REMITTANCES AND ECONOMIC DEVELOPMENT IN NIGERIA: A MACROECONOMIC APPROACH

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Abstract

This study applied both descriptive and quantitative techniques to evaluate the macroeconomic impact of remittances on economic development in Nigeria. Specifically, the study used Autoregressive Distributed Lag (ARDL) model to estimate the model. Based on the results, the positive coefficient of remittances implies that increased levels of remittances inflow into the country will spur economic development. The study therefore recommends that the government should reduce the transaction cost of remitting monies from abroad, for instance, charges from western union, automatically lowers the overall inflow of remittances. Also, the negative coefficients of domestic savings gap of -0.009 and -0.028 percent for long-run and short-run results respectively imply that the larger the savings gap, the lower the level of economic development. The study therefore recommends that the government, through the Central Bank of Nigeria (CBN) should increase the savings rate in the country, so that the dependence on foreign assistance to augment domestic savings can be minimized.

Keywords: Remittances, Development, Savings, Migration

INTRODUCTION

In Nigeria, most people, especially the young ones regard migration as a remedy to economic problems of macroeconomic instability, corruption and poor management of resources. That is why a good number of professionals such as scientists, academics, and even those in medical fields migrate mainly to Western Europe, the Unites States etc (Chukwuone, 2007). These migrants remit a portion of their income to their families back home. The money which the families receive from their migrant members abroad is what is known as remittances.

Remittances have recently become an increasing and consistent wellspring of foreign earnings for developing nations. The rise in the level of remittances when compared to other external sources of funds has made it very important for the growth and development of many countries. This has given a boost for developing countries' effort towards actualizing economic growth and development. Remittances have been found to be positively related to economic growth (Beatrice and Samuel, 2015, Pradhan and Khan, 2015). More so, remittances have been found to promote households' welfare and health (Nyeadi, Yidana and Imoro, 2014).

According to a study by World Bank (2013), recorded remittances coming to nations that are still developing, have outgrown Foreign Direct Investment and Official Development Assistance. According to United Nations Development Programme (UNDP, 2015) report, estimated official remittances reached a total of $592.9 billion and of which about $441 billion came to developing countries. This report shows that developing countries take in larger share of world remittances that is about 74.38 per cent. Nigeria is reported to have received a total of $20.8 billion in remittances in 2014 and $21 billion in 2015 while countries like Ghana and South Africa received $2 billion and $913 million in 2014 and $4.9 billion and $825 million in 2015 respectively (World Development Indicators, 2015). This shows that the migrant remittance inflows for Nigeria in these periods is at least 4 times that of Ghana and more than 10 times that of South Africa. Yet, the level of development in Nigeria cannot be compared with those of the aforementioned neighboring countries. This is evident by the level of life expectancy, multidimensional poverty index, adult literacy rate, GDP per capita, human development index ranking e.t.c.

In 2015, the HDI for Nigeria, Ghana, and South Africa stood at 0.52, 0.57, and 0.66 respectively (HDI report, 2016). The report ranked Nigeria 152[nd,] Ghana 139th and South Africa 119th in the world in terms of development. This ranking puts Nigeria among the low human development countries while Ghana and South Africa are among the medium human development countries. Life expectancy for Nigeria was also less than that of Ghana and South Africa in 2015 with 53.04, 61.3 and 57.4 years respectively (World Development Indicators, 2016). Also in comparing adult literacy rate between Nigeria, Ghana and South Africa at 59.5

percent, 76.57 percent and 94.59 percent respectively (World Development Indicators, 2016), it can be seen that Nigeria still falls behind these countries. The number of people in multi-dimensional poverty and living below income poverty line stood at 12.1 and 28.6 percent for Ghana, 18.4 and 62 percent for Nigeria, and 17.1 and 9.4 percent for South Africa (HDI report, 2015). While GDP per capita for these countries of comparison stood at $1369.70, $2671.72 and $5718.24 for Ghana, Nigeria and South Africa (World Development Indicators, 2016). These figures are not mere statistical abstraction. It is a clear reflection that remittances have a huge effect on the development of an economy and this leaves much to be desired.

Several studies like Okodua, Ewetan and Urhie (2015), Adenutsi (2010) and Oluyemi, Dominic and Lady (2015) have unequivocally concluded that the impact that remittances have on Nigeria's economic development has been positive. Despite these findings, the reality however, has rather been different. Ghana and South Africa in spite of not receiving as much as Nigeria in remittances performs better than Nigeria in some key development indicators.

Therefore, for this reason, the study attempted to answer these questions (i) what is the causal relationship between remittances and economic development in Nigeria? (ii) What is the impact of remittances on economic development? It is therefore on this basis that the study examined remittances and economic development in Nigeria.

CONCEPTUAL ISSUES

Remittances

Migration and remittances are two concepts that go together, because remittances are as a result of migration. Englama (2007) defined migration to be the voluntary movement of person(s) from one country to seek a more prosperous environment. Accordingly, when the movement is documented, then the migration is regular but if it is the reverse then it is irregular migration. Migration is a phenomenon which can take place in different forms. It could be internal (rural-urban migration, urban-rural migration or urban-urban migration, within the same country) or international (from one country to another or one continent to another). Remittances can be seen as the most beneficial outcome of migration. Alenkhe and Longe (2015), submit that remittances are a logical follow up to migration.

There are several definitions of remittances. Puri and Ritzema (1999) defined remittances to be the fraction of a migrant workers' income sent from the country of employment to the home country. Larsson and Angman (2014) defined remittances as money-transfers, earned by workers abroad and sent to persons in their country of origin. Tewolde (2005) as cited by Oluwafemi and Ayandibu (2014) saw remittances to be both monetary and physical

resources that are earned and acquired by migrants as they ply their trade abroad. These are what make up what they send to their loved ones back home in their home countries. Chami et al (2008) are of the opinion that remittances are solitary and are not market-based individual exchanges between families across nations. According to Englama (2007), the definition of remittances adopted by countries is that of the Balance of Payment Statistics Manual of the international Monetary Fund (IMF), where remittances are comprised of 3 components namely: migrant transfers, employees compensation and remittances of workers.

Economic Development

Economic development is a concept that is multivariate in nature, and as such cannot be captured by a single satisfactory definition. Literally, economic development is the change that emanates from moving from a lower to a higher stage of development. According to Charles and Bruce (1958), development relates to material well-being improvements particularly for people with really low earnings, annihilation of mass neediness combined with lack of education, disease and premature demise and changes in the "inputs and outputs" composition that by and large included passage of the fundamental production base far from agro-based activities towards modern industrial-based activities. Development also means an economic structure in which most of the working age population is productively employed rather than a privileged minority, and also the participation of broad based groups in decisions concerning their welfare.

Indeed, Sen (1999) explained the concept of development as a way of enhancing the freedom of humanity. Sen (1999) posited that "development requires the removal of major sources of un-freedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as ignorance or over activity of repressive states". Todaro (2015) defined economic development as the improvement in the quality of lives of all humans and capabilities by raising people's standard of living, self confidence and opportunity. Goulet (1971) explained economic development using three core values of life sustenance, self esteem and freedom.

McGranahan (1972) included economic growth as measured in terms of GDP and its distributional dimensions as components of economic development. Economic development is therefore a concept that is broad, which takes into account monetary and non-monetary viewpoints. In view of the multidimensional nature of economic development, scholars have put forward some indicators of economic development, some of which are as chronicled in the Table 1.

Table 1: Indicators of Economic development

Economic Indicators	Poverty Indicators	Demographic Indicators	Disease Indicators
• GDP per capita • Purchasing Power Parity Income • Human Development Index (HDI) • Physical Quality of Life Index (PQLI) • Life Expectancy • Education: measured by adult literacy rate and enrolment at primary, secondary and tertiary institutions. • Unemployment rate	• Absolute Poverty • Relative Poverty	• Annual population growth rate • Proportion of population engaged in agriculture • Urban population • Percentage of population under the age of 15 • Infant mortality rate • Maternal mortality rate	• Prevalence and Incidence • Proportion of low birth weights • Prevalence of anaemia • Proportion of overweight individuals • Nutritional intake assessment • Prevalence of HIV/AIDS • Prevalence of malaria, polio, etc.

Source: Author's compilation

EMPIRICAL LITERATURE AND THEORETICAL ISSUES

Remittances and Economic Development

Okodua (2010) studied twenty one selected countries of Sub-Sahara Africa (SSA), the study employed the system Generalized Method of Moments (GMM) estimation technique within an extended neo-classical growth model framework on a set of three linear dynamic models in order to evaluate the relationship or the connection between the growth of output and remittances, remittances and domestic investment and remittances and external trade balance (proxied by real external balance). The period in the study spanned from 2000 to 2007. The findings of this study were that, remittances had a significant existing negative impact on output growth, domestic investment and external trade balance; this implied that remittances were not put to productive uses; it crowded out domestic investment and depressed trade balance in these SSA countries.

Minta and Nikoi (2015) analyzed the impact of migrant remittances on socio economic development in Ghana, made use of regression analysis as well as annual time series data for the period 1992 to 2012 with emphasis or focus on growth and poverty. The variables of interest to the study were economic growth (measured by GDP), remittances, HDI, poverty and inflation. The study found remittances and HDI to be positively related to economic growth in Ghana

while inflation negatively influenced it. However, remittances did not have a huge impact on the reduction of poverty in Ghana. The study therefore concluded from its findings that remittances had both positive and negative impact on the growth of Ghana's economy, and as such, migration in Ghana can be said to a brain gain but not a brain drain.

Bayar (2015) conducted a study on the impact of remittances on the economic growth in the transitional economies of the European Union. The main aim of the study was to appraise the causal relationship between variables like Real GDP per capita growth, personal remittances inflows and net Foreign Direct Investment, for the period 1996 to 2013. The study employed a panel regression and cointegration technique in determining the causality among the variables. A unidirectional relationship was observed from remittances to economic growth at one period lag, and at two and three lags from FDI net inflow to economic growth. Consequently, the level of income growth in these countries can be hugely tied to the net inflows of remittances and FDI.

Beatrice and Samuel (2015) investigated the effect of remittances on economic growth in Kenya from 1993 to 2013, using the Granger causality test and the OLS estimation techniques. The variables included in the model include; population, investment, openness, enrolment, inflation, net export, government consumption and remittances. The study found out that remittances impacted positively on economic growth, and also, a bi-directional causal relationship was established between remittances and economic growth. Apart from secondary enrolment and inflation which were both negatively related with economic growth, others, impacted positively and significantly economic growth,

Abdul, Muhammad and Umaima (2010) investigated the impact of remittances on economic growth and poverty, spanning the time frame of 1997 to 2007. The study was carried out on Pakistan. The Auto Regressive Distributed Lag (ARDL) approach was employed in analyzing the model comprising of variables such as; real GDP, poverty, investment, HDI, openness and inequality. The study revealed that economic growth and remittances are positively related; investment and HDI positively affected GDP, while openness showed a negative influence. The study concluded therefore, that there existed a significantly strong relationship between remittances with poverty reduction, and economic growth in Pakistan.

Adenutsi (2010) examined the macroeconomic impact of inward international remittances on human-centred development in 15 Sub-Saharan African countries. A fixed-effect balanced panel data estimation technique was adopted, having a time frame; 1987 to 2007. The model included variables such as; remittances, investment, human capital, international trade openness, CPI, government expenditure, and time dummy. The study found all the variables to positively influence human development within the SSA countries.

Adeyi (2015) in his study on remittances and economic growth in Nigeria and Sri Lanka examined the causal relationship between remittances and economic growth. The study employed the granger causality test under the Vector Auto Regression (VAR) on the time series annual data for 1985 to 2014. The variables included in the study were per capita remittances and per capita GDP. The result showed remittances cause economic growth showing a unidirectional relationship between remittances and economic growth while the results for Sri Lanka, revealed a bi-directional link between remittances and economic growth.

Adarkwa (2015) examined the impact of remittances on economic growth in four West African countries namely: Cameroon, Cape Verde, Nigeria and Senegal over the period 2000-2010. Linear regression was used to estimate the relationship among the variables. The findings of the study demonstrated that the impact of remittances on the GDP of Senegal and Nigeria was positive while for Cameroon and Cape Verde was negative. According to the study, Nigeria benefitted the most.

Adams and Page (2005) examined the impact of international migration and remittances on poverty in emerging economies. They analyzed cross-country data from 71 developing countries using OLS and Instrumental Variables. The findings showed that remittances emanating from the act of migrating abroad can reduce the level of poverty. After instrumentation of possible endogeneity of remittances, it showed that a 10 per cent increase in per capita remittances led to a 3.5 per cent reduction in the number of people living in poverty.

Nyeadi, Yidana and Imoro (2014) found remittances to be effective in fostering household welfare and health care in developing countries. To determine whether remittances can lead to economic growth, the study set to ascertain what could be the causal relationship between economic growth and remittances could be in the following remittance-receiving countries namely: Nigeria, Senegal and Togo. The study used Granger-causality and co-integration tests under Vector Auto Regression framework for the period of 33 years (1980-2012). The study realized that for Nigeria and Senegal, a unidirectional causal relationship exists implying that remittances led to economic growth but economic growth did not lead to remittances inflow. However, for Togo there was no causal link between remittances and economic growth.

Pradhan and Khan (2015) analyzed the contribution of remittance earnings to the quality of life in Bangladesh. HDI was used to represent the quality of life. The period under study was from 1981 to 2011 using data for HDI and remittance earnings. The study employed the Vector Error Correction (VEC) model to analyze the desired relation between the variables. The results found a long run causal link from remittances to HDI, meaning that remittance earnings have a long run effect on the quality of life.

Both Taiwo (2007) and Englama (2007) in different studies agree that the possibility of remittances leading to economic development for Nigeria depends on the formulation of policies and the development of appropriate structures to channel remittances into productive areas of the economy. Roberts (2006) used the case of Guyana to study the developmental impact of remittances in Caribbean economies. The study used descriptive research method. The survey conducted revealed that even though quite a sizeable portion of remittances are used for consumption purposes and smaller amounts are used for productive purposes, collectively, these expenditures can lead to the achievement of development in the country.

Theoretical issues

In analyzing the effect of remittances on economic development, this research will focus on the following theories. Exogenous Growth Theory, Two-Gap Model, Optimist School of Thought, Pessimist School of Thought and the Pluralist School of Thought.

Exogenous Growth theory was propounded by Robert Solow (1956). The theory extended the Harrod-Domar growth model by including labour among the factors of production and also introduced technology to the output growth equation. This model explains long run economic growth by focusing on capital accumulation, labour and technical progress. Growth, in the long run, is only determined through technological progress. The theory values new capital to old capital because new capital is most likely to be developed or produced with new and improved technology. It is believed that technology will improve investment by reducing its rate, and enhance capital and labour productivity. The theory assumes that the level of technology is exogenously determined, that is, it is independent of other factors in the model. Capital accumulation is also seen to be a driver for technical progress. Relating this model to how remittances can affect economic development, remittances according to Fayissa and Nsiah (2008) form a major part of international capital flows to developing countries, and by this theory, open economies (countries with external activities) through the inflow of capital from developed countries to developing countries experience high levels of income convergence..

Two-Gap Model as proposed by Chenery and Strout in 1956 stressed the role of external finance in augmenting domestic resources in order to alleviate savings or foreign constraints. The argument of the model is that majority of developing countries do not have enough domestic savings to match investment opportunities or do not have adequate foreign exchange to fund the importation of capital and intermediate goods needed for investment. It assumed that the domestic savings gap and foreign gap are not equal in size and are also exclusive of one another. The consequence of this, according to Todaro and Smith (2015) is that one of these two gaps would prevail for any developing economy at a particular point in

time. According to them Todaro and Smith (2015), if for instance, the savings gap is prevailing, this suggests that domestic investment is constraining growth and thereby, foreign savings maybe used as a supplement. When the foreign exchange gap is prevailing, the emerging country's productive and excess resources particularly labour and all foreign exchange available will be used for imports. The presence of complementary domestic resources coupled with external finance to enable the importation of the necessary capital goods and technical assistance will enable the economy invest in new projects. This shows that foreign aid or capital inflow therefore has the ability to eliminate the foreign exchange constraint and raise the real rate of economic growth.

Optimist School of Thought has the classical and neoclassical theories in their school of thought. This school of thought is of the opinion that migration would lead to transfer of investment capital from advanced economies to developing economies (de Haas, 2007). This transfer would allow developing economies to be exposed to advanced technology, modern education and knowledge, free and democratic ideas. According to the proponent of this school of thought (Papademetriou, 1985), the theory states that industrialization and transfer of capital on a large scale can lead to economic development for developing economies. The general assumption is that remittance inflows, experience, skills and knowledge gained by migrant workers' abroad will most likely improve development in recipient countries. Therefore these migrants are viewed as operators of progress, innovation and speculators.

Pessimist School of Thought is supported by the structural and dependency theories. The theories proposed by Frank (1966) states that the resultant effect of migration would be reliance on the worldwide political monetary frameworks tyrannized by the influential western states. According to this school of thought, migration is deleterious to developing economies and also the very cause of poor development in these economies. The pessimists argue that migration makes the development of human capital seem unnecessary and also leads to the collapse of traditions and customs in developing economies. This would result in the development of acquiescent, remittance-dependent and impoverished countries. The pessimists likewise contended that remittances weren't really being expended on productive activities but utilization on wasteful investments like housing. This increase in consumption was reported to provoke inflationary pressures. They turned the optimist view upside down.

METHODOLOGY

It is important here to note that this study was anchored on the Exogenous Growth theory and the Two-Gap theory. The theory was augmented and modified with the sole aim of achieving the study's objectives. The theory covers a period of 36 years (1980 to 2016). This period accounts

for major structural change in the economy. The economic collapse in the 1980s led to the increasing pool of mass emigration from Nigeria. The consequence of which is the current high remittance inflow the country is experiencing. Remittance inflows are limited to international transfer of cash earning only leaving out any material form of remittances. The exogenous growth function is thus:

$Y = AK^{\alpha}L^{\beta}$

Where:

F = function of

Y = Output

A = productive parameter or technical progress

K = Capital

L = Labour

α and β = output elasticities of capital and labour

α and β are assumed to be greater than one

In the context of this work, A = Technology and it is assumed to be constant

Y = HDI, L = Labour Force and K = Remittances

The augmented form of the model included Foreign Direct Investment (FDI) and Domestic Savings Gap (DSG). Therefore HDI is expressed as a function of remittances, labour force, FDI and DSG. The augmented and modified exogenous growth and Two-gap model is stated thus:

HDI= f (REM, LF, FDI, DSG)

Where:

HDI= Human Development Index (measure of economic development)

REM = Remittances in millions of Dollars

LF= Labour Force in millions

FDI = Foreign Direct Investment in millions of dollars

DSG = Domestic Savings Gap in millions of dollars

Equation 2 in its econometric or log linear form can be written as:

$HDI = \alpha_0 + \alpha_1 LOG (REM) + \alpha_2 LOG(LF) + \alpha_3 LOG (FDI) + \alpha_4 LOG (DSG) + \mu$

The theoretical a priori expectations about the signs of the coefficients of the parameters are as follows: $\alpha_1, \alpha_2, \alpha_3, > 0$ and $\alpha_4 < 0$

Human Development Index (HDI) is used in this study as a measure of economic development. It is a composite measure of development taking into consideration per capita income, literacy rate and life expectancy. It is the dependent variable in the study. HDI values are between 1 and 0. Labour Force is the total number of employed and unemployed persons in Nigeria. Output is said to increase proportionally to the increase in the labour input, so this study expects the

coefficient of labour force to be positive. Remittances are the total amount of financial remittances received in Nigeria as a proxy for capital. Remittances can also come in material forms. However, for the purpose of this study, only financial remittances are taken into account. So the study expects the coefficient of remittances to be positive. Foreign Direct is measured by the net inflows of FDI received in Nigeria. We expect the coefficient of FDI to be positive. FDI in the context of this study is a control variable. Domestic Savings Gap (DSG**)** refers to the situation where current level of savings is not sufficient to achieve an economic objective. It is the excess of investment over domestic savings. Domestic savings gap in this study is gotten by subtracting domestic savings from investment. A favourable situation is when domestic savings is more than investment, so the coefficient of domestic savings gap is expected to be negative. The research work used annual time series data for the period 1980 to 2015. Data used were derived from two major sources namely World Development Indicators and United Nations Development Program (UNDP) human development reports. All the financial variables are in US dollars.

This study employed both descriptive technique and regression analysis. The regression analysis technique used in this study is Autoregressive Distributed Lag (ARDL) model. This model was developed by Pesaran and Pesaran (1997) who made use of standard least square regression that included dependent and independent variable lags as regressors. The ARDL model was employed in this study not only because it could simultaneously estimate the model's long and short run parameters, also because it can be used irrespective of the order of integration of the variables. It is also used for a small sample size of this nature.

The causal relationship among the variables was investigated using 'the granger causality test'. The possibility of causality between two variables is more likely when there is cointegration among the variables.

ANALYSIS AND FINDINGS

Figure 1 shows the annual growth of Human Development Index (HDI) and remittances. From the figure, it can be seen that remittances have not translated into economic development as shown by the movement in HDI. For the period under study, HDI was consistently flat, while remittances experienced both positive and negative growth.   In summary, in terms of flow of fund from external sources to Nigeria, remittances accounts for the larger share. However, over the last decade on the average, ODA has been the major contributor to GDP with about 20.984 percent, 8.499 percent for remittances and 2.826 percent for FDI.
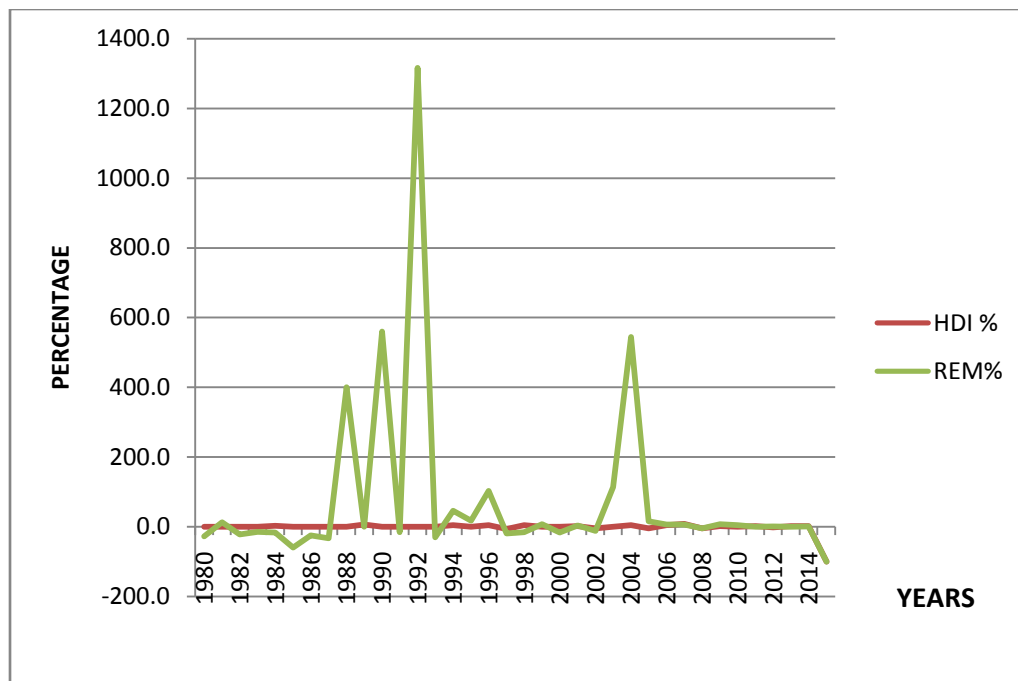
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Figure 1: Annual Growth Rate of HDI and Remittances (1980-2015)

Source: Author's Computation (2017)

Correlation Matrix

From the table 2, it can be seen that economic development and Remittances seem to have a correlation that is positive and quite strong (0.82), Foreign Direct Investment (0.75) and Labour Force (0.75). The implication of this is that as each of these variables rises, the level of economic development in Nigeria also rises. The result also shows a negative correlation between economic development and Domestic Savings Gap (-0.04). This means that an increase in Domestic Savings Gap will bring about a decrease in economic development in Nigeria. The correlation coefficients in table 2 have descriptive values, and conclusions from the study rely on the regression results.

Table 2: Correlation Matrix

	HDI	REM	FDI	DSG	LF
HDI	1.000000	0.818693	0.752622	-0.040965	0.748084
REM	0.818693	1.000000	0.835527	-0.106329	0.783027
FDI	0.752622	0.835527	1.000000	-0.147131	0.629987
DSG	-0.040965	-0.106329	-0.147131	1.000000	-0.206247
LF	0.748084	0.783027	0.629987	-0.206247	1.000000

Unit Root Tests

In carrying out pre-estimation test, the Augmented Dickey-Fuller (ADF) test was employed. The results of these tests are presented in 3. From table 3, the ADF test shows that two of the variables HDI and DSG were stationary at level and other variables became stationary at first difference.

Table 3: ADF Unit Root Result

Variables	Level	1st Difference	Order of Integration
HDI	-2.837162**	-	1(0)
REM	-0.406006	-2.531109**	1(1)
LF	-0.743772	-4.779078**	1(1)
FDI	-0.347763	-2.875963**	1(1)
DSG	-3.610039**	-	1(0)

Note: ** indicates significance at 5 per cent level. Level: Test critical value at 5% = -1.9514
1st difference: Test critical value at 5% = -1.9517

Cointegration Test

The result of the test as shown in table 4 revealed that the calculated F-statistics value of 5.69 is greater than the upper bound critical value of 4.25 at five percent level of significance. As a result, the alternative hypothesis of cointegration is accepted as against the null. This means that there is a confirmation of the existence of cointegration and a long run relationship.

Table 4: Wald Test

F-statistic	5.69529**	Probability	0.000000
Chi-square	28.47646	Probability	0.000000

Note: ** indicates significance at 5 per cent level.
Lower Bound @ 5% = 3.12.   Upper Bound @ 5% = 4.25

Granger-causality Test

This test was carried out in order to determine the direction of causality (if any) between remittances and economic development (HDI). Table 5 reveals that the hypothesis (null) that remittances (REM) do not granger cause economic development was not accepted while the null hypothesis that economic development does not granger cause remittances was accepted. This shows a unidirectional causality. By this result, it is obvious that remittances granger cause economic development in Nigeria.

Table 5: Pairwise Granger Causality

Null Hypothesis:	Obs	F-Statistic	Probability	Decision
REM does not Granger Cause HDI	34	2.35365	0.04192**	Reject
HDI does not Granger Cause REM		0.69170	0.50880	Accept
FDI does not Granger Cause HDI	34	5.64106	0.00852**	Reject
HDI does not Granger Cause FDI		1.56788	0.22565	Accept
DSG does not Granger Cause HDI	34	2.16327	0.04900**	Reject
HDI does not Granger Cause DSG		0.38142	0.68627	Accept
LF does not Granger Cause HDI	34	2.49664	0.04091**	Reject
HDI does not Granger Cause LF		1.21034	0.35502	Accept

Note: **Denotes rejection of hypothesis at 0.05 levels.

ARDL Long Run Estimation of the Model

Table 6 shows that remittances (REM), Foreign Direct Investment (FDI) and Labour Force (LF) and economic development, are all positively related, except for Domestic Savings Gap (DSG) which proved negative. This is in line with theoretical expectation. This means that a one percent rise in the amount of remittances received prompts economic development to also rise by 0.12 percent. Also, a one percent rise in FDI net inflows prompts economic development to also rise by 0.88 percent. Similarly, a one percent increase in labour Force leads to an increase in economic development by 0.005 percent. Meanwhile, a one percent increase in DSG leads to a decrease in economic development by 0.009 per cent. Comparatively, the impact of remittances is greater than that of domestic savings gap in terms of magnitude as shown in the long run result.

Table 6: ARDL Long Run Estimates (Dependent Variable: HDI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(REM)	0.126417	0.043647	2.896369	0.0443
LOG(FDI)	0.887796	0.696787	1.274128	0.2047
LOG(DSG)	-0.009194	0.003243	-2.835567	0.0471
LOG(LF)	0.005412	0.000648	8.348197	0.0011
C	0.176123	0.036060	4.884124	0.0081
R-squared	0.885714			
Adjusted R-squared	0.861427			
F-statistic	68.99677			
Prob(F-statistic)	0.000606			
Durbin-Watson stat	2.074039			

Parsimonious Error Correction Shortrun Results

The result of the parsimonious model presented in table 7 shows that the coefficient of the error correction mechanism (ECM) is well behaved because it is negative, proportional and statistically significant. This confirms the existence of long run relationship among the variables. The result again indicates the slow speed of adjustment and by implication, about 34 percent of the disequilibrium in the long run will be corrected every year.

The F-statistic value of 10.68443 is statistically significant. This means that the independent variables (REM, FDI, LF, and DSG) have combined impact on the dependent variable economic development during the period under study. The Adjusted R-squared of 0.57 is quite fair, indicating that 57 percent of the total variations in economic development can be explained by changes in the independent variables. The Durbin-Watson statistic of 1.87 is closer to 2 and therefore falls in the acceptance of no autocorrelation. This implies the presence of a minimal serial correlation among the disturbance terms in the model. More so, the Durbin-Watson statistic is in excess of adjusted R-squared, indicating that the model is not spurious. That is, the model is well behaved and can be used for policy decisions in Nigeria.

Table 7: Parsimonious Short Run Results

Dependent Variable: HDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(REM))	2.435118	0.258615	9.415996	0.0000
LOG(DSG)	-0.028320	0.008724	-3.246217	0.0101
D(DSG(-1))	-1.54E-13	4.87E-13	-0.316653	0.7587
D(LOG(FDI(-1)))	0.009617	0.009080	1.059141	0.3171
D(LOG(LF))	0.002426	0.001636	1.482885	0.1724
ECM(-1)	-0.348610	0.085468	-4.078836	0.0000
C	0.182329	0.192408	0.947620	0.3681
R-squared	0.591107			
Adjusted R-squared	0.578512			
F-statistic	10.68443	Durbin-Watson stat		1.868060
Prob(F-statistic)	0.00211			

The result indicates a positive intercept of 0.18 as shown by the constant term. This implies that, in absence of other independent variables in the model, economic development will still increase by 0.18 percent. Precisely, with regards to the objective of determining the impact of remittances on economic development, the result revealed a positive link between remittances

(REM) and economic development. This can be interpreted to mean that an increase in the amount of remittances received raises the level of economic development in Nigeria. This is consistent with *a priori* expectation since increase in the amount of remittance inflows into a country is expected to improve the standard of living of the people. Specifically, the results imply that the level of development of the Nigerian economy will be enhanced by 2.44 percent if remittances profile is raised by one percent. The variable also had a 5 significant level, implying that remittances influence economic development and are significant in explaining economic development within the period under study. This corroborates the findings of Pradhan and Khan (2015), Adenutsi (2010) and Larsson and Angman (2014) but contradictory to the findings of Okodua (2010).

The result also shows a negative relationship between domestic savings gap in the previous period and current period and economic development. By implication, if domestic savings gap in both previous and current periods increase, economic development will experience a decline. The result further explains that the coefficient of domestic savings gap of - 0.02 indicates that a one per cent increase in domestic savings gap of the current period prompts economic development to reduce by 0.02 per cent in Nigeria, while domestic savings gap of the immediate past period led economic development to experience a larger contraction of 1.54 per cent. This is in line with *a priori* expectations because an increase in domestic savings gap means that the domestic savings available is not sufficient to finance the investment required for economic development, therefore economic development is adversely affected. However, the relationship between domestic savings gap in the current period and economic development was statistically significant while that of domestic savings gap of the previous period was not. The null hypothesis of there is no significant difference between the impacts of remittances and domestic savings gap is rejected because remittances as indicated from the results seem to be positively connected to Nigeria's economic development while it is the opposite with domestic savings gap. Again, since one of the objectives of this study is to comparatively assess the impact of remittances and domestic savings gap on economic development, it is imperative to compare the impacts by taking into cognizance, the magnitude of the coefficients of remittances and domestic savings gap. From the findings, the result revealed that the impact of remittances is 86 times that of domestic savings gap. This implies that remittances in Nigeria contribute much more to the development of the Nigerian economy than domestic savings gap. Hence there is a significant difference between the impacts of remittances and domestic savings gap on economic development in Nigeria.

The one period lagged value of Foreign Direct Investment recorded positive coefficient of 0.009, implying a positive relationship with economic development. From the results, a one per cent

increase in the one period lagged value of Foreign Direct Investment prompts a rise in the level of economic development by 0.009. The variable however was insignificant in determining economic development. Furthermore, (LF) which is labour force, is seen to be positively related to economic development, which is in line with theoretical postulation that increase in labour force has a positive effect on growth of output. In absolute terms, a one per cent expansion in the labour force prompts economic development to also expand by 0.002 per cent.

Stability Test

The stability test using the CUSUM in Figure 2a indicates that the variables were stable within the period of this investigation. This is confirmed by the trend that swings within the ± five percent significant level bound. Consequently, no structural break was experienced within the period of the study. However, the CUSUM of squares (in figure 2b) plot falls outside the five per cent level of significance. This indicates that the relationship between remittances and economic development is unstable and that the coefficients are not changing abruptly.
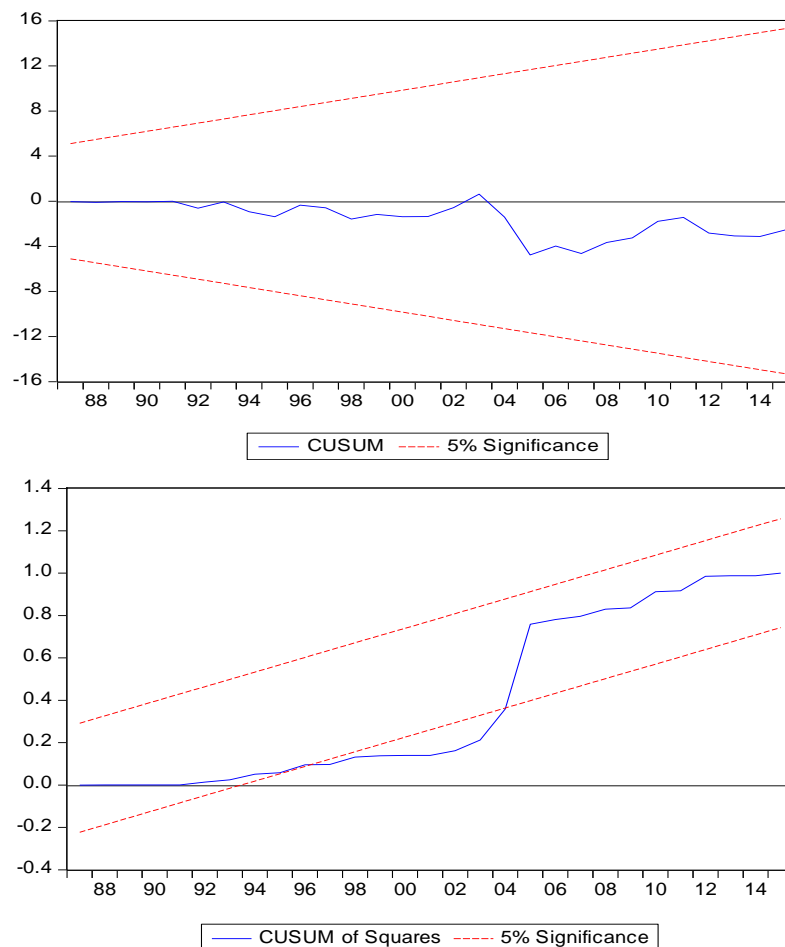

Figure 2a and 2b: CUSUM and CUSUM of Squares respectively

DISCUSSION OF RESULTS

Analysis of the results showed that remittances hugely impacted on the development of the Nigerian economy within the period under review. This implies that an increase in remittances leads to an increase in economic development in Nigeria. This corroborates the findings of Pradhan and Khan (2015), Adenutsi (2010), Ustubici and Irdam (2012), and Larsson and Angman (2014). Pradhan and Khan (2015) analyzed the contribution of remittance earnings to the quality of life in Bangladesh and the results found that remittance earnings have a huge long run impact on the standard of living, as shown by the causality moving along the path from remittances to HDI. Adenutsi (2010) in his work on how inward foreign remittances can bring about human centered improvement in 15 Sub-Saharan African countries found remittances to positively influence human development. Englama (2007) studied the impact of remittances on human development. The results showed demonstrated a positive degree of association existed between remittances and human development and are really a powerful method to improve human advancement in nations with medium pay. Larsson and Angman (2014), using evidence from 99 developing countries investigated the relationship between remittances and development and results indicated that human development in growing nations seem to be positively tied to remittances. This result is in contrast with findings of Okodua (2010). From the findings, the result showed FDI coefficient to be implying that as FDI rises, so would economic development in Nigeria. But foreign direct investment was insignificant in explaining economic development in Nigeria. This suggests that it has not been harnessed properly as a source of finance for economic development. This may be attributed to lack of business friendly policies and infrastructural facilities to attract foreign investors. The results also showed a positive but insignificant relationship between labour force and economic development. This implies that economic development in Nigeria will be on the rise if the labour force is expanded. This statistical insignificance may be as a result of the problems militating against the effectiveness of the Nigerian labour force. These problems may include: lack of appropriate human capital development training.

The analysis also revealed a negative link between domestic savings gap and economic development. This implies that an increase in the domestic savings gap in Nigeria leads to a decrease in economic development in Nigeria. This means that when savings gap is prevalent, the domestic savings needed to finance investment to achieve development is not available, therefore economic development is constrained. Comparatively, the impact of Remittances (REM) is greater than that of Domestic Savings Gap (DSG) in terms of magnitude. Both Remittances and Domestic Savings Gap (DSG) impacted on development in the present year though the impact of remittances was greater. Concerning the causal relationship, the flow was

from remittances to economic development and not otherwise. This means that the causal relationship is unidirectional from remittances to economic development. Also that economic development does not lead to the inflow of remittance in Nigeria but remittances flow in Nigeria causes economic development.

CONCLUSION

The study examined the impact of remittances on economic development. Four variables namely; remittances, labour force, foreign direct investment and domestic savings gap were considered in the study. Foreign direct investment was introduced as a control variable. This research work used annual time series data from 1980 to 2016. Data used in the analysis were derived from secondary sources. The regression analysis technique used in the study is Autoregressive Distributed Lag (ARDL). Unit root test was carried out using Augmented Dickey-Fuller (ADF) and (PP) tests to ascertain their level of stationarity. ARDL cointegration test conducted showed that is cointegration among the variables. The parsimonious result demonstrated that remittances impacted positively on economic development in Nigeria. Again, while Foreign Direct Investment and Labour Force positively influenced economic development in Nigeria, they were not significant. Also Domestic Savings Gap and economic development in Nigeria are negatively tied. The Error Correction Model (ECM) is correctly signed and statistically significant as theoretically expected. It indicated a slow speed of adjustment. The pairwise Granger Causality tests conducted showed a causal relationship between remittances and economic development.

In line with the findings from this study, the positive coefficient of remittances implies that increased levels of remittances inflow into the country will spur economic development. The study therefore recommends that the government should reduce the transaction cost of remitting monies from abroad, for instance, charges from western union, automatically lowers the overall inflow of remittances. Also, the negative coefficients of domestic savings gap of – 0.009 and -0.028 per cent for long-run and short-run results respectively imply that the larger the savings gap, the lower the level of economic development. The study therefore recommends that the government, through the Central Bank of Nigeria (CBN) should increase the savings rate in the country, so that the dependence on foreign assistance to augment domestic savings can be minimized.

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