Appraising the Relationship Between Foreign Aid on Poverty Reduction in Nigeria

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DOI 10.56201/ijebm.v9.no7.2023.pg79.104

ABSTRACT

This paper examines the impact of foreign aid on economic growth and poverty reduction in Nigeria, using the Autoregressive Distributed Lag (ARDL) technique for regression analysis. The study employs time series data from 1986 to 2020 to analyze the long-run and short-run relationship between foreign aid, economic growth, and poverty reduction in Nigeria. The study adopted the combined theories and concepts of the Great Big Push Theory, The Thirlwall-Hussain model, and The Poverty Trap Model in theoretical outlook. The data set is used to test the long-term relationship as well as the short-term relationship. The results show that foreign aid has a positive and significant impact on economic growth and poverty reduction in Nigeria in both the long-run and short run. According to the findings of the study, foreign aid can be an effective strategy for encouraging economic growth and poverty reduction in Nigeria. The study's policy consequence is that the Nigerian government should endeavour to increase the efficacy of foreign aid to achieve long-term economic growth and poverty reduction. The study recommended that to build local capacity, foreign aid can be used to provide training and technical assistance to local organizations and individuals, to build the capacity of the local population to manage and sustain economic growth. It also recommended that in promoting good governance, foreign aid can be used to support initiatives aimed at improving transparency and accountability in government, to ensure that aid is used effectively to safeguard economic growth that is inclusive.

Keywords: Capacity Building, Economic-growth, Foreign aid, Poverty, Nigeria

1.1 Background to the study

In Nigeria, various efforts have been made by the government, non-governmental organizations and individuals to reduce poverty in the country. According to Ogwumike (2001) poverty reduction measures implemented so far in Nigeria focus more attention on economic growth, basic needs and rural development strategies. The economic growth approach focuses attention on rapid economic growth as measured by the rate of growth in real per capita GDP or per capita national income, price stability and declining unemployment among others, which are attained through proper harmonization of monetary and fiscal policies. The basic need approach focuses attention on the basic necessities of life such as food, health care, education, shelter, clothing, transport, water and sanitation, which could enable the poor live a decent life.

The rural development approach focuses attention on the total emancipation and empowerment of the rural sector.

Furthermore, Ogwumike (2001) grouped the strategies for poverty reduction in Nigeria into three eras – the pre–SAP era, the SAP era and the democratic era. In the pre-SAP era, the measures that were predominant were the Operation Feed the Nation, the River Basin Development Authorities, the Agricultural Development Programs, the Agricultural Credit Guarantee Scheme, the Rural Electrification Scheme and the Green Revolution. In the SAP era the following poverty reduction measures were introduced; the Directorate for Food, Roads and Rural Infrastructures, the National Directorate of Employment, the Better Life Program, the Peoples' Bank, the Community Banks, the Family Support Program and the Family Economic Advancement Program. The democratic era witnessed the introduction of the Poverty Alleviation Program (PAP)designed to provide employment to 200,000 people all over the country. It was also aimed at inculcating and improving better attitudes towards a maintenance culture in highways, urban and rural roads and public buildings. By 2001 PAP was phased out and fused into the newly created National Poverty Eradication Program (NAPEP) which was an integral part of the National Economic Empowerment and Development Strategy (NEEDS).

Specifically, the first foreign aid which was inform of loan in Nigeria was borrowed in 1964, a sum of 13.1 million dollars from the Italian government for the construction of the Niger Dam. By 1970 Nigeria external debt has grown to 1 billion dollars and in 1980s it stood up to 19 billion dollars, from where it grew to 35 billion dollars in 2004. In 2005 Nigeria obtained a debt relieve of 18 billion dollars from the Paris club of creditors and pay back 12 billion dollars (Ayodele, 2005). Aid flows thereafter rose to US1.29 billion in 2008 and has been above that till 2011 with US1.78 billion as aid flow to Nigeria. Nigeria has received foreign aid from a wide array of agencies and countries between 1960 and today making the country to remain heavily indebted to foreign countries which have increased the rate of poverty in Nigeria.

As of 2004, it was agreed that the level of external debt was becoming unsustainable to Nigeria government and there was need for debt relieve to enable the country pursue the millennium development goal (MDGs). That is why Millennium Development Goals (MDGs) document was geared towards eradication of poverty and hunger in these economies by 2015. However, after the appraisal of success of MDGs in 2015 it was discovered that despite the fact that MDGs have been achieved at the global level, some countries are still lagging behind with high degree of poverty thus leading to the emergence of sustainable development goals (SDGs). Nigeria as perceived is one of the countries in Africa characterized by a high level of poverty in the twenty first century. According to the World Poverty Clock report in 2018, Nigeria has estimated 86.9 million people living in extreme poverty. This number is the highest in the globe. Foreign aids could be a weapon to fight poverty in developing countries through financing of developmental projects that have trickle down effects on the masses. Meanwhile, when it comes to Nigeria, there have been different opinions regarding the impact of foreign aids on poverty alleviation in the country. It has been argued that Nigeria does not need foreign aids to fight poverty because of huge revenues which the country obtains from crude oil and large bulk of remittances from its citizens working overseas.

In the recent time, an attempt to empirically examine the impact of foreign aids on poverty alleviation in Nigeria has generated a lot of arguments and conflicting results in the literature. "Poverty, according to Evbromeran (1997), is capable of causing fear, depression, despondency, suicide, revolution, envy, bitterness, and self-depreciation of ego". However, it appears poverty situation in Nigeria in recent times appears to conflict with the purpose of foreign aid flows; the poverty level in Nigeria is still very high and persistent, notwithstanding increase in foreign aid inflow. This persistent increase in poverty level amidst the foreign aid inflows casts doubt on the potency of foreign aid as a veritable tool for poverty reduction in Nigeria. It is against this backdrop that this study aims to analyze the effects of foreign aid on the economic growth and poverty reduction in Nigeria, Hence the focal point of this study is to ascertain the nature of the relationship that exists between foreign aid and poverty reduction in Nigeria.

1.2 Statement of Problem

In the recent time, an attempt to empirically examine the impact of foreign aids on poverty reduction in Nigeria has generated a lot of arguments and conflicting results in the literature. For instance, Neutral impact was reported by Bashir (2013) who analyzed the influence of ODA and foreign direct investment on real growth in Nigeria using error correction model for the periods 1980 to 2011. The study of Tersoo and Abubakar (2019) 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 applied the Autoregressive Distributed Lag (ARDL) bounds testing approach. The results showed that Technical Cooperation Grants and Official Development Assistance 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.

Research Questions

Based on the issues raised above, the following research questions have been generated to guide the study:

- **i.** What is the effect of net official development assistance and official aid on real gross domestic product in Nigeria?
- **ii.** What is the effect of grants excluding technical co-operation on real gross domestic product in Nigeria?

Objective of the study

The broad objective of the study is to examine the impact of disaggregated government expenditure on poverty and inequality in Nigeria. The specific objectives are below;

- i. To analyze the effect of net official development assistance and official aid on real gross domestic product in Nigeria.
- **ii.** To determine the effect of grants excluding technical co-operation on real gross domestic product in Nigeria.

Hypotheses of the study

The following hypotheses stated in the null form will be tested in the study;

- H0₁ Net official development assistance and official aid has no significant impact on real gross domestic product in Nigeria.
- H0₂ Grants excluding technical co-operation has no significant impact on real gross domestic product in Nigeria.

1.6 Significance of the study

This research work has theoretical and practical significance. The theoretical Significance is that the study will add to existing knowledge. Practically this study will contribute to the advancement of extent literature on impact of foreign aids and technical assistance on poverty reduction in Nigeria, thus forming a verifiable source of reference for researchers. Again, it is also expected that the empirical result and recommendation of this work will be useful to policy makers as it will help in adopting the right and suitable foreign

aids policies that will eradicate extreme poverty, extreme hunger and enhance fast economic development in Nigeria, more so the entire population of Nigeria and Nigerian government will benefit immensely from this research work as it will expose them to the benefit and harmful effect of foreign aids and help Nigeria policy makers on how to make the right policies as to clear their impending debt, makes the right economic policy in determining the effectiveness of foreign aid in Nigeria and invest wisely to attained economic development independently.

Scope of the study

This study is based on secondary data obtained from the World Development Indicators (WDI) from 1986 to 2020 for Nigeria. This work captures net bilateral aid flow, net official development assistance aid, technical cooperation Grant, Grant excluding technical cooperation grant, foreign direct investment, gross fixed capital formation and personal remittance represented as independent variables and poverty level and Real gross domestic product represented as our two dependent variables. The theoretical framework will be based on two theories which are big push theory and the two-gap model theory. The model specification illustrates the relationship between foreign aid on economic growth and poverty reduction in Nigeria and the estimation method to be used in this analysis will be the Auto regressive distributed lag model (ARDL).

Foreign Aid as a Concept

There are diverse definitions of foreign aid and this has constituted problems in defining foreign aid because not all kinds of non-commercial international financial flows can be conceptually included as foreign aid. The term foreign aid is generally used in the sense of flow of resources from the rich countries to the poor underdeveloped countries at some point, 'all real resource transfer' from developed to underdeveloped or developing countries were included as foreign aid and this raised conceptual problems because it includes certain resource transfer which do not essentially qualify as foreign aid.

Therefore, a more general definition is given by Ekiring (2000) conceptualizes foreign aid as an international transfer of capital, goods, or services for the benefit of other nations. Such aid, in her view, is offered in several forms: Capital transfers, in cash or kind, either as grants or loans, technical assistance and training, usually as grants in the form of human resources and technical equipment, and Military assistance in the form of either equipment or training advisors. Therefore, foreign aid includes direct government transfers as well as those promoted by special official action such as government guarantees. Another definition is in the work of Bakare (2011), and he defined foreign aid as a means of increasing the capital available for investment and the economic growth needed to reduce poverty and raise living standards in sub-Saharan African. He further stressed that it could provide resources for industrialization, enhance efficiency of resource use, increase product diversity and generate employment, (OECD-DAC, 1999).

According to Todaro (1998), the generally accepted and used definition of foreign aid is one that encompasses all official grants and concessional loans, in currency or in kind, that are broadly aimed at transferring resources from developed to less developed nations on development and income redistribution grounds." It has also been defined by economists 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 as opined by (Todaro & Smith, 2011).

2.1.3 Classification of Foreign Aid

Nigerian government has received several aids on poverty eradication and sustainable development from various sources. Classification of Foreign aid is majorly classified into Projects, Programmes, Technical co-operation aid or grants, Net bilateral aid flows, Humanitarian Aid or Emergency Aid, official development assistance and Food Aid.

Project Aid

This is simply the influx of external funding that is aimed at a specific project, example, improving access to water, construction of a road or building a school. It consists of activities aimed principally at augmenting the physical capital infrastructure of receiving countries. The assistance is known to be project aid when the funds are used to support a certain project, such as a hospital or school. Project Aid is a traditional method of delivering aid to developing countries. Under this instrument assistance is provided for a set of activities, having specified time duration and well-defined objectives. Project Aid is usually provided for building infrastructure, for example roads, harbors, dams, irrigation projects and telecommunication projects. In addition, funds under project aid can be directed towards large and small scale industrial and agricultural projects, rural development projects, education and health projects, population projects and projects for women etc. Project Aid is utilized through project management units that are set up in parallel with local government systems (Szirmai, 2004).

Programme Aid

Programme aid is defined by OECD as financial contributions not linked to specific activities. The programme aid is divided into two forms, the balance of payments (BOP) support and the budget support. Under the budget support, aid funds are provided to boost aggregate revenue and increase overall spending. Aid funds channelled to ministries of finance are termed as General Budget Support (GBS) while those channelled to particular sectors are termed as Sector Budget Support (SBS). Under the GBS, donors provide funds for implementation of development and poverty alleviating strategies paying attention to the capacity of the recipient governments to use funds efficiently. Programme aid is not targeted at a particular activity, although donors make payments conditional upon policy reform by the recipient government. It includes, amongst others, budget and balance-of-payments (BOP) support, financing of capital goods and commodities and sector programme assistance. The key characteristic of Programme Aid is its direct channeling to recipient countries through their local accounting system (Camara,2004) which is given for debt relief, import support and budget support (White & Dijkstra,2003).

Food Aid

Food aid comprises of programme food aid and humanitarian food aid. Programme food aid may relieve the foreign exchange constraint to the import of the necessary intermediate inputs or by providing fiscal resources through counterpart funds generated by the local sale of programme food aid (Barret, 1998). These resources can be used by the recipient country to invest in agricultural research and extension and improvement of rural infrastructure. However, programme food aid may have Dutch disease effects on domestic food producers and thus hurting the food sector's competitiveness in the world markets.

Technical Co-operation Grants Also referred to as technical assistance (TA) is a general term covering contributions to development essentially through the provision of guidance and or skills in the form of training and scholarship, specialist personnel, grants for research and other associated costs. Technical cooperation grants include free-standing technical cooperation grants, which are intended to finance the transfer of technical and managerial skills

or of technology for the purpose of building up general national capacity without reference to any specific investment projects; and investment-related technical cooperation grants, which are provided to strengthen the capacity to execute specific investment projects.

2.1.4 Poverty as a Concept Definition of Poverty

Oyeranti and Olayiwola (2005) view poverty as a severe deprivation of some basic human needs at the individual or household level. Put differently, poverty is material deprivation which can be assessed in monetary terms. Deprivation can be equated with lack, e.g. Lack of money to spend and to obtain material things needed to satisfy human wants. This condition can lead to a low standard of living. The word poverty comes from French word "poverté" which means poor. On the basis of social, economic and political aspects, there are different ways to identify the types of Poverty but for this paper we will shift focus to two major areas which are Absolute poverty and Relative Poverty:

Absolute poverty

Absolute poverty refers to a below absolute standard of minimum requirements, while relative refers to falling behind most others in the community (Lauer, 1998). De Beer and Swanepoel (2000), in line with the World Bank (2001), indicate that absolute poverty refers to a situation where incomes are low and the minimum living standards cannot be maintained. This means a person is so poor that his next meal may mean the difference between life and death' (De Beer & Swanepoel, 2000).

In the MDG report of Nepal (UNDP, 2003), absolute poverty is defined as a level of income insufficient to procure a basket of minimum food (2124 kilocalories per person) per day". It is a situation where the net income of an individual or group is below the threshold (poverty line) of now US\$1.25 income per day. It is synonymous with destitution and occurs when people cannot obtain adequate resources (measured in terms of calories or nutrition) to support a minimum level of physical health. Absolute poverty means about the same everywhere, and can be eradicated as demonstrated by some countries.

Also known as extreme poverty or abject poverty, it involves the scarcity of basic food, clean water, health, shelter, education and information. Those who belong to absolute poverty tend to struggle to live and experience a lot of child deaths from preventable diseases like malaria, cholera and water-contamination related diseases. Absolute Poverty is usually uncommon in developed countries. It was first introduced in 1990, the "dollar a day" poverty line measured absolute poverty by the standards of the world's poorest countries. In October 2015, the World Bank reset it to \$1.90 a day. This number is controversial; therefore, each nation has its own threshold for absolute poverty line.

Relative poverty

Relative poverty, on the other hand, articulates the minimum standards in terms of the average living standards of society and therefore, captures the distributional component of poverty. It is focused on the conditions of those at the bottom of the income distribution and how they fare when compared with other selected benchmark population in the income distribution (Serageldin, 1989). It is defined from the social perspective that is living standard compared to the economic standards of population living in surroundings. Hence it is a measure of income inequality. For example, a family can be considered poor if it cannot afford vacations, or cannot buy presents for children at Christmas, or cannot send its young to the university. Usually, relative poverty is measured as the percentage of the population with

income less than some fixed proportion of median income. It is a widely used measure to ascertain poverty rates in wealthy developed nations.

Relative poverty means poverty defined in comparison to other people's standing in the economy. Thus, a person can be poor in the relative sense, even if she is not poor in the absolute sense, that is, can meet her basic needs. Relative poverty can be observed by looking at relative standings within a society, or internationally. Sometimes relative poverty is seen as a phenomenon most relevant in societies in which there is no acute problem with absolute poverty, thus being an ethically less severe problem. Typically, relative poverty is seen as a matter of failure of distributive justice, while absolute poverty is seen as a failure of meeting the requirements of basic dignity of human beings or even a failure to meet human rights (Eskelinen, 2011). In European Union, the "relative poverty measure is the most prominent and most–quoted of the EU social inclusion indicators" it occurs when people do not enjoy a certain minimum level of living standards as determined by a government (and enjoyed by the bulk of the population) that vary from country to country, sometimes within the same country. Poverty is endemic in Nigeria just like other problems bedeviling the polity. Poverty has been described as wide spread and severe (CBN/World Bank, 1996).

2.2 Poverty Reduction/alleviation

Poverty alleviation or reduction is a strategic programme designated to curtail or eradicate poverty from the society. It also means measures adopted to reduce poverty in the society. Poverty Reduction in this case refers to decrease, for instance, reduction in unemployment. That means the number of unemployed has reduced by number and size. Put simply, poverty reduction according to this study connotes a physical reduction in the incidence of poverty in number and size. Reducing the number of the poor from high to low. This is done through empowerment and capacity building in an enabling environment. Empowerment and capacity building in an enabling environment to nothing.

Oyeranti and Olayiwola (2005) view poverty as a severe deprivation of some basic human needs at the individual or household level. Put differently, poverty is material deprivation which can be assessed in monetary terms. Deprivation can be equated with lack, e.g. Lack of money to spend and to obtain material things needed to satisfy human wants. This condition can lead to low standard of living.

2.2.1 Past Government and Non-Government Organizations (NGOs) Poverty Alleviation Programs.

The first was the Farm Settlement Option introduced in 1960's. The intention of the Nigerian government was to develop both the export and cash crops. In 1972, the scheme collapsed but birthed the National Accelerated Food Production project. The projective was to create an avenue for testing and adapting agricultural research findings and making such available to farmers. In 1973, Agriculture Development Project (ADP) was established to provide credit facilities for the development of agricultural projects, in order to promote integrated rural developments. It was partly financed and executed by the World Bank but became moribund after a brief spell. Operation Feed the Nation came on board in 1976 to arouse in Nigerians, the habit of cultivating food and cash crops in order to be self-reliant. It only succeeded in arousing the awareness of increasing food production without any appreciable increase in agricultural production.

In 1987, the government introduced the Better Life Programme (BLP) targeted at the rural women; the thrust of the programme was self-help and rural development programmes, skill acquisition and health care. There was also the National Policy on Science and Technology, meant to boost the development of indigenous technology. In order to give

succour to the industrial revolution sweeping through the country the Federal Government set up the Science and Technology Fund (STF) and the National Economic Recovery Fund (NERFUND) in 1989. This was further boosted, same year, by the establishment of People's Bank of Nigeria, targeted at the underprivileged in the rural and urban areas, to encourage savings and to grant credit facilities to small businessmen and women.

The current poverty alleviation programme from 1999 till date is the National Poverty Eradication Programme (NAPEP). It focuses on the provision of strategies for the eradication of absolute poverty in Nigeria. NAPEP is complemented by the National Poverty Eradication Council (NAPEC) which is to coordinate poverty reduction related activities of all the relevant Ministries, Parastatals and Agencies. The poverty reduction-related activities of the institutions under NAPEP have been classified into four - Youth Empowerment Scheme (YES), Rural Infrastructure Development Scheme (RIDS), Social Welfare Service Scheme (SOWESS) and Natural Resources Development and Conservative Scheme (NRDCS). Since the inception of the civilian administration in 1999, the following policies have been adopted in poverty alleviation programme.

- i. Trade and payment liberalization.
- ii. Tariff reform and rationalization for the promotion of industrial diversification.
- iii. Deregulation and greater reliance on market forces particularly in the downstream activities of the crude oil industry.
- iv. Adoption of appropriate pricing policies of all commodities and
- v. Adoption of measures to stimulate production and broaden the supply base of the economy.

The description of Nigeria as a paradox by the World Bank (1996) has continued to be confirmed by events and official statistics in the country. The paradox is that the poverty level in Nigeria contradicts the country's immense wealth. Among other things, the country is enormously endowed with human, agricultural, petroleum, gas, and large untapped solid mineral resources. Particularly worrisome is that the country earned over US\$300 billion from one resource -petroleum -during the last three decades of the twentieth century. But rather than record remarkable progress in national socio-economic development, Nigeria retrogressed to become one of the 25 poorest countries at the threshold of twenty-first century whereas she was among the richest 50 in the early-1970s. The increasing incidence of poverty, both within and among locations, was in spite of various resources and efforts exerted on poverty-related programmes and scheme in the country, thus suggesting that the programmes and schemes were ineffective and ineffectual. Until the inauguration of a Poverty Alleviation Programme Development Committee (PAPDC) by the Nigerian government in 1994, all efforts at poverty alleviation were essentially ad-Hoc. It can be observed from the Plan documents that "the primary goal of economic planning in Nigeria is the attainment of rapid increase in the nation's productive capacity with a view to improving the living standards of the people".

The Aid-growth Relationship

Theory suggests that foreign aid promotes economic growth by supplementing limited domestic savings as well as foreign exchange constraints of recipient developing countries. From early literature the study conducted by Chenery H.B. and Strout (1966) which itself money added to government coffers) thereby limiting growth and inhibiting development. The effectiveness or ineffectiveness of foreign aid in spurring growth is on a case-to-case basis. It is therefore rational to identify the key factors that cause aid to work or not work for growth. The studies under this category may be further grouped into those that identify country specific

factors and those that point out donor specific characteristics that provide conducive environment for aid to spur growth.

2.2.4 Foreign direct Investment and Economic growth

Aid and the Dutch Disease

The injection of aid into an economy changes its economic dynamic because relative prices are likely to be affected. Thus, the effect of aid on growth is partly accounted for by how relative prices react to the influx of aid. The Dutch disease is a term used when a sharp inflow of foreign currency causes the real exchange rate (RER) of a country to appreciate, potentially harming productivity, and hence having an adverse effect on growth in the long run. When the RER of a country appreciates due to ODA, import of international goods become cheaper, export of domestic goods become expensive, incentive to produce weakens and production falls. Additionally, as a result of imports becoming cheaper, the large increase in the volume of imports gradually begin to act as substitutes for domestically produced import-competing goods, threatening productivity and potentially causing deindustrialization. In both scenarios, BOP deficit will likely occur, as imports will exceed exports. Even worse, as the relative prices of internationally traded goods fall, domestic prices of non-traded goods such as electricity, local transport, water supply, etc. rise, thus the output of non-traded goods rise, while the output of traded goods fall. If receiving aid offsets this chain of events, then this would be a step backward in achieving growth.

Contrary to the Dutch disease theory, there is a belief that aid's influence on the RER (appreciation) of small economies, do not have the same effect. As a result of cheap imports, the domestic input-competing industries could potentially gain cost advantage, thereby increasing productivity of domestic import-competing goods (Kallon, 2014). The adjustment of the RER as a direct consequence of the inflow of ODA, tells us that in examining the effect of foreign aid on economic growth, including exchange rate (ER) responses in the analysis is vital (Fielding & Gibson, 2013). Aid has been said to exhibit diminishing marginal returns, thus, there is such a thing as "too much aid". If an increase in aid flows is accompanied by an increase in consumer expenditure (increased importation of unproductive goods/ increased government expenditure on consumer goods), then the Dutch disease effect may set in, delaying long run growth in the process. In diagnosing the presence or the absence of the Dutch disease, careful measures must be employed. A correct diagnosis will set the scene for corrective measures to be applied. A wrong diagnosis, however, will mean a reduction on aid flows, thus causing a setback in the implementation of long run growth enhancing policies (Nkusu, 2004).

Aid Fungibility

Aid is said to be fungible when donor and recipient interests for the use of funds, are not aligned, e.g. If the United States donates \$1 million to Nigeria for health care, and instead of health care, the funds are spent on debt servicing. Aid has been categorised by many researchers, of which one category is program versus project aid. According to Carlin (1966), "project aid can be defined as assistance whose disbursement is tied to capital investment in a separable productive activity" while "program aid is assistance whose disbursement is tied to the recipient's expenditures on a wide variety of items, justified in terms of total needs and development plan of the country rather than any particular project". Project aid is subject to stricter conditionality, this could be why it has been reported as being more successful, in terms of aid effectiveness.

Theoretical Review

Great Big Push Theory

This theory was developed by Rosenstein-Rodan in 1943. The theory states that investing in "bit by bit" or in piecemeal will not enable an economy to successfully be on the development path. Rather preferably a minimum amount of investment is necessary for enabling an economy to successfully be in the development and growth path. The theory of 'big push' first put forward by P.N. Rosenstein-Rodan is actually a stringent variant of the theory of 'balanced growth'. The crux of this theory is that the obstacles of development are formidable and pervasive. The development process by its very nature is not a smooth and uninterrupted process. It involves a series of discontinuous 'jumps'. The factors affecting economic growth, though functionally related with each other, are marked by several "discontinuities" and "hump."

Therefore, any strategy of economic development that relies basically upon the philosophy of economic "gradualism" is bound to be frustrated. What is needed is a "big push" to undo the initial inertia of the stagnant economy. It is only then that a smooth journey of the economy towards higher levels of productivity and income can be ensured. Unless big initial momentum is imparted to the economy, it would fail to achieve a self- generating and cumulative growth. A certain minimum of initial speed is essential if at all the race is to be run. A big thrust of a certain minimum size is needed in order to overcome the various discontinuities and indivisibilities in the economy and offset the diseconomies of scale that may arise once development begins.

And in his argument states that foreign aid provides the necessary capital to boost developing countries into self-sustaining economic growth. It was argued that poor countries needed a "big push" to free themselves from the constraints of the low-level trap (Clunies-Ross *et al.*, 2009; Rosenstein-Rodan, 1943), and therefore foreign aid "jump starts economic growth, and initiates a virtuous cycle whereby investment generates income and thus raises the economic return to further investment" (Shleifer, 2009). Based on this assumption that aid reduces poverty through economic growth, many poverty allocation models were developed in line with the theories by Harrod (1939; 1948), Domar (1946), Chenery and Bruno (1962), Chenery and Strout (1966), and Thirlwall and Hussain (1982). 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).

The Thirlwall-Hussain model

The Thirlwall and Hussain (1982) model, also known as the balance of payments or constrained growth model, is based on Thirlwall's law (Thirlwall, 1979). Thirlwall's law states that the rate of growth of any open economy is equal to its export volume growth divided by the income elasticity of demand for imports (Thirlwall, 1979). Thirlwall and Hussain (1982) extended this law and showed the effects of economic growth emanating from initial imbalance in the current account, terms of trade and capital inflows. This extended model can be used to forecast growth, measure the 'financing gap', formulate policy advice, and offer indicators for estimating the development effectiveness of foreign aid (Hussain, 2001). Unlike the neoclassical growth theories, which are supply-side models, the Thirlwall and Hussain (1982) is a demand-side model. It postulates that the main binding limitation on growth in an open economy is a shortage of foreign exchange. It contends that the balance of payments position

of a country is the main constraint on growth, because it imposes a limit on demand to which supply can adapt (Hussain, 2001). It is further argued that economic growth can only be faster and sustainable if the exports are expanding more than imports.

Thus, countries' growth strategies should be anchored on "foreign exchange productivity of investment" such as foreign exchange earnings. Hussain (2001) argues that foreign aid can contribute to higher growth rate if it can be used to finance the excess of imports over exports. It is further argued that if there is no corresponding change in the production structure and the pattern of trade in the recipient country, the economy will continue to depend on foreign aid for higher growth rates. Thus, if the fundamental objective is faster economic growth and poverty reduction, the allocation of foreign aid should be in a manner that can help poor countries graduate to a self-sustaining growth path. The model suggests two broad indicators of measuring the long-term development effectiveness of foreign aid

(i) The ability to promote export growth relative to that of imports in the recipient country.

(ii) Creation of an environment that attracts private capital into the aid recipient country.

Hussain (2001) applied the Thirlwall and Hussain (1982) model to the estimation of the financing gap for a sample of 24 African countries, as an alternative model to the Harrod-Domar. The study concluded that foreign exchange is the binding constraint in most African countries, and therefore the effectiveness of foreign aid should be measured in terms of foreign exchange earnings or savings (Hussain, 2001).

The Poverty Trap Model

The poverty trap model is in reality to a greater degree a hypothetical structure than an econometric one. The earliest poverty trap model was utilized by Nelson (1956). Dissimilar to the gap model which considers unfamiliar to be as an approach to raise investment and accordingly impact development, this model expects that development is hampered by poverty traps which can emerge out of different elements like low production capacity, high populace, and weak savings. Notwithstanding the causes, poverty traps are believed to compromise development. Foreign aid, which is an impermanent infusion of capital, is accepted to enable the economy to escape the poverty trap and take-off towards development.

Empirical Review

The study of Tersoo and Abubakar (2019) 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 applied the Autoregressive Distributed Lag (ARDL) bounds testing approach to establish the variables relationship. The results showed that Technical Cooperation Grants and Official Development Assistance have a 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. Girma (2015) utilized the Autoregressive Distributed Lag (ARDL) approach to co-integration as he examined whether aid effectiveness is conditional on a stable macroeconomic policy environment. The study used time series data for the period 1974 to 2011. The results showed that while separate foreign aid hurt economic growth, the aid policy index was found to have contributed positively to economic growth in Ethiopia if supplementation takes place under a stable macroeconomic policy environment.

Ramesh et al. (2010) assessed the effectiveness of aid at the micro- and macro-level in selected developing countries using an augmented Fishcher-Easterly model. Their result supports the reoccurring view that a positive relationship between aid and growth provides the macroeconomic policy environment is stable which corroborates the findings of Easterly (2003) who established a positive nexus between aid and economic growth in the economy with consistent macroeconomic policy and political stability.

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In their work, Fasanya and Onakoya (2012) employ a time series approach to analyze the impact of foreign aid on economic growth from 1970-2010 using the neoclassical modelling framework. The authors employ OLS and ECM estimation techniques to estimate the causal relationship between foreign aid and economic growth in Nigeria. Their findings reveal that in the short run, investment is positive but insignificant, government expenditure is negative and significant, population growth and inflation are negative and insignificant and foreign aid is positive and significant. The coefficient on aid is positive and significantly larger than the controls included, implying that foreign aid has a larger effect on economic growth relative to other determinants of growth (included in this model) in Nigeria.

In a similar study, Trinh (2014) examined the nexus between foreign aid and economic growth in Vietnam between 1960-1990 by employing the Autoregressive Distributed Lag (ARDL) estimation technique. The empirical results showed that foreign aid had a positive and significant impact on economic growth in Vietnam. Furthermore, additional evidence of the favourable effects of aid was confirmed through the outcomes of the growth accounting exercise and the examination of central channels through which aid had contributed to outcomes of development. These channels are human capital accumulation, infrastructure, and macroeconomic management. However, problems associated with aid such as rent-seeking behaviour, absorptive capacity constraints and high volatility and unpredictability of the inflow could pose a problem for the recipient's administration and in succession, weaken the effectiveness of aid.

Equally, Sahoo (2016) employed the Johansen-Juselius multivariate cointegration test, Granger-causality test and Vector Error Correction Mechanism (VECM) test to investigate the long-run causal link between foreign aid and economic development in three key South Asian economies of India, Sri Lanka and Pakistan over the periods of 1970-1971 to 2013-2014. The effect of aid volatility on the economic growth of the developing countries was investigated as well. The study resolved that foreign aid is unquestionably considered a vital determinant of economic development in all three Asian countries India, Pakistan, and Sri Lanka. The major results of the study underscored that foreign aid had played an important impact on the economic development of India, Pakistan and Sri Lanka. However, the empirical results established that the volatility of aid had revealed a significant negative impact on the economic growth of Pakistan and Sri Lanka.

Besides, Salisu and Ogwumike (2010) utilized the Ordinary Least Square (OLS) and Two-Stage Least Square (2SLS) methodologies to study the role of the macroeconomic policy environment in the relationship between foreign aid and economic growth for 20 countries of Sub-Saharan Africa for the period of 1970-2001. The findings showed that a sound macroeconomic environment is necessary for the efficient impact of foreign aid on sustainable economic growth. Also, the results revealed that the macroeconomic policy environment is a fundamental factor in economic growth.

Ugwuanyi et al. (2017) examined the impact of official aid on poverty reduction with empirical evidence from Nigeria. The data covered the period from 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 the labour force exerted a positive effect on poverty reduction.

To understand the macroeconomic impact of foreign aid in Nigeria, Osaro and Iyoha (2012) also used the VAR model for the period 1970 to 2009 by including policy variables like the budget deficit, current account balance, real gross domestic product growth rate, and

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foreign aid in the model. Their finding was also negative. These results tally with Emmanuel (2012) who employed a two-stage least square to analyze the relationship between development aid and human development. He concludes that there exists a negative relationship between development aid and human development in Nigeria thus supporting the view of aid ineffectiveness in developing countries.

Neutral impact was reported by Bashir (2013) who analyzed the influence of ODA and foreign direct investment on real growth in Nigeria using an error correction model for the periods 1980 to 2011. A similar result was reported among the low-income countries by Ayadi and Ayadi (2008) who used the Arellano-Bond dynamic panel estimation to analyze the impact of Aid on economic growth in 34 low-income Sub-Saharan Africa countries over the period of 15 years (1990 to 2004). Dreher and Langlotz (2015) examined the impact of aid and growth using an excludable instrument for 96 countries from 1974 through 2009. They concluded that there was no impact of aid on growth. The study shows the foreign aid variable having a negative sign in three out of four cases, indicating that foreign aid appears to hurt economic growth in developing countries.

Similarly, Kolawole (2013) examined the impact of foreign assistance (ODA) and Foreign Direct Investment (FDI) on real growth in Nigeria from 1980-2011, using the two-gap model framework. Various econometric techniques including the Granger causality test and Error Correction Method (ECM) were utilized and the findings revealed that imports impact negatively on real growth, while domestic investments and exports had a positive effect on real growth in Nigeria. The main results from this study posit that while FDI showed a negative effect, ODA revealed an insignificant effect on Nigeria's GDP. They explain that the reason for such an insignificant aid-growth result lies in the fact that aid funds are either looted or diverted to unproductive uses.

Stella and Ditimi (2014), delved into the link between foreign aid and economic growth in Nigeria, covering the period 1981 to 2012, using the ordinary least square, Augmented Dickey-Fuller (ADF) test, Johansen co-integration test and the result shows a negative and nonsignificant relationship between foreign aid to Nigeria and GDP. Furthermore, Bakare (2011) used the Vector Autoregressive (VAR) model to investigate empirically the link between foreign aid and economic growth in Nigeria. The results showed a negative relationship between foreign aid and economic growth in Nigeria.

The values of the modernizations of foreign aid shocks to shocks in macroeconomic variables unveiled that it breeds contradictions that alter budget deficits, generate doubts that diminish current account balances and transfer negative shocks with strong limiting impacts on economic growth. It was discovered that the negative effects of foreign aid lower the country's tendencies to economic growth and that macroeconomic approaches are incompatible and deficient in the willpower to efficiently exploit the benefits of foreign aid. Using the Ordinary Least Square (OLS) methodology, Manwa (2015) studied the relationship between foreign aid and economic growth in Malawi employing data from 1960-2012. The findings suggested that aid exerted a negative and significant impact on economic growth. Besides, the study revealed that the effectiveness of aid is conditional on states having strong political will, sound policies and governance structures that are supportive.

On the same subject and using annual data from 1970 to 2011, Olkeba (2013) assessed the causal relationships among aid, domestic resources and economic growth in developing countries with emphasis on Ethiopia within an ARDL framework. The results revealed that aid and domestic savings exerted a positive relationship with economic growth in the long run. Domestic resource mobilization exerted a higher positive effect on economic growth than aid. However, when the level of investment was controlled, aid had a negative and insignificant relationship with economic growth. Furthermore, the existence of absorptive capacity constraints connected with expending huge aid money was validated by this result. Besides, aid and domestic saving exerted a negative and positive relationship with economic growth respectively in the short run. However, the impact of domestic savings on growth was statistically insignificant.

2.5 Gap in Literature

From the literature, there is a strong reason to show that the impact of foreign aid on poverty reduction is not settled. For Instance, Ugwuanyi et al (2017) using a ARDL Model shows that foreign aid had a positive but non-significant impact on poverty reduction in Nigeria. Also, Azam et al. (2016) used a modified old and found out that foreign aid had no positive impact on poverty mitigation in Nigeria. Including Boye (2019) consulted a Bound cointegration test and found out that foreign Aid has no impact on poverty reduction in Nigeria.

Fasanya and Onakaya (2012) used an Error Correction Model and found out that there was a positive and significant relationship between foreign Aid and economic growth in Nigeria. Bashir (2013) used an ECM and recorded a Neutral impact on foreign direct investment, foreign Aid and economic growth in Nigeria. So also, Iyoha and Osaro (2012) employs the use of Var Model and found out a negative relationship between foreign aid and Real GDP in Nigeria. Ugwuebe (2016) used OLS Model and found out that foreign aid had a positive but insignificant impact on Economic Growth due to aid expended on consumption rather than investment in Nigeria. Kolawole (2013) used an Error Correction Model and found out that FDI showed a negative effect on Growth and foreign Aid shows a positive but insignificant impact on Nigeria Real GDP. Also, Tersoo and Abubakar (2019) employs the use of ARDL Test and found out that technical cooperation Grant and foreign Aid has positive but insignificant impact on poverty reduction but in the long run it has a negative impact on Poverty entirely in Nigeria. Having reviewed several literatures, it is clear that the relationship that exists between foreign aid, economic growth and poverty reduction is not conclusive. Also, the works reviewed from the literature employed at most two types of aid in their studies. This study is therefore out to employ three types of aid classifications which are Net bilateral aid flows, technical cooperation grants and Net official development assistance and official aid. Also, this study seeks to extend the literature to cover a period of up to 2020 which was characterized by several economic distortions given the advent of covid-19 generated by the lockdown.

Methodology

Theoretical framework

This study will be based on two theories which are the big push theory developed by Rosenstein-Rodan in 1943 and the two-gap model advanced by Chenery and Strout (1966). The big push theory states that investing in "bit by bit" or in piecemeal will not enable an economy to successfully be on the development path. Rather preferably a minimum amount of investment is necessary for enabling an economy to successfully be in the development and growth path. Therefore, any strategy of economic development that relies basically upon the philosophy of economic "gradualism" is bound to be frustrated. What is needed is a "big push" to undo the initial inertia of the stagnant economy. It is only then that a smooth journey of the economy towards higher levels of productivity and income can be ensured. Unless big initial momentum is imparted to the economy, it would fail to achieve a self- generating and cumulative growth.

3.2 Model Specification

This study institutes an econometric model to illustrate the relationship between foreign aid on economic growth and poverty reduction in Nigeria. In analyzing the relationship between the variables by incorporating the Autoregressive distributed lag (ARDL), the following are the linear specifications as adapted from, Okumoko et al. (2018); James, (2021); Ifunanyachukwu, (2019) are shown.

LRGDP = $\alpha_0 + \alpha_1 \text{ NBI} + \alpha_2 \text{ NODA} + \alpha_3 \text{ LTCG} + \alpha_4 \text{LGETC} + \alpha_5 \text{LFDI} + \alpha_6 \text{LGFCF} + \alpha_7 \text{LPR} + \mu_t$ ----- (3.4) From the foregoing, the Autoregressive Distributed Lag form of the version of the estimated model study can be written as follows;

$$\begin{split} D(LNPISHs)_t &= \beta 0 + \gamma t + \alpha_0 LNPISHs_{t-1} + \alpha_1 NBI_{t-1} + \alpha_2 \text{ NODA }_{t-1} + \alpha_3 LTCG_{t-1} + \alpha_4 LGETC_{t-1} \\ &+ \alpha_5 LFDI_{t-1} + + \alpha_6 LGFCF_{t-1} + \alpha_7 LPR + \sum_{i=0}^{p} & \pi i \ D(NBI)_{t-1} + \sum_{i=0}^{q} & \pi i \ D(NODA)_{t-1} \sum_{i=0}^{r} \\ & \upsilon i \ D(LTCG)_{t-1} + \sum_{i=0}^{s} & \tau i \ D(LGETC)_{t-1} + \sum_{i=0}^{u} & \rho i \ D(LFDI)_{t-1} + \sum_{i=0}^{v} & \rho i \ D(LGFCF)_{t-1} + \sum_{i=0}^{w} & \rho i \ D(LFDI)_{t-1} + \sum_{i=0}^{v} & \rho i \ D(LGFCF)_{t-1} + \sum_{i=0}^{w} & \rho i \ D(LFDI)_{t-1} + \sum_{i=0}^{v} & \rho i \ D(LGFCF)_{t-1} + \sum_{i=0}^{w} & \rho i \ D(LFR)_{t-1} + \kappa t. \end{split}$$

$$\begin{split} D(LRGDP)_t &= \beta 0 + \gamma t + \alpha_0 LNPISH_{s t-1} + \alpha_1 NBI_{t-1} + \alpha_2 NODA_{t-1} + \alpha_3 LTCG_{t-1} + \alpha_4 LGETC_{t-1} \\ &+ \alpha_5 LFDI_{t-1} + \alpha_6 LGFCF_{t-1} + \alpha_7 LPR + \sum_{i=0}^{p} \pi i D(NBI)_{t-1} + \sum_{i=0}^{q} \pi i D(NODA)_{t-1} \sum_{i=0}^{r} \tau i D(LGETC)_{t-1} + \sum_{i=0}^{u} \rho i D(LFDI)_{t-1} + \sum_{i=0}^{v} \rho i D(LGFCF)_{t-1} + \sum_{i=0}^{w} \rho i D(LFDI)_{t-1} + \sum_{i=0}^{v} \rho i D(LGFCF)_{t-1} + \sum_{i=0}^{w} \rho i D(LPR)_{t-1} \kappa t.....(3.6) \end{split}$$

The D is the first difference operator; t is the years 0; p, q, r, s,u,v and w are the maximum lag orders, and κt is the error term.

Descriptive Statistics

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries of the variables and the measures. The descriptive statistics of the study are presented below;

Table 4.1.1 shows descriptive statistics of the variables used in this study. Foreign Direct Investment (FDI) ranged from 0.195183 billion dollars to 5.790847 billion dollars with an average of 1.659499 billion dollars, in the period 1986 to 2020. The standard deviation of the country's Foreign Direct Investment expenditure was 1.251626. The coefficient of variation (standard deviation divided by mean) value was 0.75. The skewness value of 1.67, and kurtosis value of 5.72, indicated that foreign direct investment was skewed to the right and leptokurtic, respectively. The Jarque-Bera value of 27.1 was significant at the 5 percent level. This meant that foreign direct investment was normally distributed.

Grants excluding technical cooperation (GETC) ranged from 8730000 to 1.14E+10 billion dollars with an average of 1.06E+09 billion dollars in the period under review. The skewness value of 3.78, and kurtosis value of 18.1 indicated that Grants excluding technical cooperation were normally distributed and were skewed to the right with a long-right tail and leptokurtic. The Jarque-Bera value of 416.1 was significant at the 5 percent level. This meant that Grants excluding technical cooperation were normally distributed.

Gross fixed capital formation (GFCF) ranged from 1.23E+10 to 1.16E+11 billion dollars with an average of 4.45E+10 billion dollars in the period under review. The skewness value of 0.88, and kurtosis value of 3.05 indicated that Gross fixed capital formation was normally distributed and was skewed to the right with a long-right tail and mesokurtic. The Jarque-Bera value of

4.5 was not significant at the 5 percent level. This meant that Gross fixed capital formation was not normally distributed.

Net bilateral aid flows (NBI) ranged from 1.10E+10 to 2182001 billion dollars with an average of 1.08E+09 billion dollars in the period under review. The skewness value of 3.73, and kurtosis value of 17.48 indicated that the net bilateral aid flows were normally distributed and were skewed to the right with a long-right tail and leptokurtic. The Jarque-Bera value of 385.88 was significant at the 5 percent level. This meant that net bilateral aid flows were normally distributed.

Net official development assistance and official aid (NODA) ranged from 1.14E+10 to 5811999 billion dollars with an average of 1.60E+09 billion dollars in the period under review. The skewness value of 2.73, and kurtosis value of 11.89 indicated that the net official development assistance and official aid was normally distributed and was skewed to the right with a long-right tail and mesokurtic. The Jarque-Bera value of 158.47 was significant at the 5 percent level. This meant that net official development assistance and official aid were normally distributed.

Net official development assistance and official aid (NODA) ranged from 1.14E+10 to 5811999 billion dollars with an average of 1.60E+09 billion dollars in the period under review. The skewness value of 2.73, and kurtosis value of 11.89 indicated that the net official development assistance and official aid was normally distributed and was skewed to the right with a long-right tail and mesokurtic. The Jarque-Bera value of 158.47 was significant at the 5 percent level. This meant that net official development assistance and official aid were normally distributed.

Household and final consumption per capita (PR) ranged from -18.17534 to 55.43416 billion naira with an average of 2,228936 billion naira in the period under review. The skewness value of 1.58, and kurtosis value of 6.31 indicated that the household and final consumption per capita was normally distributed and was skewed to the right with a long-right tail and leptokurtic. The Jarque-Bera value of 30.55 was significant at the 5 percent level. This meant that Household and final consumption per capita was normally distributed.

Personal remittances (PR) ranged from 1.04E+09 to 547300.2 billion naira with an average of 94021021 billion naira in the period under review. The skewness value of 3.62, and kurtosis value of 15.39 indicated that the personal remittances were normally distributed and were skewed to the right with a long-right tail and leptokurtic. The Jarque-Bera value of 300.25 was significant at the 5 percent level. This meant that Personal remittances were normally distributed.

Real gross domestic product (RGDP) ranged from -4.457078 to 12.45747 billion dollars with an average of 1.548636 billion dollars in the period under review. The skewness value of 0.50, and kurtosis value of 3.34 indicated that the real gross domestic product was normally distributed and was skewed to the right with a long-right tail and leptokurtic. The Jarque-Bera value of 1.606523 was not significant at the 5 percent level. This meant that real gross domestic product was normally distributed.

4.1.2 **Correlation Analyses**

Correlation Analysis is a statistical method that is used to establish if there is a relationship between two variables/datasets, and how strong that relationship may be. The Pearson Correlation analysis was used to ascertain the relationship between the variables and is shown in the table below.

Fig 1 Correlation Matrix



Source: Author's computation from Eviews 10 output, (2022)

Fig 1 provided Pearson's correlation matrix of the model. The results showed that the pairwise Pearson's correlation coefficients ranged from -0.01 to 0.90. This indicated that all the pairwise Pearson's correlation coefficients were less than 1. The implication is to expect an absence of multicollinearity among repressors in the estimated regression model. This supports the assumption of no multicollinearity in the estimated poverty and inequality results.

4.1.3 Unit Root Test

A time series has stationarity if a shift in time does not cause a change in the shape of the distribution; unit roots are one cause for non-stationarity. In the study, the Augmented Dickey Fulley Test (ADF) was used to confirm the presence of unit root in the series. The results are shown below;

Variable	Lags	ADF Stats	5% critical Value	Order of Integration	Remarks
RGDP					
	0	-3.705466	-2.951125	I(0)	stationary
D(TCG)					
	5	-3.548542	-2.971853	I(1)	stationary
PR					
	0	-3.064454	-2.951125	I(0)	stationary
NODA					
	0	-3.019529	-2.951125	I(0)	stationary
NBI					
	1	-3.656303	-2.954021	I(0)	stationary
D(GFCF)					
	2	-4.665422	-2.960411	I(I)	stationary
GETC					
	0	-3.486349	-2.951125	I(0)	stationary

Table 4.1.3Unit root Test

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FDI					
	0	-3.921666	-2.951125	I(0)	stationary
NPISHS					
	0	-6.817571	-2.951125	I(0)	stationary

Source: Author's computation from Eviews 10 output, (2022)

Note: "D" denotes the first difference

Table 4.1.3 displayed the Augmented Dickey-Fuller (ADF) unit root test statistics of the variables at levels. All the variables had ADF test statistical values which are greater in absolute terms, than their corresponding critical values at the 5 percent level. Technical co-operation grants (TCG) and Gross fixed capital formation (GFCF) were stationary after first difference, while the remaining variables were stationary at levels.

4.2 Presentation and Discussion of Empirical Results

4.2.1 ARDL Model

In ARDL modeling, it is first imperative to determine the optimal lag and to find out whether co-integration exists using the bound test approach. In the determination of the optimal lag, the optimal lag length from an auxiliary VAR model was analyzed for this purpose. Bound testing as an extension of ARDL modeling uses F-statistics to test the significance of the lagged levels of the variables in a univariate error correction system when it is unclear if the datagenerating process underlying a time series is a trend or first difference stationary. This test is carried out on ARDL estimates to prove that co-integrating relationship exists in the model or not.

4.2.1.1 Optimal Lag Length Selection for ARDL Models

Table 4.2.1.1 provides the results of the optimal lag selection adequate for the estimation of the ARDL models using different selection criteria. The selection criteria were sequentially modified LR test statistic (each test at a 5% level), final prediction error (FPE), Akaike information criterion (AIC), Schwarz information criterion (SIC), and Hannan-Quinn information criterion (HQ).

Lag	LogL	LR	FPE	AIC	SC	HQ
0	0	-4412.933	NA	3.2e+106	267.9353	268.2981
1	1	-4274.350	201.5750	3.9e+104	263.4152	266.6803*
2	2	-4170.776	100.4358*	7.5e+103*	261.0167*	267.1842

Table 4.2.1.1 C	ptimal Lag	g Length	Criteria f	for Poverty	(NPISH)
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Source: Author's computation using Eviews 10, (2022)

Table 4.2.1.2 shows the results of the different lag selection criteria considered in this study. The optimal lag length is 2. This is based on the recommendations of the Akaike info criterion (AIC). All the various criteria unanimously comply with the lag length.

4.2.2 Bounds Test for Co-integration

The results of the Bounds test for co-integration which establishes the long-run relationship among the variables are given below;

Table 4.2.2.1	Bounds Test for	Co-integration for	r Poverty (NPISH)
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F-Bounds Test Null Hypothesis: No Level relationship				
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Test Statistics	Value	significance	I(0)	I(1)
			Asymptotic: n=1000	
F-Statistic	5.408498	10%	1.92	2.89
К	7	5%	2.17	3.21
		2.5%	2.43	3.51
		1%	2.73	3.9

Source: Author's computation using Eviews 10, (2022)

From table 4.2.2.1 above, the F-statistics of 5.41 is higher than the critical values of 2.17 and 3.21 which represent the 5% significance level for the upper and lower bound respectively. Therefore, we reject the null hypothesis of no levels of co-integrating relationship, hence, there is a long-run relationship between the endogenous and the exogenous variables in the model.

4.2.3 Short Run Error Correction Model (ECM)

The standard method of obtaining the short-run dynamics of a model described by an error correction model is the use of the autoregressive lag (ARDL) model. To establish the long-run relationship between the dependent variable and the independent variables in the model. Having established the existence of co-integration based on the results of the bounds test, we proceed to estimate the error correction modeling (ECM). The significance of the ECM in the model is to indicate how disequilibrium in the dependent variable can be adjusted in the short-run. The results of the ECM model are presented in the table below:

Ariable	Coefficient	Std. Error	t-Statistic	Prob.*
D(GFCF)	6.93E-10	2.43E-10	2.857058	0.0105
D(GETC)	2.44E-08	3.19E-09	7.640602	0.0000
D(GETC(-1))	-7.09E-09	1.45E-09	-4.884867	0.0001
D(PR)	4.69E-08	1.14E-08	4.106085	0.0007
D(TCG)	5.08E-08	5.49E-08	0.925730	0.3668
D(TCG(-1))	6.12E-07	7.76E-08	7.892816	0.0000
CointEq(-1)	-1.064503	0.126951	-8.385134	0.0000
R-squared	0.814305	Mean dependent var		0.138490
Adjusted R-squared	0.771452	S.D. dependent var		22.90840
S.E. of regression	10.95175	Akaike info criterion		7.810708
Sum squared resid	3118.463	Schwarz criterion		8.128149
Log likelihood	-121.8767	Hannan-Quinn criter.		7.917517
Durbin-Watson stat	2.066942			

Table 4.2.3.1 Short Run Error Correction Regression (ECM) for Poverty [D(NPISH)] Case 2: Restricted Constant and No Trend (ARDL: 1,0,0,1,2,0,1,2)

Source: Author's computation using Eviews 10, (2022)

The estimated result of the model is presented in Table 4.2.3.1 ARDL (1,0,0,1,2,0,1,2) process was modest and had a good fit. The coefficient of the error correction term (CointEq (-1)) was negative (-0.604503) and significant at the 1 percent level. This met with apriori

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expectations and indicated that about 60.4 percent of the deviations of the model from its equilibrium value in the previous period were corrected in the current period. The model, therefore, converges to its equilibrium value over time. The R-squared value of 0.814305 shows that about 81.4 percent of the fluctuations in changes in poverty level were explained by the explanatory variables in the short-run equation. The adjusted R-squared indicates that about 77.1 percent was explained when adjustment was made for the degree of freedom given by the adjusted R-square. The Durbin-Watson statistic value of 2.07 indicated that there was no threat of autocorrelation among the residual terms of the model.

The estimated coefficient of the first difference of gross fixed capital formation [D (GFCF)] was observed to be positive and significant at the 5 percent level. The coefficient value of 6.93 showed that on average, a 1-unit change in the gross fixed capital formation led to a 6.93 increase in the poverty level in the current year. This indicates a positive and significant correlation between gross fixed capital formation and the current poverty level as shown in the result.

The first difference of grants excluding technical co-operation [D (GETC)] had a positive impact on the poverty level which supports the apriori sign expectation, this impact was found to be significant at the 1 percent level of significance. The estimated value of its coefficient implies that a 1-unit increase in grants excluding technical co-operation translates to a 2.44-unit increase in poverty level. Overall, it means that a positive and significant relationship was held between the grants excluding technical cooperation and poverty level in Nigeria. However, the grants excluding technical cooperation in the previous year had a negative and significant impact on the current poverty level at a 1 percent level of significance with an estimated value of its coefficient -7.09 which implies a 1 unit increase in grants excluding technical cooperation and poverty level.

Moreover, personal remittances [D (PR)] in the first difference had a positive estimated coefficient significant at the 1 percent level. The estimated value of 4.6 shows that on average, a 1 unit increase in personal remittances led to a 4.6 unit increase in poverty level during the period 1986 to 2020. This suggests that a significant and positive relationship was observed between personal remittances and poverty level in the period considered.

Technical co-operation grants [D (TCG)] in its first difference had a positive estimated coefficient that was not significant at the 5 percent level. The sign expectation of the variable was correctly held. The estimated value of 5.08 indicated that holding all factors constant, a unit increase in technical cooperation grants would translate to a 5.08 unit increase in poverty level during the period. This showed that an insignificant and positive relationship was held between technical cooperation grants and the poverty level in Nigeria within the period.

Lastly, Technical cooperation grants [D (TCG (-1)] in the previous year had an estimated positive coefficient that was significant at the 1 percent level. The coefficient value of 6.12 showed that holding all other factors constant, a unit increase in technical co-operation grants [D (TCG)] would inform a 6.12 unit increase in poverty level. This suggested that a direct relationship existed between technical cooperation grants [D (TCG)] and poverty level in the previous year by the apriori expectation during the period under study.

4.2.4 Estimated Coefficient of the Long Run Model

Having analyzed the short-run dynamics of the Error Correction Model, we proceed to estimate the associated long-run model using the ARDL approach. The results are presented below.

Fig. 2 Long Run Model for Poverty [D(LNPOV)]

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Case 2: Restricted Constant and No Trend (ARDL: 1,0,0,1,2,0,1,2)



Source: Authors' computation using Eviews 10, (2022)

The estimated long run result of the model is presented in Fig 2. The estimated coefficient of net official development assistance and official aid (NODA) was positive and significant at the 1 percent level of significance. The estimated value of its coefficient implies a 1 unit increase in population growth rate would translate to a 1.06 unit increase in the poverty level of the current year. Overall, it meant that a positive and significant relationship was held between the net official development assistance and official aid (NODA) and the current poverty level in Nigeria. Moreover, net bilateral aid flows (NBI) had a negative estimated coefficient that was significant at the 5 percent level. The estimated value of -0.325663 showed that on average, a 1 unit increase in net bilateral aid flows (NBI) led to a 0.325663 unit increase in the poverty level during the period 1986 to 2020. This suggested that a significant and negative relationship was held between net bilateral aid flows (NBI) and poverty level in the period considered.

Gross fixed capital formation (GFCF) had a negative estimated coefficient that was insignificant at the 5 percent level. The sign expectation of the variable was correctly held. The estimated value of -0.09 indicated that holding all factors constant, a unit increase in the Gross fixed capital formation (GFCF) would translate to a 0.09 unit decrease in the poverty level in the current year during the period. This showed that an insignificant and negative relationship was held between Gross fixed capital formation (GFCF) in the previous year and the poverty level in the current year in Nigeria within the period. However, Grant excluding technical cooperation (GETC) had a positive coefficient significant at the 5 percent level. This, however, contradicts the apriori expectation from literature. The coefficient value of 0.03 implied that ceteris paribus, a unit increase in Grant excluding technical co-operation (GETC) led to a 0.03 unit increase in the current poverty level. Therefore, a significant positive relationship existed between Grant excluding technical co-operation (GETC) and the current poverty level in Nigeria.

Foreign direct investment (FDI) had a negative estimated coefficient that was significant at the 5 percent level. The sign expectation of the variable was incorrectly held. The estimated value of -0.14 indicated that holding all factors constant, a unit increase in the Foreign direct investment (FDI) would translate to a 0.14 unit decrease in the poverty level in the current year during the period. This showed that a significant and negative relationship was held between Foreign direct investment (FDI) in the previous year and the poverty level in the current year in Nigeria within the period. Personal remittances (PR) had a positive coefficient

and insignificant at the 5 percent level. The coefficient value of 6.52E-08 implied that ceteris paribus, a unit increase in Personal remittances (PR) led to a 6.52 unit increase in the current poverty level. Therefore, an insignificant positive relationship existed between Personal remittances (PR) and the current poverty level in Nigeria.

Technical co-operation grants (TCG) had a negative estimated coefficient that was insignificant at the 5 percent level. The estimated value of -2.56E-07 indicated that holding all factors constant, a unit increase in the technical co-operation grants (TCG) would translate to a 2.5 unit decrease in the poverty level in the current year during the period. This showed that a significant and negative relationship was held between technical co-operation grants (TCG) in the previous year and the poverty level in the current year in Nigeria within the period.

4.3 **Post Diagnostic Test**

Post-diagnostic tests were also conducted to ascertain the validity or otherwise of the estimated models. Such tests as the Breusch-Godfrey Lagrange Multiplier test for serial correlation, autoregressive conditional heteroscedasticity test, Ramsey's regression specification error test, and stability test were conducted. The results are presented below;







Fig 3 contained the diagnostic results of estimation with Poverty as the dependent variable. The result showed that there was no threat of serial correlation in the estimated model since Breusch-Godfrey Serial Correlation LM Test F-statistic value of 0.229942 was not significant. There was also no heteroskedasticity problem in the estimated as Breusch-Pagan-Godfrey F-statistic value 0.315880 was not significant. Furthermore, the estimated model was adequately specified judging from Ramsey's RESET F-statistic which was not significant in establishing the stability of the model. The error terms obtained from the model estimation were normally distributed. It follows, therefore, that all the underlying assumptions of the regression analysis were not violated. Hence, the estimates from the model are reliable for decision-making.

4.4 Test for Hypotheses

The null hypotheses stated earlier in this study were evaluated in this section. The evaluations were based on the results obtained and presented above.

H01 Net official development assistance and official aid has no significant impact on real gross domestic product in Nigeria.

The estimated results shows that the impact of Net official development assistance and official aid was positive and significant at a 5 percent level in both the short run and the long-run. The null hypothesis was therefore rejected against the alternative hypothesis in both the short run and the long-run, thus; Net official development assistance and official aid has a significant impact on real gross domestic product in both the short run and the long-run period in Nigeria.

H02 Grants excluding technical co-operation has no significant impact on real gross domestic product in Nigeria.

The estimated results shows that the impact of grants excluding technical co-operation was negative and insignificant at a 5 percent level in both the short run and although positive, yet insignificant in the long-run. The null hypothesis was therefore rejected against the alternative hypothesis in both the short run and accepted in the long-run, thus; grants excluding technical co-operation has a significant impact on real gross domestic product in both the short run and the no significant impact long-run period in Nigeria.

4.5 **Policy Implications**

From the results of the Autoregressive distributed lag model (ARDL), the type of foreign aid that affects economic growth and poverty reduction in Nigeria is Net official development assistance and official aid. It may suggest that policymakers need to deliberately encourage Net official development assistance and official aid to boost economic activities and improve the welfare of the people, especially the poor ones as it would decrease the poverty level. This result could be important for policy recommendation because it could provide insight for the government on which foreign aid fund significantly eradicate poverty and boost economic growth in Nigeria.

Foreign aid can have a positive impact on economic growth and poverty reduction in Nigeria. Aid can provide funding for infrastructure projects, education and training programs, and other initiatives that can increase productivity and promote economic growth. Additionally, foreign aid can be used to support poverty reduction efforts by providing access to basic services such as healthcare and education, and by creating jobs and income-generating opportunities for the poor. However, it's important to note that foreign aid alone is not a solution, and that there are potential negative impacts such as dependency on aid, corruption and lack of aid effectiveness. It should be combined with effective domestic policies and good governance to achieve sustainable development.

Summary of findings

This study has been able to expose several findings on the impact of government sectoral expenditure on poverty and inequality. The findings of the result agree with the previous findings of Instance Ugwuanyi, et al. (2017) that foreign Aid had a positive but non-significant impact on poverty reduction in Nigeria as the type of foreign aid that affects economic growth and poverty reduction in Nigeria is Net official development assistance and official aid while other were found insignificant on the long run. Foreign aid can potentially impact economic growth and poverty reduction in Nigeria in several ways.

5.3 Conclusion

Aid can be used to fund infrastructure projects and support small businesses, which can help to create jobs and stimulate economic activity. Additionally, foreign aid can be used to support education and healthcare initiatives, which can help to improve the overall health and well-being of the population and increase productivity. However, it's also important to note that the effectiveness of foreign aid in promoting economic growth and poverty reduction can be affected by a number of factors, such as the political and economic climate in the country and the efficiency and transparency of government institutions.

5.4 **Recommendations**

Based on the findings of the study, the following recommends were made:

- **1.** Building local capacity: Foreign aid can be used to provide training and technical assistance to local organizations and individuals, which can help to build the capacity of the local population to manage and sustain economic growth.
- 2. Promoting good governance: Foreign aid can be used to support initiatives aimed at improving transparency and accountability in government, which can help to ensure that aid is used effectively, and that economic growth is inclusive.
- **3.** Encouraging private investment: Foreign aid can be used to support initiatives that encourage private investment in the country, which can help to stimulate economic growth and create jobs.
- 4. Focusing on sustainable development: Foreign aid can be used to support initiatives that promote sustainable development, such as protecting the environment and promoting conservation, which can help to ensure that economic growth is sustainable in the long-term.

Recommendations for Further Studies

1. Further studies need to be carried out investigating the impact of aid on poverty reduction: Another area of research focus could be to investigate the impact of foreign aid on poverty reduction in Nigeria. This could involve conducting a study to assess the impact of foreign aid on poverty reduction using a methodology such as a panel data analysis or a propensity score matching.

Contribution to Knowledge

The purpose of this research work was to shed more light on how foreign aid impact economic growth and poverty reduction in Nigeria, this study carefully analyzed variables like Net bilateral aid flows, net official development assistance and official aid, technical cooperation grants, grants excluding technical co-operation, foreign direct investment, personal remittances and gross fixed capital formation. This, has aided the research work to be more robust and highly adequate for policy relevance.

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