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UNDERSTANDING THE NEXUS BETWEEN FOREIGN INSTITUTIONAL LOANS AND INCOME INEQUALITY IN NIGERIA

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ABSTRACT: *This study examines the role of foreign institutional loans in reducing income inequality in Nigeria. Time series data spanning from 1980 to 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 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 all I(1). The cointegration test results indicate that the variables have long run relationship. The estimated VECM shows that loans from the World Bank and African Development Bank impacted negatively on income inequality. This finding suggests that borrowings from the World Bank and African Development Bank are helpful in collapsing the disparity in the distribution of income within the Nigerian population. The Granger causality test results reveal that joint causality runs from the all the underlying foreign institutional loans to poverty and income inequality. 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 in order to foster rapid and sustained reduction in income inequality.*

KEYWORDS: Foreign Institutional Loans, Income Inequality, World Bank, African Development Bank, Federal Ministry of Finance and Debt Management Office.

INTRODUCTION

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. The idea of financing gap has infested the developing countries which significantly triggered 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) opines 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).

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 economic performance, savings continue to grow (Sachs, 2002). After a given level of growth in savings, capital will be strong enough to sustain a capital formation that will lead to a self-propelling economic growth. The foregoing scenario is however hardly attained without foreign intervention in form of external funding or foreign institutional loans (Hunt, 2007; Bakare, 2011). The idea behind this postulation is the "dual gap theory" which says that "investment" as a purpose for "savings" needed external support in view of the insufficient domestic savings that will guarantee sustained economic growth and development (McKinnon, 1964).

However, the conditions attached to 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 sustainable development, huge proportions of the resources are channeled to debt servicing and repayment of principal with rising incidences of poverty, unemployment and widening income gap. 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 examines the effect of foreign institutional loans on income inequality.

REVIEW OF RELATED LITERATURE

Theoretical Framework

The dual gap theory was proposed by Chenery and Bruno (1962) assumes that developing economies are faced with the problem of foreign exchange gap in addition to their savings-investment gap as contained in the Harrod-Domar model. Thus, they tend to leverage on inflows loans from foreign institutions and aid to address their key development challenges. It is argued that foreign exchange gap is prevalent in developing economies and external debts are believed to offer the necessary opportunities for closing this gap. The dual-gap model refers to the function of foreign capital in the economic development process. The role of foreign capital here is that it permits developing countries to invest more than they can save domestically; which is a necessity resulting from deficits in internal savings.

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 debt overhang theory assumes that a negative relationship exists between foreign debt and investment which consequently results into lower capital formation. In economies with heavy indebtedness "debt overhang" is considered a leading cause of distortion and slowing down of economic growth (Sachs, 1989; Bulow and Rogoff, 1990). Additionally, servicing of debts exhausts up so much of the indebted country's revenue to the extent that the potential of returning to growth paths is abridged. It should however be noted that debt overhang does not occur only when a country accumulates too much debt, it can also arise when country's circumstances change, making it difficult to manage and discharge its stocks of debts. Such conditions may emerge because of adverse economic shocks or poor economic policies and in these unfavorable circumstances, creditors loan portfolios will face heavier risks.

Stylized Facts of Foreign Institutional Loans

Nigerian's borrowings from foreign institutions such as World Bank (WBL), International Monetary Fund (IMF) and African Development Bank (ABL) have varied overtime as summarized in figure 1.

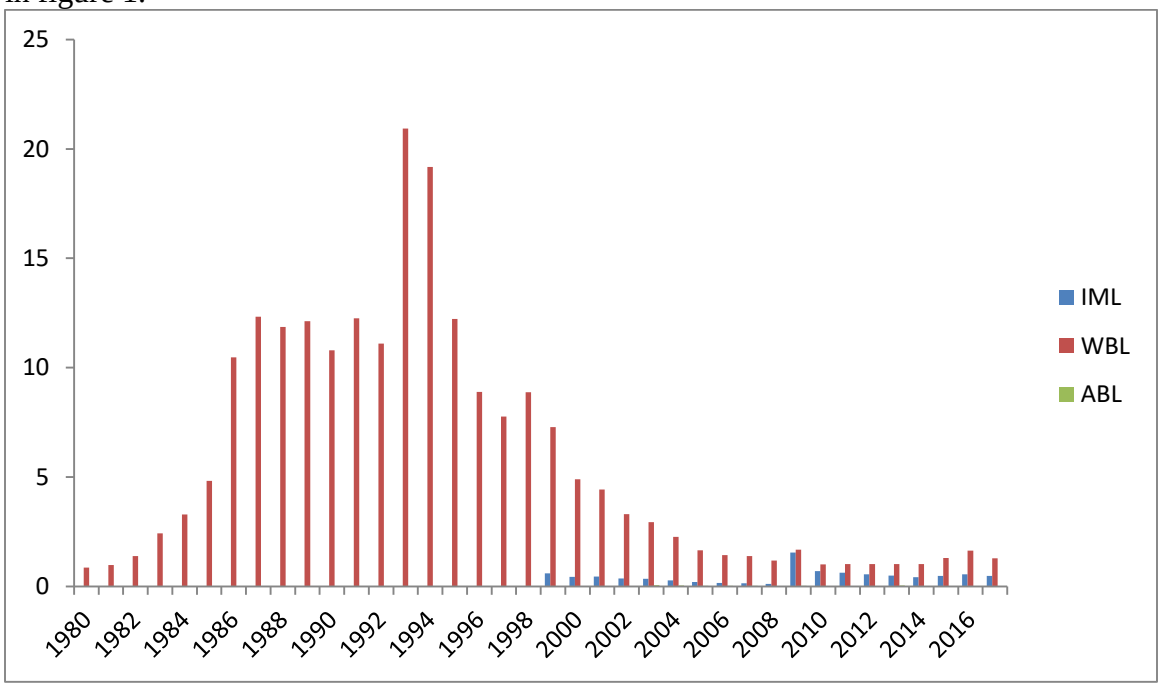

Figure 1: Trends of Foreign Institutional Loans in Nigeria, 1981-2017.

As observed from figure 1, World Bank loan as a percentage of GDP rose from 0.863 percent in 1980 to all-time high value of 20.929 percent in 1993. It decreased substantially to 1.0165 percent in 2014. The IMF loan also increased, but lagged behind World Bank loan. It reached a maximum value of 1.597 percent in 2009. The large share of GDP accounted by World Bank loan is an indication that the World Bank Group has remained a key source of external borrowing for Nigeria. Additionally, loans from the AfDB account for only 1.075 percent of GDP in 1980. It increase to

25.339 percent in 1987 and become maximized in 1992 as it reached a record high value of 35.69 percent. It however, witnessed downward trend from 1993 to 1998. It fluctuated in the rest of the period. The increased in share of AfDB loan to GDP is an indication that the bank has made effort in funding development programmes in Nigeria.

Empirical Literature

Clements, Bhattacharya, and Nguyen (2003) examined the channels through which external debt affects growth in low income countries. Their results suggest that the substantial reduction in the stock of external debt projected for highly indebted poor countries (HIPC) would directly increase per capita income growth by about 1 percentage point per annum. Reductions in external debt service could also provide an indirect boost to growth through their effects on public investment. Malik, Hayat, and Hayat (2010) explored the relationship between external debt and economic growth in Pakistan for the period, 1972 – 2005, using time series econometric technique. Their result shows that external debt is negatively and significantly related to economic growth. The evidence suggests that increase in external debt will lead to decline in economic growth.

Sulaiman and Azeez (2012) examine the effect of external debt on economic growth of Nigeria. Ordinary Least Squares (OLS), Augmented Dickey-Fuller (ADF) Unit Root test, Johansen Co-integration test and Error Correction Method (ECM) were employed in the empirical analysis. The findings from the error correction method show that external debt has contributed positively to the Nigerian economy. The study recommends that government should ensure economic and political stability and external debt should be acquired largely for economic reasons rather than social or political reasons. As earlier mentioned, most of the empirical studies suffer from methodological limitations in the sense that there is a tendency to ignore the non-stationarity of time series data. This is despite the fact that working with nonstationary variables lead to spurious regression results. The paper adopts a Vector Auto-Regression (VAR), a disaggregated formulation in assessing the external debt economic growth nexus in Nigeria in the face of important debt policy regimes such as debt relief in the early 2000s.

Chaudhry, Malik and Ramzan (2009) investigated the impact of foreign debt on savings and investment in Pakistan using time series econometric tools for the period 1973-2006. Annual data for the real savings, real interest rate on bank deposits, real gross domestic product, real foreign debt, real debt servicing on foreign debt, real investment and growth rate of real gross domestic product were used for the analysis. The stationarity of the variables was determined using augmented Dickey-Fuller test while cointegration test was applied in the conduct of unit root test. Analysis of the models cannot be carried out because residuals of the models are not stationary at level and have not the same order. To avoid the results of spurious regressions, multivariable regression analysis is carried out by considering their respective orders of the differences of the series. According to the empirical results, there is partial evidence that foreign debt contributed favorably to investment expenditures and savings in Pakistan. Finally, the study concluded that governance mechanism for the use and monitoring of funds generated through external borrowing needs much ardent improvement because of its strong and significant impact on savings and investment.

Shkolnyk and Koilo (2018) explored the relationship between external debt and economic growth in emerging economies for the period 2006–2016. The study utilized different econometric tools, such as ADL model and correlation analysis. The regression results showed that the original values had no significant impact on the estimation of the parameters. The study established that high level of external debt, in conjunction with macroeconomic instability, impedes economic growth in emerging economies. The regression model also showed that there is a critical level of debt burden for emerging economies, where the marginal impact of external debt on economic growth becomes negative. The results of the study highlighted the significance of the problem of effective public debt management strategy implementation in Ukraine. The study recommends improving a public external debt management model through the adoption of a unified external debt management system that integrates all state institutions and executive power structures in the study area.

Ugwuegbe, Okafor and Akarogbe (2016) empirically explored the effect of external borrowing and foreign financial aid in the form of official development assistance (ODA) on the growth of the Nigerian economy over a period of 34 years from 1980 to 2013. Annual time series data was obtained from the CBN statistical bulletin and Organisation for Economic Cooperation and Development (OECD). The study employed Ordinary Least Square technique (OLS) to estimate the multiple regression model and determine the causal links between the variables under study. The test for unit root was conducted using Augmented Dickey-Fuller (ADF), Johansen Co-integration test was used to determine the long-runn relationship between the variables and Error Correction Method (ECM) was adopted to help us determine the speed of adjustment. The results show that while external debt has a positive and significant effect on economic growth, foreign aid in accordance with the a priori expectation is positively related to GDP as well but statistically insignificant. This implies that foreign aid is beneficial to Nigeria but has not been much felt. In view of the results, the study concludes that large proportion of the external borrowing are mostly directed towards meeting recurrent or consumption expenditure needs of the country at the expense of productive investments.

Akinwunmi and Adekoya (2018) examines the impact of foreign borrowing on the economic growth of the developing nations using Nigeria as a case study. Time series data from 1985 and 2015 were sourced from Central Bank of Nigeria Statistical Bulletin and other related journals. Data sourced were analyzed using Durbin Watson autocorrelation to test for the reliability of the data and diagnostic tests such as Augmented Dickey Fuller unit root test and Johansen co-integration to test for the non-stationary of the data and long r un relationship between the dependent and independent variables. OLS multiple regressions were used as estimation technique to test for the relationship between the explanatory variables and forecast variable. The study revealed that there is significant relationship between economic growth, exports, capital investment and debt service payment but external debt and exchange rate have a significant inverse relationship with economic growth. The study concludes that, capital investment, exports and debt service payment have impact on economic growth but external debt and exchange rate do not. Therefore, the study recommends that the purpose of borrowing should be considered important while channeling the borrowed funds and efficient utilization of the funds to solve the purpose by which it was acquired will help to foster growth of the economy.

Festus & Saibu (2019) offered further evidences on the effect of external debt on economic growth in Nigeria. Time series data on external debt stock, real gross domestic product, trade openness, and gross fixed capital formation as a percentage of GDP as well as data on inflation and exchange rates were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank indicators. The study set out to test for the long run and short run relationship as well as presenting further evidences on the relationship between external debt and economic growth.

Ekperiware and Oladeji (2012) examined the effect of external debt relief on economic growth in Nigeria using regression technique on quarterly time series of external debt, external debt service and real gross domestic product. Applying Chow test to the regression result, they found that there was a structural break in the relationship between economic growth and external debt in Nigeria during the period 1975 to 2005. Ekpo and 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.

Mhlaba and Phiri (2019) adopt the ARDL model to examine the long-run and short-run effects of public debt on economic growth for South African data spanning a period between 2002:q2 to 2016:q4. The sensitivity analysis utilized by the study consists of re-estimating empirical regressions using two sub-samples dataset corresponding to the pre-crisis period from. 2002:q1 to 2007:q2 and the post-crisis period from 2007:q3 to 2016:q4). It was observed from the results that the estimated regressions unanimously find negative long-run debt –growth relationship although the short-term effects are unclear with some evidence of a positive short-run relationship between the time series specifically in the post-crisis period. The study recommends that policymakers should continue to place emphasis on lowering public to levels as a formal part of policy programmes aimed at improving economic growth rates.

Osuka and Ezedike (2019) investigate the empirical link between external borrowing sources and economic growth in Nigeria using time series data sourced from the Nigerian Bureau of Statistics, Debt Management Office and Central Bank of Nigeria Statistical Bulletin for period of 1981 to 2017. Data were collected on the Nigerian external financing sources namely; Multilaterals (MFIs), London Club of Creditors (LCCs), Paris Club of Creditors (PCCs), Promissory Notes (PNs) and Others which served as the exogenous variables and the Real GDP as the endogenous variable. The data was modeled and analyzed using Autoregressive Distributive Lag (ARDL) bounds test and cointegrating long run technique. The study found significant short run and long run relationship between external borrowing and economic growth in Nigeria; In the short run, borrowing from the Paris Club and London Club of Creditors made insignificant negative contribution, Multilateral Financial Institutions and Others made significant negative contribution while, Promissory Note was insignificant positive contributor. The study therefore, recommends that Nigeria's external borrowing should concentrate more on Multilateral Financial Institutions

and prudent utilization of the borrowed funds to achieve significant positive impact on economic growth.

MATERIALS AND METHODS

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 income inequality. The functional relationships of the models are stated as follows:

$UNE_t = f(WBL, IML, ABL, PCL)$ (1)

The vector error correction representation of the model is specified as follows:

$$\Delta INE_t = \sum_{i=1}^{q} \mu_{11}\Delta INE_{t-i} + \sum_{i=1}^{q} \mu_{12}\Delta WBL_{1t-i} + \sum_{i=1}^{q} \mu_{13}\Delta IML_{2t-i} + \sum_{i=1}^{q} \mu_{14}\Delta ABL_{3t-i} + \sum_{i=1}^{q} \mu_{15}\Delta PCL_{4t-i} + \beta_1 ECM_{t-1} + e_{1t}$$

$$\Delta WBL_t = \sum_{i=1}^{q} \mu_{21}\Delta INE_{t-i} + \sum_{i=1}^{q} \mu_{22}\Delta WBL_{1t-i} + \sum_{i=1}^{q} \mu_{23}\Delta IML_{2t-i} + \sum_{i=1}^{q} \mu_{24}\Delta ABL_{3t-i} + \sum_{i=1}^{q} \mu_{25}\Delta PCL_{4t-i} + \beta_2 ECM_{t-1} + e_{2t}$$

$$\Delta IML_t = \sum_{i=1}^{q} \mu_{31}\Delta INE_{t-i} + \sum_{i=1}^{q} \mu_{32}\Delta WBL_{1t-i} + \sum_{i=1}^{q} \mu_{33}\Delta IML_{2t-i} + \sum_{i=1}^{q} \mu_{34}\Delta ABL_{3t-i} + \sum_{i=1}^{q} \mu_{35}\Delta PCL_{4t-i} + \beta_3 ECM_{t-1} + e_{3t}$$

$$\Delta ABL_t = \sum_{i=1}^{q} \mu_{41}\Delta INE_{t-i} + \sum_{i=1}^{q} \mu_{42}\Delta WBL_{1t-i} + \sum_{i=1}^{q} \mu_{43}\Delta IML_{2t-i} + \sum_{i=1}^{q} \mu_{44}\Delta ABL_{3t-i} + \sum_{i=1}^{q} \mu_{45}\Delta PCL_{4t-i} + \beta_4 ECM_{t-1} + e_{4t}$$

$$\Delta PCL_t = \sum_{i=1}^{q} \mu_{51}\Delta INE_{t-i} + \sum_{i=1}^{q} \mu_{52}\Delta WBL_{1t-i} + \sum_{i=1}^{q} \mu_{53}\Delta IML_{2t-i} + \sum_{i=1}^{q} \mu_{54}\Delta ABL_{3t-i} + \sum_{i=1}^{q} \mu_{55}\Delta PCL_{4t-i} + \beta_1 ECM_{t-1} + e_{5t}$$

Where: $\mu_{11} - \mu_{22}$ = 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

Type 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 (NBS) and World Development Indicators (WDI) with a focus on the underlying endogenous and exogenous variables.

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. Its application in time series data draws support from the work of Sims (1980) and it is enabled in econometrics with at least one or more cointegration relationship among the variables under investigation. Ankargren & Lyhagen, (2018) posit that the VCM provides the most popular ways to model macroeconomic variables. Besides forecasting and testing of hypotheses, the VECM is often used for calculating impulse responses, which describe the responsiveness of variable to its shock in other 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. All the variables in this study is been tested for stationarity by using the Augmented Dickey-Fuller (ADF) tests. The ADF general model specification with constant and deterministic trend is expressed below:

$$\Delta W_t = b_0 + b_1 \mathrm{W}_{\mathrm{t}-1} + \sum_{i=1}^{n} c_i \Delta W_{\mathrm{t}-\mathrm{i}} + u_{\mathrm{t}} \qquad (1)$$

Where: W_t = economic time series under investigation, b_1 and c_i= parameter estimate of the variables, n = optimal lag length, Δ= First difference operator and u_t = Stochastic term.

The Johansen and Juselius, (1990) procedure to co-integration test was applied to ascertain whether or not long-run relationship exists among the underlying series. Specifically, the null hypothesis of no cointegration is tested against the alternative hypothesis of cointegration at 5 percent level.

RESULTS AND DISCUSSION

Unit Root Test Results

The unit root test was conducted using ADF unit root test approach at 5 percent level of significance. The results are reported in table 1.

Table 1: ADF unit root test results for the series

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	
INE	-2.525	-3.540	-3.662	-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 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 cointegrtaion.

Cointegration Test Results

The Johansen test for cointegration was applied in this study. The results are summarized in Table 2.

Table 2: Cointegration test results

Series: INE IML WBL ABL PCL				
Trace test results				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.909690	144.0839	69.81889	0.0000
At most 1 *	0.728637	67.13963	47.85613	0.0003
At most 2	0.354668	25.40207	29.79707	0.1476
At most 3	0.217279	11.38640	15.49471	0.1888
At most 4	0.104924	3.547083	3.841466	0.0596
Max-Eigen test results				

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.909690	76.94427	33.87687	0.0000
At most 1 *	0.728637	41.73756	27.58434	0.0004
At most 2	0.354668	14.01567	21.13162	0.3637
At most 3	0.217279	7.839318	14.26460	0.3952
At most 4	0.104924	3.547083	3.841466	0.0596

Source: Researcher's computation using E-views software

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

The test for cointgration was necessitated by the evidence of first difference stationary process in the series in the series. The results reveal that two cointegration equations are in the model. Therefore, income inequality is considered as having long run equilibrium relationship with the underlying foreign institutional loans. This is consistent with the result of Akinwunmi and Adekoya (2018). Following the establishment of cointegration in each of the models, it implies that linear combination of the series in each of the models, can, therefore, leads to long run equilibrium relationship between income inequality and the underlying sources of international institutional loans.

4.3 Model Estimation

The evidence of cointegration in each of the models provides basis for estimating the VECM. The results are summarized in tables 3.

Table 3: Vector Error Correction Estimates

Cointegrating Equation Dependent variable: INE			
Explanatory variable	Coefficient	Standard error	t-stat.
IML(-1)	-0.673575	12.1819	-0.05529
WBL(-1)	-3.310451	0.99587	-3.32417
ABL(-1)	-1756.470	299.368	-5.86727
PCL(-1)	0.834936	0.34135	2.44598
Error correction equation Dependent variable: D(INE)			
Explanatory variable	Coefficient	Standard error	t-stat.
ECM(-1)	-0.051540	0.01486	-3.46830
D(INE(-1))	0.508871	0.14150	3.59633
D(IML(-1))	-0.004517	0.90667	-0.00498
D(WBL(-1))	-0.172842	0.10951	-1.57838
D(ABL(-1))	-25.28348	26.0599	-0.97021
D(PCL(-1))	0.076014	0.04731	1.60669
C	0.125930	0.26895	0.46823
R-squared	0.545185	F-statistic	5.394138

Source: Researcher's computation using E-views software

Table 3.1 Post-estimation tests results for model 3

Test type	Test statistic	Probability value
VEC Residual Serial Correlation LM Test	LM-Stat. (19.955)	0.7492
VEC Residual Heteroscedasticity Test	Chi-Square stat. (200.287)	0.1431

Source: Author's computation from the VEC result in table 3

The VEC estimates reveal that IMF loan generates insignificant negative effect on income inequality. It was further observed that World Bank loans have significant negative effect on income inequality. It was also found that loans from the African Development Bank impacted negatively on income inequality. These findings suggest that borrowings from the World Bank and African Development Bank are helpful in collapsing the disparity in the distribution of income within the Nigerian population. This finding is not in agreement with the findings of Akram (2016) that neither public external debt nor external debt servicing has a significant relationship with income inequality. On the other hand, it was found that the lag 1 of income inequality is positively related to the current level of inequality in the short run. This indicates that previous level of income inequality is helpful in predicting variations in the current inequality level. It was equally found that none of the lagged values of the foreign institutional loans significantly influenced income inequality as their coefficients are associated with low t-statistics which are less than their corresponding 5 percent critical t-values. However, the empirical F-statistic reveals that, taken together, the explanatory variables are jointly significant in accounting for changes in income inequality. This indicative that the regressors are jointly important in predicting changes in income inequality. The coefficient of determination shows that 54.52 percent variations in income inequality are due to changes in inflows of foreign institutional loans. The diagnostics tests results reveal that the model free from serial correlation and heteroscedasticity. It was also found from the autoregressive plot that the coefficients are stable. This is because all the points fall within the circle. Overall, the results of the post-estimation diagnostics tests are very welcoming as it indicates that forecast based on the model can be relied upon

Granger Causality Test

The interactions among the variables in each of the models were captured with the application of Granger short run causality test performed at 5 percent level of significance. The results are summarized in table 4.

Table 4: VEC Granger causality/block exogeneity wald tests results

Null Hypothesis (H_0): No causality **Dependent variable: D(INE)**			
Direction of causality	Computed Chi-square Stat.	P-value	Decision
D(IML)→ D(INE)	0.7387	0.8640	Accept H_0
D(INE)→ D(IML)	5.7713	0.1233	Accept H_0
D(WBL)→ D(INE)	4.1243	0.2484	Accept H_0
D(INE)→ D(WBL)	0.71024	0.8708	Accept H_0
D(ABL)→ D(INE)	2.0947	0.5530	Accept H_0
D(INE)→ D(ABL)	34.568	0.0000	Reject H_0
D(PCL)→ D(INE)	9.7561	0.0208	Reject H_0
D(INE)→ D(PCL)	20.0465	0.0002	Reject H_0
D(IML), D(WBL), D(ABL), D(PCL) → D(INE)	15.654	0.2076	Accept H_0

Source: Author's calculations from E-views Software

The interactions between the variables as presented in table 10 reveal that there is no unidirectional or bidirectional causality between IML and INE; and between WBL and INE. This provides empirical evidence for accepting the null hypothesis at 5 percent level of significance. The study shows evidence of unidirectional causal running from income inequality to African Development Bank loans. This suggests that the growing disparity in income distribution projects the source of foreign loans from the regional development bank. It was also found that bidirectional causal relationship exists between Paris Club loans and income inequality. Moreover, the joint causality test reveals that there is no joint causality flowing from all the foreign institutional loans to income inequality. This prompts the acceptance of the null hypothesis of no causality in the series. From the foregoing, it is deduced that, taken together, foreign institutional loans do not have forecasting ability for income inequality in Nigeria.

CONCLUSION

The development effects of foreign institutional loans have received widespread attention in macroeconomic debates in both development and international economics literature. Thus, this paper offers further insights into the role of these foreign intuitional loans in reducing income inequality in Nigeria. The VEC estimates reveal that the World Bank and African Development Bank loans have significant negative effect on income inequality. This is indicative that funding from the World Bank and African Development Bank plays important in narrowing the income gap amongst Nigerian population. The Granger causality test results reveal that joint causality runs from the all the underlying foreign institutional loans to income inequality. In view of the findings, it is concluded that funding from the World Bank and African Development Bank provide pathways for collapsing the divide in income distribution amongst the Nigerian population. Thus, 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 in order to foster rapid and sustained reduction in income inequality.

REFERENCES

Akinwunmi, A. A., & Adekoya, R. B. (2018). Assessment of the Impact of External Borrowing on the Economic Growth of the Developing Countries-Nigerian Experience. *Asian Business Research*, *3*(1), 29.

Akram, N. (2016). Public debt and pro-poor economic growth evidence from South Asian countries. *Economic research-Ekonomska istraživanja*, 29(1), 746-757.

Ankargren S., & Lyhagen, J., (2018). Estimating a VECM for a small open economy. *Department of Statistics, Uppsala University, Working Paper 2.*

Bakare, A.S. (2011), A theoretical analysis of capital formation and growth in Nigeria. *Far East Journal of Psychology and Business 3*(1), 12-24.

Bulow, & Rogoff, B. (1990). Apprenticeship in Thinking. Cognitive Development in Social Context. New York: Oxford University Press.

Chaudury, R., Malik, K., & Ramzan, (2009). Impact of Domestic and External Debt on the Economic Growth of Pakistan. *Word Applied Sciences Journal*, 20(1), 120-129.

Chenery, H. B., & Bruno, M. (1962). Development alternatives in an open economy: the case of Israel. *The Economic Journal*, *72*(285), 79-103.

Clements, B.; Bhattacharya, R. and Nguyen, T.Q. (2003) "External Debt, Public Investment, and Growth in Low-Income Countries", IMF Working Paper, No.03/249.

Domar (1946).Impact of Foreign Private Investment on the Development of Nigerian Capital Market. *International Journal of Economics, Business and Management Research,* 1(2), 120-132.

Easterly, W. (1999). The ghost of financing gap: testing the growth model used in the international financial institutions. *Journal of development Economics*, *60*(2), 423-438.

Ekperiware, M.C., Oladeji, S.I. (2012). External debt relief and economic growth in Nigeria. *American Journal of Economics.*

Festus, G. E., & Saibu, M. O. (2019). Effect of external debt on Nigerian Economy: Further evidences. MPRA Paper No. 92704. Online at https://mpra.ub.uni-muenchen.de/92704.

Hunt, S. D. (2007). Economic growth: Should Policy Focus on Investment or Dynamic Competition? *European Business Review, 19(4), 279-291.*

Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration—with appucations to the demand for money. *Oxford Bulletin of Economics and statistics*, *52*(2), 169-210.

Malik, S., Hayat, M.K. & Hayat, M.U (2010). External Debt and Economic Growth: Empirical Evidence from Pakistan", *International Research Journal of Finance and Economics*, 44, 88-97.

McKinnon, R. (1964), Foreign exchange constraints in economic development and efficient aid allocation. *The Economic Journal, 74*(294), 388-409.

Mhlaba, N., & Phiri, A. (2019). Is public debt harmful towards economic growth? New evidence from South Africa. *Cogent Economics & Finance*, *7*(1).

Osuka, B. O., & Ezedike, G. O. (2019). Nigeria's External Borrowing and Economic Growth (1981-2017): An Auto-Regressive Distributed Lagged (ARDL) Model Approach. *International Journal of Banking and Finance Research*, *5*(1), 8-32.

Sachs, J. (1989). The Debt Overhang of Developing Countries in Calvo, G.A.; Findlay, R; Kouri, P and De Macedo, JB (eds) Debt Stabilization and Development: Essays in Memory of Carlos Diaz Alejandro. Oxford: Basil Blackwell, 80-102.

Sachs, J. D. (2002). Resolving the debt crisis of low-income countries. *Brookings papers on economic activity*, *2002*(1), 257-286.

Shkolnyk, I., & Koilo, V. (2018). The relationship between external debt and economic growth: empirical evidence from Ukraine and other emerging economies. *Investment Management and Financial Innovations*, *15*(1).

Sims, C. (1980). Macroeconomics and reality. *Econometrica, 48(1), 1–48.*

Sulaiman, L.A., & Azeez, B.A. (2012). Effect of external debt on economic growth of Nigeria. *Journal of Economics and Sustainable Development, 3(8), 71-79.*

Ugwuegbe, S. U., Okafor, I. G., & Akarogbe, C. (2016). Effect of external borrowing and foreign aid on economic growth in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, *6*(4), 155-175.