

Foreign Institutional Loans and Poverty Incidence in Nigeria

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Abstract: This paper examines the role of foreign institutional loans in addressing the challenge of poverty in Nigeria. The Foreign Institutional loans focused in this study are World Bank, IMF, African Development Bank (AfDB) and Paris Club loans. Time series data spanning from 1980-2017 on each of the variables were sourced from the National Bureau of Statistics and World Development Indicators (WDI). The augmented Dickey Fuller (ADF) unit root test, Johansen multivariate cointegration approach, vector error correction model (VECM) and Granger causality tests amongst others were employed as techniques for data analysis. The ADF unit root test results reveal that the variables are all stationary upon first difference and as such they are all I(1). The cointegration test results reveal that the linear combinations of the variables in the model lead to long run relationship. The estimated VECM shows that African Development Bank and Paris Club have negative and significant effect on poverty rate in the long run. The Granger causality test results reveal that joint causality runs from the all the underlying foreign institutional loans to poverty. Given the findings, it is recommended that the Federal Ministry of Finance in collaboration with the Debt Management Office (DMO) should ensure that loans sourced from foreign institutions are channeled into productive investments that support the process of poverty reduction.

Keywords: Foreign Institutional Loans, Poverty Rate, World Bank, IMF, AfDB and Nigeria.

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I. INTRODUCTION

Foreign institutions are considered to play important role in the movement of foreign capital to support development in poor income countries. They are also envisaged as having the capacity to boost domestic resources while at the same increases the debt profile of the receiving economy. According to the Institute of International Finance (2018), global debt stocks reached \$247.2 trillion as against \$168 trillion at the beginning of the global financial crisis of 2007-2008. Majority of the loans were directed to developing countries to support development projects (UNCTAD, 2018).

It is generally agreed that the growth and sustainable development of any country cannot be fully realized without taking a closer look at the contribution of foreign institutional loans to developing countries; as well as having an understanding while debt or borrowing meant to boost domestic savings is vital for enhancing investment, financing development and economic growth in general and capital formation in particular (Muhammad and Ayodele, 2016). Thus foreign institutional loan is recognized as an important factor that determines the growth and development of any economy. As a tripartite concept, sustainable development encompasses social, economic and environmental sustainability. For instance, economic sustainability is intended to maintain the natural, social and human capital required for income and living standards.

Additionally, social sustainability is designed to promote human rights and equality, preserve cultural identity and respect for cultural diversity, race and religion while environmental sustainability centers on maintaining the quality of the environment which is necessary for conducting the economic activities and quality of life of people. Overall, the thrust of sustainable development lies in striking a balance between all these pillars of economic, social and environment sustainability. Notably, it is generally accepted that growth will only take off when the stock of capital has reached a certain threshold level. It is also believed that as the increased stock of capital leads to improvement in economics performance, savings continue to grow (Sachs, 2002).

Although Nigeria has been identified as having continuous access to loans from foreign institutions, proper allocation of these loans to areas that offer greater opportunities for sustainable development has remained a source of worry to the players in the economy. The conditions attached to these loans from foreign institutions often seem unfavorable for the domestic economy. The interest charged on these loans is another challenge for sustainable development. This is because rather than being a major source of financing for poverty reduction, huge proportions of the resources are channeled to debt servicing and repayment of principal with rising incidences of poverty. Thus, controversies have trailed the continuous borrowing from foreign

institutions. Some argue that it is helpful in address the revenue gap and supports long term investment in the critical sectors of the economy with improved economic turnaround. On the other hand, widespread criticisms have characterized the ineffectiveness of foreign institutional loans on the grounds that the core social, economic and environmental challenges that the fund is expected to address still persist. It is against this backdrop that this study explores the link between foreign institutional loans and poverty reduction in Nigeria.

II. REVIEW OF RELATED LITERATURE

2.1.1 Keynesian Theory of Public Debt

Keynes (1936) proposed this theory and it is based on the assumption that state intervention in the economy is necessary due to the realities of market failure. The Keynesian doctrine alters the very liberal assumptions and principles of the Classical theory. In response to the challenges of those times, especially the great depression, the Keynesian doctrine attaches great importance to the state, whose interventions in economy is considered helpful in complementing the activities of the free market and correcting its imperfections (Bilan, 2016). The Keynesians view of public debt deviated from the classical assumptions as they perceive public borrowing as growth-enhancing due to the expected turnaround associated with its investment in productive activities. The economic situation that gave rise to or produced the great depression of the 1930s is responsible, in part, for the development of a modern theory of public debt. The medieval or traditional thinking that a consistent operation of a budget deficit and a rising public debt distorts the financial stability of a nation gradually faded away and was replaced by the thinking that a huge public or external debt is not a liability but a national asset and that a continuous operation of a deficit budget is essential to the overall economic prosperity of a nation.

The attack on the classicist principles of public finance and budgeting by the Keynesians was a logical branch of the latter's attack on the classical's held view that the economy tends toward full employment equilibrium or that there is always full employment of resources. Keynes (1936) was of the view that, if there are unemployed or unutilized resources which could not be employed by the private sector, such resources can be put to use by unbalancing the budget. It was held that increase in public debt through the instrumentality of the multiplier would raise national income or gross domestic product. A link was established between public borrowing and deficit financing and proposed that government should borrow for all purposes so as to raise the level of effective demand in the economy and by effect, the level of output and employment.

According to Keynes (1936), borrowing for the purpose of consumption was as desirable as that undertaken for investment purposes or to be channeled into the manufacturing of productive goods due to its inducing effect on investment. The Keynesian paradigm implies or is suggestive that the government is not only obligated but has the ability to address problems of instability that are inherent in the economy or are the failure of the market system. The extensive theoretical construct of Keynes provides the basis for state intervention, through its financial means, in support of economic recovery and combating unemployment, in times of recession, or in accelerating the pace of economic growth, during period of sluggish growth. The Keynesian theory of public debt was criticized by Bernheim (1989) on the ground that the notions that budget deficits have, not only positive effects, but exerts negative impacts when the assumptions underpinning the Keynesian hypotheses are not satisfied completely.

2.1.2 Financing Gap Theory

Generally, the idea of financing gap has infested the developing countries which significantly encouraged the so called foreign borrowings. Financing gap is essentially the difference between the funds that are available from domestic sources and the total investment requirement; and one way of closing this gap is by borrowing from abroad. Easterly (1999) informed that the idea originated when Domar (1946) in a publication entitled "Capital Expansion, Rate of Growth, and Employment" where it was postulated that there would be a proportionate relationship between investment spending and the total growth of gross domestic product (GDP).

The financing gap idea resurfaced in the work of Rostow (1960); "The Stages of Economic Growth" postulating that for any country to move from being a less developed to a developed economy, it needs to pass through a sequence of stages. There exists a proportionate association between such investment and economic growth and development. Rostow deduced that the necessary condition for takeoff is that investment increases from 5% to 10% of profits which means that if a developing country does not have enough domestic resources for investment it must fill the gap with foreign aid or external debt. Chenery and Strout (1966) augmented the Harrod-Domar financing gap model with an understanding of the need to have savings funded internally. National saving, in the event of an existing temporary shortfall between investment ability and saving ability can be supplemented by foreign aid. Self-refinancing occurs if a particular country has a high enough marginal saving rate; only then will a country be able to finance its investment out of its own saving. Some scholars observed that the model has proved to be amongst those generally employed theories in explaining growth

phenomenon in economics (Efendi, 2001) and equally used in reaching at all financing requirements decisions by International Finance Institutions (IFIs) (Easterly, 1999).

2.2 Empirical Literature

Zaghdoudi and Hakimi (2017) employ panel data to explore the impact of external debt on poverty for 25 developing countries. The study ran for a period of 16 years extending from 2000 to 2015. Secondary data was employed for the purpose of the study. Empirical findings of the study divulged that, there exists a long run equilibrium relationship between the variables of the model as informed by the heterogeneous panel cointegration test carried out. The established long-run relationship showed that, a one (1) percent increase in external debt raises or increases poverty by 0.35 percent. The result that emanated from the panel vector error correction model revealed the existence of both short and long-run bidirectional causality between external debt and poverty as upward trends in external debt increases poverty. The study proposed that developing countries should improve on their infrastructure, health sector and should favour higher degree of trade openness as it was evidenced from the study that, such significantly reduce the level of poverty.

Akram (2016) assessed the implications of public debt on economic growth and poverty reduction in some selected South Asian countries comprising Bangladesh, India, Pakistan and Sri Lanka between 1975 and 2010. The study developed an empirical model that incorporates the role of public debt into growth equations and the model is extended to incorporate the effects of debt on poverty. The estimation process relied on the standard panel data-based estimation methodologies. The results indicate that public debt profile has a negative impact on economic growth. It was equally uncovered that neither public external debt nor external debt servicing has a significant relationship with income inequality. This is an indication that public external debt can be helpful or harmful for the poor as it is for the rich. On the other hand, domestic debt has a positive link with economic growth and a negative impact on the GINI coefficient, indicating that domestic debt is pro-poor.

Oyedele, Emerah and Ogege (2013) applied cointegration and regression analysis in investigating the impact of external debt and debt servicing on poverty reduction in Nigeria using time series data that spanned from 1980 to 2010. Specifically, the empirical analysis followed three procedures. First, the time series properties of the underlying variables were examined with the help of the Augmented Dickey-Fuller (ADF) unit root procedures. Second, the long-run relationship among poverty reduction, debt –Income ratio, debt-service, degree of openness, growth of agricultural value added, per capital income, inflation rate and investment-income ratio was examined using the Johansen and Juselius (1990) procedures. Lastly, a multiple regression analysis was undertaken to examine the impact of external debt and debt servicing on poverty reduction. From the results, it was found that both the external debt and debt servicing cause poverty in Nigeria. This finding suggests that government needs to mobilize domestic saving to adequately manage the external debt.

Ekpo& Udo (2013) used econometric methodology to determine the link between debt burden, growth and incidence of poverty in Nigeria over the period 1970-2011. In the econometric model, elements of failing state comprising corruption, insecurity and ethnic violence were also included as explanatory variables. Again, the incidence of poverty was measured by the proportion of government spending on social services and income per capita. It was found that public debt is negatively related to growth and poverty reduction. The study however, suggested that expenditure on social services should be promoted.

Osundina (2014) examined how policy-based external loan affect the Nigerian economy. The study employed content data analysis based on secondary data sourced from Debit Management Office, National Bureau of Statistics, Central Bank of Nigeria, Economical and Financial review and relevant publication from Nigeria on variable like foreign assistance, policy on economic development, and debt overhang among others. The finding indicates that external debt burdens constraint the Nigeria economy promoting poverty ridden society, unemployment, inflation and associated health related diseases. Consequently, study established that in as much as corrupt practices tails the political system, and as long as Nigeria economy is largely driven by government expenditure, exploit on loan will be detrimental. Based on the finding the study suggest that a review on policy-based external debt should be undertaken to extricate Nigeria economy from the lender's trap, tackle the menace of corruption; control government expenditure and source alternative measure to generate revenue away from loan for economic development.

Ochalibe, Awoderu and Onyia (2017) examined the impact of external debt on economic development and the policy implications for poverty reduction. It utilized secondary data from Nigeria statistical bulletins, IMF's International Financial Statistics, World Bank's International Debt Statistics and national accounts data. Based on the findings of the study, there is evidence of relationship between external debt and economic development on the one hand and the existence of long run relationship between external debt and economic development on the other. This study concluded that the resultant effects of external debt on economic development in Nigeria are negative and significant. The implication is that debt is a burden and should be traded with caution. The study therefore, recommended that external borrowings should be channeled towards productive investments that will generate returns that are sufficient enough to offset the debt when due.

Matandare and Tito (2018) examines the relationship between public debt and economic growth in Zimbabwe. Ordinary Least Square (OLS) method has been used to analyze 1980 to 2016 time series data for Zimbabwe. The study found that there is a negative significant relationship between external debt and economic growth in Zimbabwe for the period under study. Exchange rate and inflation were also found to have negative significant relationships with economic growth in Zimbabwe. However, external debt service was found to have a significant positive relationship with economic growth. In view of this, the study recommends that the government should step up efforts to boost sources of domestic revenue to finance its growth plans as external debt accumulation weighs down economic growth. The need to diversify the economy is crucial as government should develop new sectors which can generate revenue to contribute towards economic growth.

Using econometrics approach, Kim, Ha, and Kim (2017) investigate the relationship between public debt and economic growth. Specific the study applied the pooled ordinary least squares (OLS), fixed effects models and the dynamic panel generalized method of moments (GMM) models to analyse data of 77 countries from 1990 to 2014. The empirical results show that the interaction term between public debt and corruption is statistically significant. This supports the hypothesis that the effect of public debt on economic growth is a function of corruption. The sign of the marginal effect is negative in corrupt countries, but public debt enhances economic growth within countries that are not corrupt.

III. METHODOLOGY

3.1 Nature and Source of Data

This study relied on secondary time series data from documentary sources. The data which span from 1980-2017 is collected from the Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistics and World Development Indicators (WDI) with a focus on the underlying endogenous and exogenous variables.

3.2 Model Specification

The model specified in this section is used to evaluate the relationship between variables that served as proxies for foreign institutional loans and poverty incidence. The functional form of the model is stated as follows:

$$POV_t = f(WBL, IML, ABL, PCL) \tag{1}$$

Specifically, the econometric form of equation 1 is presented as follows:

$$POV_t = a_0 + a_1WBL_t + a_2IML_t + a_3ABL_t + a_4PCL_t + e_{1t} \tag{2}$$

The general framework for the vector error correction model (VECM) involving four variables is expressed as:

$$\begin{aligned} \Delta POV_t &= \sum_{i=1}^q \mu_{11} \Delta POV_{t-i} + \sum_{i=1}^q \mu_{12} \Delta WBL_{t-i} + \sum_{i=1}^q \mu_{13} \Delta IML_{t-i} + \sum_{i=1}^q \mu_{14} \Delta ABL_{t-i} + \sum_{i=1}^q \mu_{15} \Delta PCL_{t-i} + \beta_1 ECM_{t-1} + e_{1t} \\ \Delta WBL_t &= \sum_{i=1}^q \mu_{21} \Delta POV_{t-i} + \sum_{i=1}^q \mu_{22} \Delta WBL_{t-i} + \sum_{i=1}^q \mu_{23} \Delta IML_{t-i} + \sum_{i=1}^q \mu_{24} \Delta ABL_{t-i} + \sum_{i=1}^q \mu_{25} \Delta PCL_{t-i} + \beta_2 ECM_{t-1} + e_{2t} \\ \Delta IML_t &= \sum_{i=1}^q \mu_{31} \Delta POV_{t-i} + \sum_{i=1}^q \mu_{32} \Delta WBL_{t-i} + \sum_{i=1}^q \mu_{33} \Delta IML_{t-i} + \sum_{i=1}^q \mu_{34} \Delta ABL_{t-i} + \sum_{i=1}^q \mu_{35} \Delta PCL_{t-i} + \beta_3 ECM_{t-1} + e_{3t} \\ \Delta ABL_t &= \sum_{i=1}^q \mu_{41} \Delta POV_{t-i} + \sum_{i=1}^q \mu_{42} \Delta WBL_{t-i} + \sum_{i=1}^q \mu_{43} \Delta IML_{t-i} + \sum_{i=1}^q \mu_{44} \Delta ABL_{t-i} + \sum_{i=1}^q \mu_{45} \Delta PCL_{t-i} + \beta_4 ECM_{t-1} + e_{4t} \\ \Delta PCL_t &= \sum_{i=1}^q \mu_{51} \Delta POV_{t-i} + \sum_{i=1}^q \mu_{52} \Delta WBL_{t-i} + \sum_{i=1}^q \mu_{53} \Delta IML_{t-i} + \sum_{i=1}^q \mu_{54} \Delta ABL_{t-i} + \sum_{i=1}^q \mu_{55} \Delta PCL_{t-i} + \beta_5 ECM_{t-1} + e_{5t} \end{aligned}$$

$\mu_{11} - \mu_{55}$ = vectors of short-run estimates of the independent variables

Δ = first difference notation

q = notation for optimal lag order

β_{1t} and β_{5t} = vectors for the speed of adjustment

e_{1t} and e_{5t} = vectors for the stochastic error terms

3.2.1 Variable Description

i. Poverty rate: The poverty rate is concerned with the ratio of the total population whose income is less than the poverty threshold which defines the income level (measured in United States dollars) below which an individual is regarded as being poor. In this study, the poverty headcount which represents the percentage of the overall population that are living below the poverty line is used as published by the NBS.

ii. World Bank Loan (WBL): This refers to loans provided by the International Bank for Reconstruction and Development established to meet the development needs of member states, especially developing economies. In

its structure, World Bank loans encompasses public and publicly guaranteed loans provided by the World Bank Group with long term tenure and directed towards poverty reduction and employment generation. In this study, the World Bank concessionary Loans and International Development Association (IDA) credits is used in this study. It is expected that increase in World Bank concessionary Loans and credits will reduce poverty rate and employment and boosts per capita income.

iii. International Monetary Fund Loan (IML): This comprises credits from the IMF to its member countries with focus on developing economies to enable them meet their development needs. Increase in loans from the IMF is expected to reduce the level of poverty and unemployment and increase per capita income.

iv. AfDB loans: These are multilateral loans offered by AfDB which are allocated to productive investment to promote economic and social progress in Africa. In addition to the provision of loans, AfDB also provide equity investments and technical assistance to the member states to enable overcome challenges of economic development. Following its outlined goals, it is expected that increase in AfDB loans will reduce poverty, increase productive employment and per capita income.

v. Paris club loans: This refers to funds borrowed from foreign governments under the aegis of the Paris Club with long term repayment plan. It mostly describes borrowing by governments in developing countries from developed countries' government. Traditional participants among Paris Club creditors are the Organization of Economic Cooperation and Development (OECD) country governments; although in any single meeting any number, up to one-half of these, actually participate.

3.3 Method of Data Analysis

The Vector Error Correction Model (VECM) is applied in estimating the regression equations. The choice of the VECM was driven by the popularity of nonstationary amongst time series as contained in existing theories and previous studies. Primarily, the VECM is considered as a useful technique for estimating the short term effect for both variables and the long run effect of the time series data. Furthermore, VECM has been described as one of the time series modeling techniques that offers opportunity for the estimation of the level to which a variable can be brought back to equilibrium condition after a shock on other variables. Ankargren&Lyhagen, (2018) posit that the VCM provides the most popular ways to model macroeconomic variables. In addition to VECM, this study employs descriptive statistics to gain deeper insights into the distribution of the variables over the study period and their basic descriptive statistics. The causal links among the dependent and independent variables is examined using Granger causality test.

IV. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics for the variables are summarized in table 1.

Table 1: Descriptive statistics for POV, UMP, INE, IML, WBL, ABL and PCL

	POV	IML	WBL	ABL	PCL
Mean	58.47278	0.249543	5.901518	0.008654	13.64098
Median	61.10000	0.132769	3.291739	0.002786	10.07090
Maximum	78.60000	1.549713	20.92975	0.053509	35.69232
Minimum	34.00000	0.000000	1.003861	3.64E-06	0.000000
Std. Dev.	12.26655	0.327088	5.460809	0.012949	13.41760
Jarque-Bera	2.651813	54.95884	6.550711	34.75578	4.268345
Probability	0.265562	0.000000	0.037803	0.000000	0.118343
Observations	36	36	36	36	36

Source: Researcher's computation using E-views software

As observed from the descriptive statistics, the mean poverty rate in Nigeria between 1980 and 2017 is 58.47 and 9.87. This reveals that large proportions of the Nigerian population are living below the poverty line. The debt statistics show that IMF, World Bank and African Development Bank loans averaged 0.249, 5.902 and 0.0087 percent. It was further observed that Paris Club loan averaged 13.641 percent. The corresponding standard deviations of the variables reveal that the observations for poverty, unemployment, World Bank loans and Paris Club loans converged around their respective mean values while that of IMF and African Development Bank loans are divergent from their mean values. More so, the probability values of the Jarque-Bera statistics indicate that poverty rate, unemployment rate, Gini index and Paris are normally distributed whereas the other variables are not. The evidence of normal distribution in the series is very welcoming as it provides more insights into the data properties.

4.2 Unit Root Test Results

The unit root test was conducted using ADF at 5 percent level of significance. The results are reported in table 2.

Table 2: ADF unit root test results for POV, UMP, INE, IML, WBL, ABL and PCL

Variable	ADF test at levels		ADF test at First difference		Order of Integration
	t-statistic	5 Percent Critical value	t-statistic	5 Percent Critical value	
POV	-2.2422	-3.537	-6.499	-3.544	I(1)
IML	-2.297	-3.587	-8.785	-3.540	I(1)
WBL	-2.149	-3.537	-5.147	-3.540	I(1)
ABL	-3.383	-3.544	-7.628	-3.540	I(1)
PCL	-2.356	-3.540	-4.769	-3.540	I(1)

Source: Researcher’s computation using E-views software

The ADF unit root test results were conducted at 5 percent level of significance. The results at levels indicate that all the variables are not stationary. This is because, in absolute terms, the computed t-statistics are greater than their corresponding critical values at 5 percent level of significance. Therefore, the null hypothesis of no unit root in the series is retained. As a result of the nonstationary process in the series, the variables were differenced once and found to be stationary at first difference. Thus, the variables are integrated of order one. The evidence of difference stationary in the series provides the required justification for the application of Johansen multivariate maximum likelihood approach to cointegration.

4.3.1 Cointegration Test Results

The Johansen test for cointegration was applied in this study. The results are summarized in table 3.

Table 3: Cointegration test result

Series: POV IML WBL ABL PCL				
Trace test results				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.923292	182.3259	88.80380	0.0000
At most 1 *	0.712299	100.1581	63.87610	0.0000
At most 2 *	0.638128	60.29137	42.91525	0.0004
At most 3 *	0.444881	27.76446	25.87211	0.0288
At most 4	0.243511	8.930143	12.51798	0.1847
Max-Eigen test results				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.923292	82.16782	38.33101	0.0000
At most 1 *	0.712299	39.86668	32.11832	0.0046
At most 2 *	0.638128	32.52691	25.82321	0.0056
At most 3	0.444881	18.83432	19.38704	0.0600
At most 4	0.243511	8.930143	12.51798	0.1847

Source: Researcher’s computation using E-views software

NB: * denotes rejection of the hypothesis at the 0.05 level

The test for cointegration was necessitated by the evidence of first difference stationary process in the series. The results show evidence of four cointegrating equations from the trace test and three cointegrating equations from the maximum eigenvalue test. This provides the basis for the rejection of the null hypothesis that the series are not cointegrated. This implies that poverty rate has long run relationship with foreign institutional loans. This finding is in agreement with the work of Zaghoudiand Hakimi (2017).

4.4 Model Estimation

The evidence of cointegration in each of the models provides basis for estimating the VECM. The results are summarized in table 4.

Table 4: Vector Error Correction Estimates

Cointegrating Equation			
Dependent variable: POV			
Explanatory variable	Coefficient	Standard error	t-stat.
IML(-1)	-118.9598	99.1512	-1.19978
WBL(-1)	12.76899	7.09896	1.79871
ABL(-1)	9976.511	2848.53	3.50234
PCL(-1)	-8.008374	2.25074	-3.55810
Error correction equation			
Dependent variable: D(POV)			
Explanatory variable	Coefficient	Standard error	t-stat.
ECM(-1)	-0.011750	0.00295	-3.98374
D(POV(-1))	-0.236257	0.20206	-1.16923
D(POV(-2))	0.067286	0.16340	0.41179
D(IML(-1))	-6.346012	3.42503	-1.85284
D(IML(-2))	-5.061227	3.63355	-1.39292
D(WBL(-1))	0.259172	0.37590	0.68947
D(WBL(-2))	0.444960	0.36500	1.21906
D(ABL(-1))	-289.4834	98.1557	-2.94923
D(ABL(-2))	-2.634390	100.828	-0.02613
D(PCL(-1))	-0.089259	0.17276	-0.51667
D(PCL(-2))	-0.208522	0.17528	-1.18965
C	0.867686	0.90399	0.95984
R-squared	0.660513	F-statistic	3.714372

Source: Researcher’s computation using E-views software

Table 4.1 Post-estimation tests results

Test type	Test statistic	Probability value
VEC Residual Serial Correlation LM Test	LM-Stat. (22.894)	0.5838
VEC Residual Heteroscedasticity Test	Chi-Square stat. (324.25)	0.5790

Source: Author’s computation from the VEC result in table 4

The estimated long run equation shows that both IMF loan has an insignificant negative impact on poverty rate. This is in contrasts to the findings of Ewubare&Nteegah (2017) that revealed that external debt positively and significantly influenced growth. The insignificant effect of the IMF loan could be traced to incidences of corruption and allocation of the loans to the non-pro-poor growth sectors. However, this finding deviated from the results of Osundina (2014) that found significant positive effects of foreign loans on poverty. The results further revealed that World Bank loan has insignificant positive effect on poverty rate in the long run. This finding deviates from the result of Morris,Ozigbu&Ezekwe (2018) that borrowing from the Bretton Woods institutions tends to intensify the problem of poverty in Nigeria. Interestingly, it was found that loans from African Development Bank and Paris Club have negative and significant effect on poverty rate in the long run. African Development Bank loan has the largest negative impact on positive rate, indicating that it provides greatest potentials for pro-poor growth in the long run. This finding supports the finding of Ochalibe, AwoderuandOnyia (2017) which shows significant negative impact of external debt on poverty rate.

The short run result also reveals that lag 1 of African Development Bank loans exert significant negative impact on poverty rate. This finding is consistent with the long run effect, but contrasted with the result of Zaghdoudiand Hakimi (2017) which found evidence of positive effect of foreign debt on poverty from their estimated VECM. The F-statistic reveals that all the underlying external debt indicators in the model are jointly significant in explaining changes in poverty rate. This, therefore, follows that foreign institutional loans provide prospects for poverty reduction. The R-squared (0.6605) revealed that regressors jointly account for 66.05 percent of the overall variations in poverty rate. More importantly, the error correction estimate (-0.01175) has the expected negative sign and indicates that short run deviations in the model can be reconciled to achieve long run equilibrium position. The post-estimation test results reveal that the residuals are serially independence and homoscedastic as the probability values of the LM statistic and chi-square statistic exceed 0.05. Thus, the null hypotheses of no serial correlation and heteroscedasticity in the residuals are retained.

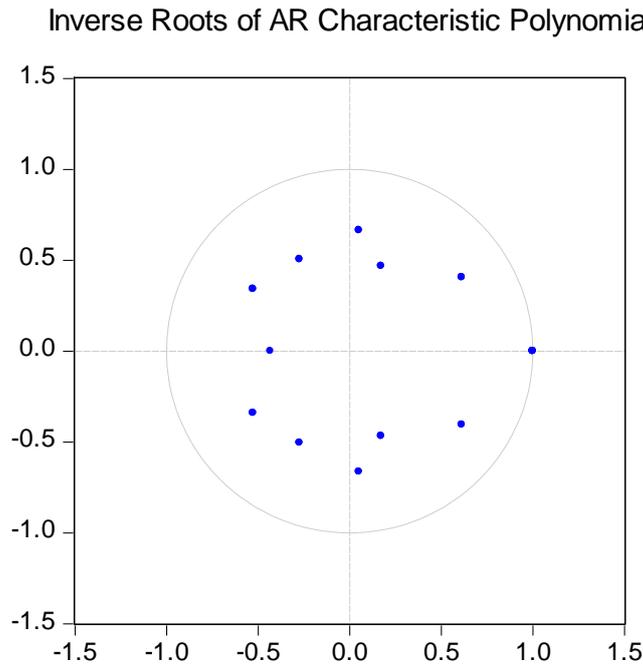


Figure 4: Plot of stability test result for VEC model 1

Source: Author’s illustration from the VEC result in table 5

The coefficient stability test depicted in the autoregressive plot indicates that all the points are within the circle, implying that the model is stable. This is suggestive that the coefficients are stable and are reliable for prediction and policy.

4.5 Granger Causality Test

The interactions among the variables were captured with the application of Granger short run causality test performed at 5 percent level of significance. The results are summarized in table 5.

Table 5: VEC Granger causality/block exogeneitywald tests results

Null Hypothesis (H ₀): No causality				
Dependent variable: D(POV)				
Direction of causality	Computed Chi-square Stat.	P-value	Decision	
D(IML)→ D(POV)	4.0201	0.1340	Accept H ₀	
D(POV)→ D(IML)	2.8814	0.2368	Accept H ₀	
D(WBL)→ D(POV)	2.0375	0.3160	Accept H ₀	
D(POV)→ D(WBL)	0.2912	0.8645	Accept H ₀	
D(ABL)→ D(POV)	9.75044	0.0076	Reject H ₀	
D(POV)→ D(ABL)	4.2433	0.1198	Accept H ₀	
D(PCL)→ D(POV)	1.4935	0.4739	Accept H ₀	
D(POV)→ D(PCL)	0.4026	0.8177	Accept H ₀	
D(IML), D(WBL), D(ABL), D(PCL)→ D(POV)	27.077	0.0007	Reject H ₀	

Source: Author’s calculations from E-views Software

The result reveals that no causal relations exist between IML and POV, between WBL and POV and between PCL and POV. Thus, the null hypothesis is rejected in each case at 5 percent level given that the probability values of the chi-square statistics are greater than 0.05. This finding is in contrary with the result of Zaghdoudi&Hakimi (2017) which found evidence of bidirectional causality between external debt and poverty rate. However, it was found that unidirectional causality runs from ABL to POV. This necessitates the rejection of the null hypothesis. It therefore, implies that funding flowing from the African Development Bank has forecasting power for poverty rate. More importantly, the results reveal that joint causing from institutional loans to poverty rate. This finding is consistent with the estimated VEC as observed from the F-test. This implies that the foreign institutional loan components are important in predicting the poverty level.

V. CONCLUDING REMARKS

The development effects of foreign institutional loans have received widespread attention in macroeconomic debates in both development and international economics literature. Thus, this study offers further insights into the role of these foreign institutional loans in support of the process of poverty reduction in Nigeria. Specifically, the impacts of loans from IMF, the World Bank, African Development Bank and Paris Club on poverty reduction were examined using Vector error correction model (VECM). Additionally, VEC Granger causal test was conducted to determine the direction of causality amongst the variables in each of the models. The main findings of this study reveal that long run equilibrium relationship exists amongst the variables in each of the model. The VEC estimates reveal that loans from African Development Bank are significant in reducing the proportion of the population in poverty in the long run. The Granger causality test results reveal that joint causality runs from the all the underlying foreign institutional loans to poverty rate. In view of the findings, this study concludes that foreign institutional loans sourced from the IMF, African Development Bank and Paris Club is helpful for achieving sustainable development through reduction in poverty. Given the findings, it is recommended as follows:

1. The Federal Ministry of Finance in collaboration with the Debt Management Office (DMO) should ensure that loans sourced from foreign institutions are channeled into productive investments that support the process of poverty reduction.
2. Policy makers should prioritize agriculture and manufacturing development in the allocation of loans from the IMF and African Development Bank in order to optimize their potentials for poverty reduction.

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