



REASSESSING THE EFFICACY OF FOREIGN AID AND GRANTS IN POVERTY REDUCTION IN NIGERIA



Tersoo Shimonkabar SHITILE^{1*}

Abubakar SULE²

¹Central Bank of Nigeria and Economics Department, Nile University of Nigeria.

Email: shimonkabar@gmail.com Tel: (+234) 0803 525 4079

²Department of Economics, Kogi State University, Nigeria.

Email: sulea07@yahoo.com Tel: (+234) 0803 968 9256



(+ Corresponding author)

ABSTRACT

Article History

Received: 10 January 2019

Revised: 15 February 2019

Accepted: 21 March 2019

Published: 26 April 2019

Keywords

Foreign aid and grants
Technical cooperation grants
Official development assistance
Poverty reduction
Empirical studies of economic growth
Autoregressive distributed lag
Nigeria.

JEL Classification:

F35; I32; O47; C32.

This study re-examines the efficacy of foreign aid and grants on poverty reduction in Nigeria using time series data covering the period of 1999 to 2017. To perform the inquiry, the paper focus on disaggregated data for the analysis of foreign aid and grants, that is, technical cooperation grants (TCG), official development assistance (ODA) and other grants. Grounded on the Great Big Push theoretical framework, the study tested the marginal effect of TCG, ODA and other grants on poverty incidence in Nigeria using the Autoregressive Distributed Lag (ARDL) bounds testing approach. The empirical findings show that TCG and ODA have positive but insignificant impact on national poverty incidence in the short-term horizon; however, in the long-term, the effect of TCG and ODA on poverty incidence is negative. This finding suggests that the plausibility of poverty reduction policy based on external aid and grants is contestable. This affirms the argument that externally nominated solutions in form of foreign aid and grants do not connect with locally defined problems in poverty reduction.

Contribution/ Originality: This study is one of very few studies to explore the influence of disaggregated data of foreign aid and grants on poverty incidence in dimensions such as technical corporation grants, official development assistance, and other grants using the ARDL model of Nigeria from 1999 to 2017.

1. INTRODUCTION

According to Alimi (2018) extreme poverty has become a problematic issue in Sub-Saharan Africa, particularly since the 1980s and has risen to become one of the most challenging issues confronting many countries on the sub-continent. To this end, Sub-Saharan Africa is the world's leading beneficiary of foreign aid (Ogundipe *et al.*, 2014). Historically, the foreign aid and grants system is one of the principles of the Bretton Woods institution in the 20th century (Bretton Woods Project, 2005). It became prominent after the economic breakdown of 1930s, which contributed to the collapse of the world economy and this package has remained one of the channels of poverty reduction in countries with a shortage of capital.

On the foreign scene, there are many policy frameworks on foreign aid and grants, one of which is the Monterrey consensus agreement in March 2002 that donor communities should increase aid and grants to encourage the achievement of the Sustainable Development Goals (SDGs) - with all the targets geared towards

improving standard of living (IMF, 2015). Empirical studies (Mahembe and Odhiambo, 2018; Ugwuanyi *et al.*, 2017) show that its achievement is still far from reaching an appreciable threshold especially in sub-Saharan Africa countries.

Theoretically, foreign aid and grants are essential to the development process of recipient countries (Rosenstein-Rodan (1943). Lewis (1954) pointed out “that almost every developed country of the world in its developing stage had made the use of foreign capital to make up deficiency of domestic savings”. In 2005, the World Economic Forum called upon developed countries and foreign aid donors to implement the Big Push approach (Easterly, 2006). The Big Push approach combines a big increase in foreign aid, investment in employment-creating and welfare sectors, as well as complementary policy change packages (Sachs, 2005). The idea stems from the fact that poverty traps exist and escaping the trap requires a big push of basic investments in human capital, key infrastructure and public management. To this end, Bakare (2011) argues that foreign aid and grants increases the capital available for investment and growth which are needed to reduce poverty and raise living standards. He further stressed that it can provide resources for enhanced efficiency of resource use, employment generation and increased citizen participation in development programmes.

Empirical reviews obtained from various studies within and outside Sub-Saharan Africa, both at country-specific and cross-country levels indicate inconclusive results on the relationship between foreign aid and grants on poverty reduction. In studies by Ugwuanyi *et al.* (2017), Ojo *et al.* (2016), Ibietan *et al.* (2014), Abiola and Olofin (2009); the relationship between foreign aid and poverty reduction is inverse; while Mahembe and Odhiambo (2018), Woldekidan (2015) and Olofin (2013) reported positive outcomes. However, none of the works reviewed used disaggregated data for the analysis of foreign aid and grants in form of technical corporation grants, official development assistance, other grants to Nigeria and external loans. This is the point of departure from other studies and contribution to knowledge.

Nigeria is a country with vast wealth and revenues from crude oil have been increasing over the past decades; however, the citizenry have been becoming more embedded in poverty. There is still widespread poverty, as statistics show no meaningful decline over the past three decades. In 1994, 65.27% of Nigeria’s population lived on less than \$1.25 per day with severe poverty of 31.64% of total population (National Bureau of Statistics, 2000). In 2005, Nigeria witnessed a slight decline in the population segment that live on less than \$1.25 per day to 61.87% out of which 36.98% of total population were in severe poverty level (NBS, 2012). Eleven years after, in spite of great expectations, Nigeria still has a high poverty rate as 62.22% still live on less \$1.25 in 2017 (NBS, 2018). This implies that, the percentage of population below the poverty line in Nigeria is still alarming, hence, the high unemployment rate, and incessant youth unrest in many parts of Nigeria.

On this note, this study uses the Auto-Regressive Distributed Lag (ARDL) model to re-examine the long term and short-term effects of foreign aid and grants on poverty reduction in Nigeria covering the period of 1999 to 2017. It is expected that foreign aid and grant should exert a positive and significant effect on poverty reduction in Nigeria. The rest of this paper is organized as follows: Section two examines the literature review comprising of conceptual clarification, theoretical framework, and empirical review, Section three discusses the methodology including model specification and analysis of results while Section four discusses the major findings, concluding remarks and policy recommendations.

2. REVIEW OF RELATED LITERATURE

2.1. Conceptual Issues: Foreign Aid, Grants and Poverty Reduction

Foreign aid and grants constitute the flow of capital packages and other technical/managerial assistance from foreign countries and corporations to developing countries with the aim of lifting and enhancing the socio-economic activities of the less privileged. Foreign aid and grants are therefore, clearly recognised as a channel that can contribute towards human capital development either directly or indirectly. Aid and grants are donor-driven in the

sense that the donor decides on the volume, type and time to grant such aid and grants. This approach has always been the motive and the donors decide what to give as aid to recipient countries.

A lot of progress has been made in reducing global poverty (as percentage of the population) over the last forty years. Grants and Official Development Assistance (ODA) from rich countries have helped to achieve this (Hermias and Kharas, 2008) in addition to other technical corporation grants and external loans. Because of the importance attached to aids and grants especially for the developing countries, Todaro and Smith (2011) viewed foreign aid as all forms of grants and loans at concessional financial terms that are aimed at transferring resources from developed to developing countries on development, poverty and income distribution grounds.

Poverty reduction means strategies and programmes put in place by relevant stakeholders both home and abroad to address inequality gap in any given society and the implementation of these strategies/programmes requires adequate capital to achieve its full benefits (UNDP, 2016). In situations where a person cannot earn a daily income of US\$1, is without access to education and safe drinking water and is burdened by poor health and low life expectancy, they are termed poor. This is so precarious among the people of Nigeria who live on less than US\$2 per day, which is attested to by 2018 Goalkeeper's Report of 2018, where Nigeria overtook India as the country with the highest proportion of poor people (Kharas, Hammel and Hofer, 2018).

2.2. Theoretical Framework

This study adopts the Great Big Push Theory by Rosenstein-Rodan (1943). The theory argues that a significant inflow of aggregate aid (such as grants and ODA) in social and productive sectors will result in growth across all sectors of poor societies. This perspective and realization culminated in initiatives such as the United Nations (UN) Millennium Project and International Finance Facility (IFF), which involves high concentrations of aid to specific geographical areas and the frontloading of aid from rich countries to meet the Sustainable Development Goals. These interventions among other large increases in aid through multiple organisations (NGOs, government, the private sector) would arguably finance a big push in public investment and speed productivity growth in Africa to lift people out of poverty traps (Sachs, 2005).

The big push argument, therefore, is characterised by a holistic approach to improving the lives of the poor, utilising various forms of foreign aid and delivering a plethora of projects and programmes to enable the attainment of intended goals. This is convincing for countries in sub-Saharan African where governments have failed to invest in needed public investment and private alternatives have not been ready to invest sufficiently (Kiiza, 2010).

There is a target of eliminating extreme poverty by 2030 according to the Sustainable Development Goals, but that remains a big hurdle in sub-Saharan Africa (Shettima, 2016). According to World Bank (2018), of the world's 28 poorest countries, 27 are in sub-Saharan Africa, all with poverty rates above 30 percent, which makes extreme poverty increasingly a sub-Saharan African problem. For instance, at the end of May 2018, Nigeria had about 87million people in extreme poverty compared with 73 million in India (WB, 2018). On the regional level, several programmes including social assistance (such as cash and in-kind transfers), social insurance (such as pensions and unemployment insurance), and active labour market programs (such as skills training and wage subsidies) remain limited in most countries. The poor outcome of these stop-gap programmes is attributable to internal conflicts and weak institutions (WB, 2018).

On a global scale, there are several policy initiatives of advanced economies and corporations targeted at poverty reduction in Africa. These interventions in form of aid and grants come through international Non-Governmental Organizations (NGO), development agencies (like the Department for International Development, the United States Agency for International Development and the European Commission's Department for International Cooperation & Development) or an international organization (such as the World Bank or the United Nations Development Programme, etc). The impacts from the effectiveness of foreign aid and grants' can be explained if the people's livelihoods are improved.

As a result, the granting and withholding of aid can be used to influence the domestic policies of recipient countries (Tingley, 2010). Within this context, foreign aid and grants is seen as developmental and concessional (i.e. accommodating in terms and conditions of the development finance), however, if tied to certain stipulations by donors that are not in tune to local conditions, it can impact negatively rather than achieve its purpose (McGillivray & Noorbakhsh, 2007). It has been argued that foreign aid and grants to Africa have generally benefited the ruling elites, enabling and perpetuating corrupt governments' hold on power and instigating conflicts and loss of policy independency and rendering its effectiveness is biased by donor's control (Moyo and Mafuso, 2017). There is an argument that foreign aid and grants can be more effective where the local governments and citizens have the right to freely initiate, internalize and choose the policies best suited to their economic, political and social situations rather than when it is imposed by outsiders (Riddell, 2007; McCann and McCloskey, 2009). Thus, the great big push theory suits the goal of the study to assess the efficacy of foreign aid and grants in tackling the scourge of poverty in Nigeria.

2.3. Empirical Review

Mahembe and Odhiambo (2018) in a study "does foreign aid reduce poverty in sub-Saharan Africa?" used dynamic panel estimation techniques to examine the effect of ODA on poverty in Sub-Saharan Africa covering the period of 1981 to 2011. The main finding of the study is that, foreign aid has a significant effect across all the three proxies of poverty reduction. The results of bilateral aid, multilateral aid, grants and loans exert an insignificant relationship with poverty reduction. The study further reveals that inequality has negative relationship with poverty reduction.

Ugwuanyi *et al.* (2017) examined the impact of official aid on poverty reduction with empirical evidence from Nigeria. The data covered the period of 1981 to 2014. The study adopted the ARDL Bounds Test Approach in addition to the error correction model (ECM) to estimate the long-term and short-term dynamics. The long-term and short-term estimates showed that official aid has a non-significant positive effect on poverty reduction. However, the coefficient of ECM reveals a high significance in adjusting towards long-term equilibrium. The results on population growth exerted a negative sign on poverty reduction both in the long and short-term while that of labour force exerted a positive effect on poverty reduction.

Ojo *et al.* (2016) examined the impact of foreign aid on poverty reduction/alleviation programmes in Lagos State, Nigeria. The study used primary sources of data collection. Based on the content analysis of the primary data collected, the main finding showed that several factors pose threats to effective utilization of foreign aid on poverty reduction including: the misappropriation of funds and a lack of comprehensive information of beneficiaries.

Woldekidan (2015) analysed the role of foreign aid in reducing poverty in Ethiopia. The study used multivariate Cointegration analysis on the time series data covering the period of 1975 to 2010. The findings showed that foreign aid has positive influence on poverty reduction while it exerted a negative influence on gross primary enrolment ratio. Poor quality of governance negatively influences poverty while economic growth has a significant impact on poverty reduction.

Ibietan *et al.* (2014) carried out an appraisal on poverty alleviation and the efficacy of development assistance models in Nigeria. The study used the exploratory approach to analyse the obtained data covering the period of 2008 to 2011. The findings from the analysis showed that Nigeria has witnessed significant inflows of development assistance annually, but with little or no significant effect on poverty alleviation.

Olofin (2013) investigated foreign aid and poverty levels in eight West African countries using a heterogeneous panel analysis for the period of 1975 to 2010. The study applied Pesaran and Smith (1995)'s Mean Group estimator (MGe), the Pesaran (2006)'s Common Correlated Effects Mean Group estimator (CCEMGe) and the Eberhardt and Teal (2010)'s Augmented Mean Group estimator (AMGE). From the empirical results, the study established

that the impact of different types of foreign aid varies. The findings showed that total foreign aid and food aid impacts positively on poverty; similarly, technical aid also reduces poverty.

Kouassi (2012) in a study “foreign aid, inequality, and poverty: is the effect in sub-Saharan Africa different?” used cross sectional and panel data analysis. Empirical results reveal that there is weak evidence that foreign aid does worsen inequality and poverty in sub Saharan Africa; implying that foreign aid has the potential to positively influence poverty reduction.

Abiola and Olofin (2009) examined the possibility of a nexus between foreign aid, food supply and poverty reduction in Nigeria covering the period of 1975-2005 using the Ordinary Least Squares (OLS) model. The empirical results showed a strong relationship among some types of foreign aid, food supply and poverty reduction in Nigeria. In terms of methodological innovation, the study, also found that if all aid is not lumped together, some types of aid such as multilateral aid impacts positively on rural development, which can also contribute to improving sustainable livelihoods.

From the empirical study reviewed, only Mahembe and Odhiambo (2018) examined other components of foreign aid and grants like bilateral aid and multilateral aid using cross sectional data. Their result showed an insignificant outcome. In this light therefore, this study employs disaggregated data of foreign aid and grants in form of technical cooperation grants, official development assistance, external loans and other grants to analyse their impact on poverty reduction in Nigeria. In addition, since the study is country specific, the use of the ARDL model makes it appropriate to examine the joint relationship alongside the long- and short-term dynamics.

3. METHODOLOGY

The methodology is based on the ex post facto research design and uses time series secondary data obtained from Central Bank of Nigeria’s Statistical Bulletin, the National Bureau of Statistics and the World Development Indicators database. The study covers the period from 1999 – 2017. The study used the Autoregressive Distributed Lagged (ARDL) Model. In consonance with economic theory, it was expected that the explanatory variables would exert positive signs.

Following the theoretical basis of the Great Big Push Theory in form of a minimum quantum of investment, which involves a combination of a large increase in foreign grants and official development assistance, the model by Ewubare and Okpoi (2018) was adopted. This offered a disaggregation of foreign aid and grants, instead of the use of lump sum. Their long-term model was therefore expressed as Equation 1;

$$POV_t = \delta_o + \delta_1 ORT_t + \delta_2 IRT_t + \delta_3 ODA_t + \delta_4 TCG_t + \varepsilon_t \quad (1)$$

Where: POV_t = poverty headcount, IRT_t = inward remittances, ORT_t = outward remittances, ODA_t = official development assistance, TCG_t = technical cooperation grants.

The model above was modified to achieve the stated objectives of the study. The linear relationship between foreign aids and grants on poverty reduction in Nigeria are expressed in Equation 2 in linear form thus:

$$NPI = \pi_o + \pi_1 GRTS + \pi_2 ODA + \pi_3 TCG + \pi_4 EXL + U \quad (2)$$

Where: NPI = National Poverty Incidence in Percentage, GRTS = Grants (₦B), ODA = Official Development Assistance (₦B), TCG = Technical Cooperation Grants (₦B), EXL = External Loans (₦B), π_1 - π_4 are coefficients, U is the error term.

The study made use of the Autoregressive Distributed Lag Model (ARDL) in estimating the relationship. The ARDL Bounds cointegration test was first developed by Pesaran and Shin (1999) and later extended by Pesaran *et al.* (2001). It has been used extensively in the literature for three reasons. First, unlike the Johansen-Juselius Cointegration test, it allows for cointegration testing even when all variables are integrated of order $I(0)$ or $I(1)$, or a mix of the two. Second, it is not sensitive to the values of error parameters hence making it ideal for small sample

estimation. Finally, the ARDL Bounds approach is proven to provide unbiased long term estimates with valid t-statistics even when some of the cointegrated variables are endogenous (Amusa *et al.*, 2009). The above features makes the ARDL Bounds approach to cointegration ideal for use in this paper particularly since the data sample is small and the variables are a mix of $I(0)$ and $I(1)$.

The ARDL model specification of the above functional form is;

$$\Delta NPI_t = \varphi_0 + \sum_{i=1}^k \varphi_{1i} \Delta TCG_{t-i} + \sum_{i=1}^k \varphi_{2i} \Delta GRT_{t-i} + \sum_{i=1}^k \varphi_{3i} \Delta ODA_{t-i} + \sum_{i=1}^k \varphi_{4i} \Delta EXL_{t-i} + \delta_1 TCG_{t-i} + \delta_2 GRT_{t-i} + \delta_3 ODA_{t-i} + \delta_4 EXL_{t-i} + \varepsilon_t \quad (3)$$

Where Δ is difference operator, k is the lag length and μ_t is assumed to be serially uncorrelated Equation 4. The cointegration test is based on the F-statistics. Once cointegrating relationship was ascertained, the long term and error correction estimates of the ARDL model were obtained.

The error correction representation is specified as follows:

$$\Delta NPI = \sigma_0 + \sum_{i=1}^k \sigma_{1i} \Delta TCG_{t-i} + \sum_{i=1}^k \sigma_{2i} \Delta GRT_{t-i} + \sum_{i=1}^k \sigma_{3i} \Delta ODA_{t-i} + \sum_{i=1}^p \sigma_{4i} \Delta EXL_{t-i} + \lambda ECM + \varepsilon \quad (4)$$

Where λ is the speed of the adjustment parameter and ECM is the error correction term. The coefficient of the lagged error correction term (λ) was expected to be negative and statistically significant to further confirm the existence of a cointegrating relationship.

Although the bounds testing procedure does not require pre-testing of the variables for unit roots owing to its suitability irrespective of whether the series in the model are purely $I(0)$, purely $I(1)$ or both. The application of unit root tests in the ARDL procedure might still be necessary in order to ensure that the regressand is integrated of order one and none of the variables is $I(2)$ because the computed F-statistics provided by Pesaran *et al.* (2001) are valid for only variables that are $I(0)$ or $I(1)$. Hence, the study conducted the unit root test using Augmented Dickey-Fuller (ADF) and the results are summarized in Table 1.

3.1. Measurement of Variables

Poverty Reduction: Poverty reduction is a set of measures put in place to eradicate poverty. In Nigeria, several strategies and programmes have been implemented to this effect. Poverty reduction is proxied by poverty incidence index, which is the proportion of a population that exists, or lives below the poverty line. The inclusion of this variable was to ascertain how foreign aids and grants channel helps in poverty reduction in Nigeria and its measure is in percentage.

Official Development Assistance: Nigeria is a recipient of many international aid donors like UKAIDs, USAIDs, UNICEF, which play instrumental roles in facilitating human capital development and infrastructural projects especially in the crisis prone area. The inclusion of the variable was to re-examine the magnitude to which ODA influences poverty reduction in Nigeria. It was measured in billions of Naira.

Grants: According to the Harrod & Domar model, foreign aids in form of grants can fill the savings gap and increase physical capital accumulation. Foreign grants are initiatives instituted by foreign donors and multilateral aid agencies to ensure that African countries are progressing economically. It is aimed at alleviating poverty; budget deficits and helping them achieve macroeconomic stability. The inclusion of this variable in the model was to

ascertain whether it does cause poverty reduction in Nigeria within the period of the study. In addition, it is measured in billions of Naira.

Technical Cooperation Grants: This is the provision of resources aimed at the transfer of technical and managerial skills or of technology for building up general national capacity without reference to the implementation of any specific investment projects, in addition to other technical services required for implementation (IMF, 2003). The inclusion of this variable in the model was to re-examine the extent to which it improves human capacity development and subsequently poverty reduction. It is measured in billions of Naira.

3.2. Analysis of Results

3.2.1. Unit Root Test

The unit root tests were carried out with a drift as well as a time trend for each variable. To carry out the unit root test, the data was transformed to assume the same unit of measurement. It was based on the obtained log value that the ADF statistics were tested against for the 5% MacKinnon critical values.

Table-1. ADF Unit Root Test.

Variables	ADF Statistic @ Level	ADF Statistic @ 1 st Diff.	Critical Values			Prob.	Order of Integration
			1%	5%	10%		
NPI	-4.01	-	-3.58	-2.93	-2.60	0.0139	I(0)
TCG	0.43	-6.37	-3.58	-2.93	-2.60	0.0000	I(1)
GRT	-4.57	-	-3.58	-2.93	-2.60	0.0006	I(0)
ODA	-0.99	-8.61	-3.58	-2.93	-2.60	0.0000	I(1)
EXL	-2.32	-2.87	-3.58	-2.93	-2.60	0.0572	I(1)

Source: Extract from Results.

Table 1 reveal that national poverty incidence and grants were stationary at levels that are I(0) while technical corporation grant, official development assistance and external loans became stationary after first difference i.e. I(1). Hence, we concluded that these variables have a mixed order of integration. This fulfilled the condition for the ARDL Bounds test for cointegration to detect whether the variables have a long-term relationship.

The results of the ARDL bounds testing approach are shown in Table 2.

Table-2. ARDL Bounds Test.

Variables	F- Statistics	Cointegration
F(NPI/ TCG, GRT, ODA,EXL)	14.42287*	Cointegration
Critical value	Lower Bound	Upper Bound
1%	3.39	4.37
2.5%	2.88	3.87
5%	2.56	3.49
10%	2.2	3.09

Source: Extract from Results.

The explanatory variables were assumed to be integrated of order zero, or I(0) for values of the lower bound while the upper bound values were assumed to be integrated of order one, or I(1). Therefore, the decision rule was that if the computed F-statistic fell below the lower bound value, I(0), the null hypothesis (no cointegration) could not be rejected. Contrarily, if the computed F-statistic exceeded the upper bound value, I(1) then it could be concluded that the variables were cointegrated. Therefore, since the F-statistics fell above the upper bound figure of 4.37, 3.87, 3.49, and 3.09 at 1%, 2.5%, 5% and 10% level of significance, one could conclude that the variables were cointegrated. The next step was to examine the marginal effect of expected TCG, GRT, ODA and EXL on poverty reduction in Nigeria.

Table-3. Estimated Long Run Coefficients using the ARDL Approach.

Variables	Co-efficient	Std. Error	t-Statistic	P-value
(TCG)	-0.01299	0.005801	-2.240112	0.1544
(GRT)	0.000260	0.000137	1.896262	0.1984
(ODA)	-0.000250	0.000139	-1.793134	0.2148
(EXL)	4.21E-06	1.20E-06	3.515714	0.0722
C	58.40957	1.316053	44.38238	0.0005

Source: Extract from Results.

The results of the long-term equation in Table 3 reveal that technical corporation grant (TCG) and official development assistance (ODA) are negatively related to the poverty incidence index (NPI) in the long term. That is, an increase in foreign aid and grants (TCG and GRT) leads to a decrease in NPI, which was in line with the findings of Ewubare and Okpoi (2018), Ugwuanyi *et al.* (2017) but contrary to Olofin (2013). The coefficients of grants (GRT) and external loans (EXL) exert a positive relationship with poverty incidence in the long-term, which agrees with the finding of Olofin (2013). However, the coefficients of TCG and EXL show statistical significance while GRT and ODA report insignificant relationships in the long-term.

Table-4. Error Correction Representation for the selected ARDL Model.

Variable	Co-efficient	Std. Error	t-statistic	P-value	
Δ TCG	0.006528	0.000540	12.09984	0.0068	
Δ GRT	-6.27E-05	5.28E-06	-11.86281	0.0070	
Δ ODA	4.53E-05	5.09E-06	8.904022	0.0124	
Δ EXL	-3.52E-06	1.95E-07	-18.06640	0.0030	
ECM(-1)	-0.543744	0.025497	17.40346	0.0033	
Statistical Analysis		Values	Statistical Analysis		Values
R-squared		0.891232	Adjusted R-squared		0.781211
F-stat		-5.009832	Durbin-Watson stat		1.823837

Source: Extract from Results.

The short term regression in Table 4 shows that TCG and ODA exerted positive and significant relationships with poverty incidence while GRT and EXL exhibited negative signs and were statistically significant, which agrees with the finding of Olofin (2013). The error correction coefficient of -0.543 with a probability value of 0.0033 was correctly signed and significant implying a moderate speed of adjustment in foreign aid and grants with improvements in the poverty incidence. The high value of the adjusted R-squared of 0.781 was indicative of the fitness of the model in explaining the relationships. The model was free from serial correlation given the Durbin-Watson value of 1.823.

Table-5. Diagnostic Tests Results.

Test	Value	Prob.
Ramsey RESET Test	4.66	0.52
Heteroskedasticity Test	0.97	0.68
Breusch-Godfrey LM Test	0.81	0.57

Source: Extract from Results.

The diagnostic tests presented in Table 5 show that there was no evidence of diagnostic problem with the model. The Ramsey RESET test result shows that the p-value of 0.52 was greater than the critical $F_{0.05}$; therefore, we did not reject the null hypothesis and concluded that the estimated model was correctly specified at the 5% significant level. The White heteroscedasticity test suggested that the disturbance term in the equation was homoskedastic, since the calculated p-value of 0.68 was greater than the $F_{0.05}$ critical value. Therefore, we did not reject the null hypothesis of homoscedasticity and concluded that the error term had constant variance at 5% level of significance. The Breusch-Godfrey Lagrange Multiplier (LM) test of autocorrelation p-value of 0.57 was greater

than the $F_{0.05}$ critical value, thus, we did not reject the null hypothesis and concluded that there was an absence of serial correlation.

4. CONCLUDING REMARKS AND POLICY RECOMMENDATIONS

This paper empirically reassessed the effectiveness of foreign aid and grants on poverty reduction in Nigeria. The study employed the ARDL bound testing procedure to estimate the relationship between TCG, ODA, GRT, EXL and poverty reduction in Nigeria. The main finding of the study was that TCG and ODA have a negative relationship with poverty incidence in Nigeria; while GRT and EXL exerted positive relationships in the long-term. Meanwhile, in the short term, TCG and ODA had a positive sign while GRT and EXL exerted negative relationships with poverty incidence. The study concludes that foreign aid and grants in form of technical cooperation grant and official development assistance have not contributed to poverty reduction in Nigeria during the period under review, however other variables like other grants and external loans have contributed moderately to poverty reduction in Nigeria.

Based on the results, the study suggests that externally denominated solutions in form of foreign aid and grants do not connect with locally defined problems, such as poverty reduction. Therefore, the study recommends the need for further research on the determinants of foreign aid and grant effectiveness in poverty reduction to ensure policy implementation that accounts for the reality of the domestic economy.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Contributors/Acknowledgement: Both authors contributed equally to the conception and design of the study.

REFERENCES

- Abiola, A.G. and O.P. Olofin, 2009. Foreign aid, food supply and poverty reduction in Nigeria - Examination of possible nexus. MPRA Paper No. 16263. Available from <http://mpra.ub.uni-muenchen.de/16263/>.
- Alimi, A.S., 2018. Foreign aid and poverty level: Does public investment matter in Sub-Saharan African countries?. Global Journal of Management And Business Research, 18(1): 1-9.
- Amusa, H., K. Amusa and R. Mabugu, 2009. Aggregate demand for electricity in South Africa: An analysis using the bounds testing approach to cointegration. Energy Policy, 37(10): 4167-4175. Available at: <https://doi.org/10.1016/j.enpol.2009.05.016>.
- Bakare, A.S., 2011. The macroeconomic impact of foreign aid in Sub-Saharan Africa: The case of Nigeria. Business and Management Review, 1(5): 24-32.
- Bretton Woods Project (2005) What are the Bretton Woods Institutions. Available on <https://www.brettonwoodsproject.org/2005/08/art-320747/>. Accessed on 12 March 2019
- Easterly, W., 2006. "The Big Push Déjà vu: A Review of Jeffrey Sachs's The End of Poverty: Economic Possibilities for Our Time," Journal of Economic Literature, Vol. XLIV, Issue 1 (March 2006), pp. 118-127
- Eberhardt, M. and F. Teal, 2010. Productivity analysis in global manufacturing production. economics series Working Papers 515. Department of Economics, University of Oxford.
- Ewubare, D. and G.E. Okpoi, 2018. International remittances and poverty reduction in Nigeria. Journal of Applied Economics and Business, 6(2): 5-24.
- Hermias, J. and H. Kharas, 2008. Thrive on competition. Available from <http://www.inwent.org/ez/articles/065249/index.en.shtml> [Accessed 11 January 2019].
- Ibietan, J., F. Chidozie and E. Ujara, 2014. Poverty alleviation and the efficacy of development assistance models in Nigeria: An appraisal. International Journal of Humanities Social Sciences and Education, 1(4): 1-8.

- IMF, 2015. Financing for Development: Revisiting the Monterrey Consensus. IMF Policy Paper, Press Release No. 15/325, June 15, Washington D.C
- IMF, 2015. Financing for Development: Revisiting the Monterrey Consensus. IMF Policy Paper, Press Release No. 15/325, June 15, Washington D.C.
- IMF, 2003. External debt statistics: Guide for compilers and users – Appendix III, Glossary, IMF, Washington DC.
- Kiiza, L., 2010. The relationship between aid and economic growth: What aid strategy should the government of Uganda promote? Available from <http://www.grips.ac.jp/forum/DCDA/Chapter10.pdf> [Accessed 11th March 2019].
- Kharas, H., K. Hamel and M. Hofer, 2018."The start of a new poverty narrative". June 19, 2018. Available from <https://www.brookings.edu/blog/future-development/2018/06/19/the-start-of-a-new-poverty-narrative/>(Accessed 15 April 2019).
- Kouassi, A.M., 2012. Foreign aid, inequality, and poverty: Is the effect in Sub-Saharan Africa different? Research Papers Presented to Graduate School for Masters of Science Degree in Economics, February 20, 2012 at Southern Illinois University Carbondale.
- Lewis, W.A., 1954. Economic development with unlimited supplies of labour. The Manchester School, 22(2): 139-191.Available at: <https://doi.org/10.1111/j.1467-9957.1954.tb00021.x>.
- Mahembe, E. and N.M. Odhiambo, 2018. Does foreign aid reduce poverty in Sub-Saharan Africa? A dynamic panel-data analysis. UNISA Economic Research Working Paper Series04/2018, February 2018. Available at [http://uir.unisa.ac.za/bitstream/handle/10500/2361 ... %20Analysis.docx.pdf](http://uir.unisa.ac.za/bitstream/handle/10500/2361...%20Analysis.docx.pdf)
- McCann, G. and S. McCloskey, 2009. From the local to the global. London: Pluto Press.
- Moyo, L. and L.T. Mafuso, 2017. The effectiveness of foreign aid on economic development in developing countries: A case of Zimbabwe (1980-2000). Journal of Social Sciences, 52(1-3): 173-187.Available at: <https://doi.org/10.1080/09718923.2017.1305554>.
- National Bureau of Statistics, 2000. Annual Abstract. Abuja-Nigeria.
- NBS, 2012. Annual Abstract. Abuja-Nigeria.
- NBS, 2018. Annual Abstract. Abuja-Nigeria.
- McGillivray, M. and F. Noorbakhsh, 2007. Aid, conflict and human development. Working Papers 2007_03, Business School - Economics, University of Glasgow.
- Ogundipe, A., P. Ojeaga and O. Ogundipe, 2014. Is aid really dead? Evidence from Sub-Saharan Africa. International Journal of Humanities and Social Science, 4(10): 300-314.
- Ojo, O.V., P.N. Okoronkwo and A. Eyitayo, 2016. The impact of foreign aid on poverty reduction/alleviation programmes in Lagos State, Nigeria. Journal of Research and Development, 187(3508): 1-10.
- Olofin, O.P., 2013. Foreign aid and poverty level in West African countries: New evidence using a heterogeneous panel analysis. Australian Journal of Business and Management Research, 3(4): 9.
- Pesaran, M.H. and Y. Shin, 1999. An autoregressive distributed lag modeling approach to cointegration analysis, In: Strom, S., Holly, A., Diamond, P. (Eds.), Centennial Volume of Rangar Frisch. Cambridge: Cambridge University Press.
- Pesaran, M.H., Y. Shin and R.J. Smith, 2001. Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3): 289-326.Available at: <https://doi.org/10.1002/jae.616>.
- Pesaran, M.H. and R. Smith, 1995. Estimating long-run relationships from dynamic heterogeneous panels. Journal of Econometrics, 68(1): 79-113.Available at: [https://doi.org/10.1016/0304-4076\(94\)01644-f](https://doi.org/10.1016/0304-4076(94)01644-f).
- Riddell, R., 2007. Does foreign aid really work? , Oxford: Oxford University Press.
- Rosenstein-Rodan, P.N., 1943. Problems of industrialisation of Eastern and South-Eastern Europe. The Economic Journal, 53(210/211): 202-211.Available at: <https://doi.org/10.2307/2226317>.
- Sachs, J.D., 2005. The end of poverty: Economic possibilities for our time. New York: Penguin Press.

- Shettima, K. 2016. Achieving the Sustainable Development Goals in Africa: call for a paradigm shift. Africa Journal of Reproductive Health September 2016 (Special Edition on SDGs): 20(3):19
- Tingley, D. 2010. Donors and domestic politics: political influences on foreign aid effort. The Quarterly Review of Economics and Finance. Volume 50, Issue 1. February 2010, pages 40-49
- Todaro, M. and S. Smith, 2011. Economic development. 11th Edn., Harlow: Addison Wesley.
- Ugwuanyi, U.B., H.C. Ezeaku and I.G. Ibe, 2017. The impact of official aid on poverty reduction: Empirical evidence from Nigeria (1981-2014) using the ARDL and bound test approach. European Journal of Sustainable Development, 6(2): 111-120. Doi.org/10.14207/ejsd.2017.v6n2p111.
- UNDP, 2016. UNDP and the concept and measurement of poverty. United Nations Development Programme. Issue Brief. October, 2016. Available online at <https://www.undp.org/content/dam/undp/library/Sustainable%20Development/ISSUE%20BRIEF%20-UNDP%20and%20the%20concept%20and%20measurement%20of%20poverty%20pc%20V2.pdf>
- Woldekidan, H., 2015. The role of foreign aid in reducing poverty: Time series evidence from Ethiopia. Journal of Economics and International Finance, 7(3): 59-71. Available at: <https://doi.org/10.5897/jeif2015.0646>.
- World Bank. 2018. Poverty and Shared Prosperity 2018 : Piecing Together the Poverty Puzzle. Washington, DC: World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/30418> License: CC BY 3.0 IGO.

Views and opinions expressed in this article are the views and opinions of the author(s), Asian Economic and Financial Review shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.