

Volume 5, No.1, October 2012
ISSN 0189-0998

JOS JOURNAL *of* **ECONOMICS**



Department Of Economics, Faculty Of Social Science,
University Of Jos

JOS JOURNAL OF ECONOMICS

Volume 5, No.1, October 2012

© 2012 Department of Economics, University of Jos, P.M.B. 2084, Jos – Plateau State, Nigeria.

EDITORIAL BOARD

Editor-in-Chief:

Prof. I. Ogboru Ph.D

Editors:

J. H. and Landi, Ph.D

A. C. Abimiku, Ph.D

W. A. Adem�, Ph.D

Editorial Consultants:

- Professor (Mrs.) E. Amali
- Professor D. Ireñin
- Professor P. Amaza

Business Manager:

- ▣ Mr. J. B. Tsenkwo

All rights reserved. No part of this Journal may be reproduced in any form or any means, electronic, mechanical, photocopying, recording or otherwise, without permission of the publishers.

ISSN 0189-0998

Publishers:

Department of Economics
University of Jos, Jos, Nigeria.

CONTENTS

EXCHANGE RATE DETERMINATION IN NIGERIA, THE EXPERIENCE UNDER THE WHOLESALE DUTCH AUCTION SYSTEM (WDAS); 2002– 2010 <i>P.P. NJIFORTI (Ph.D)</i>	-	-	1
THE CONTRIBUTION OF FOREIGN DIRECT INVESTMENT TO NIGERIA'S MANUFACTURING OUTPUT: AN EMPIRICAL INVESTIGATION <i>DABWOR TONGNAN DALIS</i>	-	-	35
REMITTANCES FINANCIAL DEEPENING AND ECONOMIC PERFORMANCE IN NIGERIA <i>OJAPINWA, TAIWO VICTOR</i>	-	-	59
ESTIMATION OF TRADE ELASTICITIES IN NIGERIA: A TEST OF MARSHALL–LERNER CONDITION (1981–2010). <i>RITI JOSHUA SUNDAY</i>	-	-	87
DOES PUBLIC SECTOR DEFICIT FINANCING CROWD OUT PRIVATE ECTOR INVESTMENT IN NIGERIA?: EVIDENCE FROM VAR ANALYSIS <i>TSENKWO, JOSEPH.B and LONGDUUT, T. D.</i>	-	-	112
FOREIGN DIRECT INVESTMENT AND HUMAN CAPITAL DEVELOPMENT IN NIGERIA <i>ANTHONY I. MONYE-EMINA AND DEBORAH ODEJIMI</i>	-	-	138
NIGERIA: AN ANALYSIS OF THE DISTORTION BETWEEN ECONOMIC GROWTH AND POVERTY RATE <i>ZUHUMNAN GABRIEL DAPEL</i>	-	-	163
AGRICULTURAL PRODUCTS MARKETING PROBLEMS AND FOOD SECURITY IN NIGERIA: THE STUDY OF IRISH POTATO MARKETING IN PLATEAU STATE <i>AGBA DOMINIC ZAAN CCE,</i>	-	-	182
MONETARY POLICY AND UNEMPLOYMENT REDUCTION IN NIGERIA: AN EMPIRICAL INVESTIGATION <i>GIDEON G.GOSHIT and J. H. LANDI (Ph.D)</i>	-	-	203

REMITTANCES FINANCIAL DEEPENING AND ECONOMIC PERFORMANCE IN NIGERIA

OJAPINWA, TAIWO VICTOR

DEPARTMENT OF ECONOMICS,
LAGOS STATE UNIVERSITY, OJO-LAGOS
ojapinwataiwo@yahoo.com / +2348034172740

Abstract

Despite the increasing importance of remittances in total international capital flows, the relationship between remittances and growth has not been adequately studied. This study tests the hypothesis whether remittances affect growth, in particular how domestic credit to private sector development influences a country's capacity to take advantage of remittances in Nigeria. Using unit root, co integration tests and the Error Correction (ECM) methodology, estimates suggest that remittances have a positive and significant effect on economic growth in Nigeria. The interacting relationship of remittances with a financial deepening variable reveals that these two variables are complement and, moreover, that the impact of remittances is more pronounced within a functional financial deepening variable. The study recommends that more appropriate macroeconomic framework should be developed to assist in improving its financial development and create appropriate infrastructure to complement investments out of remittances.

Keywords: Remittances, Financial-Deepening, Growth

JEL classification: F24, E51, O47

1. Introduction

Workers' remittances have become an increasingly important source of external financing for developing countries, growing since

the 1970s and rising steadily after 2000s. Worldwide officially recorded remittance flows, including flows to high income countries, reached \$440 billion in 2010, expected to reach nearly \$500 billion in 2012 and \$536 billion in 2013. The flows to developing countries are expected to grow annually by about 7.4 in 2012 and 7.9 percent in 2013 to reach \$375 billion in 2012 and \$404 billion by 2013 (World Bank, 2011). According to the World Bank (2011) reports the phenomenon proved to be resilient during the global financial crisis and became even more important as a source of external financing in many developing countries.

Despite the increasing importance of remittances in total international capital flows, the relationship between remittances and growth has not been adequately studied. This contrast sharply with the extensive research on the relationship between growth and other sources of foreign capital, such as FDI and official assistance flow (see Alfaro *et al.*, 2004; Easterly, 2003 and Rajan & Subramanian, 2005 for the link between FDI, aid and growth). Moreover, the conventional wisdom seems to be that, remittances are used mostly for consumption, because of that, it assumes to have a minimal impact on long-term growth. This paper does not only attempts to fill a gap in the existing literature of the macroeconomic impact of remittances on economic growth in Nigeria but also explores the remittance growth-linkages through financial deepening, an aspect ignored in the literature.

The relationship between remittances, financial development and growth is a-priori ambiguous. On one hand, well-functioning financial markets, by lowering costs of conducting transactions, may help direct remittances to projects that yield the highest return and therefore enhance growth rates. On the other hand, remittances

might become a substitute for inefficient or nonexistent credit markets by helping local entrepreneurs bypass lack of collateral or high lending costs and start productive activities (Paulson & Townsend, 2000). The empirical analysis finds strong evidence that the second channel works: remittances boost growth in countries with less developed financial systems by providing an alternative way to finance investment and helping overcome liquidity constraint. In contrast, while more developed financial systems seems to attract more remittances (the volumes of remittance inflows increase with lower transaction costs and fewer restrictions on payments), they do not seem to magnify their growth impact.

This paper is at the crossroads of two strands of literature. One is the positive –negative dichotomy in the development impact of remittances. Most of the work done on the macroeconomics of remittances and their impact on growth is qualitative and tends to suggest that remittances are mostly spent on consumption, and are not used for productive investment that would contribute to long-run growth. The second strand of literature considered how the financial sector infrastructure, and in particular transaction costs, influences the propensity to remit thereby aiding economic growth.

After this introduction, section 2 is devoted to the review of literature; Section 3 discusses the theoretical and modelling framework and describes the data; Section 4 is the presentation of results and 5 conclude.

2. Literature Review

Regardless of what might be the motivation, the literature on the relationship between remittances financial deepening and economic growth is controversial. For instance while Jha (2003)

reports that sophisticated financial system help clear the coast for rapid economic growth in the absence of impediments to economic development, Keynes (1936), Diamond and Dybrig (1983), Singh (1997) and Krugman (1998) state that financial deepening is an obstacle to economic growth because of the inherent instability of the financial system in less developing countries. The model of Romer (1986), Lucas (1988) and Rebelo (1991) for example argue that the financial sector affects capital accumulation either by altering the saving rate or by reallocating savings among different capital producing technologies. In the model of Aghion and Howitt (1992), Grossman and Helpman (1991) and Romer (1990) also, the financial sector is assumed to perform roles which affect steady state growth by altering the rate of technical progress.

Empirically, Chami *et al*, (2003); Taylor, (2004); Abu-Bader and Abu-Qarn, (2005); Burgess and Haksar, (2005); Amavilah, (2008); and Kure and Nwosu, (2008); King and Levine, (1993); Levine and Zervos, (1998); Beck, Levine and Loayza, (2000a, b) have all reported the remittance –financial deepening and economic growth without interacting the variables. Taylor (2004) for instance argues that remittances reduce poverty, as it is the poor who migrate and send back remittances thereby helping to improve recipients' standard of living and since remittances are private sector transfers that go directly to the poorer, economically isolated segments of the population who most need them. They can be used by the recipient under the right circumstances to break the grip of poverty.

Similarly, Kagochi *et al* (2010) examine the relationship between remittances and economic growth in a cross-country panel data analysis of six Sub-Saharan Africa (SSA) countries within the conventional neoclassical growth framework. The results of the study

suggests that while remittances have a positive impact on economic growth of SSA countries with high GDP per capita they do not cause direct impact on economic growth of low GDP SSA countries. The study also finds that capital formation, life expectancy and education have a positive impact on economic growth in SSA. Specifically for Nigeria, Kure and Nwosu (2008) examine the impact of remittances on growth using data for the period 1990-2007. One important finding from their study is that remittances have a positive impact on economic growth in Nigeria through investment in private and human capital, with a pass-through effect on private consumption.

In contrast however, Chami *et al* (2003), finds that, on average, for a sample of 113 countries, workers' remittances tend to have a negative impact on real growth per capita incomes adduced to the severity of moral hazard problem. Also, Egbuna and Adenuga (2006) find no causality of any form between remittances and economic growth in Nigeria, suggesting supporting the compensatory nature of remittances. Other opponents argued that remittances may increase inequality, because it is the rich who can migrate and send back money, making recipients even richer Stahl (1982). At the macroeconomic level, large inflows of foreign exchange can have serious consequences resulting from the advance effects on tradable commodities and on relative competitiveness due to an appreciation of real exchange rates in the receiving country. One is the possibility that countries can face a situation similar to the "Dutch Disease" in which the inflow of remittances causes a real appreciation, or postpones depreciation, of the exchange rate. This has the effect of restricting export performance and hence possibly limiting output and employment especially in small economies where remittance inflows

are large in comparison to the country's GDP (Jadotte, 2009; Ratha, 2004; and Catrinescua, Leon-Ledesma, Pirachac, & Quillind, 2009).

As for the economic impact of financial development, Beck, Demirguc-Kunt and Levine (2004) have shown that financial development leads to lower levels of poverty and inequality. Also, studies by Giuliano and Ruiz-Arranz (2005) and Mundaca (2005) show that the impact of remittances on growth can depend on the level of financial development in a country. However, these studies reach very different conclusions. Using a panel of more than 100 countries for the period 1975-2003, Giuliano and Ruiz-Arranz (2005) show that remittances help promote growth in less financially developed countries. They argue that this is evidence that agents compensate for the lack of development of local financial markets using remittances to ease liquidity constraints and to channel resources towards productive uses that foster economic growth. Mundaca (2005) analyzes the effect of workers' remittances on growth in countries in Central America, Mexico, and the Dominican Republic using a panel data set over 1970 to 2003. She finds that controlling for financial development in the analysis strengthens the positive impact of remittances on growth and concludes that financial development potentially leads to better use of remittances, thus boosting growth.

Abu-Bader and Abu-Qarn (2005) examine the causal relationship between financial development and economic growth in Egypt during the period 1960-2000. Applying Granger causality tests, co integration and vector error correction methodology their results significantly support the view that financial development Granger-causes economic growth either through increasing investment efficiency or through increasing resources for investment. Abu-Bader

and Abu-Qarn find that the financial reforms launched in 1990 can explain the rebound in economic performance since then and that further deepening of the financial sector is an important instrument to stimulate saving/investment and therefore long-term economic growth.

Aggarwal *et al* (2006) uses data on workers' remittance flows to 99 developing countries during 1975-2003 to study the impact of remittances on financial sector development. In particular, they examine whether remittances contribute to increasing the aggregate level of deposits and credit intermediated by the local banking sector. Their findings provide strong support for the notion that remittances promote financial development in developing countries. Similarly, Ramirez and Sharma, H.(n.d) develop the Fully- Modified OLS (FMOLS) methodology, while estimating the impact of remittances on the economic growth of selected upper and lower income Latin American & Caribbean countries. Ramirez and Sharma find that remittances have a positive and significant effect on economic growth in both groups of countries. They also report that the interaction of remittances with a financial development variable is a substitute which implies that the impact of remittances is more pronounced in the presence of the financial development variable.

Investigating the relationship between remittances and growth through financial sector development this paper contributes to the literature by directly addressing this issue, exploring the impact of remittances on financial deepening.

3. Theoretical Framework and Model

While remittances have the potential to affect economic activity through a host of channels, this study examine one specific

link between remittances and growth, specifically that working through financial markets. The regression to be estimated follows Jha (2003) thus:

$$Q_N = \alpha_0 + \alpha_1(REM)_i + \alpha_2 X_i + \varepsilon_i \quad 1$$

Where Q_N denotes the growth rate of Nigeria economy, REM is equal to the index of worker remittance, and X_i is a matrix of control variables and ε_i is the error term. Theoretically, however it is plausible, and also very likely, that both the level of remittance, financial development and the efficiency of financial market increase with higher growth rate. This would lead to an overstatement of the effect of each of the two variables and their interaction on growth.

The standard measures of financial development according to King and Levine (1993) are the ratio of bank credit to the private sector or the share of bank deposits expressed as a percentage of GDP and (Giuliano & Ruiz-Arranz, 2006). Graff (1999) draws on a large panel data set 93 developing countries to understand the link between financial development and economic growth from 1970-1990. He tested the relations between financial development and economic growth as a 3-step procedure: in the first step a new proxy for financial development that captures the share of resources a society devotes to run its financial system at any point in time is constructed. This is in contrast to other standard indicators of financial development. The motivation for this index comes from the institutionalist view that financial development would reduce cost of economic transactions (North, 1990 and Williamson, 1985). The fraction of resources devoted to the financial sector can be taken as a proxy for real value society places on those transactions costs. Possible proxies include (i) The share of the workforce in the financial

system (ii) The share of the financial system in the GDP (iii) The number of bank branches per capita. A principal components type of analysis is undertaken to develop an aggregate index from these 3 indicators. Graaf (1999) then use this index of financial development in a cross-country growth regression type framework to understand its contribution to the growth of output per capita. The growth model with human capital emphasizes the importance of investment in human capital as a source of economic growth. In this model people make two savings decisions - to invest in physical capital or human capital. The interplay of these savings decisions is crucial to the ensuing growth (Jha, 2003). The extended growth of output per capita in the capita model can be presented as:

$$Q = A K^{\alpha} L^{\beta} R^{\varpi}$$

$$Q = A K^{\alpha} L^{\beta} H^{\theta} \quad 2$$

where A = Exogenous growth of productivity
 Q = Output (net of depreciation)
 K = Physical capital
 L = Labour
 R = 003D Remittance

and $\alpha, \beta, w > 0$ with $\alpha + \beta + w = 1$ all being used in a macro sense.

This follows the standard Cobb-Douglas type of production function, like the Solow neoclassical model with constant returns to scale. Solow (1956) assumes that labour force growth exponentially by:

$$\frac{\dot{L}}{L} \quad \left(\equiv \frac{\partial L / \partial t}{L} \right) = n \quad 3$$

The growth of physical capital stock is given by:

$$\dot{K} \quad \left(\equiv \frac{\partial K}{\partial t} \right) = s_k Q \quad 4$$

Meanwhile the growth of remittance capital is given by:

$$\dot{R} = s_R Q \quad 5$$

And the growth rate of A is a constant: g per period. Thus

$$\frac{\dot{A}}{A} = g \quad 6$$

Letting g_x represents the growth rate of any variable X, we have:

$$g_{Q/L} = g_A + \alpha g_K L + \theta g_{r/Q} \quad 7$$

This equation has been estimated in several studies to assess the contribution of the three factors to economic performances. Graff (1999) writes the estimable equation as:

$$\begin{aligned} g_{(Y/L)it} = & \beta_{0i} + \beta_{0t} + \beta_1 \ln(Y/L)_{it} + \beta_2 \ln(R/Q)_{it} + \beta_3 g(T)_{it} + \beta_4 (FD)_{it} + \\ & \beta_5 (FD)_{it-1} \ln(Y/L)_{it} + \beta_6 (FD)_{i,t-1} \ln(H/L)_{i,t-1} + \beta_7 g(K/L)_{it} \\ & + \beta_8 g(H/L)_{it} + \varepsilon_{it} \end{aligned} \quad 8$$

where $g(T)$ represents pure technical progress and FD is the index of financial development. FD also interacts with (R/Q) and (H/L) .

3.2 The Model

Following the theoretical framework and the literature review the regression to be estimated is as follows:

FDI	Level	-3.485207	-3.584743	-2.928142	I(1)
	1 st diff	-6.651474	-3.596616	-2.933158	
LREM	Level	-0.439485	-3.584743	-2.928142	I(1)
	1 st diff	-7.997689	-3.588509	-2.929734	
RCP	Level	1.007894	-3.584743	-2.928142	I(1)
	1 st diff	-5.280060	-3.588509	-2.929734	
FD	Level	-2.404483	-3.584743	-2.928142	I(1)
	1 st diff	-6.429732	-3.592462	-2.931404	
PG	Level	-1.646144	-	-2.931404	I(1)
	1 st diff	-6.153241	-	-2.931404	

Source: Author's

This suggests the need to difference the series to obtain stationarity. At first difference, however, all the variables are stationary and are integrated of order 1. Given the unit root properties of the variables, we proceeded to establish whether or not there is a long run relationship among the variables in the model by using Engle Granger two-stage method since all the variables are integrated of the same order.

4.2 Co integration Test

Co-integration test is carried out in order to determine the long-run relationship between the dependent and independent variables when one or all of the variables is/are non-stationary at level which means they have stochastic trend. Essentially, it is used

to check if the independent variables can predict the dependent variable both now (short-run) or in the future (long-run).

Table 4.2: Co integration test results test using Engle Granger Two-Stage Procedure

Null Hypothesis: RESID01 has a unit root

Exogenous: None

Lag Length: 0 (Automatic based on SIC, MAXLAG=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.514675	0.0008
Test critical values: 1% level	-2.617364	
5% level	-1.948313	
10% level	-1.612229	

*MacKinnon (1996) one-sided p-values.

Source: Authors Computation.

From the result in table 4.2 above, the Engle-Granger asymptotic 1 percent, 5 percent and 10 percent critical values are -2.617364, -1.948313 and -1.612229 respectively, while that of the Augmented Dickey-Fuller test statistic is -3.514675. The result therefore implies that the residuals from the regression are stationary at all levels. In other words, the model in our equation suggests a long-run relationship between them.

4.2 Parameter Stability Tests

Furthermore, issue of the stability of parameters of the model was considered. To this end we adopted recursive residuals (CUSUM) (Bahmani-Oskooee and Shin, 2002) as well as applying the cumulative sum of to the residuals of the model. For stability of

short-run dynamics and long-run parameters of remittances function, it is core that the residuals and cusum of squares stay within the 5 percent critical bound (represented by two straight lines whose equations are detailed in Brown, Durbin, and Evans, 1975, Section). While the recursive residuals CUSUM of squares plots move all through within the 5 percent critical lines (fig 4.a and b), the recursive residuals CUSUM of squares plots move outside the 5 percent critical lines between 1995 and 2007. This parameters instability arose due to structural changes and the institution of different policy regimes. While the CUSUM test is particularly useful for detecting systematic changes in the regression coefficient s, the CUSUMSQ test is significant in situations where the departure from constancy of the regression coefficient is haphazard and sudden.

Figure 4.3a. Stability Tests using CUSUM and CUSUMSQ of Residual Tests

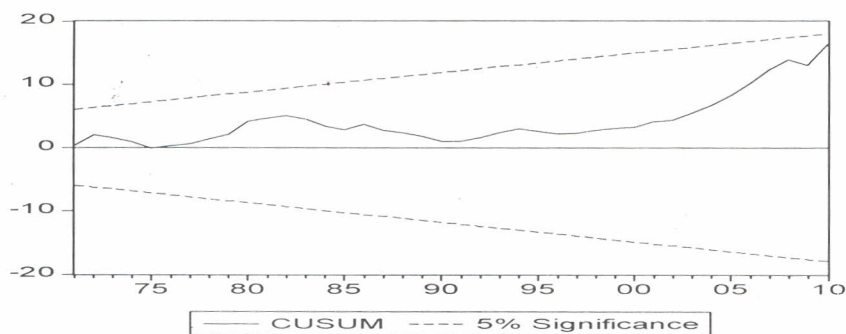
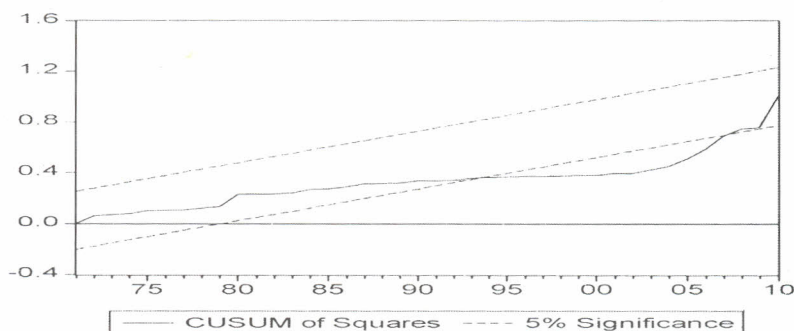


Fig 4: 3b



The result is suggestive of coefficient stability, therefore, we can safely conclude that the estimated parameters for the short-run dynamics and long-run of remittances function exists over the entire sample periods since residual result shows the future tendency of further stability. Moreso, as with the CUSUM test, movement outside the critical line is suggestive of parameter or variance instability. Meanwhile, with our result, the cumulative sum of squares is generally within the 5 percent significant lines, suggesting that the residual variance is somewhat stable, corroborating the other stability test results. Finally the result of the tests suggests that the model is fairly well specified and robust for policy analysis.

4.3 EMPRICAL RESULTS AND DISCUSSION OF THE DYNAMIC MODEL (ECM)

Although long-run equilibrium relationship may occur among variables in the regression model, short-run equilibrium may not occur. Error correction mechanism is therefore used to correct or eliminate the discrepancy that occurs in the short-run. The coefficient

of error-correction variable gives the percentage of discrepancy between the variables can be eliminated in the next period. The coefficients of the explanatory variables in the error correction model measure the short –run relationship. When conducting error correction techniques.

Table 4.4: Short-run parsimonious test

Dependent Variable: GDP

Method: Least Squares

Date: 04/26/07 Time: 19:16

Sample: 1965 2010

Included observations: 46

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.066938	0.229486	22.07948	0.0000
CP	-0.019424	0.004796	-4.050385	0.0002
FDI	-0.012537	0.012320	-1.017604	0.3150
LREM	0.019279	0.007701	2.503373	0.0165
PG	0.279291	0.104542	2.671578	0.0109
RCP	0.004260	0.000679	6.278715	0.0000
R-squared	0.708340	Mean dependent		5.923746
		var		
Adjusted R-squared	0.671882	S.D. dependent		0.203666
		var		
S.E. of regression	0.116663	Akaike info		-1.337941
		criterion		
Sum squared resid	0.544414	Schwarz criterion		-1.099422
Log likelihood	36.77264	F-statistic		19.42916
Durbin-Watson stat	1.683351	Prob(F-statistic)		0.000000

Source: Authors Computation.

Table 4.5: Short-run dynamic test

Dependent Variable: DGDP

Method: Least Squares

Date: 04/26/07 Time: 18:56

Sample(adjusted): 1969 2010

Included observations: 42 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001348	0.013302	0.101351	0.9199
DCP(-3)	0.011880	0.004853	2.447947	0.0195
DFDI	-0.004409	0.006800	-0.648402	0.5210
DLREM	0.056820	0.016317	3.482238	0.0014
DPG	0.288333	0.171082	1.685354	0.1008
DRCP	0.000495	0.000765	0.646697	0.5220
ECM(-1)	-0.399209	0.131183	-3.043152	0.0044

R-squared	0.510578	Mean dependent var	0.030401
Adjusted R-squared	0.426677	S.D. dependent var	0.101177
S.E. of regression	0.076609	Akaike info criterion	-2.149181
Sum squared resid	0.205415	Schwarz criterion	-1.859570
Log likelihood	52.13280	F-statistic	6.085485
Durbin-Watson stat	1.441955	Prob(F-statistic)	0.000193

Source: Authors Computation.

From the above parsimonious test (table 4.4), the value of R^2 revealed that the five stimuli in the equation explain nothing less than 70 percent of the systematic variations in economic growth during the 1965 to 2010 periods. The F value of 19.42916 is highly significant, easily passing the significant test at the 1% standard level. Thus,

there is no doubt that there exists a significant linear relationship between migrants' economic growth proxy by real gross domestic product per capita and the repressors used. The result for worker remittance clearly shows that it is a fundamental factor in influencing economic growth in Nigeria. Specifically, a percentage increase in remittance lead to around 0.02 percent increase in per capita income. This result is consistent with Ratha (2004) and Kagochi et al (2010) model which suggest that remittances can be used to encourage economic growth in an economy and that their impact on gross national product, community development, and potential links with microfinance institutions is increasingly being recognized.

The empirical result of FDI challenges the widespread belief that it generally has a positive impact on economic growth in developing countries. FDI indeed contributes to economic decline both in the long and the short run based on our model. However the variable lost its significance at all significant levels. The negative relationship and the lost of significance could be as a result of the unstable policy environment leading to the proliferation and growth of parallel markets and sustained capital flight. More so, it could be due to the pattern of the existing FDI that is often skewed towards extractive industries, meaning that the differential rate of FDI inflow into Nigeria has been adduced to be due to natural resources (Morriset 2000; Asiedu, 2001). This development is disturbing, sending very little hope of sustainable economic growth through FDI in Nigeria.

Financial deepening and economic growth according to this study suggested negative relationship. This is a point ascribed to Keynes (1936), Diamond and Dybvig (1983), Singh (1997) and Krugman (1998) that financial development is grossly inadequate for

economic growth in less developed countries because of the inherent macroeconomic instability of their financial system. According to them, a typical less developed country faced adverse trading conditions in international markets because it export mainly primary goods- the demand for which is inelastic. Thus, Coupled with serious foreign exchange constraint in Nigeria is the poor availability of saving in the home economy owing to low income.

Meanwhile, the interactive coefficient of remittance and financial development revealed a positive sign. This provides information regarding the complementarities nature of remittances and financial deepening in enhancing economic growth in Nigeria. This report also implies that the interaction of remittances with a financial development variable is more pronounced in the presence of the financial development variable. This is similar, to the findings of Ramirez and Sharma (n.d), although their study was based on selected upper and lower income Latin American & Caribbean countries.

The coefficient on Error Correction Model (table 4.5) gives a negative result. This provides important information on the short-run relationship between economic growth and its regressors in Nigeria. The estimate term specifies that the changes in economic growth respond to a deviation from the long-run equilibrium. This shows that thirty nine percent of disequilibrium in t-1 period is corrected/adjusted every year by the changes in per capita GDP.

5. Conclusion

This paper has attempted to examine the interactive coefficient of remittance and financial deepening by testing the hypothesis whether the level of financial deepening in Nigeria affects

the impact of remittances on growth. It also contributed to the literature on the remittances-economic growth debate. Using time series data from 1965 to 2010, the Augmented Dickey Fuller test revealed that the time series is integrated of order $I(1)$. The Engel-Granger two-stage co integration tests predicted that the model in our equation suggests a long-run relationship between them and the growth determinants ~~understudy~~ and the Error Correction (EC) coefficient gives a negative significance. This implied that the changes in economic growth responded to a deviation from the long-run equilibrium in Nigeria for the period under consideration. The grossly inadequacy of financial development for economic growth in Nigeria is adduced to the inherent macroeconomic instability of their financial system (Keynes, 1936; Diamond and Dybvig, 1983; Singh, 1997 and Krugman, 1998). Thus, Nigeria faces a serious foreign exchange constraint, coupled with poor availability of saving in the home economy primarily because of low income and non-functional financial institutions. Also, the negative empirical result of FDI is a disturbing development which could be as a result of the unstable policy environment leading to the proliferation and growth of parallel markets and sustained capital flight.

In particular, we did not explore the potential moral hazard implications of remittances nonetheless. Meanwhile, we interpreted the positive impact of population growth on economic growth as suggestive evidence that population growth could encourage more Nigerian to migrate abroad which could be more remittance of more money to Nigeria. These findings do not, however, give insights on all the channels through which remittances may affect growth. But while many policy-makers stress the need to stimulate remittances across the board by reducing transfer costs, the biggest challenge is to

understand that remittance can boost growth in Nigeria only within a well functioning financial system. The study therefore strongly recommended that, the government should develop more appropriate macroeconomic framework to assist in improving the financial institutions and create appropriate infrastructures to complement investments out of remittances.

REFERENCE

- Abu-Bader, S. & Abu-Qarn, A. (2005). Financial Development and Economic Growth: Time Series Evidence from Egypt. Online at <http://mpra.ub.uni-muenchen.de/1113/> MPRA Paper No. 1113, posted 07. November 2007 / 01:3.
- Aggarwal, R., Demirgüç-Kunt, A. & Peria, M.S.M. (2006). Do Workers' Remittances Promote Financial Development? *Quarterly Journal of Economics*, 108, 717-737.
- Aighion, P. & Howitt, P. (1992). A Model of Growth Through Creative Destruction, *Econometrica*: 60: 323-51.
- Alfaro, L., Chanda, A., Kalemli-Ozcan, S. & Sayek, S. (2004). FDI and Economic Growth: the Role of Local Financial Markets," *Journal of International Economics* 64, 89-112
- Amavilah, V. H. (2008). Domestic Resources, Governance, Global Links, and the Economic Performance of Sub-Saharan Africa (August 8, 2008).
- Bahmani-Oskooee, M., & Shin, S. (2002). Stability of the Demand for Money in Nigeria, *International Economic Journal*, 16:2, 85-95.
- Banerjee, A. V. & Newman, A. (1993). Occupational Choice and the Process of Development," *Journal of Political Economy*, 101, 274-298.
- Beck, T., Levine, R. & Loyaza, N. (2000). "Finance and the Sources of Growth," *Journal of Financial Economics* 58, 261-300.
- Burgess, R & Haksar, V. (2005). Migration and Foreign Remittances in Philipnes, *IMF working paper* (WP/05/111).
- Catrinescua, N., Leon-Ledesma, M., Pirachac, M. & Quillind, B. (2009). Remittances, Institutions, and Economic Growth, *World Development*, Vol. 37(1), Issue 1, 81-92.
- Chami, R., Fullenkamp, C. and Jahjah, S. (2003). Are Migrant Remittance Flows a Source of Capital for Development? *IMF Working Paper*, International Monetary Fund, Washington.

- Demirgrüç-Kunt, A., & Vojislav, M. (1998). "Law, Finance, and Firm Growth",
- Diamond, D. & Dybvig, P. (1983). Bank Runs, Deposit Insurance and Liquidity. *Journal of Political Economy*, 91 (3): 401-19.
- Easterly, W. (2003). Can Foreign Aid Buy Growth? *Journal of Economic Perspective*, Vol. 17, no. 3: 23-48.
- Giuliano, P. & Ruiz-Arranz, M. (2005). Remittances, Financial Development and Growth. *International Monetary Fund Working Paper*, forthcoming.
- Graff, M. (1999). Financial development and economic growth- A New Empirical Analysis, *Dresden Discussion Papers in Economics* 5/99.
- Granger, C. (1980). Testing for Causality: A personal View Point *Journal of Economic Dynamics and Control* 2 (4): 329-52.
- Grossman, G. & Helpman, E. (1991). Quality Ladder in the Theory of Growth, *Review of Economic Study* 58: 43- 61.
- Jadotte, E. (2009). International Migration, Remittances and Labour Supply: The Case of the Republic of Haiti, RP2009/28. *World Institute for Development Economics Research (WIDER)*. Helsinki, Finland.
- Jha, R. (2003). *Macroeconomics for Developing Countries*, 2nd edition Pg 391-392.
- Kagochi et al., (2010). Are Remittances a Source of Development Capital? The Case of Sub Saharan Africa. *International Research Journal of Finance and Economics* ISSN 1450-2887 Issue 47 (2010) © EuroJournals Publishing, Inc. 2010
- Keynes, J. (1936). *The General Theory of Employment, Interest and Money*, London: Macmillan.
- King, R. & Levine, R. (1993). Finance and Growth: Schumpeter Might be Right. *Journal of Finance*, 53, 2107-2137.

- Krugman, P. (1998). Richardo' Difficulty Idea why Intellectuals don't Understand comparative Advantage, in G. Cook (ed) Freedom and Trade, Vol. 2. The Economics and Politics of international trade. Studies in the Modern World economy 10, London and New York: Routledge
- Kure, E & Nwosu, C.P. (2008), Worker's remittances and economic growth Evidences from Nigeria Department of Research Central Bank of Nigeria *Being a paper prepared for Young Statisticians Conference held at Saint George Hotel, between 1stand 3rd July 2008, Pretoria, South Africa.*
- Levine, R. & Zervos, S. (1998). Stock Markets, Banks, and Growth. *American Economic Review*, 88, 537-558.
- Lucas, R.E, (1988). "On Mechanics of Economic Growth," *Journal of monetary Economics*, 22 (July):3-42.15
- Mundaca, G. B. (2005). Can Remittances Enhance Economic Growth? The Role of Financial Markets Development." Mimeo. University of Oslo.
- North, D. (1990). The political economy of Institutions and Decision Series, Cambridge: Cambridge University Press.
- Rajan, R. & Zingales, L. (1998). Financial Dependence and Growth." *American Economic Review*, 88, 559-86.
- Rajan, R. & Subramanian, A. (2005). What Undermines Aid's Impact on Growth? *IMF Working Paper no. 05/126.*
- Ramirez, M.D & Sharma, H. (n.d). Do Remittances Promote Growth in Latin America? A Panel Unit Root and Panel Cointegration Analysis. Department of Economics, Trinity College, Hartford, CT 06106.
- Ratha, D. (2004). Understanding the Importance of Remittances, Worldbank. Available online: Republic of Haiti, RP2009/28. *World Institute for Development Economics Research.*
- Rebelo, S. (1991). Long-Run policy Analysis and Long-Run Growth, *Journal of Political Economy*, 99: 500-21.

- Romer, C. (1990). The Great Crash and the Onset of the Great Depression. *Quarterly Journal of Economics* 105 (3): 597-624.
- Romer, P. (1986). "Increasing Returns and Long-Run Growth," *Journal of Political Economy*, (October): 1002-1037.
- Singh, D. (1997). South East Asian Affairs, Singapore; Institute of South East Asian Studies.
- Solow, R. (1956). A contribution to the Theory of Growth. *Quarterly Journal of Economics* 70 (1): 26-41.
- Taylor, J. (2004). Remittance corridors and economic development: a progress report on a Bush administration initiative, in: Payments in the Americas Conference (Federal Reserve Bank of Atlanta). <http://www.frbatlanta.org/news/CONFEREN/payments04/taylor.doc>.
- The World Bank (2009). *Development Education Program*, Available online: <http://go.worldbank.org/A0XM0LBDE0>.
- U.S. Census Bureau (2009). International Data Base. <http://www.census.gov/ipc/www/idb/>
- Williams, J. (1998). On the Question of Debt Relief, Statements of the Roundtable on Money and Finance, New York, 13-14 December
- World Bank (2009). Outlook for Remittances Flows 2009-2011: Remittances expected to fall by 7-10 percent in 2009. *Migration and Development Brief 10: Development Prospects Group*, Report by Ratha, D., S. Mohapatra and A. Silwal, Migration and Remittances Team, July 13, 2009. Washington, D.C.
- World Bank (2011) *World Development Report, 2010/11*, Washington, DC.

Appendices:

Data Used for the Analysis

YEAR	GDP	WR	PG	CP	FDI/GDP	R
1965	317.417847	14,000,000	2.221649	6.699077715	0.972132	0.0043212
1966	297.2238627	1,600,000	2.229851	7.203483003	0.976432	0.004541
1967	244.8670238	2,000,000	2.246431	7.81E+00	1.003672	0.0006543
1968	236.3946404	2,100,000	2.265051	7.87E+00	1.078766	0.0089183
1969	286.9611914	4,000,000	2.285755	6.65E+00	1.874127	0.005435
1970	350.5219468	5,000,000	2.312515	4.92E+00	1.634006584	0.007563
1971	391.2269938	10,000,000	2.324509	5.39E+00	3.114867861	0.005321
1972	395.0057173	13,000,000	2.347679	6.14E+00	2.484843267	0.004553
1973	406.321255	15,000,000	2.427989	6.05E+00	2.459956251	0.0023325
1974	440.1740727	17,000,000	2.578033	4.70E+00	1.034345032	0.0345632
1975	405.7948173	16,000,000	2.76291	6.81E+00	1.692361519	0.004921
1976	429.5775563	18,000,000	2.961153	7.62E+00	0.933655816	0.0213113
1977	441.500981	20,000,000	3.111847	9.24E+00	1.222448337	0.05550097
1978	403.0879039	3,000,000	3.165599	1.10E+01	0.577458572	0.00821291
1979	417.1938413	8,000,000	3.101151	1.04E+01	0.655098278	0.01692767
1980	422.0424528	22,000,000	2.963336	1.22E+01	-1.150855804	0.03426696
1981	356.4934939	16,000,000	2.805688	1.59E+01	0.90510771	0.02670292
1982	346.244456	18,000,000	2.682123	1.85E+01	0.865317021	0.03617115
1983	319.4718702	14,000,000	2.607787	17.24800504	1.042717588	0.0400567
1984	296.2736028	12,000,000	2.600296	1.63E+01	0.671212614	0.04257955
1985	316.5717232	10,000,000	2.635605	1.57E+01	1.709316045	0.03520144
1986	315.9550111	4,000,000	2.677507	2.05E+01	0.955998865	0.01979141
1987	305.3897106	3,000,000	2.698293	1.48E+01	2.604596101	0.01279791
1988	326.6839302	2,000,000	2.699156	1.32E+01	1.657351294	0.00875361
1989	340.9697662	10,000,000	2.672834	9.39E+00	7.90256905	0.04194014
1990	359.3423949	10,000,000	2.629249	9.41E+00	2.064741657	0.03512164
1991	366.8269908	66,000,000	2.584513	9.43E+00	2.608150611	0.24164006
1992	368.0307741	56,000,000	2.548837	12.03191015	2.741153061	0.17119954
1993	366.7675691	793,000,000	2.519468	9.11E+00	6.300677879	3.71380572
1994	358.0737455	550,000,000	2.498886	1.15E+01	8.27954027	2.32426551

1995	358.018278	804,000,000	2.484753	1.02E+01	3.839618025	2.86031156
1996	364.300583	947,000,000	2.470591	8.93E+00	4.514157485	2.68278415
1997	365.0604827	1,920,000,000	2.455819	1.06E+01	4.249165141	5.29956787
1998	362.9365683	1,544,000,000	2.445492	1.29E+01	3.270694884	4.80341194
1999	358.0850534	1,301,000,000	2.440121	1.39E+01	2.889681267	3.74108148
2000	368.3332826	1,391,800,000	2.43748	1.25E+01	2.479444089	3.02673125
2001	370.6210727	1,166,600,000	2.433722	1.52E+01	2.480494998	2.43042805
2002	367.3365755	1,208,900,000	2.427214	1.30E+01	3.17006437	2.04493312
2003	395.4883263	1,062,800,000	2.4191	1.38E+01	2.964096815	1.57088748
2004	426.9993492	2,272,700,000	2.408868	1.31E+01	2.133330371	2.5871582
2005	439.4032431	3,328,700,000	2.39574	13.23589851	4.438838014	2.96547104
2006	455.666514	5,435,000,000	2.381025	1.32E+01	6.008690593	3.70061866
2007	473.7322728	9,221,000,000	2.362247	2.53E+01	3.636068828	5.55746857
2008	490.5650087	9,980,000,000	2.335344	33.90542486	2.649447928	4.8185113
2009	506.262847	11,980,000,000	2.299	17.73824459	3.34483318	5.54020387
2010	545.345366	16,980,000,000	2.3245	17.99754244	5.542667	6.214263

Source: According to section 3

$$LGDP_t = \varpi_0 + \varpi_1 LR_t + \varpi_2 CP_t + \varpi_3 (R_t * FD_t) + \varpi_4 FDI_t + \varpi_5 PG_t + \varepsilon_t \quad 9$$

where LGDP denotes the (logarithm of) level of GDP per capita, R is equal to logarithm of remittances, CP is the financial deepening, FDI is foreign direct investment, GCF is the gross capital formation, $R*FD$ to mean RCP is an interactive variable with an indicator of remittance and financial depth and ε_t is the error term.

3.1 Definition and Sources of the Variable

Variable	Description
GDP per capita	Log of Growth of real per capita GDP in 2000 constant dollars. GDP <i>Source</i> : World Development Indicators, World Bank.
LREM	Log of Workers' remittances comprise unrequisite transfers by migrant workers as defined in the fifth edition of the IMF's Balance of Payments Manual: <i>Source</i> : IMF balance of payments data.
Population Growth	Annual population growth rate for year t is the exponential rate of growth of midyear population from year $t-1$ to t , expressed as a percentage. <i>Source</i> : (1) United Nations Population Division. 2010. Available at http://esa.un.org/unpd/wpp2008/index.htm .
Credit/GDP	Domestic credit to private sector refers to financial resources provided to the private sector, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. <i>Source</i> : International Monetary Fund, International Financial Statistics and

	data files, and World Bank and OECD GDP estimates.
FDI/GDP	Log of Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. GDP Source: International Monetary Fund, International Financial Statistics and Balance of Payments databases, and World Bank,

Note: This table describes the variables collected for our study. The first column gives the names of the variable as we use it; the second column describes the variables and provides the source from which it was collected.

4 Empirical Results and Discussion

4.1 Unit root test

All variables are tested at levels and first difference using ADF unit root test. The justification for the use of ADF unit root is based on large sample ($n > 30$). The result of the stationary test with intercept terms is presented in the table 4.1. The result showed clearly that all the variables are non-stationary at level.

Table 4.1: Unit Root Test Result Using ADF Statistic

Stationarity test for variables					
Variables		ADF test stat	Critical values		Order of integration
			1%	5%	
LGDP	Level	0.777764	-3.584743	-2.928142	I(1)
	1 st diff	- 4.312382	-3.653730	-2.957110	