



HETEROGENEITY OF FOREIGN CAPITAL INFLOWS AND UNEMPLOYMENT PROBLEM IN NIGERIA

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Abstract

Unemployment rate in Nigeria has remained upward trending in recent time. The Labour Force Statistics of the National Bureau Statistics (NBS) reveal that unemployment rate rose to 27.1 percent in the second quarter of 2020 from the 23.1 percent recorded in the third quarter of 2018. This paper therefore, provides empirical evidence on how the heterogeneous forms through which foreign capital reaches the Nigeria economy helps in addressing the unemployment problem. Specifically, this paper set out to estimate how migrants' remittances, multilateral debt, technical cooperation grants and bilateral debt help in reducing unemployment rate. The model set up for this paper follows an autoregressive distributed lag framework. Country-specific time series data which spanned from 1980 to 2018 and sourced from the NBS, World Development Indicators and International Debt Statistics were utilized for the analysis. It was found from the unit root test results that the variables are mixed integrated. The bounds test result reveals that long run relationship exists among the variables. The findings reveal that multilateral and bilateral debts as well as technical cooperation grants have significant negative relationship with unemployment. These findings are in tandem with the postulation of the three gap model that inflows of foreign capital help in closing resource gap and support employment creation in the recipient economy. Given the findings, it is recommended that policy makers should ensure that Nigeria remains choice destination for foreign capital in order to promote fiscal sustainability and bolster productive investments in sectors with high potentials for employment creation.

Keywords: Unemployment rate, foreign capital, fiscal sustainability, productive investments, Nigeria



INTRODUCTION

The understanding that foreign capital is heterogeneous in nature is based on the fact it reaches recipient economies through various forms. These cut across remittances, multilateral and bilateral, aid components and technical cooperation grants amongst others. Traditionally, the neoclassical hypothesis predicts that there is increasing cross-border movement of capital from capital-abundant developed economies to capital-scarce developing economies following the high marginal productivity of capital in the latter. Mowlaei (2018) argues that inflows of international resources are the driving forces development and important sources of “technology transfer and foreign exchange earnings” in the recipient economies. However, the “impossible trinity” paradigm of small open economy predicts that growth in capital influx in countries with increasing reduction in capital controls force they in making critical decision between nominal appreciation and inflation (Obstfeld, Shambaugh, & Taylor, 2005).

It is believed that inflow of capital offers huge benefits to developing economies, by making available capital and technology necessary for harnessing the available domestic resources. The host countries are believed to benefit from inflows of capital through the availability of credits, fiscal discipline and knowledge transfer (Tong & Wei, 2010). Additionally, Chigbu, Uba & Chigbu (2015) are of the view that the resource gap in the capital-scarce economies can be bridged by increasing mobility of international resources. Rehman & Ahmad (2016) posit that inward foreign capital movement fosters the process of sustainable development, improves production capacity and increase labour absorption capacity with optimal resource allocation. Thus, countries with low savings-investment ratio often leverage on inflows of capital to bolster rapid and diverse growth.

Like other small open economies, Nigerian economy has witnessed substantial integration to the global economic arena and as such emerged as a dominant destination for international resources. For instance, the 2006 United Nations Conference on Trade and Development (UNCTAD) World Investment Report reveals that Nigeria dominated direct investments inflows to West Africa by accounting for 70 percent of the sub-regional total and 11 percent of Africa’s total. Available statistics from the World Bank (2017) report indicates that “net Official Development Assistance (ODA)” inflows to Nigeria rose from US\$1,293,720,000 in 2008 to US\$2,431,600,000 in 2015. The report further reveals that inflows of external debt account for 4.54 percent of the gross national income (GNI) in 2011 and rose to 7.86 percent of GNI in 2016. More so, various reports and available statistics indicate that remittances constitute an integral part of capital inflows to Nigeria. As observed from the World Bank (2008), twenty million Nigerians in the diaspora remitted the sum of US\$7 billion in 2008. As a percentage of GDP, personal remittance rose from 0.631 percent in 2011 to 0.768 percent in 2015 (World

Bank, 2017). The volume of remittance inflow to Nigeria has positioned the country as one of the top twenty receivers in the world.

Although Nigeria has been adjudged as a popular destination for international capital, the level of unemployment in the country has remained a source of concern to policy makers, development partners and other key players in the economy. For instance, the average unemployment rate as reported by the National Bureau of Statistics (NBS, 2017) stood at 12.78 percent during 2001-2005 and increased to 16.78 percent between 2006 and 2010. More so, the Labour Force Statistics of the National Bureau Statistics (NBS) reveal that unemployment rate rose to 27.1 percent in the second quarter of 2020 from the 23.1 percent recorded in the third quarter of 2018. This suggests that overtime; the Nigerian economy has been associated with a jobless growth. Therefore, ensuring that the benefits associated with capital inflows are optimally reaped while managing associated risks has remained a challenge for policy makers. This challenge has taken a more complex dimension in the past two decades following the growing incidence and pervasiveness of corruption, poor governance and institutional quality which have posed a threat to the effectiveness of foreign capital in addressing the unemployment problem. In view of the growing controversy on the capital-development nexus across myriad of theoretical and empirical literature, this paper sets out to examine the heterogeneous nature of international resource inflows and its implication for unemployment reduction in Nigeria.

LITERATURE REVIEW

Theoretical Underpinnings

The neoclassical theory of capital flows assumes that there is movement of capital from developed economies to low-income countries. This theory is traced to the era of gold standard, when free flow of capital among countries is considered as natural. Prasad, Rajan & Subramanian (2007) are of the view that in line with the neoclassical assertions, capital is expected to move from countries with relatively high capital-to-labor ratios to countries with relatively low ratios. Therefore, the savings-investment gap in developing economies is addressed through the inflow of capital which stimulates the level of economic activities and process of economic development. Additionally, the two-gap model has its root on the Post-Keynesian growth model of closed economies assumes that developing economies are faced with the problem of foreign exchange gap in addition to their savings-investment gap. For this reason, inflow of foreign capital is expected to provide opportunities for closing these gaps.

Another assumption of the two-gap model is that investment and growth are linearly related in the very short run. Easterly (2003) observed that this assumption is traceable to the

assumptions underlying the Leontief production function which claims that the substitution of labor for capital is possible. More so, the three-gap model assumes that public investments in developing economies are believed to be constrained by fiscal gap often triggered by insufficient domestic tax revenues. Thus, inflow of foreign capital is expected to provide opportunities for filling the resource gap in the recipient of economy and boost productive investments in critical sectors that support socioeconomic development. According to the three-gap model, the utilization and expansion of existing productive capacity is constrained not only by domestic and foreign savings, as was initially discussed by Chenery & Strout (1966) in the context of the two-gap model, but also by fiscal limitations on government spending and thus on its public investment choices. Thus, international resources tend to fill the fiscal gap faced by low-income countries and promote productive investment which increases the potentials of the recipient economy to create employment rate.

Empirical Literature

Johnny, Timipere, Krokeme & Markjackson (2018) study examined the impact of foreign resources on unemployment rate in Nigeria between 1980 and 2015. The study further decomposed foreign capital into FDI and capital formation and examined their role in reducing the level of unemployment during the study period. The econometrics tools employed include unit root and cointegration tests in addition to the Ordinary Least Squares. The findings reveal that the relationship between FDI and unemployment is negative and statistically insignificant at the conventional level of significance. On the other hand, it was found that capital formation exerts significant positive impact on unemployment rate in Nigeria. Based on the findings, the study recommends that, government should implement policies that will attract foreign investors to Nigeria in order to make more investments. The study further recommended for the effective of the available resources by investment them into productive activities to increase the availability of employment opportunities.

Balcerzak & Zurek (2011) applied econometrics tool of vector autoregressions (VAR) method in analyzing the interdependencies between FDI and unemployment in Poland. In the research the VAR methodology was utilized based on aggregate quarterly data. The focus of the study is on the period of 1995 to 2009. The time series data utilized focused mainly on FDI and unemployment in Poland. From the result, it was found that FDI impulse leads to decrease in the rate of unemployment. However, the effectiveness of FDI in reducing the unemployment tend manifest in the short run. Consequent upon the results, the study recommended for the reform of public policies on FDI inflows with a view to improving on the potentials of the

economic environment as attractive destination for FDI and its associated benefits of job creation.

Bouoiyour & Miftah (2018) investigated the effect of migrants' remittances on poverty and inequality in Morocco with a focus in the rural areas of the region of Souss-Massa-Draa. The study applied survey method and found that the poverty rate and the vulnerability of non-poor households significantly reduced due to inflows of remittances. The study further revealed that remittance inflows have increased income inequality compared to the no-migration counterfactual situation. In a related study, Beer & Boswell (2001) investigate the nexus between foreign investment dependence and income inequality, and compare it to theories that focus on world trade. The result indicates that countries that highly depend on foreign capital experience high and worsening income inequality. The study also show that exploitation increases inequality while democracy and education reduce it. However, other sources of inequality derived from modernization theory or dual sector models were not significant in the models employed in the study.

Ogundipe, Ojeaga, & Ogundipe (2014) analyzed the relationship between foreign aid and economic development in the sub-Saharan Africa with special attention to the role of macroeconomic policy in aid effectiveness in SSA countries. The study relied on the GMM technique of estimation with a view to overcoming to overcome the challenge of endogeneity perceived in the institution variables and aid-growth nexus. It was observed that foreign aid does not significantly influenced real GDP per capita in the sub-Saharan Africa. Subsequently, capital stock, labour force, institutional quality and human capital were found to contribute meaningfully contributed to economic development in SSA.

MATERIALS AND METHODS

Nature and Source of Data

Year-end country-specific time series data which spanned from 1980 to 2018 were utilized in this paper. The data include migrants' remittances; multilateral debt, technical cooperation grants and bilateral debt were adapted from the World Bank World Development Indicators (WDI), international debt statistics and IMF International Financial Statistics. Again, data on unemployment was sourced from the NBS.

Model Specification

The model set up for this paper follows a broader measure of foreign capital inflows which is informed by the heterogeneous nature of foreign capital as described in the IMF Standard BoP Manual. Specifically, migrants' remittances, multilateral debt, technical cooperation grants and

bilateral debts were introduced as the explanatory variables while unemployment rate served as the dependent variable. The formal specification of the model is provided below:

$$UEM_t = Z_1 + \sum_{i=1}^p \alpha_1 \Delta UEM_{t-1} + \sum_{i=1}^p \alpha_2 \Delta MGR_{t-1} + \sum_{i=1}^p \alpha_3 \Delta MLD_{t-1} + \sum_{i=1}^p \alpha_4 \Delta TCG_{t-1} + \sum_{i=1}^p \alpha_5 \Delta BLD_{t-1} + \theta_1 UEM_{t-1} + \theta_2 MGR_{t-1} + \theta_3 MLD_{t-1} + \theta_4 TCG_{t-1} + \theta_5 BLD_{t-1} + e_{1t} \quad (1)$$

Where: UEM defines unemployment rate, MGR = migrant remittances, MLD = multilateral debt, TCG = technical cooperation grants, BLD = bilateral debt, Z_1 = vector of constant parameter, $\alpha_1 - \alpha_5$ = short-run coefficient of the predictor variables, $\theta_1 - \theta_5$ = the long-run multipliers, e_{1t} = stochastic error term, Δ = first difference notation and P represents optimal lag order.

Variable Description

i. Unemployment rate: This defines the proportion of the labour force willing and able to work at a particular wage rate, but unable to secure employment. According to International Labour Organization (2019), unemployment rate refers to the percentage of persons in the labour force who are unemployed. In this paper, the rate of unemployment focuses on national estimate over during the study sample.

ii. Migrants' remittances: These refer transfers made by migrants employed in foreign destinations to their home country. It is mainly concerned with financial flows often associated with migration or movement of people to foreign destinations. In this paper, it is measured as percentage of GDP.

iii. Multilateral debt: This is concerned with inflows of external loans from the "Bretton Woods Institutions (BWIs)" such as the World Bank and International Monetary Fund (IMF). It is expected that inflows of multilateral loan will bolsters investments in critical sectors and as such reduce the rate of unemployment.

iv. Technical cooperation grants: This refers "free-standing technical cooperation grants", which are channeled into technical and managerial skills or technology intended to build-up general national capacity. Increase in inflow of technical cooperation grants is expected to increase the potential of employment.

v. Bilateral debt: This is concerned with loans from governments and their agencies, autonomous bodies, and direct loans from official export credit agencies. Increase in bilateral loans is expected to increase investments in the economy and reduce the unemployment rate.

Data Analysis Techniques

In this paper, the Autoregressive Distributed Lag (ARDL) model developed by Pesaran & Shin (1999) form basis for data analysis. Hassler & Wolters (2006) opine that the popularity of the ARDL in applied econometrics is as a result of the fact that cointegration of nonstationary variables is equivalent to an error correction process, and the ARDL model has built-in mechanism of reparameterizing the relationship among the variables in error correction form. The empirical validity of the ARDL was initially evaluated by Pesaran, Shin & Smith (2001). As a dynamic regression model, the ARDL integrates the autoregressive and distributed-lag process in a single equation set-up. Considering its generic structure, the ARDL allows for the inclusion of lags of the dependent variable as well as other predictor variables, as explanatory variables (Ozigbu, 2018).

In addition to estimating the ADRL, the causal links among the variables is investigated with the application of the Granger causality test. Again some diagnostics tests were conducted in the course of this paper. The Kwiatkowski, Phillip, Schemidt and Shin, (KPSS, 1992) stationarity test was applied to determine whether the variables are stationary or not. Basically, the KPSS tests the null hypothesis of stationarity in the series using Lagrange multiplier (LM) statistic. The model set up for the KPSS is of the form:

$$Y_t = r_t + \beta_t + e_t \quad (2)$$

Where: Z_t = economic or financial time series under investigation, B_t = deterministic trend,

r_t = random walk and e_t = stationary error.

The bounds test approach to cointegration is applied for testing the null hypothesis that no long run relationship exists amongst the underlying variables. Essentially, the bounds cointegration test is considered appropriate for handling times series data with mixed order of integration unlike the Johansen & Juselius (1990) test that is mostly applied in the evidence of first difference stationary process.

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics was relied upon in this paper to gain some insights into basic distribution of the variables over the study sample. The results are summarized and presented in table 1.

Table 1: Summary of the descriptive statistics for the variables

	GIX	UEM	MGR	MTD	TCG	BLD
Mean	44.23	9.85	2.44	15.60	0.182	1.09
Median	43.90	9.90	1.575	13.53	0.149	0.10
Maximum	56.00	23.90	8.311	29.55	0.608	29.99
Minimum	36.20	1.90	0.004	5.023	0.053	0.00
Std. Dev.	5.24	6.49	2.565	8.216	0.117	4.88
Sample	39	39	39	39	39	39

Source: Author's computation based on data adapted from NBS, World Bank World WDI, World Bank, International Debt Statistics and IMF International Financial Statistics

The descriptive statistics reveal an average unemployment rate of 9.85% during the study sample. This is indicative that unemployment remains a macroeconomic challenge in Nigeria that needs to be addressed in order to optimize full potentials of the labour force. As observed from foreign capital indicators, migrants' remittances, on the average, accounts for 2.44% of the GDP. Additionally, technical cooperation grants as a percentage of GDP averaged 0.182% over the study period. As a percent of total external debt, multilateral and bilateral debt averaged 15.60 and 1.09% respectively. This is a pointer that multilateral sources such the World Bank and IMF are major external creditors to Nigeria. The standard deviation provides insights into the distribution of each of the variables around their corresponding mean values. It was observed from the standard deviation that unemployment rate, multilateral debt and technical cooperation grants are convergent to their respective mean values. This is because their standard deviations are less than their corresponding mean values. On the other hand, migrant remittances and bilateral debt are associated with high standard deviation which are greater than their corresponding mean values.

Unit Root Test

The test for stationarity was conducted in order to know if the variables are stationary or not and their respective order of integration. The results are presented in table 2.

Table 2: KPSS unit root test results

Null hypothesis: Variable is stationary					
Variable	Levels test results		First difference test results		Order of Integration
	LM statistic	5 Percent Critical value	LM statistic	5 Percent Critical value	
GIX	0.1226	0.1460	NA	0.1460	I(0)
UEM	0.0757		NA		I(0)
MGR	0.0821		NA		I(0)
MTD	0.0993		NA		I(0)
TCG	0.1519		0.0673		I(1)
BLD	0.0789		NA		I(0)

Source: Author's computation based on data adapted from NBS, World Bank World WDI, World Bank, International Debt Statistics and IMF International Financial Statistics.

Note: NA denotes not available due to evidence of stationarity at the levels test result.

The KPSS stationarity test results indicate that apart from technical cooperation grants, the rest of the variables are stationary at levels. The stationarity of most of the variables at levels is an indication that the KPSS is a robust approach to unit root test as it overcomes the problem of low power. The transformation of technical cooperation grants via first differencing lead to stationarity and as such it is integrated of order one. Overall, the results reveal that the variables are mixed integrated. With evidence of mixed integration from the KPSS unit root test results, the use of bounds test cointegration approach is justified in this paper.

Bounds Test Cointegration Result

The bounds cointegration method was necessitated by the mixed integration of the variables. The result is displayed in table 3.

Table 3: ARDL bounds test cointegration result

Null Hypothesis: No evidence of long relationships exist		
Series: UEM MGR MTD TCG BLD		
Test Statistic	Value	K
F-statistic	6.495	4
Critical Value Bounds		
Significance Level	Lower Bound I(0)	Upper Bound I(1)
10%	2.45	3.52
5%	2.86	4.01
1%	3.74	5.06

Source: Author's computation based on data adapted from NBS, World Bank World WDI, World Bank, International Debt Statistics and IMF International Financial Statistics.

Note: K is a representation number of regressors.

The bounds test result for reveals that the computed F-statistic (6.495) is more than the upper bound critical F-value (4.01). This is a pointer that unemployment rate has long term equilibrium relationship with all the underlying capital inflows. This result aligns with the findings of Isaev & Masih (2017) and Johnny *et al.*(2018). The presence cointegration is very welcoming and provides appreciable evidence for rejecting the null hypothesis of no long run relationship.

Estimation of the ARDL model

The estimated ARDL model provides insights into the short and long run relationships between foreign capital and unemployment rate. The results are summarized in table 4.

Table 4: ARDL short and long run estimates

Dependent Variable: UEM				
Sample: 1980 2018				
Short run form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MGR)	0.967883	0.362613	2.669192	0.0144
D(MTD)	-1.070203	0.217928	-4.910811	0.0001
D(TCG)	6.942598	7.854923	0.883853	0.3868
D(BLD)	-0.512171	0.148775	-3.442581	0.0024
D(BLD(-1))	0.342003	0.121638	2.811651	0.0105
D(BLD(-2))	0.185783	0.113561	1.635986	0.1167
D(BLD(-3))	-0.032087	0.099532	-0.322377	0.7504
D(BLD(-4))	-0.250988	0.099146	-2.531491	0.0194
CointEq(-1)	-1.280572	0.193916	-6.603739	0.0000
Long run form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MGR	4.317802	0.461459	9.356854	0.0000
MTD	-0.835722	0.109029	-7.665106	0.0000
TCG	-20.503078	4.261719	-4.810988	0.0001
BLD	-0.822712	0.276420	-2.976315	0.0072
C	18.352189	1.711092	10.725424	0.0000
R-squared	0.897		Prob.(F-stat.)	0.0000

Source: Author's computation based on data adapted from NBS, World Bank World WDI, World Bank, International Debt Statistics and IMF International Financial Statistics.

Table 4.1: Post-estimation diagnostics tests results

Test type	Test statistic	Probability value
Breusch-Godfrey serial correlation LM test	Chi-Square stat. (5.3334)	0.0695
ARCH test	Chi-Square stat. (0.5274)	0.4677
Ramsey RESET Test	F-statistic (1.6139)	0.2252

Source: Author's computation from the ARDL result in table 4

The results reveal that, in the short run, current level of remittances has significant positive effect on unemployment. This finding supports Ratha (2012) argument that migrants' households tend to squander the amount remitted on consumption instead of channeling them to productive investment capable of generating gainful employment. On the other hand, bilateral and multilateral debts negatively affect unemployment in the short run. As observed by the coefficient (-1.281) of error correction, the model is very convergent as long run equilibrium position can be achieved at the shortest possible time. More importantly, the long run result revealed that remittances maintained its significant positive relationship with unemployment rate as in the short run. With 1 percent increase in remittances, unemployment will, on the average, increase by 4.317 percent. This further attests to the unproductive utilization of the remitted funds by the migrants' households. On the other hand, multilateral and bilateral debts as well as

technical cooperation grants have significant negative relationship with unemployment. These findings are in tandem with the postulation of the three gap model that foreign resources help in closing various gaps in the recipient's economy and support job creation in the capital deficient economies. It, therefore, follows from the results that technical cooperation grants has the largest effect in reducing the level of unemployment. The implication of this finding is that the availability of technical grants for funding transfer of technical and managerial skills helps to increase the labour employability and in turn reduce the unemployment rate. The post-estimation tests which focus on the residuals diagnostics and coefficient stability test was conducted at 5 percent significance level to gain deeper insights into the empirical justification of the estimated model for long term forecast and policy prescription. It was observed from the results that the model is free from serial correlation and heteroscedasticity. The Ramsey RESET test result further reveals that the coefficients are stable over the study sample and there is no functional misspecification in of the model.

Granger Causality Test

The test for the direction of causality among the variables was conducted using Granger causality method. The results are summarized in Table 5.

Table 5: VAR Granger causality test results

Null Hypothesis (H₀): No causality in the series				
Series: UEM MGR MTD BLD				
Direction of causality	Chi-square (X ²) Statistic	P-value	Inference	
MGR → UEM	3.804	0.2834	Accept H ₀	
UEM → MGR	1.501	0.6821	Accept H ₀	
MTD → UEM	10.271	0.0164	Reject H ₀	
UEM → MTD	13.502	0.0037	Reject H ₀	
TCG → UEM	3.535	0.3162	Accept H ₀	
UEM → TCG	5.214	0.1568	Accept H ₀	
BLD → UEM	6.841	0.0772	Accept H ₀	
UEM → BLD	30.395	0.0000	Reject H ₀	
MGR, MTD, TCG and BLD → UEM	22.019	0.0373	Reject H ₀	

Source: Author's computation based on data adapted from NBS, World Bank World WDI, World Bank, International Debt Statistics and IMF International Financial Statistics.

Note: → shows direction of causality

As observed from the results, there is no causal relation between remittances and unemployment; and between technical cooperation grants and unemployment rate. Hence, the null hypothesis of no causality for these scenarios cannot be rejected. However, multilateral debt and unemployment exhibit bidirectional causality at 5 percent level of significance. This

finding is line with the result of Igberu, Odo, Anoke & Nwachukwu (2016) which establishes causal relation between external debt and unemployment in Nigeria. Additionally, it was found that unidirectional causality flows from unemployment to bilateral debt. For this reason, the null hypothesis is rejected. This suggests that the rising bilateral debt profile in Nigeria is partly driven by government's intention to address the persistent unemployment problem. Further to this, it was observed from the joint causality test result that the underlying foreign capital inflows Granger cause unemployment rate. Therefore, the null hypothesis of no joint causality is rejected. This is a pointer that the underlying indicators of foreign capital have predictive ability for unemployment rate.

CONCLUDING REMARKS

The development effects of capital inflows in the recipient economies have received widespread attention in policy debates and development narratives. This this paper therefore, deepens the understanding of the dynamic effects of capital inflows on unemployment in Nigeria. The findings reveal that multilateral and bilateral debts as well as technical cooperation grants have significant negative relationship with unemployment. It is further observed that joint causality runs from the underlying capital inflows to unemployment rate. Owing to the findings, it is concluded that the heterogeneous forms through which foreign capital reach the Nigerian economy are, on balance, important for predicting changes in unemployment rate. Thus, it is recommended that policy makers should ensure that Nigeria remains choice destination for foreign capital in order to promote fiscal sustainability and bolster productive investments in sectors with high potentials for employment creation. This will help to bridge the resource-gap through increase availability of foreign capital and boost the potentials of the economy to reduce the level of unemployment. Further studies should follow a sector-specific approach in measuring capital inflows in order to have more specific understanding of their allocation and effectiveness in addressing the problem of unemployment.

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