

**INTERNATIONAL REMITTANCES, FINANCIAL DEEPENING AND ECONOMIC GROWTH
IN NIGERIA
(1985-2016)**

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ABSTRACT

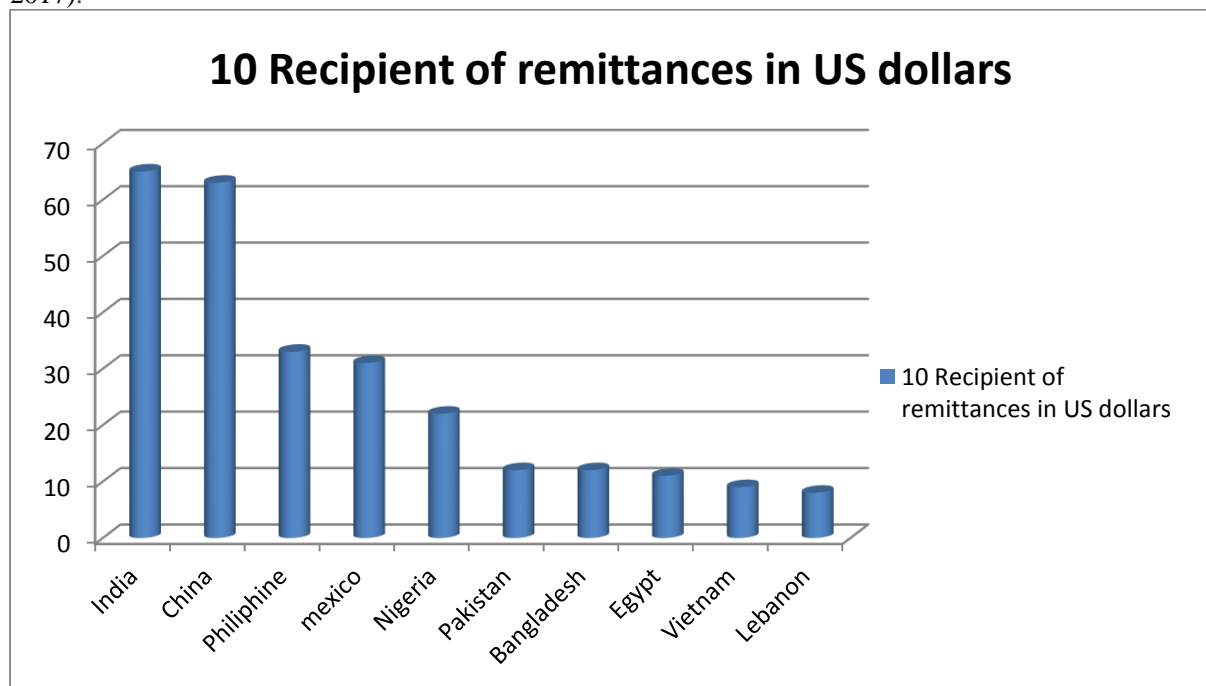
In the recent past, remittances have grown rapidly to form a significant component of foreign inflows to Nigeria. This study therefore sought to establish the impact of International remittances and financial deepening on the economic growth of Nigeria (1985-2016). The paper found a positive and statistically significant relationship between remittances and financial deepening in Nigeria. Moreover, the coefficient on the interaction coefficient between remittances and financial sector development was found to be positive and statistically significant. This result suggests that remittances can complement the allocation of capital by credit markets to private investment activities in Nigeria.

Key words: International remittances, Financial deepening, Economic growth

Background to the study

The correlation that exists between international remittances, financial deepening and Nigeria's economic growth has long been established with facts both at theoretical and empirical levels. However, the coming of new theories of endogenous growth has indeed rekindled interest in the potential role of financial systems in boosting economic growth and development. Officially acknowledged remittance inflows to developing nations overshoots US\$125 billion in 2004, making remittance the second stupendous headspring of development finance after foreign direct investment. International Remittances are unquestionably larger inflows though informal unrecorded channels are also included. International remittances moreover appear to be the least disputed aspect of the overheated discourse on international migration. Both remitting and recipient countries are considering the long-term economic implicative insinuations of these transfers. Officially recorded remittances to developing nations are anticipated to grow by 4.8 percent to \$450 billion for 2017. Ecumenical remittances, which include flows to high-income countries, are projected to grow by 3.9 percent to \$596 billion (World Bank 2017). Between prime remittance recipients, India clings to its top

spot, with remittances anticipated to total \$65 billion this year, tread on the heels by China – USD 63 billion, then Philippines – USD 33 billion, Mexico – USD 31 billion, before Nigeria – USD 22 billion (World Bank 2017).



Source: World Bank Development indicator (2017)

From a paltry 9.1 billion dollars in 1990, remittances have gotten larger more than threefold to outreach US \$40 billion in 2010, up from US\$ 38 billion in 2009 (Ratha et al., 2011). Remittance is in a very fast pace taking a centre stage in world research agenda. This is not outlandish from a recent discovery by financial economists and policy-makers that international remittance is a flexible source of foreign exchange as evidenced from recent global financial catastrophe. World Bank estimates that remittances inflows to developing countries are expected to reach \$468bn in 2014, in spite of the ravaging effect of recent global financial crisis. Remittances is the second largest source of external finance for developing countries after Foreign Direct investment (FDI) and twice the amount of official aid received, both in absolute terms and as a proportion of GDP (Aggarwal, Demirgüç-Kunt and Martinez, 2009). Unlike other sources of external finance, remittances tend to be more stable making them a reliable source of financing for developing countries (Biller, 2007). Remittances are often more effective than development aid since they are sent directly to the recipient thus making them less susceptible to bureaucratic bottlenecks and corruption. Remittance inflows to Africa on average are now roughly equal to official development assistance. The turning point occurred in 2007 when remittances officially exceeded development aid in Africa on average. In North Africa, remittances are now larger than official development aid forming roughly 3.3 per cent of GDP and 0.6 per cent of GDP, respectively. However, in sub-Saharan Africa, remittances are somewhat lower than development aid comprising 2.2 per cent and 3.7 per cent of GDP, respectively. Only foreign direct investments are currently larger than remittances as a per cent of GDP.

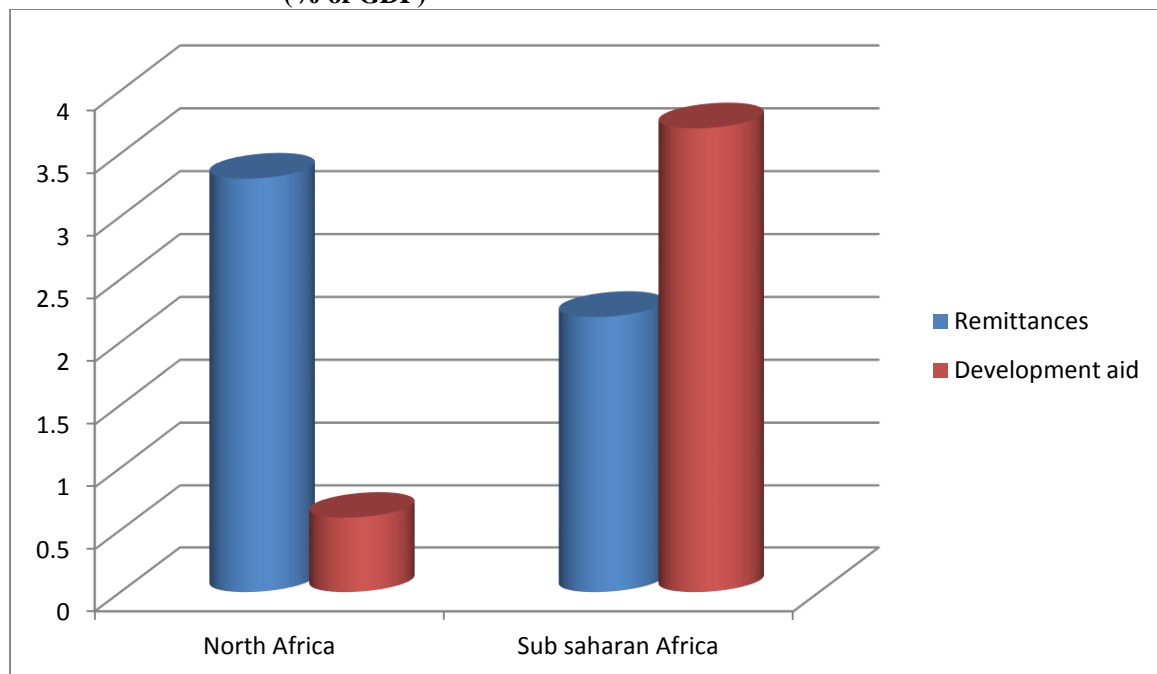
TREND IN INTERNATIONAL REMITTANCES INFLOW TO NIGERIA

The origin of Nigeria migration can be traced to Trans- Sahara migration between Northern Nigeria and North African countries. However, between 1950-1970 most Nigerian migrants went to Europe and Americas, notably United Kingdom and United States to study. Most emigrants in this category somewhat returned home after their studies. Most analysts argued that a major outflow of Nigerians, especially the skilled emigrants to overseas was after the introduction of Structural Adjustment Programme (SAP) by

President Ibrahim Babangida in 1986. As a result of SAP policy, the country’s economy experienced stagnation and increasing migration of both skilled and unskilled labor force.

It is worth noting that International financial inflows to Nigeria have complemented receipt from international trade, especially from goods exported to other economies. Such international financial flows come in form of foreign grant, foreign direct investment, foreign portfolio investment, overseas development assistance, and workers’ remittance. Nigeria in the recent times has witnessed massive migrant outflows of both skilled and unskilled workers to developed economies, a trend believed to be associated with endemic corruption in Nigerian economies that has increased poverty of the people in addition to political crises. Nigeria has also witnessed the movement of professionals to developed economies in search of greener pasture. Historically, according to Beine, Docquier and Rapoport (2008) most international migration took place in Europe till 1950s and since then, the international migration flow has undergone a drastic change, with the developing countries emerging as major sources of international migrations.

Remittance and Foreign development aid contribution to GDP in Africa
 (% of GDP)



Source: World Bank Development indicator (2016)

Statement of the Problem

There has been a growing debate on how the often voluminous migrant remittances are used and to what extent they contribute to the development of the migrant's country of origin (Ratha 2003; Pernia 2006; World Bank 2008; Hanson and Woodruff, 2003; Cox-Edwards and Ureta, 2003; Obaseki 1991; Obadan 2004, Tomori and Adebisi, 2007; Eke and Ubi, 2008; and Russell 1986; 1992 and 1995).

The increasing trend in international remittance inflows is filling the gap of foreign exchange shortages in Nigeria and other developing countries. However, some researchers argued that increase in the international remittance inflows contribute to brain drain in the developing countries. Singabele (2013) quoting Emeagwali (2008) states that brain drain was one of the greatest hindrances to the socio-economic development of African continent. Dovlo (2008), argues that Africans, Nigerians inclusive, will remain at the mercy of poverty, disease, hunger and social unrest, if those who should build the pillar of the continent’s development are abandoning their moral obligations for the so-called greener pastures.

The 2006 World Bank Annual Global Economic Prospects Report shows that developing countries received remittances estimated at \$126. In 2007, estimates indicate that such remittances to developing countries

totalled US\$240 billion out of the global amount of US\$318 billion. This has been shown to play an important role in the ability of migrants families to educate, provide shelter, healthcare as well as setting up of self-sustaining micro-finance schemes, and in poverty alleviation in Nigeria (Adenuga and BalaKeffi, 2005). Though researchers have undertaken to estimate the magnitude and nature of remittances and investigate their impact on the development of countries of origin, it is seen that aside from Egypt in Africa little attention to the issue of remittances responds to the state of economic activity in the host countries (Sayan 2004). From the trend of UNDP, World Development Indicator (2015) as stated above, it is clear that the relationship between growth rate of gross domestic product (GDP) and international remittance inflows did not follow a consistent trend pattern in Nigeria. There are no visible policy actions by Nigerian government regarding efficient application of international remittance inflows. Most previous studies concentrated on the analysis of the remittances as a contributor to brain drain in Nigeria. Yet, as shown by a considerable number studies in the literature, the decision to remit is a complex phenomenon involving other factor than the motivation to help finance current (as opposed to future) consumption spending of family members and relatives back home (see, for example Russell 1986). The rapid growth of remittances in Nigeria raises the question of whether these monies are used towards the development and investment and thus expanding the level of production.

Research Questions

1. What is the impact of remittances on economic growth in Nigeria?
2. What is the impact of financial deepening on economic growth in Nigeria?
3. Has International Remittances enhanced financial deepening in Nigeria?

Objectives of the study

The broad objective of this study is to evaluate how the rapid growth in remittances and financial deepening in the recent past has affected the economy of Nigeria as well as to examine the role played by financial sector development in facilitating the contribution of remittances towards increasing production base in Nigeria. The specific objectives of the study are as follows:

1. Examine the impact of remittances on economic growth in Nigeria.
2. Examine the impact of financial deepening on economic growth in Nigeria.
3. To determine how international remittances have enhanced financial deepening in Nigeria.

Research Hypotheses

The below hypotheses were designed for the study:

- H0₁**: Remittances did not contribute significantly to economic growth in Nigeria.
H0₂: Financial deepening did not contribute significantly to the growth of Nigeria economy.
H0₃: International remittances do not significantly enhance financial deepening in Nigeria.

Conceptual Framework

Economic Growth and International Migrant Remittances

The Macroeconomic Growth Model for International Remittances: Theoretical Perspective The traditional national income identity from the Keynesian perspective is given as:

$$Y = C + I + G \quad (X - M) = C + I + T \quad (X - M) \dots\dots\dots (1)$$

Where Y is national income; C represents consumption expenditure; I denotes investment expenditure; G stands for tax-related government expenditure; (X – M) is net exports measured as exports (X) minus imports (M); and T is total tax revenue which must equate G when the fiscal policy being pursued by the government is balanced. In a typical modern globalized low-income import-dependent developing economy like Ghana where international inward remittances are not directly taxed, a national income model can be modified to

include net international migrant remittances (R) since R is an additional source of income and because it is well-known that $R > 0$ so that, generally, for a labour-exporting country:

$$Y = C + I + T + (X + R - M) \dots\dots\dots (2)$$

$$Y = C_d + C_r + I_d + I_r + T (X + R - M_d - M_r) \dots\dots\dots (3)$$

Where subscripts $_d$ and $_r$ denotes domestic-related and remittance-related respectively.

$$S = I + (X - M) \dots\dots\dots (4)$$

Where S stands for total savings decomposable into d S and r S. Equation 4 is conceivable because it is generally known that:

$$S = Y - T - C = I + (X - M)$$

Clearly, inward international remittances are an essential component of capital inflows, which like export earnings, are a positive determinant of economic growth in a net labour-exporting country. Therefore, international remittance inflows, like all other external capital inflows, act invariably as an important source of finance to all countries and as such are reported in the balance of payments accounts. However, as expected, just as other capital inflows such as foreign aid (AID), foreign direct investment (FDI) and official development assistance (ODA), the macroeconomic impact of international remittances on growth in developing countries has been generally inconclusive.

Theoretical Literature Review

There is a general observation by economists that as per capita income of some countries increases, these countries usually experience more rapid growth in financial assets than in national wealth or national product. Developed countries of Europe, the United States, Japan, etc., whose financial assets have grown faster than their gross national products (GNP) have been cited as good examples of this general observation. Theoretical disagreements do exist about the role of financial deepening and remittances in economic growth. Some economists see the role as minor or negligible while others see it as significant. Robinson (1952), for example, argues that the financial deepening does not spur economic growth; rather the financial system simply responds to development in the real sector. From the literature on financial deepening, including particularly the works of McKinnon (1973) and Shaw (1973) basically for extending formal theoretical analysis of the relationship between growth, remittances and financial deepening to developing countries, two major propositions have emerged. One, that growth of real money balances augurs well for economic growth, and two, that the growth of an economy depends, in part, on the degree of financial development. On this, theory of altruism is reviewed

Theory of Altruism

Altruism is an ethical doctrine which was coined by the French philosopher, Auguste Comte (1852), as a description of the ethical doctrine he favoured. Proponents of altruism hypothesis suggest that individual family members are obligated to help each other and that this explains migrant remittance decisions. The decision to remit is based on the income needs of the relatives of the emigrant worker and the desire to invest. Emigrant workers send money to their relatives in the country of origin in order to improve their welfare and asset strength. There is no expectation of reciprocation on the part of the migrant worker. The migrant worker remits the money because his utility is derived from that of his family members and investment (Chami et al., 2003). In other words, the migrant worker gets satisfaction if the welfare of the family left back home improves, as a result, the motivation for the migrant worker to remit increases when his family is facing economic constraints. Remittances are therefore a form of compensatory transfers which compensate households faced by economic disruptions thus enabling them smoothen their consumption. As such remittances tend to be countercyclical; increasing during periods of economic downturns and decreasing during periods of robust economic growth. Therefore, according to this theory, remittances have a positive relationship with private investment since they are not primarily spent on consumption activities.

Empirical Literature Review

Several empirical studies that have attempted to analyze the impact of remittances and financial development on economic growth in recipient countries so far have largely inconclusive results. In a study of the impacts of remittances and financial deepening;

In one of the very few empirical studies on the relationship between remittances and financial development Demirgüç-Kunt et al. (2010) use municipality-level data for Mexico for 2000, to show that remittances are strongly associated with greater banking breadth (measured by number of branches and deposit accounts per capita) and depth (measured by the volume of deposits and credit to GDP). These effects are found to be statistically significant and robust to the potential endogeneity of remittances.

Agheli and Hadian (2017) investigated this relationship for fifteen selected emerging and Middle Eastern countries, based on Kónya (2006) bootstrapped panel methodology for the period of 1980-2013. Empirical evidence points out that low level of financial development avoid causality to economic growth due to lack of deep financial sector, but there exist both supply leading and demand following evidence for some others. In the same manner, Ahmed, Zaman and Shah (2011) in trying to estimate the impact of remittances, exports, money supply on economic growth for Pakistan, use time series data from 1976-2009 and employed Bounds testing approach. Their result suggests that remittances have both the long and short-run relationship with economic growth of Pakistan.

Similarly, Ibrahim and Shuaibu (2013) examined the finance–growth nexus for Nigeria using the bounds testing approach to cointegration within an ARDL framework proposed by Pesaran et al. and the augmented Granger causality test developed by Toda and Yamamoto for the period 1970–2010.

The variables of interest for the study are ratio of broad money to GDP (MG), which captures financial development, population growth (POP), and gross fixed capital formation (GFCF), which were included as explanatory variables in the empirical specification and growth rate of real gross domestic product (EG) as a measure of economic growth. Empirical evidence reveals that financial development significantly affects economic growth in the short and long run. This result is reinforced by the Toda–Yamamoto causality test, which showed that financial development leads to growth.

On the other hand, Lim and Morshedb (2015) in examining the motivations behind sending remittances, focused on the question whether the observed increased flow of remittances is the result of increased amounts sent by existing migrants or the result of more migration. Using cross-sectional data for three separate years, they found that home income contractions due to exogenous shocks such as natural disasters do not motivate existing migrants residing abroad to send more remittances.

Contrary to other views, Barguelli, Zaiem and Zmami (2013) in a cross-country study divided the countries into two sub – samples; the first group consists of ten countries known as the largest-remittances-recipient countries in GDP percentage, while the second group consists of eighteen countries known as the largest remittances recipient countries in terms of amounts. The results of the panel data analysis were mixed. While they found remittances to negatively affect economic growth among the first group, the relationship was, however, not significant in the second sample.

Meanwhile, Masduzzaman (2014) in Bangladesh, analysed the role of remittance on economic growth using annual time series data from 1981-2013. The study employed the Johansen estimation technique and found a positive relationship between remittance and economic growth in the long run. Exploring further for any causal link between remittance and economic growth, the Granger causality was used. The results showed a uni-directional causality running from growth to remittance. The study, however, failed to show results of the structural break test, making it difficult to utilise the findings in any meaningful way.

In a study in Egypt, Sharaf (2014) employed the ARDL to co-integration to analyse the link between remittance and economic growth. The results show that there exists a long run relationship between economic growth and remittance. In addition, only a one-way causality running from remittance to output was revealed. The study, however, did not capture other control variables which could impact on the relationship. This can affect the model performance and the results reported.

Model Specifications for objective

In order to examine the impact of remittances on Nigeria’s economic growth (objective 1) the functional form is specified as follows:

$$GDD = f(INR, MOS, CPS, FOP, RER, RINT).....(3.1)$$

Where GDP is the gross domestic product, INR = international remittances, M2 = broad money supply, CPS = credit to private sector, FOP = financial openness, RER = real exchange rate and RINT = real interest rate. Putting equation 3.1 in econometric form and in order to capture economic growth we log GDP as in the form below:

$$\ln GDP_t = \beta_0 + \beta_1 INR_t + \beta_2 MOS_t + \beta_3 CPS_t + \beta_4 FOP_t + \beta_5 RER_t + \beta_6 RINT_t + \varepsilon.....(3.2)$$

Where ε_t is the error term, Ln is logarithmic operator and all other variables are as previously defined. Further, the work set out to present an Autoregressive Distributed Lag (ARDL) model of the impact of remittances on economic growth in Nigeria. The ARDL model is stated as:

$$\ln GDP_t = \alpha_0 + \sum_{i=1}^p \gamma_i \ln GDP_{t-i} + \sum_{i=0}^p \beta_i INR_{t-i} + \sum_{i=0}^p \beta_i MOS_{t-i} + \sum_{i=0}^p \beta_i CPS_{t-i} + \sum_{i=0}^p \beta_i FOP_{t-i} + \sum_{i=0}^p \beta_i RER_{t-i} + \sum_{i=0}^p \beta_i RINT_{t-i} + \mu_{it}.....(3.3)$$

In order to obtain the cointegrating equation, equation 3.3 is transformed into 3.4 as follows:

$$\ln \Delta GDP_t = \alpha_0 + \sum_{i=1}^p \gamma_i \ln \Delta GDP_{t-i} + \sum_{i=0}^p \beta_i \Delta INR_{t-i} + \sum_{i=0}^p \beta_i \Delta MOS_{t-i} + \sum_{i=0}^p \beta_i \Delta CPS_{t-i} + \sum_{i=0}^p \beta_i \Delta FOP_{t-i} + \sum_{i=0}^p \beta_i \Delta RER_{t-i} + \sum_{i=0}^p \beta_i \Delta RINT_{t-i} + \mu_{it}.....(3.4)$$

Where $ECT_t = Y_t - \alpha_0 - \sum_{i=1}^p \gamma_i \Delta Y_{t-i} - \sum_{i=0}^p \beta_i \Delta X_{t-i}$ and $\phi = 1 - \sum_{i=1}^p \gamma_i \Delta Y_{t-i}.....(3.5)$

The Bound test procedure used equations 3.4 and 3.5 into 3.6 as:
Then we test the existence of level relationship as $\rho = 0$ and $\delta_1 = \delta_2 = \dots = \delta_k = 0$
where Δ = difference operator, μ = white noise error term.

RESULTS AND DISCUSSION

Pre-Estimation Test Results

Variables	Level	1 st diff	2 nd diff	Level of integration	Prob.	Test statistics @5%	Lag
GDP	-3.3347	-5929	-----	1(1)	0.0000	-3.4483	4
MOS	1.6010	-2.1746	-11.674	1(2)	0.0000	-3.4470	4
IRM	-2.2717	-2.5390	-6.6416	1(2)	0.0000	-3.4483	4
TRD	-2.1969	-3.7274	-5.5333	1(2)	0.0001	-3.4497	4
CPS	1.7936	-2.1890	-6.6229	1(2)	0.0000	-3.4497	4
RER	-2.680	-4.5444	-----	1(1)	0.0020	-3.4483	4
RINT	-2.6246	-4.1516	-----	1(1)	0.0071	-3.4497	4

ADF Unit Root Test

A unit root test (ADF) was conducted to ascertain whether the variables in the model are stationary and to determine the order of integration of the model variables. This is necessary as it helps to avoid spurious regression results. The summary of Unit Root Tests (ADF) results using E-views software is detailed in the table below:

ADF Unit Root Test

SOURCE: E-VIEWS STATISTICS

Hypotheses:

H0: The variables have unit roots (Not Stationary)

H1: The variables have no unit roots (Stationary)

Decision Rule

Reject Ho if unit root of ADF calculated value is greater than the critical value in absolute terms.

In the table above the ADF statistics for each variable at level form were less than the critical values at 1%, 5% and 10% in absolute term; therefore we accept Ho and conclude that the variables have no unit roots in them and therefore we difference again.

At the first difference GDP, RER and RINT were stationary and are thus integrated of order 1 (1(1)). Integrating further, MOS, IRM, FOB, and CPS were stationary at the second difference (1(2)). Since the variables are integrated of the same order we therefore conclude that there is evidence of co-integration

Interpretation of Result

The coefficient of GDP (β_0) is -0.337. This indicates that everything being equal, a change in all the variables will decrease GDP to 0.337.

The coefficient of IRN (β_1) is 2.880. This indicates that there is a direct and positive relationship between the independent variable and the dependent variable and it is statistically significant at 5% level given that the t-statistics 0.522 is less than the t-table at 5% (125 d/f) which is 1.960. We therefore reject H0 and accept H1 and conclude that international remittances did not impact on economic growth in Nigeria.

The coefficient of MO2 (β_2) is (-8.507). This indicates that there is an indirect relationship between the independent variable and the dependent variable and it is statistically significant at 5% level given that the t-statistics (-0.186) is less than the t-table at 5% (125 d/f) which is 1.960. We therefore reject H0 and accept H1 and conclude that money supply percentage of GDP did not contribute to the growth of GDP in Nigeria.

The coefficient of CPS (β_3) is 7.390. This indicates that there is positive relationship between the independent variable and the dependent variable and it statistically significant at 5% level given that the t-statistics 0.177 is less than the t-table at 5% (125 d/f) which is 1.960. We therefore reject H0 and accept H1 and conclude that CPS did not contribute to the growth of GDP in Nigeria.

The coefficient of TRD (β_4) is (-9065.093). This indicates that there is a negative relationship between the independent variable and the dependent variable and it statistically significant at 5% level given that the t-statistics (-1.812) is less than the t-table at 5% (125 d/f) which is 1.960. We therefore reject H0 and accept H1 and conclude that TRD did not contribute to the growth of GDP in Nigeria.

The coefficient of RER (β_5) is 415.72. This indicates that there is a positive relationship between the independent variable and the dependent variable and it statistically significant at 5% level given that the t-statistics 1.357 is less than the t-table at 5% (125 d/f) which is 1.960. We therefore reject H0 and accept H1 and conclude that RER did not contribute to the growth of GDP in Nigeria.

The coefficient of RINT (β_6) is (-1145.166). This indicates that there is a negative relationship between the independent variable and the dependent variable and it statistically significant at 5% level given that the t-statistics (-1.085) is less than the t-table at 5% (125 d/f) which is 1.960. We therefore reject H0 and accept H1 and conclude that RINT did not contribute to the growth of GDP in Nigeria.

The coefficient of determination (R^2) is 0.97. This indicates that the independent variables explained 97% of the total variation in the dependent variable while the remaining 3% is unexplained due to error term (E). The value of Durbin-Watson (DW) is 2.00. This shows that there is no presence of auto-correlation among the explanatory variables.

Implication of Results

The regression results which indicate that the coefficient of GDP, MOS, IRM, CPS, TRD, RINT and RER have positive and statistically significant effect on economic growth in Nigeria. The results of Error Correction Model (ECM) has negative sign and the significance of the Error Correction term (EC) indicated that there exist short run relationship between financial deepening, remittances and economic growth and it takes more years to attain equilibrium. Hence, this study examines the short-run dynamics between the variables in the co integrating equation by estimating the error correction model. It is observed from the result that the coefficient of the error correction term (ECM) has the expected negative sign and it lies between zero and one and statistically significant at 5% level. The significance of the error correction mechanism supports co integration and suggests that there exists long run steady-state equilibrium between the level of GDP and the explanatory variables. The ECM indicates a feedback of approximately 65% of the previous year's disequilibrium from long run elasticity of the explanatory variables. That is, the coefficient of the error correction term measures the speed at which the level of GDP adjusts to changes in the explanatory variables in an effort to achieve long run static equilibrium. It can be said therefore that the speed of adjustment is above average and nominal.

The adjusted R^2 is 50 percent. By implication, this shows that 50 percent of the variations in GDP growth can be explained by the variables taken together. The remaining 50 percent variations can be attributed to other forces outside the model. This suggests that financial deepening and remittances have equal influence on the economic growth. Therefore, the null hypothesis that financial deepening and remittances have no significant effect on economic growth in Nigeria is rejected. This implies that financial deepening have significant effect on economic growth in Nigeria. These results also show a goodness of fit of the regression.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The main findings are itemized below as follows:

- i. The level of financial development in Nigeria bears a significant relationship with foreign remittance inflows both in the short and long runs and so desires a closer watch for improved performance.

- ii. Foreign remittance inflows proved to be a significant contributor to broad money supply and by extension to financial development in Nigeria at both 1% and 5% levels of significance in the short run. In the long run foreign remittance inflows and the lagged value of M2/GDP, taken as a variable was found to be positively significant.
- iii. Foreign remittance inflows and Gross Domestic Product per capita proved to be significant contributors to credit to the private and by extension to financial development in Nigeria at both 1% and 5% levels of significance in the short run. In the long run foreign remittance inflows and the lagged value of CPS/GDP, taken as a variable was found to be positively significant.
- iv. Foreign remittance inflows and Gross Domestic Product per capita proved to be significant contributors to financial savings (Deposits) and by extension to financial development in Nigeria at both 1% and 5% levels of significance in the short run. In the long run foreign remittance inflows and the lagged value of DEP/GDP taken as a variable was found to be positively significant. • foreign remittance inflows and Gross domestic product per capita and proved to have significant positive relationship with exchange rate and by extension to financial development in Nigeria at both 1% and 5% levels of significance in the short run. In the long run foreign remittance inflows had a positive but not significant relationship with exchange rate, while the lagged value of exchange rate taken as an explanatory variable was found to be positively significant.

Recommendations

The study shows positive effect of foreign remittance inflows and financial deepening in the development of Nigeria economy. To make their impact more effective in Nigeria, the following recommendations should be considered:

1. Policy directives at making savings attractive in the country which will unarguably raise the proportion of banked remittances should be encouraged. One way of doing this is to arrange a particular interest rate for remittance receivers, by promising them relatively high returns if they will convert their hard currency to domestic currency and deposit a large proportion of it in banks.
2. There is need to close the gap or reduce the gap between the official and unofficial exchange rates, to allow the banks retain more of the remittance inflows.
3. Lastly, some deposit incentives and promotions can be embarked upon by deposit money banks. Such incentives can be enforced by the central bank of Nigeria.

Conclusion

Financial deepening and remittances have an essential role to play in Nigeria economy. Developing the financial sector means improving financial structures to ensure efficient delivery of financial services to the private sector to invest so as to attract more private sector participation thereby creating jobs and improving the quality of life of the people. Policy makers should design the policies which will promote the financial and capital markets through remittances, remove the obstacles that impede their growth and strengthen the healthy and competitiveness of the banking system. They must introduce measures that increase accountability and autonomy of financial institutions as well as restructuring and recapitalization of financial institutions.

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Post-Estimation Test Results

ARDL Co integration Test

Date: 05/11/19 Time: 17:27
 Sample (adjusted): 1986Q4 2016Q4
 Included observations: 121 after adjustments
 Trend assumption: Linear deterministic trend (restricted)
 Series: D(GDP,2) D(M2,2) D(IRM,2) D(TRD,2) D(CPS,2) D(RER,1) D(RINT,1)
 Lags interval (in first differences): 1 to 4

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.499024	360.6773	150.5585	0.0000
At most 1 *	0.459036	277.0423	117.7082	0.0000
At most 2 *	0.432340	202.6995	88.80380	0.0000
At most 3 *	0.366456	134.1854	63.87610	0.0000
At most 4 *	0.249795	78.95792	42.91525	0.0000
At most 5 *	0.197339	44.18144	25.87211	0.0001
At most 6 *	0.135249	17.58294	12.51798	0.0065

Trace test indicates 7 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.499024	83.63495	50.59985	0.0000
At most 1 *	0.459036	74.34281	44.49720	0.0000
At most 2 *	0.432340	68.51408	38.33101	0.0000
At most 3 *	0.366456	55.22751	32.11832	0.0000
At most 4 *	0.249795	34.77648	25.82321	0.0025
At most 5 *	0.197339	26.59849	19.38704	0.0038
At most 6 *	0.135249	17.58294	12.51798	0.0065

Max-eigenvalue test indicates 7 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

The result shows that we have 7 co integrating equations which is shown where the trace statistics is significantly greater than the critical value at 5% level. This implies that the null hypothesis is rejected.

ARDL Bound Test Approach

ARDL Long Run Form and Bounds Test
 Dependent Variable: D(GDP)
 Selected Model: ARDL(1, 0, 0, 0, 1, 1, 1)
 Case 2: Restricted Constant and No Trend
 Date: 05/11/19 Time: 21:42
 Sample: 1985Q1 2016Q4
 Included observations: 127

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	3.462763	10%	1.99	2.94
k	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99
Finite Sample: n=80				
Actual Sample Size	127	10%	2.088	3.103
		5%	2.431	3.518
		1%	3.173	4.485

Source: Eviews computation

Interpretation

Criteria: If F-value is below the I(0) bound, you fail to reject the null hypothesis but if the F-value is higher than the I(1) bound, you reject the hypothesis of no co integration.

Since the F-value is 3.462 and is higher than the I(1) bound 3.28 at 5%, we reject the hypothesis of no co integration.

Pairwise Granger causality test

Pairwise Granger Causality Tests
 Date: 05/11/19 Time: 17:31
 Sample: 1985Q1 2016Q4
 Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
M2 does not Granger Cause GDP GDP does not Granger Cause M2	126	0.55933 0.68480	0.5731 0.5061
IRM does not Granger Cause GDP GDP does not Granger Cause IRM	126	0.69368 0.91917	0.5017 0.4016
TRD does not Granger Cause GDP GDP does not Granger Cause TRD	126	2.01128 1.06513	0.1383 0.3479
CPS does not Granger Cause GDP GDP does not Granger Cause CPS	126	0.43628 0.58250	0.6475 0.5601
RER does not Granger Cause GDP GDP does not Granger Cause RER	126	0.27690 0.27134	0.7586 0.7628
RINT does not Granger Cause GDP GDP does not Granger Cause RINT	126	1.20267 0.24184	0.3040 0.7856
IRM does not Granger Cause M2 M2 does not Granger Cause IRM	126	3.91414 0.00899	0.0225 0.9910
TRD does not Granger Cause M2 M2 does not Granger Cause TRD	126	2.30974 1.07068	0.1036 0.3460
CPS does not Granger Cause M2 M2 does not Granger Cause CPS	126	2.10817 13.7911	0.1259 4.E-06
RER does not Granger Cause M2 M2 does not Granger Cause RER	126	0.21790 0.09435	0.8045 0.9100
RINT does not Granger Cause M2 M2 does not Granger Cause RINT	126	0.92991 1.03832	0.3974 0.3572
TRD does not Granger Cause IRM IRM does not Granger Cause TRD	126	2.74552 0.36263	0.0682 0.6966
CPS does not Granger Cause IRM IRM does not Granger Cause CPS	126	0.00792 5.15890	0.9921 0.0071
RER does not Granger Cause IRM IRM does not Granger Cause RER	126	0.28372 0.02801	0.7535 0.9724
RINT does not Granger Cause IRM IRM does not Granger Cause RINT	126	1.06822 0.84210	0.3468 0.4333
CPS does not Granger Cause TRD TRD does not Granger Cause CPS	126	0.63543 3.47811	0.5315 0.0340
RER does not Granger Cause TRD TRD does not Granger Cause RER	126	1.19192 0.06862	0.3072 0.9337
RINT does not Granger Cause TRD TRD does not Granger Cause RINT	126	0.23427 3.24057	0.7915 0.0426
RER does not Granger Cause CPS CPS does not Granger Cause RER	126	0.11760 0.05171	0.8892 0.9496
RINT does not Granger Cause CPS CPS does not Granger Cause RINT	126	2.32452 1.32170	0.1022 0.2705
RINT does not Granger Cause RER RER does not Granger Cause RINT	126	0.88167 0.27729	0.4167 0.7583

The result shows there is a directional causality from M2, RER, IRM, CPS, RINT, TRD to GDP. No other direction is found in any other variables. The results from the model support the Wagner’s hypothesis. The Wagner’s hypothesis explains that increase in GDP causes growth in the financial deepening.

Evaluation of Research Hypotheses

Dependent Variable: GDP(2)
Method: ARDL
Date: 10/28/18 Time: 00:45
Sample (adjusted): 1985Q2 2016Q2
Included observations: 125 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Hannan-Quinn criterion (HQ)
Dynamic regressors (4 lags, partial automatic): @FL(CPS(2),(-1))
@FL(IRM(2),(-1)) @FL(M02(2),(-1)) @FL(RER(1),(-1)) @FL(TRD(2),(-1))
@FL(RINT(1),(-1))
Fixed regressors: CPS IRM M02 RER TRD RINT C
Number of models evaluated: 4
Selected Model: ARDL(3, 0, 0, 0, 0, 0)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP(1)	1.402371	0.091477	15.33032	0.0000
GDP	-0.337197	0.156774	-2.150853	0.0336
GDP(-1)	-0.172459	0.093180	-1.850828	0.0668
CPS	7.390930	41.69967	0.177242	0.8596
IRM	2.880314	5.511344	0.522616	0.6022
M02	-8.507520	45.68263	-0.186231	0.8526
RER	415.7288	306.3445	1.357063	0.1774
TRD	-9065.093	5001.816	-1.812360	0.0725
RINT	-1145.166	1054.574	-1.085904	0.2798
C	462147.7	227019.6	2.035717	0.0441

R-squared	0.971881	Mean dependent var	751814.6
Adjusted R-squared	0.969680	S.D. dependent var	1043802.
S.E. of regression	181753.1	Akaike info criterion	27.13530
Sum squared resid	3.80E+12	Schwarz criterion	27.36157
Log likelihood	-1685.957	Hannan-Quinn criter.	27.22722
F-statistic	441.6359	Durbin-Watson stat	2.009322
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.