

The Impact of Foreign Aid on Macro Economic Variables in Nigeria (1980-2010)

Adam, James Adam Phd.
Department of Economics, University of Abuja, Nigeria

Anthony Ayo Andrew
Planning Unit, National Biotechnology Development Agency, Airport Road, Abuja, Nigeria

Abstract

The paper examined the Impact of Foreign aid on macroeconomic variables in Nigeria using time series data covering the period 1980 through 2010. The methodology employed includes Co integration and Vector Error Correction. We verify the stationarity properties of the variables used in the model via unit root test and the short and long run relationship via co integration test. The study found that foreign aid is positively related to investment, economic growth and exchange rate but negatively related to inflation. The study submits that the use of foreign aid should be encouraged since it promotes investment and growth and it is not inflationary. Consequently, government should step up its effort to tackle the infrastructural challenges facing the country so as to endear the country to foreign aid and other forms of global capital inflows. This will go a long way for the countries to meet the millennium development goals of growth and poverty reduction by 2015.

1. INTRODUCTION

Foreign aid or official development assistance on concessional term is often channeled to developing countries either directly or indirectly through multilateral institutions or private voluntary organizations for the purpose of supporting social and economic development. Foreign aid supplements domestic resources needed for investment and economic growth in less developed countries (LDCs). Since the last three decades, foreign aid inflows have supported a series of economic recovery, reconstruction efforts and structural adjustment programmes instituted to pull the African economy out of a steep decline (Hadjimicheal et al, 1995). The aid syndrome presents an important challenge to policy makers, because foreign aid may also present or generate undesirable effects such as an appreciating real exchange rate, inefficient use of resources, conditionalities and declines in export performance. These undesirable effects are commonly known as Dutch disease (a term broadly refers to the harmful consequences of large inflows of foreign currency into a country) in macroeconomics literature. Foreign aid inflows have grown significantly in the post-war period. Many studies have tried to assess the effectiveness of aid at the micro and macro levels. While micro-evaluations have found that in most cases aid 'works', those at the macro-level are ambiguous. An Important objective of much Official Development Assistance (hereafter 'foreign aid') to developing countries is the promotion of economic development and welfare, usually measured by its impact on economic growth. Yet, after decades of capital transfers to these countries, effectiveness of foreign aid in achieving these objectives remains questionable. Many Empirical studies have used econometric analysis to test the aid-growth project level. This conflict is what Mosley (1987) refers to as the micro-macro paradox'. The reasons for it remain unclear but the econometric aid-development data quality, econometric technique and specification. A particularly telling criticism of most of these studies concerns the underlying model of development which is typically poorly specified. Most aid-development investigations for example either pre-date or ignore many of the recent advances in Growth and development theory which have allowed more sophisticated empirical development equations to be specified, if aid is to be reliably identified as a development determinant, it is important that it is included within a robustly specified empirical development model. Recent discussions of foreign aid have focused on Africa because it has received the greatest amount of aid on per capita basis than any other region, yet economic performance has been the weakest there. The poor Performance has been associated with bad governance, corruption and macroeconomic instability in the region. Despite its huge oil resources Nigeria's economic performance has been startlingly poor. Per capita income has suffered significant erosion since the peak in the early 1980s that occurred when oil prices were at historical high levels. Concessional loans in the form of aid, commonly referred to as Official Development Assistance (ODA) has played vital role in Nigeria's economic development. ODA supply to Nigeria has increased over the years from US\$555 million in 1980 to US\$3320 million in 1990 (World Debt Tables, 1995). In 1982, ODA flow into Nigeria accounted for less than one per cent of GNP. Nigeria has received less foreign aid on a per capita basis than any other countries in Sub-Saharan Africa (SSA). While average net real official development assistance (ODA) for African countries in 1990-96 was US\$52 per person, Nigeria received just US\$2.20 per person. As a percentage of GNP, net ODA for Sub Sahara Africa (SSA) averaged 14 per cent while for Nigeria it was less than one per cent of GNP in the period (O' Connell and not Soludo, 1999). According to ECA (2001) and The World Bank (2001), if the 7 percent average annual growth

rate needed to reach the Millennium Development Goal of reducing poverty by half by 2015 is to be met, domestic investment will have to be increased by 50 percent and foreign aid by 20 percent. Preliminary data show that bilateral ODA to Africa as a whole rose by a mere 3 per cent in real terms between 2008 and 2009 (Business Day, 2010). The slowdown in aid growth could adversely affect Africa. The recent slowdown in aid flow has been alluded to the under-performance of advanced economies. The slowdown in economic growth since 2008 has induced some major donor countries to reduce the pledges they made for 2010 and beyond.

Given that foreign aid may promote investment and growth, it is pertinent to ask whether or not and to what extent Nigeria should continue to depend on foreign aid to achieve higher investment ratios and positive growth given its negative effects and the potential for drastic cut-back in foreign aid. Consequently, this paper assesses the relationship between foreign aid and Selected macroeconomic variables in Nigeria. The paper is divided into five sections. Section one is the introduction and two is conceptual issues and Literature Review. Section three examines facts on Foreign Aid in Nigeria, while Methodology and Empirical analysis is in section four. Section five draws the conclusion and recommendations.

1.1. Stylized Facts on the Economy and Foreign Aid in Nigeria

Nigeria did not have to rely on external finance much in the 1950s because of substantial agricultural export earnings coupled with grants from the United Kingdom (UK). But from the 1960s when foreign exchange constraint became portent, the country had to rely heavily on foreign resources to meet various national developmental needs. After independence, the Nigerian government recognized the need for foreign Aid to develop economy. The role of the federal government expanded as can be seen from the various development Plans which became critical to the development drive of the country especially, soon after the civil war and the subsequent oil boom of the 1970s. The government had to provide socio-economic and production infrastructure/ that involve large financial outlay that may be sourced domestically or abroad. The Nigerian economy evolved from an Agrarian economy which accounted for about 64 percent of GDP in 1960 into a relatively rich oil-dominated one, during the 1970s. In 1969 the oil sector accounted for less than 3 per cent of GDP and 43 percent of exports, while agriculture accounted for over 50 per cent of GDP. By 1980, the oil sector accounted for nearly 30 per cent of GDP and 96 percent of total exports (CBN, 1980).

In the 1960s, the government relied on external debt in the form of contractor finance, such financial obligations reached an alarming scale, by the early 1970s up to early 1980s, there was a major shift away from procuring loans through contractor finance to soft loans from bilateral and multilateral sources, particularly the World Bank Group.

In the 1980s and 1990s, many developing countries including Nigeria, recorded years of macroeconomic upheavals. This manifested in the form of unprecedented debt crises, high international interest rates, low external resource transfers, mass unemployment, persistent increasing inflation, exchange rate crises, economic stagnation and so forth. The international financial institutions have provided financial assistance to help cushion the impact of the external shocks and assist countries to restructure their economies to the path of sustained growth. So far, the policy environment has been characterized by 'stop and go' policies and increased administrative interventions, loss of fiscal control, little commitment to reform efforts, etc. This has led to fallen or marginal GDP growth, capital flight, reduced foreign capital-inflow, and the countries are yet to witness a revival of satisfactory investment and saving rates.

Despite its huge oil resources, Nigeria's economic performance has been startlingly poor. During the past two decades, in order for Nigeria to maintain its consumption and investment levels, there has been rapid accumulation of external debt, as imports exceeded exports. This has led to the widening of the country's external current account deficits and exchange rate overvaluation.

2.0 CONCEPTUAL ISSUES AND LITERATURE REVIEW

2.1. CONCEPTUAL ISSUES

Aid is Official Development Assistance (ODA), comprising grants, technical assistance and concessional loans. Sometimes it is referred to as official flows which can either be bilateral or multilateral external resource flow (Magbagbeola, 1998). Morgenthau (1963) identifies six types of foreign aid: humanitarian, Subsistence, military, development, of these six types only humanitarian foreign aid is nonpolitical. This is the type governments traditionally extend to other countries in case of natural disasters, such as floods, famines, and so do the services, especially in the fields of medicine and agriculture, which private organizations, such as churches and foundations, have traditionally provided in Asia, Africa, and Latin America. Subsistence foreign aid is akin to the humanitarian type in that it seeks to prevent the breakdown of law and order, as well as the disintegration of organized society. It is usually extended to governments that do not command the resources to maintain minimal public services. Prestige aid has in common with modern bribes that its true purpose is concealed by the ostensible purpose of economic development. For example, highway without traffic and leading nowhere, the idle or unprofitable steel mill, among others. There are several reasons for extension of foreign assistance. Each

of these reasons leads to difference in criteria for determining whether a country should receive aid and by how much. Aid objectives range from short-term political and military objective to long-term economic and social objectives. In most circumstances, aid objectives depend on a country's foreign policy. The main objective for granting foreign aid is to produce a political and economic environment in which the donor can best pursue its economic and social goals. It is to promote rising levels of income, modernization of economies, independent political systems and other features of societies that satisfy their own citizens as well as the international community. The second main objective is to promote internal stability, which is done by giving financial support in times of economic crisis by preventing internal disorders and other measures that help existing governments to stay in power. The third major objective is to protect the security of the donor and its allies from external aggression. This is done through provision of armaments, the securing of military bases, and of communist penetrations.

The categories of aid that are in use represent among three types of classification. The principal categories of aid in use are:

- (i) Development grants: the provision of grants for development purposes. The resources transferred are to a large extent personnel and the main focus is on education and capital goods
- (ii) Development loans: this is for long-term development purposes, any type such as machinery and equipment (for project loans and other commodities)
- (iii) Supporting assistance: The provision of grants or loans for immediate political and economic stability and to offset the effects of military expenditures
- (iv.) Military assistance: Provision of grants, loans, or sales of military supplies and equipment and training services. The principal objective is external and internal security.
- (v) Food for peace: the provision of grants, loans, or sales for local currency of surplus agricultural goods.

2.2 LITERATURE REVIEW

The literature on foreign aid effectiveness focuses almost exclusively on the macroeconomic impact, looking at the effect of aid on economic growth, savings and investment. The literature as to whether aid improves investment and GDP growth can be traced back to the two-gap model (Chenery and Strout, 1966), which remains the most influential theoretical underpinning of the aid effectiveness literature. In this literature LDCs face constraints on savings and export earnings that hamper investment and growth. Aid-flows are meant to fill the gap between investment needs and domestic saving. Even though this model has been widely criticized for its simplicity, it has provided the underlying principles both for early aid analysis and policies (Easterly, 2005). Most early authors concluded that foreign aid had - no significant impact on growth, savings or investment. Foreign aid was shown to increase unproductive public consumption and fail to promote investment. Empirical evidence is ambiguous at best and the Literature presents rather inconclusive results. Empirical studies on the relationship between foreign aid and investment a positive result Hansen and Tarp, (2000); or Lensink and Morrissey (2001). Dollar and Easterly (1999) add that this relationship is only significant in a food policy environment. Not referenced conclude that a dollar give in aid to developing countries causes government spending to increase by a dollar. Of this, roughly one-quarter is spent on capital expenditure. On aid vitality, the World Bank (2001) affirms that aid works principally through increasing domestic investment, but that volatility in aid flows however dampens domestic investment. Bulio and Lane(2002) and Gemmel and McGillivray (1998) show that foreign aid is significantly more volatile than domestic fiscal revenues and thus poses challenges for short-term fiscal management. Lensink and Morrissey (1999) find that volatility of aid receipts affects fiscal behaviour and lower both public and private investment.

Burnside and Dollar(2000) showed that aid can be effective when policies are good, that is, well articulated monetary and fiscal policies. Three main arguments have been advanced to explain the disappointing results of most aid effectiveness studies; aid is misallocated (donors give aid for strategic reasons to the wrong recipient), aid is misused (recipient governments pursue non-developmental agendas) and GDP growth is not the right measure of aid effectiveness. Most literature on aid effectiveness define donors' objective as solely the promotion of economic growth or reduction of poverty in recipient countries, another strand of literature argue that aid is allocated for strategic purposes, no positive impact in terms of growth or poverty alleviation should be expected. Some studies how that government (the recipient) and the donor can have conflicting objective. If foreign aid is misallocated and misused then it cannot be expected to have significant impact on growth. Suggest that aid effectiveness should not be measured by its impact on growth. One shortcoming with majority of these studies is that the analyses of aid effectiveness are concerned exclusively with official development aid. Foreign capital inflows are encouraged because it increases real income resulting from the investment. An increase in employment and real wages may be another major benefit from an inflow of foreign capital (Obadan 1999). According to Bulio and Lane (2002), conditionality is a major source of foreign aid volatility. This does not only apply to the conditions attached by bilateral donors, but frequently, the requirements that aid recipients have the approval of an on-track IMF supported programme. Pallage and Robe (2001) adds that highly volatile aid is

obviously less beneficial to recipient countries than a similar mean level of aid delivered in a less volatile form. The last twenty years have seen the emergence of a new category of actors on the foreign aid stage. As noted by Meyer (1995), participation by Non-Governmental Organisations (NGOs) in foreign aid has intensified significantly during the last two decades. Their number has grown exponentially; the size of some of them makes them significant players in social welfare and employment markets at the national level; the funding they attract has increased enormously; and their visibility to the general public is quite appreciable. NGOs are perceived as having two distinctive features that differentiate them from other donors. First, they are advocates of the most vulnerable populations and their motivation is generally perceived as mainly altruistic. Second, their actions at the grass roots level are seen as conducted at private sector levels of cost control and efficiency, while they achieve development objective and serve the needs of many people (Rose-Ackermann, 1996). Robinson (1997) suggests that NGOs will become mere implementers of donors' policies. The debate has so far focused on the nature of NGOs and their relationship with donors, relying on project evaluations to assess the effectiveness of NGO aid. Despite these concerns about NGO activities, no empirical study has been undertaken on the effectiveness of NGO aid at the macro level.

No clear Studies on impacts of foreign aid besides having made a good case for increased flow of foreign aid, they raise questions on utilization of these funds on their designated projects. The donor community has become increasingly concerned that part of the development assistance intended for crucial projects might be used to finance other non-intended projects. For instance, a current study by Uganda Debt Relief Network has shown that only 35 per cent of the external funds reach their designated targets (Dollar et.al, -1998). Also related to this issue is whether aid resources compliments or substitutes the domestic resources available.

The usage of donor fund affects the usage of domestic resources. The link between foreign aid development expenditure is direct, that of recurrent expenditure can only be explained by aid fungibility. The country might be rendering aid fungible by transferring domestic resources from sectors receiving aid to non-aid beneficial sectors, hence releasing some domestic resources for recurrent expenditure. This might impact negatively on the effectiveness of aid in promoting development and stimulate future problems of debt repayment. A few studies have supported the theoretical proposition that developing countries have been rendering aid fungible by transferring resources from the donor-aided sectors to non-donor aided sectors. Devarajan et al. (1998) found that most aid (90%) boosted government expenditure with no significant evidence on tax relief. About half of the aid was used to finance external debt service payments, one quarter of the aid was used to finance investments and the other quarter to off-set current account deficits.

2.3 THEORETICAL FRAMEWORK

Most studies examined acknowledge that external resource inflows affect growth through their impact on investment (Gomanee et al, 2002; Hansen or is it and Tarp, 2000). Resources inflows affect domestic investment differently depending on the type of inflows, here we focus on official flows and their volatility are expected to impact on domestic investment and economic growth. According to Bulio and Lane (2002) and Gomanee et al.(2002), poor countries lack sufficient resources to finance investment and imports of capital goods as well as technology. Foreign aid to finance investment can directly fill the savings-investment gap and as it is in the form of hard currency, can fill the foreign exchange gap. Similarly, as official flows are issued to government, they can also fund government spending and compensate for a small tax base (fiscal gap). Shortfalls in official flows are likely to result in reduction in government spending, and sometimes by an increase in taxes, or both. Incomplete adjustment to the shortfall in foreign aid is likely to crowd-out private investment and/or create inflationary pressures Gomanee et al.(2002). The link between external finance, investment and output growth is well documented in the two-gap and three gap models literature. In a similar vein, Obadan (1999) deduced from the relationship that exists between development finance and some macroeconomic variables: $I = S_p + (T - G) + (M - X)$... 1

Where I is Investment, S_p is private saving, $(T - G)$ is public savings and $(M - X)$ is foreign savings. Equation 1 shows that external financing will be necessary as long as there is deficiency in private savings, deficit in public finance and import exceeds export. The external financing to fill the gap could be in the form of grants, foreign loans, foreign direct investment, and draw-down on foreign reserve, among others.

There are a number of channels through which official flows affect investment though they are delivered essentially to government. Official flows improve infrastructure as they are very often meant for public capital expenditure. Secondly, aid inflows can lower the rate of taxation as they make up for part of government revenue. The third possible channel through which aid flows can influence investment is through government borrowings. Less foreign aid might increase government borrowing. Fourthly, aid tied on the level of economic reform improves investment. Finally increased official inflow might lead to an appreciation of the currency (Dutch Disease). This has positive effect on investment as the import of capital goods becomes cheaper, especially in developing countries with no capacity to produce capital goods required for investment.

3.0 FACTS ON FOREIGN AID IN NIGERIA

The sources of foreign assistance to Nigeria are the World Bank, the United Nations Development Programme (UNDP) and other United Nations agencies, the European Commission (EC), the African Development Bank (ADB). Other bilateral donor countries include the Great Britain, Australia, Canada, Finland, France, Japan, Germany, United States, etc. In recent times, International Non-Governmental Organizations (NGOs) like the Ford Foundation, the Rockefeller foundation, Fredrick Ebert, Rotary Foundation among others, have accounted for a sizable proportion of development assistance to Nigeria. The motives behind official resource flows, particularly, 'multilateral flow is to alter macroeconomic performance of a country. In 1986 Nigeria adopted SAP to move a market economy. On the other hand, bilateral flows are motivated more by political and strategic considerations.

Nigeria has received assistance from multilateral organizations like the World Bank and ADB which have provided both concessional and non Concessional loans. The World Bank gives soft credits to low income countries like Nigeria.

The soft credit is repaid over 30 years with 10 years of grace and carries a service charge of 0.75 percent. Borrowings from the IBRD (a member of the World Bank Group) increased tremendously in the early 1980s from US\$517 million in 1980 to US\$2137 million in 1986. It, however, declined gradually in the late 198s and early 1990s, moved to US\$3,284 million in 1990 (World Debt Table, 1995). Rot refereed the loan from this source constitutes foreign aid directed to economic development (financing projects in infrastructure, health, education, agriculture, water, etc.) as well as poverty reduction. There are over 32 projects in Nigeria under implementation being financed by the World Bank with a total loan of US\$2,844.5 million. A total of 42 other loans and two credits valued at US\$4,688.8 million have been fully disbursed as at December, 1994.

According to World Bank (2008) report, total loan support for Nigeria's NEEDS Programme as at 2008 amounted to US 1.5 billion. However, IBRD loans have a low grant element and are revalued periodically, a practice which more than not increases the value of debt.

Table 1: ODA inflow in Nigeria, 1970 – 2008 US\$ Million)

Year	IDA & IBRD	Growth Rate(%)	Grants	TC	Total (Grants + TC)	Growth Rate (%)
1970	182	-	40	36	76	-
1972	282	54.94	36	35	71	-16.57
1974	332	17.73	32	49	59	-16.9
1976	402	21.08	32	39	71	20.34
1978	486	20.08	35	43	78	7.85
1980	555	14.19	33	47	78	2.56
1982	711	28.11	23	42	80	-18.75
1984	936	31.64	31	45	65	16.92
1986	2170	131.83	9	48	76	-25
1988	2759	27.14	36	66	57	78.94
1990	3320	20.33	125	95	102	115.68
1992	3254	-1.98	116	99	220	-2.27
1994	3467	6.54	43	72	215	-46.51
1996	3110	-10.29	35	76	111	-3.60
1998	2842	-8.61	45	86	131	18.01
2000	2269	-20.16	49	105	154	17.55
2002	2138	-5.77	56	145	501	225.32
2004	1994	6.73	163	244	407	-18.76
2006	2075	4.06	11384	317	11701	2774.93
2007	2310	11.32	1321	162	1483	-87.32
2008	2454	6.23	843	201	1044	-29.6
2009						
2010						

Source: World Debt Table, Global Development Finance, World Bank.

NOTE: - IDA – International Development Agency,

- IBRD – International Bank for Reconstruction and Development

- TC – Technical Cooperation.

Table 1 shows that multilateral loans (IDA & IBRD) from the World Bank accounted for the largest share of ODA recorded during the period under review. Between 1970 and 1980 it recorded average growth rate of 2.56 percent, Grants and technical assistance recorded negative growth in the early 1970s but became positive by late 1970s. A positive growth was observed in the 1980s and 1990s. An impressive high growth was recorded

in 2006, this improvement could be the result of democracy in Nigeria, economic reform efforts and debt relief granted Nigeria in 2005.

Table 2: ODA inflow as a Percent of GNP in Nigeria, 1970 – 2008 US\$ Million)

Year	IDA & IBRD	Growth Rate(%)	Grants	TC	Total (Grants + TC)	Growth Rate (%)
1970	182	40	36	258	5125	5.03
1972	282	36	35	358	7133	5.02
1974	332	32	49	413	18376	2.25
1976	402	32	39	473	27298	1.73
1978	486	35	43	564	35610	1.58
1980	555	33	47	635	61079	1.04
1982	711	23	42	776	91715	0.85
1984	936	31	45	1012	90891	0.85
1986	2170	9	48	2227	45836	1.11
1988	2759	36	66	2861	28693	4.85
1990	3320	125	95	3540	25585	9.97
1992	3254	116	99	3755	24715	13.83
1994	3467	43	72	3582	21310	15.19
1996	3110	35	76	3221	33068	16.8
1998	2842	45	86	2973	29317	9.74
2000	2269	49	105	2423	36726	10.14
2002	2138	56	145	2339	38202	6.59
2004	1994	163	244	2401	78110	3.07
2006	2075	11384	317	13776	141277	9.75
2007	2310	1321	162	3793	155392	2.44
2008	2454	843	201	3498	197319	1.77
2009	2576	679	221	3678	201409	2.34
2010	2737	764	227	3748	214676	2.75

SOURCE: World Debt Table, Global Development Finance, World Bank.

Table 2 shows that ODA from multilateral sources (IDA&IBRD) accounted for the largest share of foreign assistance during the period under review, followed by grants and TC. TC shares were higher than grants from late 1990s up to early 2000s. The average growth of ODA/GNP ratio shows that between 1970 and 1980 it grew by 2.01 percent, 5.16 percent (1982-1990); 11.69 percent (1992-2000) and 4.63 percent (2002-2008). ODA as percentage of GNP was high in early 1970, the late 1980s to 2006 also experience high ratios, it peaked in 1994. However, the ratio started dropping from 2007 onward. The decline may be due to worldwide economic crisis, financial meltdown, cut in budget and aid fatigue from donor countries.

4.0. METHODOLOGY AND EMPIRICAL ANALYSIS

This paper uses the co-integration and vector error correction method to analyze the relationship between foreign aid and some selected macro Economic Variables in Nigeria. Prior to estimation, the time series properties of the data were determined using the Augmented Dickey Fuller method. Also, Co integration tests were performed using Johansen system estimation technique. This was done to determine the short run and long run relationships that exist between the variables in the model. Pairwise Granger causality tests were also carried out to check the direction of causality. The estimation results were obtained via two approaches namely, the least square method and vector error correction (VEC), Durbin Watson statistic was used to test for the presence of serial correlation (Autocorrelation), which is also common in time series data.

4.1. MODEL SPECIFICATION

Batu(2010) posit a positive relationship between Foreign aid and GDP, Consequently, a model is specified following the lead from Bulio and Lane(2002) and Batu (2010). A partial log model of the Relationship between Foreign aid and some selected Macro Economic Variables in Nigeria can be put as:

$$\ln FAID = b_0 + b_1 \ln RGDP + b_2 \ln INFL + b_3 \ln INV + b_4 \ln EXCR + b_5 \ln EXP + e_t$$

Where: $\ln RGDP$ = Real Gross Domestic Product (in log form)

$\ln INFL$ = Inflation rate

$\ln INV$ = Investment (in log form), represented by total Saving as ratio of GDP.

$\ln EXCR$ = Exchange Rate (in log form)

$\ln EXP$ = Export (in log form)

e_t = error term And b_0, b_1, \dots, b_n are the parameters to be estimated

All variables in the above model have been selected on the basis of how frequently they were cited in previous applied studies, Arndt et al(2010),Easterly (1999). According to Batu (2010),foreign aid is positively related to RGDP, which is also supported by Arndt et al (2010).Also, Arndt et al (2010),postulate a positive relationship between savings(investment) and foreign aid, using Harod-Domar growth model and the two-gap chinery-strout extension. Foreign aid is expected to have a positive relationship with inflation in short run, but negative relationship in long run.(Hansen et al,2001).The Data for estimation were sourced from Central Bank of Nigeria Statistical Bulletin, World Bank Debt Table(Global Development Finance),International Financial Statistics of IMF and others.

4.2 EMPIRICAL ANALYSIS.

4.2.1 STATIONARITY RESULT

Non spatiality of time series data has often been regarded as a problem in empirical analysis. Working with non-stationary variables lead to spurious regression result from which further inference is meaningless. The first step is therefore to test for stationarity of the variables using Augmented Dickey Fuller unit root test:

Table 4.1: Augmented Dickey Fuller test for Unit Root [test for Stationarity (1970 – 2009)]

ADF Static	Critical Value 1%	Critical Value 5%	Critical Value 10%	Order of Integration
-2.5758	-3.6117	-2.9399	-2.6080	I(1)
-3.3252	-3.6117	-2.9399	-2.6080	I(0)
-1.1681	-3.6117	-2.9399	-2.6080	I(1)
0.2631	-3.6117	-2.9399	-2.6080	I(1)
-1.3101	-3.6117	-2.9399	-2.6080	I(1)
-1.94044	-3.6117	-2.9399	-2.6080	I(1)

From the result shown in table 4.1 above, almost all the variables are not stationary, They are only stationary at first difference i.e. integrated order one I(1) at 10% level. That is almost all the variables have unit roots. The only variable that has no unit root is inflation; however, they are stationary at first difference: if a time series has a unit root, the first difference of such data are stationary (Gujarati 2007:820).

4.2.2. TEST FOR CO-INTEGRATION

Differencing of variables to achieve stationarity leads to loss of long run properties. The concept of co-integration implies that if there is a long run relationship between two or more non stationary variables, deviation from this long run path are stationary. To establish this, the Johansen (1988) technique was used and we obtained the following results as shown in table below.

Table 4.1.2 Co integration test results

Hypothesis	Trace Test Statistic	
	Statistic	Critical Value 5%
None.	43.734	68.52
At most 1	22.516	47.52
At most 2	10.858	29.68
At most 3	4.178	15.41
At most 4	0.0025	3.76

Source” Auther Computation

L.R Test indicates 3 cointegrating equation at 5% significance level.

Table 4.1.2 above shows the results of the Johansen cointegration test. It indicates the existence of 3 cointegrating equations at 5 % significance level. It shows that the likelihood ratio of 4.178 is less than 5% critical value for the null hypothesis of “at most 3” cointegrating relations, hence the acceptance of alternative hypothesis that there exist 3 cointegrating equations. Implying that there exist a long run relationship between Foreign aid and the explanatory variables.

4.2.3. Pairwise Granger Causality Test

Table 4.1.3 Pairwise Granger Causality Test.

Null Hypothesis	Obs.	F-statistic	Prob.	Decision	Direction
Inf does nt granger cause ln RGDP lnRDGP does nt granger cuase inf	38	0.22301 0.08132	0.801 0.922	Accept Accept	No. causality No causality
lnINV does nt granger cause ln RGDP Ln RGDP does nt granger cause lnINV	38	0.0887 0.7574	0.915 0.477	Accept Accept	No Causality No causality
lnINV does n't granger cause inf inf does n't granger cause lnINV	38	0.6489 5.5693	0.529 0.008	Accept Reject	No Causality Causality
lnEXCHR doesn't granger cause Inf Inf does not granger cause lnEXCHR	38	0.5454 0.3470	0.5847 0.7094	Accept Accept	No Causality No Causality
LnEXP does nt granger cause inf Inf does nt granger cause lnEXP	38	0.8258 1.7616	0.4467 0.1875	Accept Accept	No causality No causality
Lnfaid does nt granger cause lnRGDP lnRGDP does nt granger cause lnfaid	38	2.2463 4.1858	0.1217 0.0239	Reject Reject	Causality Causality

Source" Auther Computation

In Table 4.1.3 above, the granger causality test shows that there is a unidirectional relationship between the variables in hypothesis 1 to hypothesis 5. This shows that almost all the explanatory variables are exogenous, which conform to OLS assumption. The implication therefore is that Investment, export, Exchange rate, etc can be used to predict foreign Aid. However, lnFaaid and lnRGDP do have multidirectional relationship only at 10% level of significant. These conclusion is based on the relationship between the estimate F and the critical of value 10% (for 5 and 33 df)

4. 4. REGRESSION RESULTS

Based on the evidences from the co-integration test conducted in the previous section, the model was estimated using least square method and Vector Error Correction method. The results are presented below:

Table 4.1 Results of OLS : Dependent variable: Lnfaid

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LnRGDP	2.076	0.6256	3.3185	0.0022
INF	-0.008	0.008	-0.974	0.3367
lnINV	0.104	0.0517	2.0150	0.0519
LnEXCHR	0.0017	0.0060	0.2760	0.7842
LnEXP	0.4657	0.1937	2.405	0.0218
INTERCEPT	-4.9415	1.400	-3.5280	0.0012
R ²	0.9178	N = 40		
Adjusted R ²	0.9058	K = 6		
F-Statistics	75.97	Log likelihood = -47.76		
D.W Statistics	2.203	Akaike info Criterion = 2.688		
		Schwarz Criterion = 2.9412		

BEYOND THE OLS RESULTS:- VECTOR ERROR CORRECTION (VEC) MODEL

One major criticism of the single equation model is the existence of a simultaneous bias in the estimation procedure, namely, that the procedure ignores the existence of a multivariate relationship common among macroeconomic variables, such as RGDP and Investment. Thus, the existence of high interdependence between some of the independent variables inform the use of an interactive model of the VAR type. The results of VEC is presented below.

Table 4.2 VEC RESULTS

Variable	Coefficient	T-Statistics
ECM(-1)	-0.0101	-0.025
LnRGDP(-1)	0.9519	0.7445
Inf(-1)	-0.02163	-0.9445
LnInv(-2)	0.08258	0.4759
LnEXCHR(-2)	0.0058	0.3844
LnEXP(-1)	-0.066	-0.096
C	0.5394	1.5143
Adjusted R ²	0.0903	
F-Statistics	1.275	
Akaike info. criterion	25.91	
Schwarz Criterion	29.83	

IV. 5. INTERPRETATIONS AND POLICY IMPLICATIONS OF RESULTS

The result from OLS shows that the model is well behaved. The level of explanation of variation in Infaid by lnRGDP, inf, lnINV, lnEXCHR and lnEXP is very high as represented by the high value of Coefficient of determination (R²). The adjusted R² also indicate that the model has good fit: 90.57% variation in Infaid is explained by estimated regression line/equation.

The F statistic is highly significant: comparing the F statistic (75.97) with the tabulated F at 5% level of significance and (5.32) degree of freedom 2.53, this shows that the model is statistically significant and all the estimates are significantly different from zero i.e. all explanatory variables (e.g. lnRGDP, inf, lninv, lnEXCHR, lnEXP) are good determinants of Foreign Aid in Nigeria.

Also, based on a prior and statistical criteria, all the explanatory variables, excluding inflation, are positively related to foreign aid and they are statistically significant at 10%.(except exchange rate).Unlike FDI inflow, Foreign aid is not significantly affected by exchange rate. However, the results show that there is significant relationship between foreign aid and Some main macro-economic variables, e.g. RGDP, Investment, Exports and Inflation rate. A unit change in RGDP will lead to about 2.06 unit changes in foreign aid, holding other factors constant. Also high consumer price index (Inflation), means reduction in foreign aid. However, inflation rate is not statistically significant. This shows that inflation rate in Nigeria in the period under consideration, has no significant effect on foreign aid inflow.

This regression results is reliable and statistically fit for policy recommendation, this is because there is no problem of serial correlation (i.e. no Auto correlation). The D.W Statistic is greater than 2.

In summary, Foreign aid has a significant role to play in Nigeria Economy. It promotes increase in GDP, Capital formation, Exports and hence Employment generation. From the results of Error Correction model, the signs of the estimated coefficients is the same with that of OLS, i.e, there is positive relationship between foreign aid and RGDP, Investment, and a negative relationship between foreign aid and inflation rate. For instance, 1 percent increase in RGDP in the previous one year causes Foreign aid to increase by 0.9519 percent.similarly,1 percent increase in Investment in the previous two years, causes foreign aid to increase by 0.083 percent, but 1 percent increase in inflation rate in the previous period will lead to 0.022 percent decline in foreign aid. These findings are in line with the work of Adamu (2011). Lastly, the error correction has been found to be significant and correctly signed, implying that a long run equilibrium or relationship exists between Foreign aid and the selected macro economic variables. The speed of adjustment of the error correction term shows that about 1% of the deviation of short run Foreign aid from the long run is covered up within a year.

5.0 SUMMARY AND CONCLUSION

The paper found that foreign aid is positively related to aggregate output, investment, export and exchange rate, but negatively related to inflation. This implies that foreign aid promotes investment, output expansion and hence increase in exports. It also encourages local currency appreciation but not inflationary.

The correct policy response to the aid syndrome or volatility is for economic agents to spend the aid money for direct productive investment to induce a positive supply response. The government which is the main recipient of aid should also implement policies that will offset the tendency for foreign aid to generate exchange rate appreciation. High on the list of these measures is enhancing financial liberalization, zero level tolerance for corruption, due process and transparency, establishing a freely functioning foreign exchange market, and instituting non-inflationary monetary and fiscal policies.

Moreover, industrial countries must strive to raise ODA supply which is an important strategy for enhancing investment and reducing global poverty and meeting the Millennium Development Goals by 2015. A dramatic growth in ODA supply can also lead to expanded public goods. If industrial countries were to be

successful in meeting ODA targets, financial aid would increase to enhance investment and growth in Nigeria. However, this could pose macroeconomic challenges such as Dutch disease. To ensure that enhanced ODA is used efficiently in the fight against global poverty, it is crucial that the international community should increase the flow and mind how it allocates aid.

REFERENCES

1. Adam, A. J. (2008), *International Perspectives on Aid Coordination in Developing Countries*, The Ecosight Magazine, NESAPublication, 4th Edition, University of 4buja
2. Bulio A. and T. Lane(2002) "Aid and Fiscal Management" IMF Working Paper WP1021112, Washington DC
3. Central Bank of Nigeri1980), *Statistical Bulletin*, Abuja Chenery, H. B. and A. M. Strout, 1966, *Foreign Assistance and Economic Development*," *American Economic Review*, Vol. 56 September, pp. 679-733
4. Christensen, V. B.(1995), "Review of Issues of Aid Effectiveness," *External Assistance and Policies for Growth in Africa*, Ed. Claire Liuksila, IMF Washington DC.
5. ECA (Economic Commision for Africa), what year "Transforming Africa: Overview ECA, Addis Ababa A
6. Devarajan, S et al (1998), "The Implications of Foreign Aid Fungibility for Development Assistance," *Policy Research Working Paper 2022* (Washington DC: World Bank)
7. Dollan (998), "Aid, the Incentive Regime and Poverty reduction," *Policy •Research Working Paper 1937*(Washington DC: The World Bank Easterly et al., 1999, "Aid Policies and Growth, *American Economic Review*, September
8. Gemmell, N and M. Mc Gillivray (1998) "Aid and Tax Instability and the Government Budget Constraint in Developing Countries" *Credit Research Paper 98/0 1*, University of Nottingham, England
9. Gomanee, K. S. et al42002 "Aid and Growth in Sub-Saharan Africa: Accounting for Transmission Mechanisms," *Credit Research Paper 02/05*, University of Nottingham, England
10. Hanson, H and F. Tarp (2000), "Aid and Growth Regressions" *Credit Research Paper 00/07*, University of Nottingham, England.
11. Hadjimicheal M. T et al., 1995, *Sub-Saharan Africa: Growth, Saving, and Investment, 1986-93*, IMF Occasional Paper, No. 118 (Washington DC: IMF)
12. Lensinlc, R. and 0. Morrissey(2001), "Uncertainty of Aid Inflows and the Aid-Growth Relationship, *Credit Research Paper 01/06*, University of Nottingham, England Magbagbeola, N. O.(1998), "External Resourcece Flows into Nigeria:0
13. Analysis of the Issues, Nigerian Economic Society 1998 Annual Conference proceeding where Morgensthaui, J. (1963), *Preface to a Political Theory of Foreign Aid*, pp. what journal 79.
14. Meyer, C. A. (1995), "Opportunism and NGOs: Entrepreneurship and Green -' North-South Transfers," *World Development*, 23 (August), pp. 1277-89
15. Obadan M. I. (1999), "International Capital Flows and the Recent Financial Crises: What have we learned?" *A Publication of Nigerian Economic Society. 7?*
16. Olaniyi O.(1995), "External Capital and Economic Development in Nigeria (1970-1991 *Journal . of Economic and Social Studies*, Vol. 37, Nos
17. Pallage, S. and M. Rob4(2001), "Foreign Aid and the Business Cycle," *Review of International Economics*, Vol. 9, No.4, pp. 636-67
18. Rose-Ackerman, Susan (1996), "Altruism, Nonprofits and economic Theory," *Journal of Economic Literature*, Vol. 34, (June), pp. 701-28
19. Robinson, S. (199 "Privatising the Voluntary Sector: NGOs as Public Sector Contractors," in *NGOs, States and Donors: Too Close for Comfort*, by M. Edwards and D. Hume (London: Pergamon Press)
20. World Bank/2001) *Global Development Finance*, Washington, DC