the variable of trade openness is insignificant. However, the short-run Granger-causality test results reveal only the presence of unidirectional causality between economic growth and trade openness. This means that improvement of the overall economy causes Nigeria to open its trade sector and integrate with the rest of the world in the short-run. The policy recommendation based on the outcome of this study is that; it is imperative for the Nigerian policy makers to ensure efficient utilization of the foreign aids due to its direct impact of promoting long-run growth.

Keywords: Foreign aid; Economic growth; Trade openness; Financial development; Nigeria.

Introduction

The relevance of foreign development aid is essential in stimulating the growth of various developing countries Nigeria inclusive. Foreign aid that usually comes from either developed countries or global development donors so as to support developmental projects in developing countries like improving infrastructures, investment in health, education and power may have significant roles to play in improving the overall performance of the economy. Although, the major leading wealthy countries used some incentives to continue the dominations and influences on the weaker economies through different mediums like foreign aids, but still these funds may have their contributions on the recipients countries.

Nigeria is considered the giant of Africa in terms of resources which comprise both human and physical resources, but she is yet a beneficiary of various foreign aids. For example, just last week a Japanese government donated $800 million to the Nigerian government to combat malaria, tuberculosis, and other deadly diseases during the just concluded sixth Tokyo International Conference on African Development (TICAD VI), held in Nairobi Kenya.

The country also receives different aids from other countries like, China, United Kingdom (UK), Germany, France, and United States (US), etc. Apart from countries aids and institutional donor agencies (e.g. World Bank, International Monetary Fund, Islamic Development Bank, Paris Club, etc.). Several wealthy individuals in the globe also contributes immensely to different sectors on the Nigerian economy, prominent among them includes; Bill and Melinda Gates foundation which contributes several financial aids more especially to internally displaced persons (IDPs) in the north east due to Boko Haram insurgency.

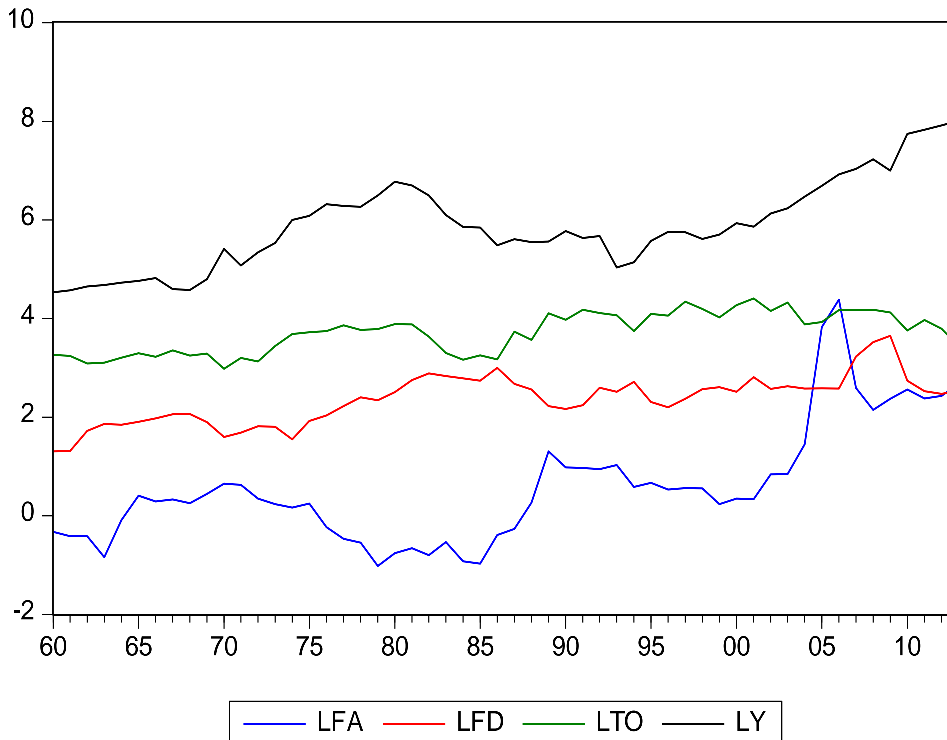

Fig. 1: Time plots series of the variables

Figure 1 shows the time plots series of the variables, the key variable (Foreign aids) is increasing in Nigeria overtime which reflect that the country highly benefited from such aid since after the country's freedom from the colonialists to date. Therefore, observing its contributions to the overall economic growth and development is paramount.

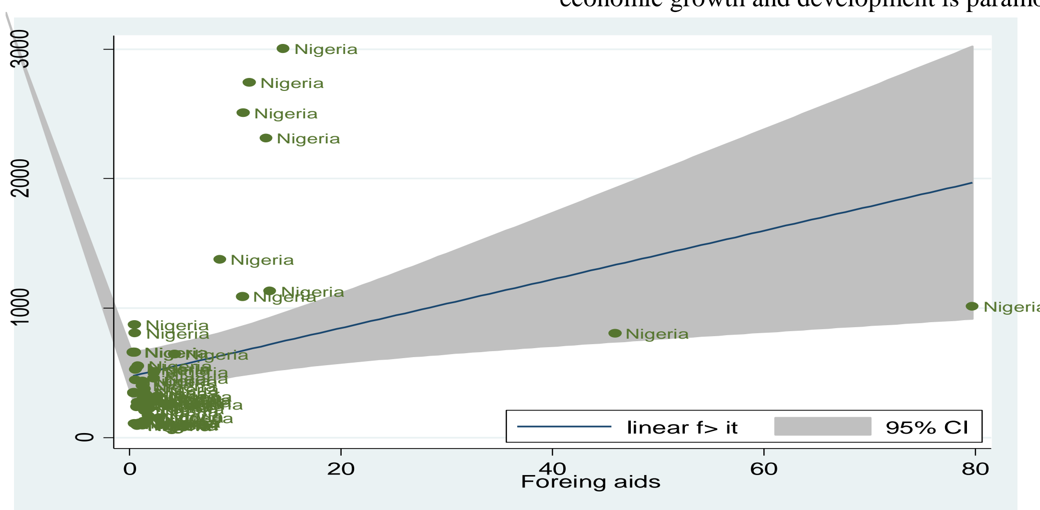

Fig. 2: Scatter plot that reflect the behaviour of the key variables

Figure 2 represent the relationship between foreign aids and economic growth in Nigeria, it shows that, increase in the foreign aid inflow positively influence the overall economic growth. The trend is positive and moving from left to the right over the years (1960-2013), which reflect the positive significance of the foreign aid on economic growth in the country.

The objective of this article is to empirically examine the impact of foreign aid on economic growth in Nigeria from independence of the country, i.e. 1960 to 2013. We controlled the model specification with two important determinants of growth, i.e. financial development and trade openness. Despite the huge financial and material aids the country is benefiting from both institutional donors and individuals, still little is known about its impact on the overall economic growth of the country. Hence, this paper added to the existing literature and filled the gap by identifying whether such aids promote economic growth in the country or not. While other papers used different econometric techniques, we used simple ordinary least square (OLS) to estimate the relationship among the variables. Also, we used aggregated aids instead of disaggregated as applied in some previous studies. The rest of the article is presented as follows; section two discussed the existing literatures, section three explain the data sources, and variables measurements, section four elaborate on the econometric methodology, and section five discussed and interpreted the results, and lastly section six concluded and suggest the relevant policy recommendations.

Literature Review

Considering the importance of foreign aids for decades more especially in developing countries, a lot of researchers contribute on the effect of foreign aid on the overall growth of the economy based on different regions and countries in the world. It is established for a very long time that numerous researchers contributes to the literature of foreign aids on different economic variables and dimensions, prominent among them includes; Easterly (2003), Kumar (2014), Asongu (2015), Arndt et al. (2015), Hsiao and Emdin (2015), Petrikova (2015), Edwards (2015), Levin et al. (2015), Lessmann and Markwardt (2016), Mascagni (2016), and Glennie and Sumner (2016). For example, Grounder (2001) applied Autoregressive Distributed Lag (ARDL) method to cointegration for the period of 1968-1996 to examine the impact of foreign aids on economic growth in Fiji. This study used different types of aids which includes; loan aid, technical cooperation aid, and grant aid, bilateral and multilateral aids with a view to find whether there exist long-run relationship based on disaggregated and total foreign aids in the country. The main result shows that, overall foreign aids and its disaggregated components has a positive and significant impact on economic growth in Fiji. Moreover, from domestic resources components only private investments and exports has a positive effect on economic growth.

Hansen and Tarp (2001) based on cross-country growth specification, examines the relationship between foreign aid and GDP growth per-capita. The finding shows that, the overall aid promotes growth rate irrespective of the policy frameworks. Moreover, the result suggests the variation of the outcome based on the indicator and specific control variables. For example, using investment and capital as controls, the finding shows no positive effect on growth. Minoiu and Reddy (2010) examine the impact of official development aids on economic growth in a selected developing countries based on system generalized method of moments (system-GMM). The time period ranges from1960-2000 based on five years scaling average. In this study they used two different types of aids; developmental and non-developmental. The main result suggests that developmental foreign aids stimulate long-run economic growth.

Feeny (2005) applied Autoregressive Distributed Lag (ARDL) to cointegration during 1965-1999 in Papua New Guinea. The empirical finding indicated that foreign aid and its numerous components promote economic growth in Papua New Guinea. The finding also proved that, foreign aids is more efficient when the country applied World Bank Structural Adjustment Program (SAP). This means that, SAP is more successful and effective when supported by foreign development aids. Dalgaard *et al*. (2005) applied basic OLG model and investigate the impact of foreign aids on economic growth. The empirical finding shows that aid inflows stimulates economic growth, although the degree of the effect rely on a given environments.

Rajan and Subramanian (2008) used both cross-sectional and panel data analysis to examine the impact of foreign aid inflows on economic growth in a selected sample countries. The finding reveals a slight strong evidence of a positive (or negative) nexus between aid inflows and economic growth. They also argue that, the effectiveness of aids have nothing to do with better policy or a geographical locations. Odusanya *et al.* (2011) examine the impact of foreign aid and public expenditure on economic growth in Nigeria during 1998-2008. The key finding reveals that foreign aid and public expenditure has a positive impact on the economic growth in Nigeria. Fasanya and Onakoya (2012) empirically assess the impact of foreign aid on economic growth in Nigeria during 1970-2010. The analysis is based on neo-classical modeling

analytical approach and other econometrics estimation techniques. The main empirical result reveals that; foreign aid has a positive and significant impact on economic growth in Nigeria. The result further highlight that increase in domestic investment is responding to the aid flows while population growth has no any significant influence on foreign aid inflows. MBA et al. (2012) empirically investigates the impact of foreign aid and external debt on economic growth based on seemingly unrelated regression estimation (SURE) model. The main empirical result emphasize that foreign aid has a significant impact on economic growth. However, there exists a negative impact of external debt on economic growth in the country.

Kolawole (2013) examine the impact of foreign assistance official development assistance (ODA) and foreign direct investment (FDI) on the real GDP of Nigeria during 1980-2011. The method used are Two-Gap model and various econometric techniques which include Augmented Dickey Fuller (ADF) test, Granger causality test, Johansen co-integration test and Error Correction Method (ECM). The main finding shows the presence of negative relationship between ODA and real growth of the Nigerian economy. Mbah and Amassoma (2014) applied Ordinary Least Square (OLS), Augmented Dickey Fuller (ADF) test, Johansen Cointegration test and examine the effect of foreign aids on economic growth in |Nigeria during 1981 to 2012. The main findings reveal a negative and unsubstantial effect of foreign aid on Nigeria's GDP. This outcome might be possible due to poor institutional quality and corruption that bedeviled the governance structure of the country.

Methodology

The econometric model based on ordinary least square (OLS) method is presented below, in which Y represent the dependent variable (economic growth), FA signify the main independent variable of interest (foreign aid), FD represent control variable (financial development), and lastly TO means the second control variable (trade openness), while ε represent random error term that take care of other factors that affect economic growth but are not captured in our model, and t signify time period of the study. In order to find the relationship among the variables, the following equation (1) is estimated;

$$Y_t = \beta_0 + \beta_1 FA_t + \beta_2 FD_t + \beta_3 TO_t + \varepsilon_t \quad (1)$$

After taking the natural logarithm of the variables for normalization purposes, we obtained equation (2) below;

$$lnY_t = \beta_0 + \beta_1 lnFA_t + \beta_2 lnFD_t + \beta_3 lnTO_t + \varepsilon_t \quad (2)$$

Where, lnY refers to the natural log of economic growth, lnFA is the natural log of foreign aids, lnFD is the natural log of financial development, and lnTO specify the natural log of trade openness.

Data

The data used for this study is sourced from world development indicators (WDI), World Bank data set for the period of 1960-2013. The notion of selecting this period is to examine the impact of foreign aid during the long period of post-independence Nigeria. The measurements of variables reveals that, economic growth is proxied by the real per-capita GDP. Financial aid is measured by the net official development aid (ODA) received per capita, financial development is measured by the GDP ratio of the domestic credit received by the private sector. Lastly, trade openness is measured by the GDP ratio of the total volume of import and export of the country.

Empirical Results

Table 1: Descriptive statistics

Variables	Observations	Mean	Std. Deviation	Minimum	Maximum
lnY	54	5.889	0.905	4.530	8.008
lnFA	54	0.593	1.201	-1.023	4.378
lnFD	54	2.359	0.493	1.307	3.647
lnTO	54	3.713	0.407	2.976	4.404

Source: Extracted by Author from E-views version 9

The descriptive statistics as presented in table 1 shows the distribution of the data, it signifies the number of observation (54), mean, standard deviation, minimum, and maximum of the variables of the study.

Table 2: Ordinary least square (OLS) estimation result. Dependent variable: Economic growth.

Variables	Coefficients	Standard error	P-values
$\ln FA_t$	0.273***	0.083	0.001
$\ln FD_t$	0.805***	0.216	0.000
$\ln TO_t$	0.201	0.274	0.467
Constant	3.080	0.893	0.001
R^2	0.51	-	-
F-statistics	17.048(0.000)	-	-

Source: Extracted by Author from E-views version 9
Note: * signify 1%, ** 5%, and *** 10% significance level respectively.

The main empirical result of the study is reported in table 2. Starting with the main hypothesis of the study, the finding reveals the existence of a positive significant relationship between foreign aids and economic growth in Nigeria. It further highlight that, 1% increase in foreign aids could stimulate economic growth to increase by 0.27%, and it is highly significant statistically hence null hypothesis is rejected at 1% significant level. This finding is consistent with that of Minoiu and Reddy (2010) across selected developing countries, Grounder (2001) in case of Fiji, Feeny (2005) in Papua New Guinea and Moreira (2005) across developing countries.

Moving to control variables, the finding also shows that; positive and significant nexus exist between financial development and economic growth, it further shows that 1% increase in the level of financial development promotes economic growth by 0.81%, hence the null hypothesis is rejected at 1% level of significance. While, the result reveal no any significant impact between trade openness and economic growth in Nigeria during the stated study period. The coefficient of determination (R^2) that determine the model fitness shows that the model is fit enough with 51% of the per-capita GDP growth rate explained by the variable in the equation.

Table 3: VECM Granger Causality Results

Dependent Variable	Independent Variables: χ^2 -statistics of lagged 1st differenced term [p-value]				ECT_{t-1} coefficient (t-ratio)
	ΔLY	ΔLFA	ΔLFD	ΔLTO	
ΔLY	_	3.507 [0.173]	0.101 [0.950]	1.319 [0.852]	0.019* (0.379)
ΔLFA	0.981 [0.371]	_	2.220 [0.329]	1.603 [0.448]	-0.190* (-1.995)
ΔLFD	4.062 [0.131]	0.558 [0.756]	_	3.384 [0.184]	0.109** (2.604)
ΔLTO	10.065*** [0.006]	0.832 [0.659]	2.108 [0.348]	_	-0.073** (-1.869)

Source: Extracted by Author from E-views version 9
Note: * signify 1%, ** 5%, and *** 10% significance level respectively.

We also move further to test the VECM short-run Granger causality with a view to identify the short-run relationship among the variables. The result is reported in table 3 and reveals the existence of only unidirectional causality running from economic growth to trade openness. While, no short-run causality exist between the other variables as reflected in the above table.

Conclusion and Recommendations

The main aim of this article is to examine the dynamic impact of foreign aids on economic growth during 1960-2013 in Nigeria. We applied ordinary

least square (OLS) to estimate the relationship, and also used short-run Granger causality with a view to estimate the short-run relationship. The result that answer the main hypothesis of the study reveal positive and significant impact of foreign aids on economic growth in Nigeria, this means that the overall per-capita official development aids received by the country promotes its overall economic growth in the country. Moreover, same result was found on the impact of financial development on economic growth, hence development of the financial sector stimulates economic growth, therefore supply-leading hypothesis exist in the case of Nigeria. Hence, it is imperative to use all forms of foreign aids judiciously since its contributions to the overall economic growth are imperative. The government should ensure it monitor the projects financed by the funds in order to checkmate the possibility of diverting the funds for other uses, more especially as corruption become rampant in the country.

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