International Migrant Remittances And Financial Sector Development: Evidence From West African Monetary Zone (WAMZ)

Ugochukwu Sebastine Ugwuegbe[1], Chibueze Ekene Onyeke[2], Nnenna G. Nwonye[3] & Chukwu Benjamin Ibe[4]

Abstract

In this study, we examined the effect of international migrant remittances on financial sector development with a panel of 6 countries in West Africa Monetary Zone (WAMZ). The novelty provided by our study is that we examined the effect of migrant remittances not only on the depth of the financial sectors but also on the efficiency and stability of the financial sector development which many studies failed to cover. We employed one-step differenced-Generalized Method Moments on a panel data of 6 countries and 21 observations (1996-2016) from each country. Our findings showed that international migrant remittances positively contribute to financial sector development in WAMZ. The result of robustness test indicates that the effect of remittances on the depth of the financial sector depends on the type of proxy variable used. We, therefore, recommended that effort should be made by the government to promote inflow of migrant remittances into the WAMZ sub-region.

Keywords: Financial Development, Migrant Remittances.

1.0 Introduction

Migrant remittances have remained one of the sustainable sources of foreign capital for development in most of the developing economies of the world. The increasing volume of migrant workers remittance into developing countries emphasized its importance for economic and social development. It has also been considered a more stable source of foreign capital over that of foreign direct investment (World Bank 2014). In 2014, a total of USD553.599 billion was received globally by developing countries of the world, out of which, USD38.275 billion was received by Sub-Saharan African (SSA) countries representing a total of 6.91% of the global remittances. Similarly, in 2015, the figure marginally increased to USD553.975 billion globally, but SSA countries still attracted a significant inflow of remittances in the same year which amounted to USD40.397 billion in 2015 representing a total of 7.29% of the global remittances. The West African Monetary Zone (WAMZ) stood as one of the major recipient of migrant remittances in the SSA region. Meanwhile, out of the USD38.275 billion which flowed into SSA countries, a total of USD23.664 billion was received by WAMZ countries amounting to 61.83% of the total remittances that flowed into SSA and 4.27% of the global remittances. The trend continued upward in 2015 with WAMZ attracting a total of USD26.997 billion out of USD40.397 billion that entered into SSA countries. This figure represents 67% of the total remittance inflow to SSA and 4.87% of the global remittances.

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[1] Department of Accountancy, Coal City University Enugu, ugwuegbe@gmail.com

[2] Department of Banking and Finance, University of Nigeria Enugu Campus, chibueze.onyeke@unn.edu.ng

[3]Department of Banking and Finance, University of Nigeria, Enugu Campus, nenanwonye@gmail.com

[4]Department of Management, University of Nigeria, Enugu Campus, benjamin.chukwu@unn.edu.ng

The inflow of migrant remittances according to World Bank (2015), has a far-reaching effect not only on the national level but also at the community and household level. Various researchers (Azam, Haseeb, and Samsudin (2016),Chukwuone, Amaechina, Iyoko, Enebeli-Uzor and Okpukpara (2012), Clemens and Mckenzie (2014), Cooray (2012), El Hamma (2016), Fromentin (2015), Githaiga and Kabiru (2014), Karikari, Mensah and Harey (2016), Meyer and Shera (2016), Ncube and Brixiova (2013), Posse (2012), Salahuddin and Gow (2015), Urama, Nwosu, Yuni and Aguegboh (2016), Waheed, Awoyemi, Shittu, and Olowa (2013)) have examined the impact of migrant remittances on economic growth, productivity of labour, financial sector development, poverty and inequality of home countries and end up with varied results. Despite what appears to be a unanimous conclusion on some macroeconomic variables, evidence on remittances-financial sector development nexus seems to be conflicting. Fromentin and Lorraine (2015), and Cooray (2012) reported a positive impact of remittances on financial system development, while Githaiga and Kabiru (2014), indicated that remittances have a negative impact on credit to private sector and positive impact on money supply (M2). Karikari, Mensah and Harey (2016), also found that remittances do not promote financial development.

This study seeks to investigate further the effect of remittances on the financial sector development, which is related to some of the literature reported above. Most of the reported literature examined the effect of remittances on the depth of the financial institution only by employing credit to private sector, M2, total bank deposit all as a ratio of GDP which measures only the depth of the financial sector. This study differs from the previous studies by examining not only the depth of the financial sectorbut will also examine the efficiency and stability of the financial sector development. Similarly, despite the significant volume of migrant remittance inflow into WAMZ, no study has evaluated the effect of remittances on the financial sector development in the zone. It is against this background that this study seeks to investigate the effect of international migrant remittances on the financial sector development of countries in WAMZ. To achieve this, the following specific objectives have been identified.

1. To determine the effect of international migrant remittances on the depth of financial sector in WAMZ.
2. To determine the effect of migrant remittances on the efficiency of the financial sector in WAMZ.
3. To determine the effect of migrant remittances on the stability of the financial sector in WAMZ.

2.0 Review of Related Literature

2.1 Nature of the Financial Sector Development

World Economic Forum Report (2012), opined that Financial Sector Development (FSD) comprises of all the factors, policies and institutions which contributes to efficient financial intermediation and market, as well as deep and broad access to capital and financial services. In other words, financial development is said to occur when financial instruments, markets, and intermediaries interact in other to reduce the cost of financial services. It also involves establishing sound financial and regulatory framework with a view to stimulating economic growth and decent job creation. Financial development has been identified as an important tool in the economic development of many nations. To fully understand how crucial financial development is in the economic growth and poverty reduction, there is a need for the concept to be effectively measured. Despite the important of financial development, its measurment has remained very difficult in practice given the complexity and dimensions it encompasses. Most of the empirical studies have based their measurement of financial development on M2 as a ratio of GDP, financial institution assets as a ratio of GDP, and the ratio of deposit to GDP. Meanwhile, since the financial sector of any economy comprises of a variety of financial institutions, markets and products, the above measurement only serves as a rough estimate and do not fully capture all aspect of financial development. A comprehensive, but relatively simple 4x2 framework has been developed by the World Bank Global Financial Database (GFDD) to measure financial sector development across the globe. The GFDD identified four sets of variables to proxy a well-functioning financial system which includes: financial depth, access, efficiency, and stability. These four key variables which were categorized into two main components of the financial sector are the financial institution and the financial markets. Given this categorization, financial inclusion is a subset of financial development, as financial inclusion looks at only access to financial service at an affordable cost.

Meanwhile, since most remittances are channelled into the home country mainly through financial institutions. This study, therefore, focuses on examining the role of international migrant remittances on the development of the depth, efficiency and stability of WAMZ financial sectors.

2.2 Empirical Review
2.2.1 Remittances and Macroeconomic Variables

Remittances have received increasing attention from various researchers globally. This is due to the significance of remittances in stimulating the recipient economy for sustainable economic growth, poverty reduction, financial inclusion, the productivity of labour, as well as financial development. Regarding the impact of remittances on poverty, Gupta, Pattillo, and Wagh (2009) found that remittances have a direct poverty mitigating effect and also promote financial development. In a similar study, Chukwuone, Amaechina, Iyoko, Enebeli-Uzor and Okpukpara (2012), opined that both internal and international remittances lead to a reduction in the incidences of debt and severity of poverty. They noted that international remittance has a high poverty reduction effect when compare to that of internal remittances. On the other hand, Waheed, Awoyemi, Shittu, and Olowa (2013) examined the effect of remittances on poverty among rural households in Nigeria and found that both internal and international remittances reduce the depth and severity of poverty among rural Nigerians. According to Anyanwu and Erhijkpor (2010), international remittances reduce the depth and severity of poverty in Africa by 2.9 and 2.8 percent respectively if remittances as a share of GDP increase by 10 percent. Azam, Haseeb, and Samsudin (2016) in a study of 39 countries found that foreign remittances have a positive impact on poverty alleviation only for middle-income countries.

On the effect of remittances on growth, Fayissa and Nsiah (2008) found that remittances promote growth in countries where the level of financial system development is low by providing an alternative source of finance for investment thereby helping the economy overcome liquidity constraints. Jongwanich (2007) in a related study comprising of Developing Asia and Pacific Countries found that remittances have a marginal impact on economic growth but the effect of remittances on poverty reduction was found to be significant. Ncube and Brixiova (2013) also found that remittances impact positively on public debt sustainability in Africa. Clemens and Mckenzie (2014) concluded that remittances have a first-order effect on poverty reduction and welfare in the country of origin as well as on the global GDP, but its effect on the economic growth of the country of origin is elusive. Meyer and Shera (2016) in a similar study opined that remittances have a positive impact on growth and that the impact tends to improve at a higher level of remittances relative to GDP. Salahuddin and Gow (2015) found that remittances have a highly significant and positive impact on economic growth. Balde (2009) concluded that remittances do not have a direct positive impact on growth in SSA instead it has an indirect effect on growth through various channels like investment or education. El Hamma (2016) in a similar study examined the relationship between remittances and financial sector development in selected Middle East and North African countries for a period of 1984 to 2012 and found that the effect of remittances on economic growth is affected by the level of financial sector development. Agu (2009) opined that there is a very weak relationship between remittances and the real sector of the Nigerian economy, but relatively significant on the private consumption.

However, on the productivity of labour, Urama, Nwosu, Yuni and Aguegboh (2016) investigated the impact of remittances on labour supply in Nigeria and found that remittances negatively affect labour supply of self-employed in agriculture, teenagers as well as the elderly. A similar study by Posse (2012) investigated the effect of remittances on aggregate labour supply in 66 countries across the world and found that remittances have a positive and significant impact on aggregate labour supply.

2.2.2 Remittances and Financial Sector Development

Fromentin (2015) examined the effect of remittances on financial development in Latin America and the Caribbean countries and found that remittances impact positively on financial sector development proxied by private sector credit, and Money supply (M2), all as a ratio of GDP. In a similar study which investigated the effect of remittances on financial development of 50 developing countries in Africa for the period of 1990 to 2011, Karikari, Mensah and Harey (2016) opined that remittances do not promote financial sector development proxied by private sector credit, bank deposit, money supply (M2). Githaiga and Kabiru (2014) examined the role of remittances as a determinant of financial sector development employing a panel of 31 countries for a period of 1980 to 2012 and found that remittances have a negative impact on credit to private sector and foreign direct investment while positive but insignificant impact on bank deposit which are all proxies for financial sector development.

Cooray (2012) explored the effect of remittances on financial sector development in 94 non-OECD countries and found that migrant remittances contribute positively to the size and efficiency of the financial sector. The study further suggested that remittances impact more positively on size and efficiency of the financial sector in the countries where government ownership of banks are lower.

3.0 Methodology

3.1 Data

The study included a panel data set which comprises of six (6) countries from the WAMZ (i.e Nigeria, Ghana, Gambia, Sierra Leone, Guinea, and Liberia). The time dimension of the data is for the period of 1996 to 2016, amounting to 21 observations per country. The variables employed in this study are presented in table 1 below.

Table 1 Variables descriptions

Variables	Descriptions	Expt. sign	Source
	Depenent variables		
M2	Money Supply as a ration of GDP		World Bank (2017)
NIM	Net Interest Margin (%)		Data Market (2017)
BZ	Bank Z-score		Data Market (2017)
	Independent Variables		
IMR	International Migrant Remittances as a ratio of GDP	+	World Bank (2017)
FDI	Foreign Direct Investment as a ratio of GDP	+	World Bank (2017)
ODA	Official Development Assistance as a ratio of GDP	+	World Bank (2017)
GEX	Government Expenditure as a ratio of GDP	+	World Bank (2017)

Source: Authors' presentation

The study employed money supply as a ration of GDP to proxy for depth of financial sector, while net interest margin was used as a proxy for the efficiency of the financial sector. The stability of the financial sector was proxied with the bank Z-score. The above-defined variables are used as proxies for financial sector development. Foreign direct investment, official development assistant and government expenditures were all included in the model as control variables.

3.1 Model Specification

The number of years covered in this study is less than 25 years, and based on this, a short panel methodology was employed for the analysis of the short panel data. The study adopted Arellano and Bond (1991) dynamic panel Generalized Method of Moments (GMM) and modified to suit the variables employed in this study. The study proposed to employ the following model in estimating the effect of remittances on financial sector development in WAMZ.

$$\sum FD_{i,t} = \sum \varphi FD_{i,t-1} + \sum \beta IMR_{i,t} + \sum \delta \gamma_{i,t} + \pi_i + \varepsilon_{i,t} \dots \dots \dots \dots \dots . (1)$$
$$i = 1 \dots \dots N; t = 1 \dots \dots . T$$

Where $FD_{i,t}$ is a vector of all proxies for depth, efficiency and stability of the financial sector; $FD_{i,t-1}$ is a vector of the lagged values of the financial sector development indicators (depth, efficiency and stability), $IMR_{i,t}$ represent the international migrant remittances, $\gamma_{i,t}$ is a vector of all the control variables included in the model. π_i is the country specific effect; while $\varepsilon_{i,t}$ is the error term; $\beta, \varphi,$ and δ are the coefficients of the independent variables to be estimated.

Employing the panel OLS (fixed and random effect) in this estimation will be erroneous since the lagged value of the dependent variable is bound to correlate with the error term. And so, by taking the first difference of the equation one, the Arellano and Bond (1991) GMM estimator provides a solution to this problem by eliminating the country-specific effect. Since the expected value of the error term minus the lagged value of the error term is zero i.e $E(\varepsilon_{i,t} - \varepsilon_{i,t-1}) = 0$, but the first lag minus the second $(FD_{i,t-1} - FD_{i,t-2})$ of the proxy for financial sector development is not independent $(\varepsilon_{i,t} - \varepsilon_{i,t-1})$, Arellano and Bond (1991) provided a solution to this problem by using two or more lags of the first difference of the financial sector development indicators as instruments. In line

with$(\gamma_{i,t} - \gamma_{i,t-1})$ and$(IMR_{i,t} - IMR_{i,t-1})$ we assume that international migrant remittances and other control variables are predetermined in the sense that$E(\gamma_{i,t}, \varepsilon_{i,s}) \neq 0$ and $E(FD_{i,t}, \varepsilon_{i,s}) \neq 0$ for s<t but zero for s≥t. it is expected that one or more period lagged level of the predetermined variables are orthogonal to the differenced error term and thus qualifies as a valid instrument for respective first difference right-hand side variables.

Meanwhile, to test for the robustness of our result, we estimated the effect of remittances on other measures of financial depth and efficiency like bank overhead cost as a ratio of total assets and deposit money bank total assets as a percentage of GDP.

The final step is on the choice of the best estimator among the one-step and two-step estimators for the first-differenced GMM estimator. It has been reported that two-step estimator is asymptotically more efficient than the one-step estimator but Blundell and Bond (1998) in a subsequent study noted that the asymptotic inferences based on the one-step estimator are more reliable because it has correct empirical size distributions. It is on the basis of this that we employed the one-step estimator. This approach is consistent with the study of Narayan and Narayan (2013) and Cole, Moshirian, and Wu (2008).

4.0 Analysis of Results

The result from the one-step difference GMM for WAMZ is reported in table 2. Columns 2 to 4 presents the main result for the three specific objectives of the study while 5 and 6 present the result of robustness test. The results presented in column 2 of table 2 represent the result of the first objective which examined the effect of remittances on the depth of the financial sector proxied by M2. The result showed that an increase in international migrant remittances as a percentage of GDP has a positive and statistically significant effect (at 1% level) on the depth of financial sector proxied by M2. In line with theory, FDI and GEX have a positive and significant effect (at 1% level) on financial sector depth proxied by M2. The result of ODA, on the other hand, showed a positive but insignificant effect on the depth of financial sector.

In column 3, table 2, the result of the second objectivewhich analyzed the effect of international migrant remittances on the efficiency of the financial sector proxied by NIM was reported. The result revealed that migrant remittance as a percentage of GDP has a positive and statistically insignificant effect on the efficiency of the financial sector proxied by net interest margin. The result of FDI and GEX indicates statistically significant and negative effect on the efficiency of the financial sector. On the other hand, the result of ODA showed a positive and significant effect (at 1% level) on the efficiency of the financial sector.

In column 4, the result of the third objective is presented which examined the effect of international migrant remittances on the stability of the financial sector proxied by bank Z-score. We find that an increase in international migrant remittances as a percentage of GDP has a statistically significant (at 5% level) and positive effect on the stability of the financial sector. The other regressors which were included in the model as control variables indicate that FDI and ODA has a statistically significant and positive effect on the stability of the financial sector proxied by bank Z-score. Similarly, GEX as a percentage of GDP showed a positive but insignificant effect on the stability of the financial sector.

4.1 Diagnostic tests

The last step in the estimation is to conduct some commonly employed diagnostic checks to verify whether or not the set of data used is consistent with the basic assumptions of Arellano and Bond (1991) estimator. First, we begin by reporting the Sargan test statistics which evaluates the over-identification restriction. The main goal of the test is to establish whether the error terms are uncorrelated with the instrument in the estimated equations. The null hypothesis is that the instruments taken together as a group are exogenous. And so, to validate the GMM estimates, there is need to find the exogenous instruments. The Sargan test statistics and the p-values are reported in the 5th and 6th row starting from the observation in table 2. The result of the Sargan test for all the models indicates that all the probability values are greater than 0.10, therefore, we fail to reject the null hypothesis. The second test reported is the Arellano and Bond test for autocorrelation. No autocorrelation is reported in the null hypothesis and it relates to differenced residuals. The report on AR(1) indicates that the p-values of first and last models are less than 0.05 while the p-value of the second model is less than 0.10, and based on this we reject the null hypothesis at AR(1).

Similarly, the result of AR(2) indicates that all the p-values are greater than 0.01, 0.05 and 0.10 and based on this we cannot reject the null hypothesis of no autocorrelation at AR(2). This, however, provides a strong evidence that the model is free from autocorrelation at AR(1).

Table 2: Results of the Differenced-GMM estimator

	(1)	(2)	(3)	(4)	(5)
VARIABLES	DGMM1	DGMM2	DGMM4	DGMM4	DGMM3
L.GM2	0.416***				
	(0.120)				
L.GNIM		0.360***			
		(0.0419)			
L.GBZSCORE			0.193**		
			(0.0829)		
L.GDMBA				0.795***	
				(0.0942)	
L.GBOC					0.314***
					(0.120)
GIMR	0.197***	0.0442	0.124**	-0.0719	-0.00502
	(0.0184)	(0.0419)	(0.0604)	(0.0784)	(0.0345)
GFDI	0.145***	-0.0447***	0.0782***	0.0441***	-0.0768***
	(0.0335)	(0.0131)	(0.0168)	(0.0138)	(0.0195)
GGEX	0.0490***	-0.0224***	0.0201	0.0154	-0.0490***
	(0.0148)	(0.00851)	(0.0139)	(0.0123)	(0.0141)
GODA	0.0196	0.0581***	0.0268**	0.00418	-0.000266
	(0.0170)	(0.00829)	(0.0131)	(0.00578)	(0.00544)
Observations	113	112	113	113	112
Number of crossed	6	6	6	6	6
country effect	YES	YES	YES	YES	YES
year effect	NO	NO	NO	NO	NO
Sargan_test	107.9	96.24	106.6	59.2	93.54
SarganProb	0.212	0.503	0.234	0.699	0.580
AR(1)_test	-22.377	-23.810	-21.260	-6.357	-19.901
AR(1)_P-value	0.019	0.008	0.028	0.050	0.035
AR(2)_test	-0.900	1.260	1.040	-1.987	2.084
AR(2)_P-value	0.368	0.208	0.298	0.0469	0.0372

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2 Robustness test result

The robustness test examined the effect of remittances on deposit money bank assets as a percentage of GDP as well as on bank overhead cost as a percentage of total assets. The two variables are equally used as proxies for financial sector depth and efficiency different from the ones included in our model. The result, however, indicates that the effect of international migrant remittances on the depth of the financial sector differ according to the proxy employed. However, international migrant remittances have a negative effect on depth when proxied with deposit money bank assets as a percentage of GDP, but when regressed on money supply as a percentage of GDP the result showed positive and statistically significant effect. On the other hand, the result of international migrant remittances on the efficiency of the financial sector remains the same irrespective of the variable used as a proxy for financial sector efficiency. The result, however, indicates that international migrant remittances contribute significantly to the reduction of the bank overhead cost as a percentage of total assets resulting in increased efficiency of the financial sector.

5.0 Conclusion and Recommendations

The objective of this paper was to examine the effect of international migrant remittances on financial sector development of WAMZ. The empirical analysis covered a period of 1996 to 2016, and we employed differenced-GMM estimator. We used three proxies for financial sector development, namely money supply which is a measure of financial sector depth, net interest margin which is a measure of efficiency and bank z-score which measures stability. We summarized our findings as follows; International migrant remittances have a positive and statistically significant effect on depth of the financial sector, while the effect onthe efficiency of the financial sector shows positive but statistically insignificant. The result on the effect of international migrant remittances on the stability of the financial sector proxied by bank z-score showed positive and statistically significant at 5% level. The result of the robustness test reviled that the effect of international migrant remittances on the depth of the financial sector depends on the proxy variable, while the effect on the efficiency remains the same irrespective of the choice of the proxy variable for financial sector efficiency.

We, therefore, recommend that effort should be made to promote inflow of migrant remittances into WAMZ so as to deepen the development of the financial sector in the region. This can be achieved through the establishment of a bilateral agreement with countries that impose a stringent condition on the repatriation of remittances to the home country with a view to reduce and remove the bottlenecks. Effective policies should also be instituted and implemented to ensure that most of the unofficial channels through which remittances are repatriated are effectively controlled so as to account for the actual remittances that flow into the region.

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