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Socio-Economic Implications of Migrants' Dollars in Nigeria: A Bounds Test Approach toCo integration

Ozigbu, JohnboscoChukwuma
PhD Candidate
Department of Agricultural and Applied Economics, Rivers State University, Port Harcourt, Nigeria.
Corresponding Author: Ozigbu, JohnboscoChukwuma.

ABSTRACT:*Migrants' dollars play fundamental roles in the recipient's economy, especially for the migrant's households who rely on them for mitigating incidences of poverty and improving their living standard. In this paper, efforts were made to examine the impacts of migrants' dollars on socio-economic indicators in Nigeria focusing on poverty level and per capita GDP. The Pesaran-Shin Autoregressive Distributed Lag (ARDL) model was applied for analyzing the time series data extracted from the National Bureau of Statistics and World Bank Development Indicators over the period 1985-2016. The Kwiatkowski, Phillips, Schmidt and Shin (KPSS) unit root test results reveal that the series are mixed integrated with evidences of levels and first difference stationary. It was found from the bounds test results that the variables in each of the models are cointegrated. The ARDL estimates indicate that personal remittances negatively impacted on poverty headcount in the short run. One percentage increase in personal remittances at contemporaneous level and lag 1 mitigates poverty headcount by 7.50 percent and 9.49 percent respectively. The results further indicate that ODA is effective in enhancing per capita GDP in the long run. Increase in ODA by 1 percent leads to 0.11 percent increase in per capita GDP. The recommendation proffered in view of the findings is that policy makers and stakeholders alike should collaborate to ensure productive use of migrants' dollars to enable them serve as hedge against poverty and stimulate per capita GDP.*

KEYWORDS:Migrants' dollars, Poverty headcount, Per capita GDP and Bounds test

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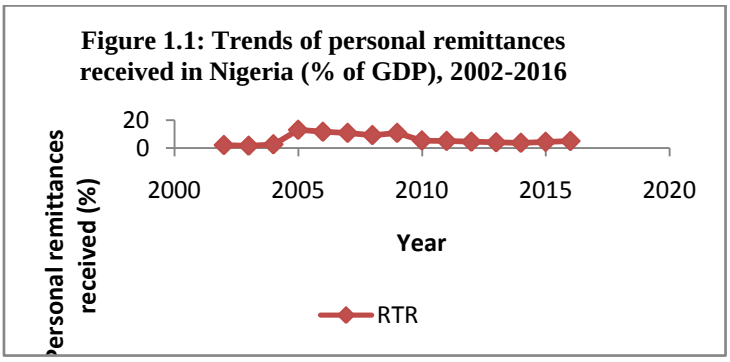
I. Introduction

The household and portfolio approaches to migration have identified migrants' dollars as important sources of consumption for the migrants' families and investment in the recipient country. In both instances, migrants' dollars or remittances are considered helpful in advancing the process of socio-economic development. Ratha (2013) observed that remittances have continued to surge globally in the past two decades reaching an impressive value of US$401 billion in 2012. This has attracted the attention of several scholars as Goschin (2014) opined that numerous studies in migration literature focused on the consumption and investment expenditures of migrants' households in their countries of origin. In addition to the monetary benefits created by migrants' dollars, improvement in key indicators of human resource development, especially education, healthcare and gender equality are identified by Ratha (2012) as benefits associated with remittances. The New Economics of Labor Movement (NELM) outlines the benefits of migrants' dollars to include reduction in household production and market constraints in developing poor countries. These are indications that migrants' dollars are associated with positive spill-over effects both for the migrants' households and the overall economy.

The distribution of migrants' dollars across various countries and economic blocs as observed from various reports and empirical evidences indicate that developing poor countries seem to take the lead considering the amount remitted so far to these countries. For instance, the World Bank (2014) report indicates that remittances inflow to developing countries increased from US$200 billion in 2003 to US$404 billion in 2013. The report further revealed that sub-Saharan Africa witnessed an increase of US$18.6 billion in remittances inflows accounting for 3.7 percent of her GDP. More importantly, various reports and empirical evidences indicate that migrants' dollars constitute one of the largest inflows of financial resources to Nigeria. This could be attributed to high trace of migration of Nigerians to the rest of the world as Augustine and Sunday (2015) argued that inward remittance is a logical follow-up to migration. In 2004, the inward remittances to Nigeria totaled US$2.26 billion (Iheke, 2012). The figure more than doubled in 2008 as the World Bank (2008) report indicates that about twenty million Nigerians abroad remitted the sum of US$7 billion. Again, Gupta et al. (2009) estimated the value of migrants' dollars to Nigeria at US$10 billion, thus making Nigeria the highest net receiver in sub-Saharan African and among the top twenty receivers in the world. As a share of GDP, remittances inflows as reported in Figure 1.1 have continued to fluctuate in the past one and half decade.



Source: Author's Estimation based on data from World Bank World Development Indicators (2017)

Figure 1.1 shows that the contribution of remittances to GDP reached a peak of 13.04 % in 2005 compared to the low contribution of 1.57% recorded in 2003. The share of the migrants' dollars of GDP fluctuated between 2006 and 2015 reaching a value of 4.96% in 2016. The actual value of migrants' dollars remitted to Nigeria may be much higher as money remitted through informal sources seems not to be recorded.

The pace of socio-economic development in Nigeria amidst the increasing inflow of migrants' dollars has remained a source of worry to policy makers and stakeholders alike. Although, theory and past studies indicate that migrants' dollars increase household incomes and as such provide opportunities for poverty reduction and rapid growth of the recipient's economy, Ratha (2012) opined that the inflows of remittances have been criticized for their unsustainability as the migrants'households tend to squander the amount remitted on consumption. It is expected that the streams of migrant dollars will increase the likelihood of better socio-economic outcomes in the forms of improved standard of living, increase in life expectancy; decrease in the population of the poor and reduction in income gap amongst others. On the contrary, high incidences and severity of poverty, widening income gap and low per capita GDP have remained recurring incidents in Nigeria. These have sparked renewed interest in the migration literature on the net benefits of migrants' dollars as experiences in Nigeria and other developing poor countries suggest that the perceived benefits of migrants' dollars are not systematic. In view of the foregoing, this paper focused on the socio-economic implications of migrants' dollars in Nigeria with particular emphasis on poverty reduction and changes in per capita GDP.

II. Review Of Related Literature

2.1 Theoretical Literature

2.1.1 Harris-Todaro Model

Harris and Todaro (1970) proposed this migration model based on the assumption that the migration is driven by expected income differentials between rural and urban areas rather than expected wage differentials. Following this assumption, it is expected that higher urban income provides greater incentives for people to migrating to the urban area. Thus, rural-urban migration is based on cost-benefit analysis which determines the decision to migrate (Augustine and Sunday, 2015). From Harris-Todaro viewpoint, migration is considered as an outcome of a thorough analysis of the chances available before the movement into the new environment. Income to be received from migrating to urban areas remains a determinant factor in the choice of migration. Positive conceptions of the host environmen in terms of the availability of viable economic activities that increase the opportunities of earning higher income shape the migration decision of individuals.

It is important to note that Harris-Todaro model improved upon the basic Todaro (1969) model with a view to introducing the components of reality into Todaro's perception of the migration process which were either ignored or not explicitly taken into consideration. Furthermore, the existence of a higher wage in urban areas compared to rural areas is a relatively constant observation. The gap in wages between the rural and urban areas is not closed by migration. This could be attributed to lack of full employment in urban areas. Thus, institutional determined urban wages tend to hinder the equilibrium in the urban labor market. This makes unemployment a common scenario in the urban areas. The migration decision of individuals is shaped by the expected income and probability of finding a job in the urban area. Moreover, Harris and Todaro (1970) observed that migration plays important role in the welfare of the entire rural sector which prompted inter-sectoral compensation requirements.

2.1.2 Theory of Pure Altruism

The theory of pure altruism was popularized by Lucas and Stark (1985) in an attempt to broaden the understanding of the drive for migrants' remittances. The theory assumes that the selfless interests and concern of migrants to support their households in their home country are the main motives for remitting money. Thus, increase in remittances is sparked by increase in the migrants' income (Englama, 2009). As observed by Lucas

and Stark (1985), the social welfare of the migrants tends to be maximized by their ability to remit money to their households. The likelihood of remitting money to the migrants' home country increases with increase in earnings. Again, the intention to remit is based on the relationship between the migrant and his household. The migrant however, tends to be concerned about the wellbeing of his household when they have strong ties and consequently send money to them.

The complete model of altruistic behavior incorporates the welfare or consumption behavior of the migrant's household into the utility function of the migrant. In other words, the theory of pure altruism assumes that the migrant maximizes his own utility subject to the amount remitted to his household given that the household at the migrant's home country benefits from migrant's increased income. This is indicative that the income of the recipients is largely determined by the volume of remittances available to them at any given period of time. Tchouassia and Sikod (2010) argued that sending remittances brings satisfaction to the migrant out of a concern toimprove the social welfare of his household or community. The altruistic model has been criticized for focusing mainly on selfless motive of remittances. Many studies have investigated the validity of this motive and most have concluded that altruism is insufficient in explaining remittance inflows. Alleyne (2006) argued that there is a strong investment drive rather than an altruistic motive for remitting me. This is also in accordance with van Dalen et al (2005) claim that modelling altruism would yield inconclusive results.

2.2 Conceptual Issues

The concept of migrants' dollars also known as remittances has received increased attention in migration literature. In most of the literature, remittances comprise migrants' earnings sent from their host countries to their place of origin. Migrants' remittances are major sources of income and poverty alleviation for their households and communities of origin in many parts of the developing poor countries (Arif, 2009 as cited in Dhungana and Pandit, 2016). According to the fifth edition of International Monetary Fund (IMF) Balance of Payments Manual (BPM5), remittances define transfers made by migrants employed in foreign destinations to their home country. Barai (2012) perceived migrants' dollars as monetary or financial flows often associated with migration or movement of people to foreign destinations. In other words, remittances are measured mainly in monetary terms. More so, the International Organization for Migration (IOM, 2006) describes remittances as financial flows often associated with labor movements. Thus, the likelihood of remitting money increases with the international mobility of labor.

Augustine and Sunday (2015) believe that remittances constitute one of the largest financial inflows to many transitional and developing economies surpassing international aid in some instances. They further explained that remittances are considered as important and stable source of income for households in many countries because it is least responsive to economic shocks. The World Bank (2006b) and Chami et al. (2009) identify remittances as having income stabilizing effects at both macroeconomic and household levels. Although migrants sent their earning both in cash and kind, the term remittance or migrant's dollar is generally perceived to denote only monetary and cash transfers made by migrants from their host countries to their countries of origin. On the other hand, socio-economic development is a multi-dimensional concept. It integrates both social and economic components of development with emphasis on poverty reduction, job reduction, equitable income distribution, mass literacy and access to quality healthcare amongst others. Other indicators used in measuring socio-economic development are GDP, life expectancy, per capita income and participation in civil society. Therefore, socio-economic development is a process of improvement in a various ways which is expected to influence all aspects of human life in a given economy.

2.3 Empirical Literature

The continuous inflows of migrants' dollars to transition and developing countries have drawn the attentions of several scholars across the globe, thus necessitating inquiries into their spill-over effects on the recipient economies.

Goschin (2014) examined the implications of remittances on the growth potentials of ten Central and Eastern Europe (CEE) between 1995 and 2011. The study employed to two growth models that include remittances as a core predictor variable. The data required for the analysis were sourced from the ten selected countries. The study relied on Panel estimation methods to account for potential cross-section heterogeneity. The result revealed that remittances exert significant positive influence on both absolute and relative GDP growth in the sample ten CEE economies. The study however, concluded that remittances are good for promoting stable macroeconomic growth even during crisis.

Dhungana,andPandit (2014) explored the impact of remittance on social and economic status of households in Lekhnath Municipality of Kaski District. The study sample comprises one hundred and forty-seven households having migrant family member. The data were collected through interview by using structured interview schedule. Descriptive and inferential statistics were carried out to analyze the data. The study also employed paired t-test to analyze the economic status of the households before and after the remittance received.

The result showed that the status of the household in the post migration period is better than that in the pre-migration period. It was found that annual remittances to the households are significantly associated with socio-economic indicators such as qualitative change in children's education and health status and participation of household in social organizations amongst others. The study therefore concluded that migration is helpful in terms of improving children's education and advancing the overall social status of the households.

Augustine and Sunday (2015) analyzed the issue of international migration and its impact on the migrants' place of origin. The study focused mainly on the analysis of 450 Nigerian migrants' families in two communities in Ikpoba-Okha Local Government area of Edo State with particular reference to money and the values of goods remitted. The study employed descriptive statistics for the analysis and the findings show that although home remittances do not have a uniform impact on the communities and families of migrants, they are however significant and appreciated. The study however, concludes that an emerging relationship seem to arise from the influence of home remittances from Nigerian migrants resident in Europe.

Hassan and Shakur (2017) assessed the impact of inward remittances flows on per capita GDP growth in Bangladesh over the period 1976–2012. The study employed combined techniques of Ordinary Least Squares; two stage Least Squares and Generalized Method of Moments (GMM). as methods of data analysis. It was discovered that the growth effect of remittances is negative at first but becomes positive at a later stage. The result also revealed that the remittances were put into unproductive use in the beginning when they were received by migrant families. However, better social and economic investments allowed for more productive use of the remittances receipts at later periods. The study therefore, concluded that the finding does not show that the effect of remittances on per capita GDP growth in Bangladesh is predicated on the level of financial development.

Jebran et al. (2016) investigated the implications of remittances on per capita GDP in Pakistan for the period 1976 to 2013. The auto regressive distributed lag (ARDL) model was used to examine the short run and long run relationships between remittances and per capita GDP. The findings show evidence of significant positive long run and short run impacts of remittances on per capita GDP. Given the findings, the study recommended that government should employ strategies that can further induce and mobilize remittances inflows capable of stimulating the growth process.

Azam, Haseeb and Samsudin (2016) examined the impact of foreign remittances on poverty alleviation in 39 countries covering the lower middle, upper middle and high income countries between 1990 and 2014. The study utilized Panel fully modified OLS (FMOLS) to analyze the data sourced for each of the sampled countries. The results reveal foreign remittances have positive impact on poverty alleviation and significant only for upper middle income countries. The results also show that aid and debt are negatively related to poverty. The effect of aid on poverty is not significantly, indicating that aid is not effective tool for poverty mitigation. The recommendation provided by the study is that policy makers should focus on measures that boost remittances inflows in order to reduce poverty.

Chukwuone et al. (2012) utilized data from the 2004 Nigerian National Living Standard Survey (NNLSS) to analyze the impact of remittances on poverty in Nigeria. Multinomial logit model with instrumental variables and the propensity score matching (PSM) method was used to estimate the impact of remittances on poverty. From the results, the study finds that both internal and international remittances are sources of reductions in the incidence, depth and severity of poverty. Specifically, internal remittances reduce the poverty headcount and poverty gap by 11.14% and 9.7% respectively while the receipt of international remittances reduces poverty indices to a near zero level.

Peković (2017) examined how effective remittances are in alleviating poverty among rural households and regions in the Republic of Serbia. Data from the Living Standards Measurement Survey 2007 was used in analyzing the depth and severity of poverty in the Republic of Serbia. Following the limitation of data, the study relied on counterfactual household consumption estimated in conditions of remittances absence, treating the last as exogenous transfer of money. The findings show that remittances have a larger impact on the depth and severity poverty of rural households. The distribution of the impacts across the regions indicates that remittances have largest impact on the poverty level in East Serbia, but the smallest changes in the depth and severity of poverty are observed in Sumadija. In view of the findings, the study recommended for considerable improvement of data with a view to promoting more efficient managing of remittances and achieving better results.

III. Material Andmethods

3.1 Model Specification

Two auto-regressive distributed lag (ARDL) models were employed in this paper to analyze the socio-economic implications of migrants' dollars in Nigeria. In the first model, poverty headcount (PHC) was used as the dependent variable while per capita GDP (PCG) served as the dependent variable in the second model. Personal remittances received (RTR) was included in each of the models as the core predictor variable while

foreign direct investments (FDI) and net official development assistance (ODA) received were equally added as explanatory variables based on their theoretical link with the economic phenomena under investigation and evidences from previous studies (Uttama, 2015; Simon-Oke; 2014, Boniface; Chijindu and Ibe 2017 and Kolawole, 2013). Based on the foregoing, the functional specifications of the models are provided as:

PHC = f (RTR, ODA, FDI) (3.1)

PCG = f (RTR, ODA, FDI) (3.2)

Where: PHC, PCG are respectively poverty headcount and per capita GDP while RTR, ODA and FDI are remittances received, net official development assistance received and foreign direct investments inflows respectively.

The ARDL representations of equations (3.1) and (3.2) are expressed as:

$$PHC_t = \upsilon_0 + \beta_{1i} PHC_{t-1} + \beta_{2i} InRTR_{t-1} + \beta_{3i} InODA_{t-1} + \beta_{4i} InFDI_{t-1} + \sum_{i=1}^{m} \psi_{1i} \Delta PHC_{t-1} + \sum_{i=1}^{m} \psi_{2I} \Delta InRTR_{t-1} + \sum_{i=1}^{m} \psi_{3i} \Delta InODA_{t-1} + \sum_{i=1}^{m} \psi_{4i} \Delta InFDI_{t-1} + E_{1t} \quad (3.3)$$

$$\text{In}PCG_t = \upsilon_0 + C_{1i} In\ PCG_{t-1} + C_{2i}\ InRTR_{t-1} + C_{3i} In\ ODA_{t-1} + C_{4i} In\ FDI_{t-1} + \sum_{i=1}^{m} \theta_{1i} \Delta InPCG_{t-1} + \sum_{i=1}^{m} \theta_{2I} \Delta InRTR_{t-1} + \sum_{i=1}^{m} \theta_{3i} \Delta InODA_{t-1} + \sum_{i=1}^{m} \theta_{4i} \Delta InFDI_{t-1} + E_{2t} \quad (3.4)$$

Where: PHC, PCG, RTR, ODA and FDI are as described previously in equations (3.1) and (3.2), υ_0 = intercept, β_1 - β_4 and C_1- C_4= long run parameters of the explanatory variables, ψ_1 - ψ_4 and θ_1 - θ_4 = short run dynamic coefficients of the explanatory variables, E_{1t} and E_{2t} = random disturbance terms, Δ = first difference operator, m = order of lag (automatically selected using Schwarz information criterion (SIC), In = natural log operator,i and t respectively denote country of study and time.

3.2 Variable Description and Data Sources

The descriptions of the variables in each of the models and the various sources of their observations are provided in Table 3.1.

Table 3.1 Description of variables in the models

Variable/Notation	Description	Source
Poverty headcount (PHC)	Proportion of the population living below the poverty line measured in percentage	National Bureau of Statistics (2016)
Per capita GDP (PCG)	GDP per capita in Nigeria (Constant 2010 US$)	World Bank World Development Indicators (2017)
Remittances received (RTR)	Personal remittances, received (Current US$)	World Bank World Development Indicators (2017)
Official Development Assistance (ODA)	Net ODA received (Current US$)	World Bank World Development Indicators (2017)
Foreign direct investment (FDI)	Foreign direct investment, net inflows (BoP current US$)	World Bank World Development Indicators (2017)

Source: Author's compilation, 2018

3.3 Analytical Techniques

This Pesaran and Shin (1999) Autoregressive Distributed Lag (ARDL) model was employed to analyze the time series data extracted from various documentary sources as explained in Table 3.1. This estimation technique is considered appropriate because (i) it produces robust results for both small and large samples, (ii) it allows for the inclusion of both fractionally and mixed integrated series in the model and (iii) it integrates both short run and long run behaviors in single equation set-up amongst others. Additionally, the ARDL allows for assigning different lag to different variables in the model and this is helpful in overcoming the problem of endogeneity of associated with static models. The lag order for each of the variables in the model was selected automatically using SIC.

3.3.1 Diagnostics Tests

i. Unit root test: The Kwiatkowski, Phillips, Schmidt and Shin (KPSS, 1992) method for unit root test was applied to determine the time series properties of each of the series. In this regard, the null hypothesis of no unit root was tested against the alternative hypothesis of unit. Notably, the ARDL requires that the variables be stationary at levels [I(0)] or at first difference [I(1)] or combination both [I(0) and I(1)], but not at second difference [I(2)]. The computation of the langrage multiplier (LM) statistics for each of the series was done at 5 percent level. The model for the unit root test is specified as:

$$\Delta Z_t = \mho_0 + \mho_1 Z_{t-1} + \sum_{i=1}^{q} \square_i \Delta Z_{t-i} + £_t \quad (3.5)$$

Where: Z= series in the model, $\mho_1$ and $\square_i$= estimated coefficients, q= order of lag, Δ, $£_t$ and t are as described earlier in equations (3.3) and (3.4).

ii. Bounds test for cointegration: The bounds test procedure to co-integration was used in examining if the variables have long run relationship or not. The bounds test specifically tested the null hypothesis of no cointegration against the alternative hypothesis of cointegration using F-statistic. The computation of this test statistic was carried out at 5 percent level.

iii. Autocorrelation and Heteroscedasticity Tests: Breusch (1978) and Godfrey (1978) higher order test for autocorrelation was applied in this paper following the dynamic nature ofthe models. It was considered necessary to authenticate the results for purposes of prediction and policy direction. In addition to the autocorrelation test, heteroscedasticity test was also conducted using White (1980) procedure. In each case, the test statistic was computed at 0.05 level.

IV. Results And Discussion

4.1 Unit Root Tests Results

The unit root test was carried-out using KPSS approach and the model involves intercept and linear trend. The results are reported in Table 4.1.

Table 4.1: KPSS unit root test results

Variable	Test at Levels		Test at 1st difference		Inference
	LM-statistic	Critical Value (5%)	LM-statistic	Critical Value (5%)	
PHC	0.125	0.146	0.075	0.146	I (0)
In(PCG)	0.168	0.146	0.129	0.146	I (1)
In(RTR)	0.138	0.146	0.068	0.146	I (0)
In(ODA)	0.068	0.146	0.101	0.146	I (0)
In(FDI)	0.074	0.146	0.093	0.146	I(0)

Source: Author's calculations from E-views software

Table 4.1 shows the unit test results. It was observed from the results that all the variables excepted per capita GDP are stationary at levels. This is because the respective LM statistics of the series at the levels test result are greater than the associated 5 percent critical value (0.146). The first difference test results revealed that PCG becomes stationary after first differencing. Thus, it is inferred from the results that poverty headcount, remittances, official development assistance and FDI are integrated of order zero [I(0)] while per capita GDP is integrated of order one [I(1)]. Given that none of the variables is second difference stationary [I(2)], they satisfy the condition to be included in the ARDL model.

4.2 Cointegration Test Results

The ARDL bounds test for cointegration for each of the models was carried out at 5 percent level. The results are reported in Tables 4.2 and 4.3.

Table 4.2 ARDL bounds test cointegration result for model 1

Series: PHC In(RTR) In(ODA) In(FDI)		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	12.769	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Author's calculations from E-views software

NB: K denotes number of explanatory variables

Table 4.3 ARDL bounds test cointegration result for model 2

Series: In(PCG) In(RTR) In(ODA) In(FDI)		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	4.554	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2-.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Author's calculations from E-views software
NB: K denotes number of explanatory variables

The result in Table 4.2 shows that the variables in the poverty model have long run relationship. This is because the F-statistic (12.769) is greater than the 5 percent critical value (4.35) at upper bound. Similarly, the bounds test result for the second model in Table 4.3 shows that the F-statistic (4.554) is greater than the upper bound critical value (4.35) at 0.05 level. This is indicative that long run relationship exists among the series. Given the results for each of the models, the null hypothesis of no long run relationship is rejected in each case.

4.3 Estimated ARDL Models

The lag order for the ARDL models was decided automatically using SIC. The short run and long run estimates for each of the models are reported in Table 4.4 and 4.5**.**

Table 4.4 ARDL short run and long run estimates for model 1

Dependent Variable: PHC				
Short run estimates				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PHC(-1))	0.62	0.23	2.86	0.0243
D(PHC(-2))	0.13	0.21	0.64	0.5406
D(PHC(-3))	0.73	0.26	2.76	0.0279
D(PHC(-4))	0.49	0.27	1.79	0.1173
D(PHC(-5))	0.47	0.21	2.29	0.0551
DIn(RTR)	-7.50	3.05	-2.46	0.0435
DIn(RTR(-1))	-9.49	2.71	-3.50	0.0100
DIn(RTR(-2))	6.79	2.95	2.30	0.0546
DIn(RTR(-3))	-6.56	2.02	-3.24	0.0142
DIn(ODA)	-5.27	3.13	-1.68	0.1362
DIn(ODA(-1))	6.11	3.56	1.72	0.1299
DIn(ODA(-2))	-4.99	3.54	-1.41	0.2005
DIn(ODA(-3))	10.13	2.86	3.54	0.0094
DIn(FDI)	22.00	4.78	4.61	0.0025
CointEq(-1)	-1.59	0.24	-6.61	0.0003
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
In(RTR)	2.05	0.92	2.23	0.0608
In(ODA)	-8.59	1.93	-4.46	0.0029
In(FDI)	6.89	3.26	2.12	0.0721
C	38.36	40.62	0.94	0.3764
ROBUSTNESS/DIAGNOSTICS TESTS				
R-Squared = 0.955				
Prob(F-stat.) = 0.004				
			Test stat.	**p-value**
Breush-Godfrey serial correlation LM test			X^2-statistics	0.397
White's heterskedasticity test			X^2-statistics	0.839
Ramsey RESET test			F-statistics	0.146

Source: Author's calculations from E-views software

The results in Table 4.4 show that in the short run, personal remittances negatively impacted on poverty headcount. One percentage increase in personal remittances at contemporaneous level and lag 1 mitigates poverty headcount by 7.50 percent and 9.49 percent respectively. This finding is in accordance with the theoretical provisions and the finding of Chukwuone et al. (2012) that remittances are sources of reductions in

the incidence, depth and severity of poverty. FDI was found to exert significant positive influence on poverty headcount while the current and lagged values of ODA are insignificant in influencing changes in poverty headcount in the short run. Although the insignificant positive influence of ODA on poverty headcount deviated from the theoretical expectations, it supported the finding of Azam, Haseeb and Samsudin (2016). The result also indicates that poverty headcount in previous periods, especially lag 1and 3 have significant positive impacts on the current poverty level. The error correction estimate (-1.59) indicates that the short run deviations are reconciled instantaneously. From the long run coefficients, it was observed that ODA has significant negative impact on poverty headcount while remittances and FDI are insignificant in explaining changes in poverty level. The robustness tests indicate that the regressors possess high explanatory power (95.5 %) and are collectively significant in explaining changes in poverty level as revealed in the coefficient of determination and probability value of F-statistic. Additionally, the diagnostics tests reveal that the model is free from autocorrelation, heteroscedasticity and functional misspecification. In other words, the model is good fit and satisfies the conditions for prediction.

Table 4.5 ARDL short run and long run estimates for model 2

Dependent Variable: LOG(PCG)				
Short run estimates				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIn(RTR)	-0.0068	0.0076	-0.89	0.3786
DIn(ODA)	0.030	0.016	1.87	0.0735
DIn(FDI)	0.0062	0.025	0.25	0.8080
CointEq(-1)	-0.275	0.070	-3.92	0.0006
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
In(RTR)	-0.025	0.028	-0.890	0.3816
In(ODA)	0.11	0.052	2.09	0.0470
In(FDI)	0.26	0.11	2.32	0.0288
C	0.14	1.51	0.090	0.9286
ROBUSTNESS/DIAGNOSTICS TESTS				
R-Squared = 0.972				
Prob(F-stat.) = 0.000				
			Test stat.	**p-value**
Breush-Godfrey serial correlation LM test			X^2-statistics	0.202
White's heterskedasticity test			X^2-statistics	0.851
Ramsey RESET test			F-statistics	0.546

Source: Author's calculations from E-views software

The results in Table 4.5 report the short and long run estimates of the GDP per capita model. The short run behaviors of the regressors indicate that individually none of the explanatory variables significant contributed to per capita GDP. However, the model is associated with 25 percent of adjustment speed, indicating that it takes relatively long period for any short run disequilibrium in the system to be reconciled in the long run. However, the long run long run estimates indicate that ODA is effective in enhancing per capita GDP. Increase in ODA by 1 percent leads to 0.11 percent increase in per capita GDP. It is also inferred from the R-squared (0.972) and probability value (0.000) of F-statistic that the model is well fitted and robust given that the explanatory variables are jointly important in accounting for changes in GDP per capita. More so, the model shows no evidence serial correlation, heteroscedasticity and misspecification problems as observed from the outcomes of the diagnostics tests.

V. Conclusion

The inflows of migrants' dollars to developing poor countries and transition economieshave continued to shape the migration literature, providing evidences on the sources, motives and implications of remittances to the migrants' households in particular and the economy wide aggregate in general. In this paper, efforts were made to uncover the socio-economic implications of migrants' dollars in Nigeria using econometric approach of ARDL. The findings reveal that personal remittances robustly impacted on poverty headcount in the short run, causing a more than proportional reduction in poverty level. Similarly, official development assistance significantly mitigated poverty headcount in the long run. Contrarily, it was found that remittances are not significant in explaining changes in GDP per capita. The results also indicate that official development assistance contributed significantly to the growth of GDP per capita. Given the findings, it is concluded that migrants' dollars and official development assistance are helpful for socio-economic development. It is also concluded that the inflows of official development assistance enhance the relative competiveness of Nigeria in terms improved living standard due to increase in per capita GDP. Thus, it is recommended for policy makers

and stakeholders alike to collaborate to ensure productive use of migrants' dollars to enable them serve as hedge against poverty and stimulate per capita GDP.

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