

Effect of Remittances on Financial Sector Development in Nigeria

Olatomide Waheed Olowa and Omowumi Ayodele Olowa

Department of Agricultural Education, Federal College of Education (Technical) Akoka, Nigeria
owolowa@gmail.com

Abstract: Migrants' remittances to developing countries have become the second largest type of flows after foreign direct investment. This paper uses data on remittance flows to Nigeria during 1977-2010 to study the link between remittances and financial sector development. In particular, we examine the association between remittances and the aggregate level of deposits and credit intermediated by the local banking sector by employing both the ordinary least square estimation (OLS) technique as well as the Generalized Method of Moments (GMM) estimator. The results generally indicate that remittances positively and significantly influence financial development in Nigeria, with the exception of the cps/gdp measure of FINDEV in the GMM estimation where the coefficient is insignificant. The implication of this is that remittances augment liquid liabilities more than loanable funds in Nigeria, as remittances are likely used more for consumption purposes than for productive ventures in the country.

[Olatomide Waheed Olowa and Omowumi Ayodele Olowa. **Effect of Remittances on Financial Sector Development in Nigeria.** *Academ Arena* 2015;7(1):15-23]. (ISSN 1553-992X).
<http://www.sciencepub.net/academia>. 3

Key words: remittances, financial development, financial institutions, Nigeria

1.0. Introduction

Remittances, funds received from migrants working abroad, to developing countries have grown dramatically in recent years from U.S. \$3.3 billion in 1975 to close to U.S. \$289.4 billion in 2007 (World Bank, 2009). They have become the second largest source of external finance for developing countries after foreign direct investment (FDI) and represent about twice the amount of official aid received, both in absolute terms and as a proportion of GDP.

Relative to private capital flows, remittances tend to be stable and increase during periods of economic downturns and natural disasters (Yang, 2008a). Furthermore, while a surge in inflows, including aid flows, can erode a country's competitiveness, remittances do not seem to have this adverse effect (Rajan and Subramanian, 2005). They have become the second largest source of external finance for developing countries after foreign direct investment (FDI) and represent about twice the amount of official aid received, both in absolute terms and as a proportion of GDP. (Beck, Levine and Loayza, 2000a,b; and Beck, Demirguc-Kunt, and Levine, 2007). Furthermore, some argue that banking remittance recipients will help multiply the development impact of remittance flows (Hinojosa-Ojeda, 2003; Terry and Wilson, 2005, and World Bank, 2006).

In this paper, we use balance of payments data on remittance flows received by Nigeria over the period 1975-2010 to study the link between workers' remittances and financial sector development. Specifically, we examine whether remittances contribute to the development of the financial sector

by increasing the aggregate level of deposits and/or the amount of credit extended by the local banking sector to the private sector. We focus on these measures for two reasons. First, given that banks play a leading role in the supply of external finance in most developing countries, banking sector development in these countries is of key importance.

Second, since remittances are small flows going primarily to poor individuals, we expect a direct link with capital market development to be less probable. Whether and how remittances might affect financial, particularly banking, development is a priori unclear. The notion that remittances can lead to banking sector development in developing countries is based on the concept that money transferred through financial institutions can pave the way for recipients to demand and gain access to other financial products and services, which they might not have otherwise (Orozco and Fedewa, 2007). At the same time, providing remittance transfer services allows banks to "get to know" and reach out to unbanked recipients or recipients with limited financial intermediation. For example, remittances might have a positive impact on credit market development if banks become more willing to extend credit to remittance recipients because the transfers they receive from abroad are perceived to be significant and stable (i.e., serve as collateral, at least informally). However, even if bank lending to remittance recipients does not materialize, overall credit in the economy might increase if banks' loanable funds surge as a result of deposits linked to remittance flows.

Furthermore, because remittances are typically lumpy, recipients might have a need for financial

products that allow for the safe storage of these funds, even if most of these funds are not received through banks. In the case of households that receive their remittances through banks, the potential to learn about and demand other bank products is even larger. On the other hand, because remittances can help relax individuals' financing constraints, they might lead to a lower demand for credit and have a dampening effect on credit market development. Also, a rise in remittances might not translate itself into an increase in credit to the private sector if these flows are instead channeled to finance the government or if banks are reluctant to lend and prefer to hold liquid assets. Finally, remittances might not increase bank deposits if they are immediately consumed or if remittance recipients distrust financial institutions and prefer other ways to save these funds.

The relation between remittances and the financial sector has been examined in the studies of Giuliano and Ruiz-Arranz (2009), Aggarwal et al. (2006), Orozco and Fedewa (2005), Munduca (2009), Gupta et al. (2009) among others. Giuliano and Ruiz-Arranz (2009) conclude that remittances can promote economic growth in the developing economies by enhancing financial sector development, particularly in financially less developed economies. Aggarwal et al. (2006) find that migrant remittances lead to financial sector development in the developing economies by leading to increases in the aggregate volume of deposits and credit intermediated by the banking sector. Examining the effect of remittances on poverty and financial development in Sub-Saharan Africa, Gupta et al. (2009) find that remittances have a positive effect on both poverty and financial development. In a case study of nine financial institutions in South America, Orozco and Fedewa (2005) show that financial institutions' distribution of transfers, and financial services provided depend on the resources of the institution and its existing presence in the community. Munduca (2009) using a panel dataset from Latin America, shows that remittances can further promote economic growth in economies with well-developed financial markets. Modeling the entry of banks into the remittance market, Alberola and Salvado (2006) observe that banks as opposed to smaller money transmitter operators have the ability to offer lower remittance transmission fees thereby increasing the volume of remittances into recipient countries. Freund and Spatafora (2008) on the other hand, argue that formal transmission channels such as banks are more expensive compared to informal transmission channels. In a panel dataset covering 104 countries, they show that remittances are transmitted through formal channels in countries which have well developed financial systems. Acosta et al. (2009)

investigating the effects of remittances on the exchange rate on 109 developing and transition economies find that upward pressure on exchange rates brought about by the increase in remittances, are lower in countries with well-developed financial markets. While these studies are indirectly focused on countries whose financial sectors are developed, there are no explicit studies on Developing countries whose financial sector are still trying to find their feet.

An important complication in empirically studying the impact of remittances on financial development is the potential for endogeneity biases as a result of measurement error, reverse causation, and omitted variables. Officially recorded remittances are known to be measured with error. In particular, balance of payments data on remittances tend to record more accurately remittances sent via banks and in some cases ignore those sent via non-bank institutions (since these are typically not regulated) and informal channels such as relatives, friends, and *Hawala* type operators. Estimates of unrecorded remittances range from 50 to 250 percent of official statistics on remittances (Freund and Spatafora, 2008). Another problem associated with aggregate remittance data is the fact that the concepts and methodologies used are not applied uniformly across all countries. Data sourcing and compilation is better in some countries than others (Reinke, 2007).

Reverse causality is also a concern when examining the link between remittances and financial development, since greater financial development might lead to larger measured remittances either because financial development enables remittance flows or because a larger percentage of remittances are measured when those remittances are channeled through formal financial institutions. In addition, financial development might lower the cost of transmitting remittances, leading to an increase in such flows. Finally, omitted factors can explain both the evolution of remittances and of financial development, also leading to biases in the estimated impact of remittances on financial development.

The rest of this paper is structured as follows. Section 2 examines Nigeria's migration and remittances characteristics. Section 3 describes the data and estimation methodology. Section 4 presents the empirical results, and conclusions are summarised in Section 5.

Nigeria: International Migration and Remittance Characteristics.

The International Organisation for Migration reckons that Africa has lost one third of its skilled manpower and is continuing to lose at least 20,000 medical doctors, academics, engineers and other professionals leaving the continent yearly since 1990. Current estimates put the number highly skilled and

qualified Africans in the diaspora at 300,000 with about ten percent of this having PhDs. General economic downturn, political instability, discrimination and lack of freedom, poor state of educational and social infrastructure and poor working conditions have been identified as some of the factors responsible for movement of skilled manpower in search of “greener pastures” in overseas countries. Even though there are perceived negative sides of the brain drain in Africa, it is speculated that remittance from skilled migrants could boost economic welfare of the relatives of migrants back home and support home country balance of payments position. The Organisation for Economic Co-operation and Development in its publication; “World Migration Outlook 2006” found out that remittances to developing countries constitute an important source of capital accounting for about 2.4% of the cumulated GDP, 8.2% of the cumulated exports and 10.4% of the cumulated investments. Nigeria plays a dual role as a source as well as destination for migration in the subregion. As a source, because of international migration of her citizens to Europe, United States of America, South Africa and Asia. As a destination, most of the country’s West African neighbours in war and conflict situations find Nigeria a safe haven especially in the era of oil/economic boom in the 1970s. However, from the mid 1980s, the economic

downturn, political instability, corruption and poor management of her resources occasioned by military dictatorships made Nigeria a rich source of vibrant young male and female migrants. Migration out of Nigeria is not only restricted to skilled workforce as even young unskilled citizens have left the shores of the country to do menial jobs like washing of corpse, plates in hotels, security guards, taxi drivers and road cleaners. Bah (2003) reveals that 50 to 80 percent of Nigerian households have a migrant member. This figure may even be slightly higher for some parts of Eastern and Western Nigeria where it has almost become a tradition to have an international migrant member in each household. Such migrant member of the family is seen as family pride and foots most family bills while also in most cases investing in property and other businesses. Though the figures of actual Nigeria population abroad is inconsistent (United Nations - 1.1 million; Hernandez, Coss and Bun - 5 million; U.S census estimates - 134,940 Nigerians in US), the estimates by Orozco (2007) using global migrant data-base is akin to that of Hernandez, Coss and Bun and puts the Nigerian migrant population at over 5 million. This was worked out using an average of 3.9 percent of migrant population for countries with population of between 100–120 million people. The estimates are shown below:

Table 1: Nigerians Abroad

s/n	Region of the world	3.9% of Nigerian population
1	East Asia and Pacific	37,879
2	Europe and Central Asia	954,155
3	Latin America and Caribbean	10,951
4	Middle East and North Africa	145,703
5	North America	763,401
6	South Asia	61,777
7	Sub - Saharan Africa	3,197,540
Grand Total		5,171,406

Source: Orozco (2007); estimates from Global Migrant Origin Database

The United States, United Kingdom and Southern Africa (including South Africa, Botswana, Namibia, etc) have the highest number of established Nigerian professionals including second and third generational citizens of these countries who still maintain close familial ties with relations back home. Remittances, in term of average growth rate, as a ratio of real GDP and measured per migrant to the developing world has shown remarkable improvements especially in the past decade.

The annual rate of growth of workers’ remittances to lowincome countries have averaged 12.3 percent and 9.9 for low and middle income countries, respectively since 1990 (Sayan 2006 as quoted by

Apaa - Okello and Anguyo, 2006). The rapid growth in remittance inflows to developing countries has resulted in remittance ratio to real GDP at 1.9 percent for lowincome countries, 1.4 percent for middle income countries. (Apaa Okello and Anguyo 2006). In 2006, worldwide remittance flows to developing countries was put at about 300 billion US dollars with about 40 billion being remitted to Africa. The annual average remittance to Africa per migrant for that year was put at about US\$1,200 and a country - by country average of 5 percent of GDP and 27 percent of exports (IFAD, 2006). In the literature, there is a bidirectional relationship between remittances and financial sector development in most the developing world. While

functional and developed financial sector is characterized by low transaction costs and efficient allocation of resources which could be an incentive for remittance funds to be channeled to high yielding investment outlets, remittances could also serve as compensation during adverse economic conditions as it cushions recipients against its effects and loosens credit constraints in underdeveloped financial markets. The World Economic Outlook (2005) buttresses this point when it posits that remittances could give rise to remittances-driven economic activity especially during periods of disaster and general economic downturn. During such periods, remitters tend to remit more to cushion the effect of such phenomena on relatives left at home and if such funds are channeled through the financial system, it could stimulate economic activity. Reena (2006) in a study on the impact of remittances through increasing aggregate level of deposits or the amount of credit to the private sector on the development of the financial sector in developing countries found that remittances actually contribute to financial sector development.

Nigeria receives more than 50 per cent of the total remittances to sub-Saharan Africa and ranks sixth on the table of top remittance recipients in all developing countries in 2008 with receipts in excess of ten billion dollars. Nigeria was among the largest five recipients of remittances Globally in 2010. Others in the category are India (US \$54,035 million), China (US \$53,038 million), the Philippines (US \$21,423 million) and Bangladesh (US\$10,852) (World Development Indicators 2012). It has been reported that In 2006, workers remittance to Nigeria was over 4 billion US dollars which accounts for about 2.8% of the nations GDP (World Bank, 2006). This figure is speculated to have risen to about 5 billion US dollars and about 4.7 percent of GDP in 2007 (IFAD, 2007). In a survey by Orozco in 2007, commercial bank executives report that in 2006, the recorded flows were estimated at 4.2 billion US dollars representing 700,000 transactions and a 30 percent increase from the figures of 2005. The study identified the four major sources of remittances as United States, United Kingdom, Italy and Western European countries.

Table2: Workers Remittances to Nigeria, 1997 - 2005 (US\$ millions)

Year	1995	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Remittances in US dollars	804	1871	1544	1638	1705	1303	1209	1063	2273	3064	3.3	9221	9980	9584	10045

Source: International Monetary Fund 2005 as quoted by HernandezCoss, 2007 and Bun, Orozco, 2007 and World Development Indicators (2012).

The table above shows a significant increase amounted to about 39 percent increase in remittances to Nigeria for less than a decade (1997/2005) even though the growth path has not been consistent, it shows that on the whole, remittances to Nigeria has been on the upward trend.

3.0. Methodology

3.1 Model Specification

To ascertain the relationship between remittances and financial development in Nigeria, we posit a bivariate model of the following form:

$$LOGFINDEV = \sum_{j=1}^n \delta_j + \sum_{j=1}^n \varphi_j (LOGREMY) + \varepsilon_t \quad (1)$$

Where LOGFINDEV is the log of financial development while LOGREMY stands for the log of remittances, δ_j and φ_j are the parameters to be

estimated, and ε_t is the error term. Financial development here refers to either the ratio of money supply (M2) to GDP (FINDEV) or the ratio of credit to the private sector to GDP (PRIVY). Moreover, we determine the robustness of the independent partial correlation between remittances and financial development in Nigeria using the following model:

$$LOGFINDEV = \sum_{j=1}^n \alpha_j X_t + \sum_{j=1}^n \beta_j (LOGREMY) + \mu_t \quad (2)$$

Where LOGFINDEV is the log of financial development; X is a set of control variables; α is a vector of coefficients on the variables in X; β is the estimated coefficient of LOGREMY; and μ is an error term. We expect "a priori", $\beta > 0$.

Finally, using GMM, we specify:

$$LOGFINDEV = \Phi_j + \lambda_1 (LOGREMY) + \lambda_2 (LOGGDP) + \lambda_3 (LOGOPEN) + \lambda_4 (LOGINF) + \lambda_5 (EXRATE) + \lambda_6 (FINLIB) + \lambda_7 (LOGREMY) + \varepsilon_t \quad (3)$$

Where LOGFINDEV is the log of financial development, LOGREMY is the log of remittances, LOGGDP is the log of GDP, LOGOPEN is the log of the degree of openness, EXRATE is the dummy for dual exchange rates regimes, FINLIB is the dummy representing Financial Liberalization, LOGREMY1 is the log of one lag value of remittances, Φ_j and λ_1 are the parameters to be estimated and ε_t is the error term.

3.2 Model Estimation Technique

In this study, we employ time series econometric techniques to ascertain the nexus between remittances and financial development in Nigeria from 1997 to 2010. Specifically, we use ordinary least square estimation (OLS) technique to establish the relationship and further carry out key diagnostic tests for the model to ascertain the adequacy of model 2.

In addition to the above and to assuage the anxiety over reverse causality, we employ the Generalized Method of Moments (GMM) estimator which is a robust estimator to the extent that a lot of popular estimators in econometrics are regarded as special cases of GMM. The OLS, for instance is regarded as a GMM estimator in which the independent variables are individually not correlated with the residual. For the GMM, we write the moment condition as an orthogonally condition between the parameters and a set of instrumental variables. To ensure that the GMM estimator is identified, we have the same number of instrumental variables as the parameters to be estimated. Thus, we use economic conditions such as foreign direct investment (FDI), financial liberalization, gross domestic product (GDP) and the lagged values of both remittances and financial development (remy1 and privy1) as instruments for the remittances flows received by Nigeria.

3.3 Indicators of Remittances and Financial Development

Two indicators of financial development are employed in this study. The first indicator, FINDEPTH is the ratio of money supply (M2) to GDP. Popularly referred to as financial depth, it measures the size of financial intermediaries as well as the level of financial intermediation. The second indicator is the ratio of credit to private sector to GDP (PRIVY). The rationale behind the choice of PRIVY is that financial systems that funnel more loanable funds to the private sector are more involved in performing the five functions of the financial system than financial systems that simply channel credit to the public sector. Moreover, Remittances (REMY) are current private transfers from migrant workers resident in the host country for more than a year, irrespective

of their immigration status, to recipients in their country of origin. Migrants' transfers are defined as the net worth of migrants who are expected to remain in the host country for more than one year that is transferred from one country to another at the time of migration. Compensation of employees is the income of migrants who have lived in the host country for less than a year. All the data used in this study are in current U.S. dollars and were obtained from the World Bank Development Indicators 2012.

3.4 Data/Variables

In equation 2 above, the matrix X refers to a set of variables that extant literature has established as drivers of financial development. In this study we use country size (LOGGDP; the log of GDP in constant dollars), the degree of openness (LOGOPEN; The ratio of exports plus imports to GDP (Giuliano and Ruiz-Arranz 2009, Gupta et al. 2009), the ratio of foreign direct investment to GDP (Gupta et al. 2009), and a dummy variable for the exchange rate regime (Gupta et al. 2009), are used to capture the degree of openness of an economy but here the log of the ratio of trade to GDP is used), exchange rate (EXRATE; a dummy for the presence of dual exchange rates regimes), financial liberalization (FINLIB; a dummy that equals one in cases when there are no controls on domestic interest rates). Studies have shown that current and capital account liberalisation have a favourable impact on financial sector development (see Chinn and Ito 2002, Aggarwal et al. 2006, Gupta et al. 2009); Previous remittance (Logremy1; the log of the one lag value of remittances), inflation rate (LOGINF; the log of annual percentage change in the GDP deflator). Inflation can discourage financial intermediation (Aggarwal et al. 2006) and also act as a proxy for uncertainty and risk (Giuliano and Ruiz-Arranz 2009). Therefore inflation is used an explanatory variable in the empirical estimation that follows.

4.0. Results

Table 3 presents the results of the relationship between remittances and financial development in Nigeria as modeled in equation 2 above. The regression results indicate that the coefficients of the indicators of remittances are both correctly signed and are significant at 5 percent level. This means that whether we measure financial development as the ratio of money supply to GDP (FINDEPTH) or ratio of credits to GDP (PRIVY), remittances positively and significantly influence financial development in Nigeria. The results further show that an increase in remittances by one percentage point enhances financial development by 0.09 and 0.10, when we measure the latter as the ratio of money supply to GDP and as the ratio of credits to GDP respectively. This

thus indicates that remittances not only boost the size of financial intermediaries and the level of financial intermediation, it also help funnel more loanable funds

to the private sector in Nigeria during the period under consideration.

Table3. Impact of Remittances on Financial Development in Nigeria (OLS)

Dependent Variable: LOGFINDEV		
Variables	LOGPRIVY (DC/GDP)	LOGFINDEPTH (M2/GDP)
LOGREMY	0.103801** (2.349344) {0.0298}	0.091115** (2.472149) {0.0231}
LOGGDP	-1.651921*** (-3.535899) {0.0022}	-1.354713*** (-3.476141) {0.0025}
LOGOPEN	0.722879** (2.253526) {0.0362}	0.235022 (0.878304) {0.3908}
LOGINF	-0.035993 (-0.983213) {0.3379}	-0.022504 (-0.736921) {0.4702}
EXRATE	-0.549676*** (-4.522821) {0.0002}	-0.465170*** (-4.588316) {0.0002}
FINLIB	0.328269* (1.952583) {0.0658}	0.103348 (0.736918) {0.4702}
LOGREMY1	0.067929 (1.551692) {0.1372}	0.000218 (0.005969) {0.9953}
Constant	36.74938*** (3.565998) {0.0021}	33.46682*** (3.893004) {0.0010}
Observations	35	35
R-squared	0.614742	0.805548
Adjusted R-squared	0.472804	0.733908
Akaike info criterion	-0.634287	-0.996895
Schwarz criterion	-0.250335	-0.612943
F-statistic	4.331078	11.24439
Prob (F-statistic)	0.005080	0.000014

Note: t statistics are in brackets while p-values reported in parenthesis. ***, **, *, significant at the 1%, 5% and 10% levels

The results also indicate that although financial development is positively influenced by financial liberalization, previous year's remittances and the degree of openness, it is only the latter that exerts a significant effect when we use the ratio of credits to GDP as the indicator of financial development. Also, in line with our 'a priori' expectations, the results reveal that both inflation and exchange rate regimes exert negative effects on financial development, but the effect of the latter is more pronounced on financial development. The surprising result however is that, although the size of the economy is a significant

predictor of financial development in Nigeria, it enters with the wrong sign regardless of the measure of financial development employed. Table 4 presents the results of relevant diagnostic tests for the model. The results in general are satisfactory. The Breusch-Godfrey Serial Correlation LM Test shows that there is no evidence of autocorrelation while the Jarque Bera test for residual indicates that the normality assumption is not violated. Also, the Harvey, White and Glejser tests establish that there is absence of heteroskedasticity while the ARCH LM test confirms the absence of ARCH effect in the residuals. The latter

ensures that there is no loss of efficiency. Moreover the Ramsey Reset test shows that the model is well

specified and that valid inferences can be made from the results of this study.

Table 4. Summary of Diagnostic Tests for the Model

Diagnostic Tests	LOGPRIVY (DC/GDP)	LOGFINDEPTH (M2/GDP)
Breusch-Godfrey Serial Correlation LM Test	2.186578 (0.1429)	1.161838 (0.336553)
ARCH LM Test	0.311240 (0.5826)	0.179998 (0.675495)
White Heteroskedasticity Test: (No Cross Terms)	0.497911 (0.8835)	0.019677 (0.480547)
Harvey Heteroskedasticity Test	1.079025 (0.4141)	0.989794 (0.4676)
Glejser Heteroskedasticity Test	0.923860 (0.4440)	0.468429 (0.8453)
Jarque-Bera Normality Tests	1.526326 (0.4662)	1.686060 (0.430404)
Ramsey RESET Test	0.00000818 (0.9993)	4.461379 (0.048906)

Note: Figures are the F statistics and the probabilities (in brackets)

Table 5. Impact of Remittances on Financial Development in Nigeria (GMM)

Variables	LOGPRIVY (DC/GDP)	LOGFINDEPTH (M2/GDP)
LOGREMY	0.208247 (1.439308) {0.1672}	0.135156 (2.122092) {0.0480}**
LOGGDP	-2.818254 (-2.972879) {0.0082}***	-2.093157 (-4.273844) {0.0005}***
LOGOPEN	1.788384 (0.307543) {0.7620}	1.375096 (0.745757) {0.4654}
LOGINF	-0.031269 (-0.350108) {0.7303}	-0.024327 (-0.942187) {0.3586}
EXRATE	-0.962555 (-0.815703) {0.4253}	-0.625735 (-2.122058) {0.0480}**
FINLIB	0.937968 (0.747013) {0.4647}	0.610354 (1.204520) {0.2440}
LOGREMY1	0.072738 (0.040069) {0.0862}*	0.016904 (0.330620) {0.7447}
Constant	58.74979 (1.413142) {0.1747}	45.67990 (3.547658) {0.0023}***
Observations	35	35
R-squared	0.193188	0.607755
Adjusted R-squared	-0.120572	0.455215

Note: *, **, and *** denote significance at the 10, 5, and 1 percent level, respectively.

Figures in brackets are the t statistics while the ones in parentheses are the p-values

In Table 5, we present the results of the relationship between remittances and financial development in Nigeria as specified in model 3 using the GMM approach. We establish that when we employ the ratio of money supply to GDP as our indicator of financial development, the coefficient of the indicator of remittances is correctly signed and is significant at 5 percent level. This means that remittances exert a positive influence on financial development in Nigeria and it confirms the results presented in table 5 above when we use the OLS technique. On the other hand, when we employ the ratio of private credit to GDP (cps/gdp) as the indicator of financial development, the result shows that remittances insignificantly but positively influence financial development at 5 percent level. The implication of these results is that remittances augment liquid liabilities more than loanable funds in Nigeria as they are used more for consumption purposes than for productive ventures. Consistent with the OLS results above, Table 5 also reveals that financial liberalization, previous year's remittances and the degree of openness are positive predictors of financial development in Nigeria while inflation, exchange rate regimes and surprisingly, the size of the economy exert negative impacts on financial development in the country. Out of the six control variables, both the exchange rate regimes and the size of the economy are significant drivers of financial development (when we use the ratio of money supply to GDP) while only the size of the economy is significant predictors of financial development (when we use the ratio of credits to GDP).

5. Conclusion and Recommendations

In this study we examine the nexus between remittances and financial development (FINDEV) in Nigeria for the period 1975 to 2010. Towards achieving the objective of this study, we employ both the ordinary least square estimation (OLS) technique as well as the Generalized Method of Moments (GMM) estimator. Moreover, key diagnostic tests are carried out in order to ascertain model adequacy. We also use two indicators of FINDEV, namely: the ratio of money supply to GDP (m2/gdp) and the ratio of private credit to GDP (cps/gdp). The results generally indicate that remittances positively and significantly influence financial development in Nigeria, with the exception of the cps/gdp measure of FINDEV in the GMM estimation where the coefficient is insignificant. The implication of this is that remittances augment liquid liabilities more than loanable funds in Nigeria, as remittances are likely used more for consumption purposes than for productive ventures in the country. Further results show that although financial development is positively influenced by financial

liberalization, previous year's remittances and the degree of openness, both inflation and exchange rate regimes exert negative effects on financial development in Nigeria. Since remittances provide foreign exchange that is so vital to both the internal and the external sectors of the economy, they should be encouraged via appropriate policy formulation and implementation. Financial intermediaries and institutions operating in Nigerian should also intensify the mobilization of remittances with the aim of making them important sources of loanable funds in the country.

References

1. Aggarwal, Reena, Demirguc-Kunt, Asli and Peria, Maria Soledad Martinez. (2006). Do workers' Remittances.
2. Apaa - Okello, Jimmy and Anguyo Francis (2006), "The cyclical Implications of immigrant workers remittances to Uganda".
3. Arellano, Manuel and Olympia Bover (1995). "Another Look at the Instrumental Variable Estimation of Error Component Models." *Journal of Econometrics* 68, 29-51.
4. Promote Financial Development? World Bank Policy Research Working Paper Series, WBPR WP No 3957, The World Bank, <http://econpapers.repec.org/RePEc:wbrwps:3957>.
5. Beck, T., Demirgüç-Kunt, A. and Levine, R. (2007). Finance, Inequality and the Poor', *Journal of Economic Growth*, Vol. 12, Number 1, pp.27-49, <http://dx.doi.org/10.1007/s10887-007-9010-6>.
6. Beck, Thorsten, Ross Levine, and Norman Loayza, (2000a). "Financial Intermediation and Growth: Causality and Causes." *Journal of Monetary Economics* 46, 31-77.
7. Beck, Thorsten, Ross Levine, and Norman Loayza, (2000b). "Finance and the Sources of Growth." *Journal of Financial Economics* 58, 261-300.
8. Boyd, J H, R. Levine, and Bruce D. Smith. (2001). The Impact of Inflation on Financial Sector Performance, *Journal of Monetary Economics*, Volume 47, Issue 2, pp 221-248, [http://dx.doi.org/10.1016/S0304-3932\(01\)00049-6](http://dx.doi.org/10.1016/S0304-3932(01)00049-6).
9. Chin M and Ito H (2002) "Capital Account Liberalization, Institutions and Financial Development: Cross Country Evidence" NBER Working Paper 8967.
10. Freund, Carolina L. and Nikola Spatafora, (2008). "Remittances, Transaction Costs, and Informality." *Journal of Development Economics* 86, 356-366.

11. Giuliano P and Ruiz-Arranz M (2009) "Remittances, Financial Development and Growth," *Journal of Development Economics*, 90, 144-152.
12. Gupta S, Pattillo A and Wagh S (2009) "Effect of Remittances on Poverty and Financial Development in Sub-Saharan Africa," *World Development*, 37, 104-115.
13. Gupta, S., Pattillo, C. A. and Wagh, S. (2007). Impact of Remittances on Poverty and Financial Development in Sub-Saharan Africa, IMF Working Paper WP/07/38, <http://www.imf.org/external/pubs/ft/wp/2007/wp0738.pdf>.
14. Hernandez - Coss, Raul and Chinyere Egwuagu -Bun (2007), "The UK - Nigeria remittance Corridor, challenges of embracing formal transfer systems in a dual financial environment" World Bank Working paper No 92.
15. Hinojosa Ojeda, Raul (2003). Transnational Migration, Remittances and Development in North America: Globalization Lessons from the Oaxa-California Transnational Village/Community Modeling Project. Paper prepared for presentation at a Conference on "Remittances as a Development Tool in Mexico" organized by the Multilateral Investment Fund (MIF) of the InterAmerican Development Bank (IDB), Mexico City, Mexico, October 28, 2003.
16. IFAD (2007), "Sending money home; Worldwide remittance flows to developing and transition countries". IFAD Conference on Remittance and Development.
17. IMF (2005) *World Economic Outlook: Globalization and External Imbalances*, Washington.
18. IMF (2012). *World Economic Outlook*, Washington, D.C., <http://www.imf.org/external/pubs/ft/weo/2012/01/index.htm>.
19. Mundaca, Gabriela B. (2005). Can Remittances Enhance Economic Growth? The Role of Financial Markets Development. http://www.sais-jhu.edu/bin/o/c/growth_remittances.pdf.
20. Orozco, M., (2007), "Remittances, Competition and fair financial access opportunities in Nigeria." Publication for review submitted to United States Agency for International Development.
21. Rajan, Raghuram, and Arvind Subramanian, 2005. "What Undermines Aid's Impact on Growth?" International Monetary Fund Working Paper 05/126.
22. Reinke, Jens, 2007. "Remittances in the Balance of Payments Framework: Current Problems and Forthcoming Improvements." Irving Fisher Committee (IFC) on Central Bank Statistics Bulletin N. 27. Bank for International Settlements.
23. Terry, Donald F. and Steven R Wilson, 2005. *Beyond Small Change: Making Migrant Remittances Count*. Washington, D.C.: Inter-American Development Bank.
24. World Bank. (2011). *Migration and Remittances Factbook*, The International Bank for Reconstruction and Development / The World Bank, 2nd Edition, <http://siteresources.worldbank.org/INTLAC/Resources/Factbook2011-Ebook.pdf>.
25. World Bank, 2006. *Global Economic Prospects*, World Bank, Washington D.C. World Bank, 2009. *Migration and Development Brief 11*. World Bank, Washington D.C. <http://siteresources.worldbank.org/INTPROSPECTS/Resources/3349341110315015165/MigrationAndDevelopmentBrief11.pdf>.
26. Yang, Dean, 2008a. "Coping with Disaster: The Impact of Hurricanes on International Financial Flows, 1970-2002," *The B.E. Journal of Economic Analysis & Policy*, 8, Article 13.
27. Yang, Dean, 2008b. "International Migration, Remittances and Household Investment: Evidence from Phillipine Migrants' Exchange Rate Shocks." *The Economic Journal* 118, 591-630.
28. Zoli, Edda. (2007). *Financial Development in Emerging Europe: The Unfinished Agenda*. IMF Working Papers, Vol. pp. 1-36. Available at SSRN: <http://ssrn.com/abstract=1030687>.