REMITTANCES AND ECONOMIC GROWTH IN ECOWAS COUNTRIES

Raymond l. Aor[1], Jerome Andohol[2] & Naomi O. Doki[3]

[1]Department of Economics
Benue State University, Makurdi, Nigeria
rakylak@yahoo.com
[2]Department of Economics
Benue State University, Makurdi, Nigeria
[3]Department of Economics
Benue State University, Makurdi, Nigeria

ABSTRACT

In this study we investigated the impact of remittances on economic growth covering 1992-2020 using a 5-year non-overlapping panel data for 15 ECOWAS countries. The study is anchored on the extended neoclassical growth model, adopting the system generalized method of moment (SGMM) estimation technique on a dynamic linear panel data model to render robust, consistent and efficient estimates. The study find that remittances exhibit a positive but insignificant impact on economic growth within the study period. This holds implications and the need to channel remittances receipts to productive ventures.

Pages 170 - 184

1. Introduction

The twenty-first century, marked with increased economic integration and enhanced labor mobility, has seen an increased flow of remittances across the globe. This global trend in the flow of remittances has undoubtedly led to a growing interest in the economic and social contributions of remittances to the recipient economies. More than 250 million people or 3.4 % of the world population live outside their countries of birth, (World Bank, 2016). The traditional viewpoint is that people migrate when they are both pushed by a lack of opportunities at home and pulled by the hope of economic gains elsewhere. Thus, the hope that migration will help associate migrants more closely with available economic opportunities, employment, and services elsewhere is a major incentive for migration. Arguably, migration is necessarily a part of a family strategy to raise income, obtain new funds, and insure against financial risks. It is therefore not surprising that thousands of West African migrants with relevant skill endowments leave their home countries yearly to pursue better economic prospects elsewhere within and outside Africa (Rena, 2008).

According to World Bank (2016), the total global official remittances flow stood at $613 billion, developing and emerging economies to which ECOWAS member countries belong account for about $466 billion of the global flow in 2017. These large sums are argued to confer macroeconomic impact on recipient economies; the need to investigate this source of finance other than the size of the inflow is hinged on the ratio of remittances to the gross domestic product, which consistently remains above 5% in majority of the countries within the study area and rising to 31% for Liberia in 2016. Despite their impressive increase, there seems to be a lack of clarity in the literature regarding the macroeconomic potency of remittances, hence, a contested subject among scholars and policy makers. Recent studies investigate the contributions of remittances to several macroeconomic variables such as output growth (Dastidar, 2017; William, 2017; Ofeh, & Muandzevera, 2017; Meyer, & Shera, 2016; Okodua, 2012), poverty reduction (Beyene,2011), the exchange rate (Mendelman, 2017), financial development (Bhattacherya, Inekwe, & Paramati, 2018; William, 2016; Karikari, Mensah, & Harvey 2016), domestic investment (Jena, 2017; Ojapinwa, & Adekunle, 2013; Ali, & Alpaslan, 2013; Balde, 2010), human capital formation (Arif, Raza, Frieman, & Suleman, 2018; Azizi, 2017), democratic institutions (Guetat,& Srida, 2017), producing conflicting results

These mixed findings are argued to occur on account of the absence or presence of the requisite channels/ mechanisms through which remittances impact growth. Theoretically, remittances are argued to transmit positive growth effects through several channels; first, via enhancement in physical capital. An increase in remittances inflow to an economy may lead to an increase in the domestic investment rate, thus, increasing economic growth. Second, it leads to the facilitation of human capital formation; a proportion of remittances received are used for the acquisition of education, healthcare as well as the nutritional needs of the recipient's household which ultimately translate into improved productivity and growth. This is on the premise that the developed human capital, in turn, does not emigrate. Third, remittances affect the ability of the recipient economy's financial system to allocate capital. It loosens credit constraints imposed on the households by a small financial sector. This increases the number of funds flowing through the banking system which in turn may lead to enhance financial development, hence, economic

growth. A thorough perusal of the remittances – economic growth relationship indicates the absence of a single study that interacts with the above channels (to account for the transmission effects of the channels) that are believed may transmit growth effects of remittances. A few studies that explore these channels are conducted on other developing economies outside the purview of this study (William, 2017; Chowdhury, 2016; Najibullah, & Masih, 2015); hence, extrapolating the results of other continents/regional and other sub-regional groupings for ECOWAS might be uninformative and may not account for unique and specific characteristics of the West African Economies, hence the need for this study.

Arising from the above, the underlying question for this study is, do remittances affect the economic growth of ECOWAS countries? Considering the mixed claims in the literature about the remittances-growth nexus, this study opts for an optimistic view by hypothesizing that remittances positively affect the economic growth of ECOWAS countries. To answer the research question, the neoclassical growth theory is adopted to interrogate this relationship with the application of system generalized method of moment (System GMM). The main finding of the study reveal that remittances have a positive but insignificant impact on economic growth in ECOWAS countries for the study period across various specifications. This suggest that, even though a positive relationship exist, the significance of the impact is weak; implying that, remittances into the sub-region is channel to economically unproductive uses. The remainder of the paper is presented as follows: Section 2 discusses literature review, Section 3 discusses the methodology, Section 4 presents the results and discussion while Section 5 concludes the paper.

2. Literature review: remittances and economic growth

The relationship between remittances and economic growth of recipient economies remains contested among scholars and policy makers. The underlying question is whether remittances affect the economic growth of recipient economies. Although there is a vast body of literature on this scholarship, conclusions remain mixed. In particular, scholars are divided about the best model to explain the remittances-growth model in a way that also takes in to account different mechanisms through which remittances affect growth. The methodological issues related to data and the problem of endogeneity between remittances and economic growth has influenced the ongoing empirical debates for developing countries. This section reviews the relevant empirical claims about remittances and growth. Dastidar (2017) show how remittances impact economic growth, using economic openness of the economy as a necessary channel of transmission, more open economies have better institutions and financial markets to take advantage of the remittance's inflows for productive investment. Similarly, Williams (2017) explored if remittances is a good predictor of economic growth conditional on the role of institutional quality in the growth process and find that democratic institutions mediate the impact of remittances on the growth process of recipient economies. Also, Ofeh and Muandzevara (2017) finds a positive but insignificant impact of remittances on economic growth process. Equally Naidu, Pandaram, and Chand (2017) accounted for the role of remittances inflows and outflows on the economic growth of Japan, they assert that, in the long-run, increases in remittances outflow will depress output growth, while remittances inflows will depress output growth in the short-run. Sabra (2016) investigated the impact of remittances on economic growth through domestic savings

and capital in the presence of official development assistant and foreign direct investment and find a positive impact on both economic growth and investment. Similarly, Zghidi, Sghaier, and Abida (2016) find strong evidence of a positive relationship between remittances and economic growth conditioned on the extent of economic freedom of such an economy. In a panel analysis of six high remittances receiving economies, Meyer and Shera (2016) finds a positive and significant impact of remittances on economic growth. Fasanya and Baruwa (2016), applied a heterogeneous panel cointegration method to highlight the significance of remittances on economic growth of six West African Monetary Zone countries and finds a positive and significant effect of remittances on economic growth. Chowdhury (2016) finds that, the impact of remittances is not growth enhancing using dynamic panel data analysis of 33 major remittances recipient economies. He emphasized that the interaction effect variable of financial development on remittances is equally not growth enhancing. The granger causality analysis by Mwangi and Mwenda (2015) reveal that international remittances indicators serves as significant factors influencing the growth process of Kenya, while Adarkwa (2015) studied the impact of remittances on economic growth of four selected remittances recipient economies and finds a positive association of remittances and economic growth in Senegal and Nigeria whereas a negative impact for Cape Verde and Cameroon. In another development, Bayar (2015), using the Dumitrescu and Hurlin causality test to establish a causal relationship between remittances and economic growth of transition emerging countries of the European Union, confirm a unidirectional causality running from remittances inflows to economic growth of the transition emerging economies. The significant impact of remittances, foreign direct investment, and imports on economic growth of Pakistan is investigated by Tahir, Khan, and Shah (2015) and find a significant and positive role of remittances and foreign direct investment in the growth process of Pakistan. Furthermore, Hassan and Shakur (2015) explored if there are significant externalities effects of remittances on the growth process of Asian economies and affirm that the externality effect of remittances is small in magnitude but significant. Establishing the causal link between economic growth and remittances through two specific transmission channels of financial development and investment, Najibullah and Masih (2015) find lack of long-run relationship between economic growth and remittances albeit the existences of a short-run relationship. Donou-Adonsou and Lim (2015) analyzed remittances flows to the West African Economic and Monetary Union with the aid of Westlund's (2007) found no evidence of a long-run impact of remittances on income per capital in the sub-region. Jidoud (2015) investigated remittances and macroeconomic volatility, highlighting channels through which remittances affect macroeconomic volatility in African countries using a dynamic stochastic general equilibrium (DSGE) model augmented with financial frictions and finds that, remittances as a share of GDP have a significant smoothing impact on output volatility.

3. Methodology

3.1 Theoretical Model

Following the Solow-Swan Model also known as the exogenous growth model which was developed independently by Solow (1956) and Swan (1956) using the idea of Cobb-Douglas production function, and economic growth model for developing countries like West African countries can be expressed as:

$Y = f(K^{\propto} AL^{1-\propto})$ - - - - - - - - - - 3.1

Where;

Y = Real Output

K = Capital Accumulation or composition

L = Labor

Thus,

$Y_t = f(k_t{}^{\propto} A_t L_t{}^{1-\propto})$ - - - - - - - - - - 3.2

Where;

t denotes time, $0 < \propto < 1$, α is the output elasticity for capital (K), 1-α is the output elasticity of labor (L); Y_t represents total output and A_t refers to labor augmenting technology or knowledge. Hence, AL represents effective labor.

However, Mankiw, Romer, and Weil (1992) created an augmented version of the Solow-Swan model that can explain the failure of international investment flow to poor countries (Mankiw, Romer and Weil, 1992) as:

$Y_t = f(k_t{}^{\propto} H_t{}^{\beta} A_t L_t{}^{1-\propto-\beta})$ - - - - - - - - - - 3.3

Where;

H_t is the stock of human capital.

$1 - \alpha - \beta$ is the output elasticity of augmented labour (AL)

Transforming the model and the taking natural logarithm:

$lnY_t = f(\propto lnK_t \, \beta lnH_t \, A_t(1 - \alpha - \beta) lnL_t)$ - - - - - - - - - - 3.4

3.2 Empirical models

This model is built on the neoclassical growth model as captured by the augmented version of the Solow-Swan. Thus, following the Mankiw, Romer, and Weil (1992) augmented version of the Solow-Swan model, the dependent variable is the real income per capita (RGDPPC) in constant dollars, while the explanatory variable of interest is remittances (REM) measured as a ratio of remittances over GDP from the World Development Indicators. Remittances enter the model as a form of non-earned income from abroad and are theoretically expected to impact output growth. A set of control variables which are anchored on the augmented version of the Solow model and eliciting universal empirical acceptability includes: Inflation, (CPI) measured as the annual percentage of the Consumer Perception Index, this variable is widely used as a measure of economic stability as a determinant of economic growth as supported by Guiliano, and Ruiz-Arranz, (2009); Karikari, and Harvey (2016) based on the augmented Solow model. Openness to international Trade, (OP), defined as the ratio of the sum of exports plus imports of goods to total output. This research derives inspiration for the inclusion of this variable from Chinn and Hiro, (2008); Dollar, (1992); Dollar and Kraay, (2000); and Sach and Warner, (1995) whose works are also anchored on the Cobb Douglas function within the augmented version of the Solow model. Human capital Development (HCD) measured as the index of human capital, which derives its inclusion from Mankiw, Weil, and Romer's (1992) augmented Solow model and widely used and accepted as a determinant of economic growth by empirical literature such as Barro, and Sala-i-Martin, (1995); Krueger and Lindahl, (2001); Pritchett, (2001); and Barro and Lee, (1993) as a growth-enhancing variable. Institutional Quality (IQ) for which democratic institutions are adopted as the main measure of institutional quality is measured by the Polity2 Index score from the Polity IV database. Its inclusion is principally based on the classical work of North (1990) and supported by empirical inclusion based on the works of Barro, (1999, 2003); Rodrik, (2000); Hall and Jones, (1999); Knack and

Keefer (1995); Mauro, (1995) which traced their inclusion from North (1990). Investment ratio (IR) defined as the ratio of gross fixed capital formation to GDP; which is anchored on the postulations of the augmented Solow model as well as empirical works of Barro and Sala-i-Martin, (1995); Sala-i-Martin, (1997); Easterly and Levine, (1997) as a growth-enhancing variable. Financial Development (FD) is measured as the credit to the private sector as a percentage of Gross Domestic Product. This variable earned its inclusion as a growth-enhancing variable from the works of Razan and Zingales, (1998); King and Levine, (1993); Menyah, Nazlioglu, and Wolde-Rafael, (2014). As a starting exercise, the study specifies the model of interest as follows:

$$\ln RGDPPC_{it} = f(\beta_0 + \beta_1 \ln REM_{it} + \beta_2 X_{it} + \mu_t + \eta_i + \varepsilon_{it}) \text{----------} 3.5$$

Where $RGDPPC_{it}$ denotes the logarithm of the level of GDP per capita, REM is the ratio of remittances over GDP and X_{it} is the matrix of control variables as describes above and stating the basis for their inclusion, μ_t is a time-specific effect, η_i is an unobserved country-specific fixed effect and ε_{it} is the error term. This model seeks to test whether the marginal impact of remittances on growth β_1 is statistically significant. To specify the model along with control variables, the model becomes:

$$\ln RGDPPC_{it} = f(\ln REM_{it}, \ln HCD_{it}, \ln FD_{it}, \ln IR_{it}, CPI_{it}, \ln OP_{it}, POLITY2_{it}) \text{--------} 3.6$$

Where;

RGDPPC	=	Real GDP per capita
REM	=	Remittances
HCD	=	Human capita development
FD	=	Financial Development
IR	=	Investment ratio
CPI	=	Consumer price index
OP	=	Trade openness
POLITY2		= Polity2

The relevant econometric model for estimation is equation (3.6) which is explicitly specified thus:

$$\ln RGDPPC_{it} = \beta_0 + \beta_1 \ln REM_{it} + \beta_2 \ln HCD_{it} + \beta_3 \ln FD_{it} + \beta_4 \ln IR_{it} + \beta_5 CPI_{it} + \beta_6 \ln OP_{it} + \beta_7 POLITY2_{it} + \eta_i + \nu_{it} \text{------} 3.7$$

According to Blundell, Bond, and Windmeijer (2009), a linear dynamic panel data model should consider the autoregressive pattern of the form:

$$y_{it} = \propto y_{it-1} + \beta' x_{it} + U_{it} \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad 3.8$$

$$U_{it} = \eta_i + v_{it} \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad 3.9$$

Where $i = 1, \ldots, N$ and $t = 2, \ldots, T$. Where $\eta_i + v_{it}$ is the usual 'error components' decomposition of the error term; N is large, T is fixed, and $/\propto/ < 1$. The above specification is sufficient to

cover most of the standard cases encountered in linear dynamic panel applications and allows the inclusion of x_{it-1} that provides the autoregressive panel data model as:

$$y_{it} = \propto y_{it-1} + \beta_1^{'} x_{it} + \beta_2^{'} x_{it-1} + \eta_i + \mathrm{v}_{it} \quad - \quad - \quad - \quad - \quad 3.10$$

Applying the above typical linear dynamic panel model to equation 3.7 to examining the impact of remittances on economic growth, the model is re-stated as:

$$\ln RGDPPC_{it} = \beta_0 + \delta \ln RGDPPC_{it-1} + \beta_1 \ln REM_{it} + \beta_2 \ln HCD_{it} + \beta_3 \ln FD_{it} + \beta_4 \ln IR_{it} + \beta_5 CPI_{it} + \beta_6 \ln OP_{it} + \beta_7 IQ_{it} + \eta_i + \nu_{it} \quad ----------3.11$$

Where;

β_0	=	Intercept
$\beta_1 - \beta_7$	=	Parameter Coefficients to be estimated
η_i	=	Individual Specific Effect or Fixed Effect
v_{it}	=	An idiosyncratic error

Equation 3.11 is estimated to provide insight on objective of this study.

We utilized a 5-year non-overlapping panel data for 15 ECOWAS countries covering 1992-2020 obtained from world development indicators, International Monetary Fund, International Financial Statistics and the national database of the individual countries. The choice of the time span is based on the availability of data for majority of the countries included in the study.

This study adopt Blundell and Bond's (1998) System Generalized Method-of-Moments (SGMM) estimator within the Dynamic Panel Data Modeling framework. It is a general estimator that makes fewer assumptions about the underlying data generating process but uses more complex techniques to isolate useful information as it relates to the bias and efficiency of the parameter estimates. The Arellano and Bond (1991) 'Difference GMM' is so-called because estimation precedes after first-differencing the data to eliminate the fixed effects. The Arellano and Bover (1995), and Blundell and Bond (1998) 'System GMM' estimator augments the difference GMM by making an additional assumption that, the first difference of instrument variables are uncorrelated with fixed effects, which allows for the introduction of more instruments and can dramatically improve efficiency. It, therefore, builds on the system of two equations i.e., the original equation which is referred to as the level equation, and the transformed equation which is referred to as the differential equation. In the estimation procedure, the system GMM has two variants, the one-step, and two-step; although the two-step is asymptotically more efficient, the reported two steps standard errors tend to be severely downward biased (Arellano and Bond 1991; Blundell and Bond 1998). To compensate for this bias, there is a finite-sample correction to the two-step covariance matrix derived by Windmiejer (2005). This thus, makes a two-step robust option more efficient than a one-step robust, especially for system GMM. The simultaneous estimations of the two equations within the generalized method-of-moments and the two equations being distinctly instrumented for by a set of internal instruments account for the system generalized method of the moment.

The system GMM estimator is designed for panel analysis and embodies

assumptions about the data generating process as follows: the process may be dynamic with current realizations of the dependent variable influenced by past ones; there may be existences of arbitrarily distributed fixed individual effects; some regressors may be endogenous; the idiosyncratic disturbances (those apart from the fixed effects) may have individual-specific patterns of heteroskedasticity and serial correlation, and the idiosyncratic disturbances are uncorrelated across individuals. It principally assumes "the panel is small T, and large N"; it finally assumes that the only available instrument is "internal"- based on lags of the instrumented variables. In general, the estimator is designed for short, wide panels, and to fit linear models with one dynamic dependent variable with additional control correlates and fixed effects.

4. Results

The dynamic panel data model estimation results for the remittances-growth model are reported in Table 4.1. This includes four separate results in columns 1 to 4 of the table. Column 1 comprises the one-step system GMM without lags; column 2 has the one-step system GMM results with lags, while column 3 includes the two-step system GMM results without lags. Column 4 is made up of the result of a two-step system GMM with lags. An underlying advantage of the system GMM estimation is that all variables from the regression that are not correlated with the error term (including lagged and differenced variables) can be potentially used as valid instruments (Greene, 2008). An optimal set of internal instruments were utilized by engaging the collapse option in the system GMM results.

An examination of the result in Table 4.1 begins with the diagnostics tests. As a starting point, the system GMM estimator assumes that the idiosyncratic errors ν_{it} are serially uncorrelated for consistent estimations. The presence of autocorrelation will indicate that lags of the dependent variable and any other variables used as instruments that are not strictly exogenous are endogenous, thus bad instruments. Arellano and Bond develop a test for this phenomenon that would potentially render some lags invalid as instruments. It is applied to the differenced residuals to purge the unobserved and perfectly autocorrelated idiosyncratic errors. These results are reported as AR(1) and AR(2) in the lower portion of Table 4.1. The null hypothesis $\text{cov}(\Delta\nu_{it}, \Delta\nu_{it-k}) = 0$ for k = 1 & 2 is rejected at a level of 0.1 if P<0.1. If ν_{it} are serially uncorrelated, then the null of no serial correlation will be rejected at order 1 i.e. AR(1) but accepted at higher orders. This is the case of the result in Table 4.1, where the null of no serial correlation is rejected in order 1 but accepted at order 2. Given this result, the estimates can be regarded as consistent.

Table 4.1: Dynamic Panel Data Results for Remittances-Growth Equation: System GMM

Regressand: lnRGDPPC				
Specification Options:	One-step Without lags	One-step With lags	Two-step Without lags	Two-step With lags
Regressors:	1a	1b-collapse	2a	2b-collapse
lnRGDPPC_{it-1}	0.788***	0.784***	0.843***	0.795***

	(0.000)	(0.000)	(0.000)	(0.000)
lnREM	0.0971	0.103	0.0893	0.110
	(0.153)	(0.173)	(0.365)	(0.147)
$lnREM_{it-1}$	-0.919	-0.101	-0.802	-0.104
	(0.261)	(0.277)	(0.421)	(0.198)
HCD	0.682*	0.710*	0.614	0.714**
	(0.091)	(0.080)	(0.294)	(0.046)
lnFD	0.142**	0.143**	0.130***	0.155***
	(0.022)	(0.045)	(0.005)	(0.018)
lnIR	-0.00740	0.002	-0.0172**	0.006
	(0.864)	(0.965)	(0.0494)	(0.897)
lnCPI	0.0543	0.0552	0.0425	0.052
	(0.109)	(0.123)	(0.255)	(0.120)
lnTOP	-0.203*	-0.187*	-0.169	-0.204**
	(0.063)	(0.092)	(0.257)	(0.045)
POLITY2	0.0289***	0.0288***	0.0271***	0.027***
	(0.000)	(0.000)	(0.002)	(0.000)
Constant	1.685*	1.608	1.255	1.823
	(0.067)	(0.159)	(0.319)	(0.404)
Observations	59	59	59	59
Number of crossed	15	15	15	15
country effect	YES	YES	YES	YES
year effect	NO	NO	NO	NO
Hansen_test	2.704	1.460	2.704	1.460
Hansen Prob	[0.911]	[0.834]	[0.911]	[0.834]
Sargan_test	6.994	2.967	6.994	2.967
Sargan Prob	[0.429]	[0.563]	[0.429]	[0.563]
AR(1)_test	-1.913	-1.940	-1.733	-1.887
AR(1)_P-value	[0.0558]	[0.0524]	[0.0831]	[0.0591]
AR(2)_test	0.489	0.460	0.490	0.541
AR(2)_P-value	[0.62]	[0.646]	[0.624]	[0.589]
No. of Instruments	17	12	17	12
F-Stat.	148.57	123.97	184.31	729.94
F-Stat_P-value	[0.000]	[0.000]	[0.000]	[0.000]

*NOTES: The p-values are reported in brackets. ***, **, *,represent 1%, 5% and 10% significances levels respectively.*

1a &1b denote one-step SGMM without and with lags respectively while 2a &2b; denote Two-Step SGMM without and with lags respectively. Also, the Regressions follow Roodman (2009b) by collapsing the instrument matrix.

Source: Authors computation from STATA output.

Another diagnostic test is the test of over-identifying restrictions of whether the instruments as a group appear exogenous. This test of instrument validity has to do with comparing instruments used in each case and the related number of parameters. It is implemented by the Sargan and Hansen tests. The null hypothesis that the population moment condition is valid is not rejected if P>0.05. This is valid for the results presented

in Table 4.1 where the P-values of both Sargan and Hansen tests are consistent. However, a rule of thumb as suggested by Roodman (2009b) that the number of instruments in any given equation must be less or equal to the number of cross-sections. This made columns 1b and 2b whose number of instruments are 14 each valid for possible interpretation and discussions. The F-Statistic is the small-sample counterpart of the Wald (Chi-Squared) statistic and it is a measure of the overall significance of an estimated model. The values in each of the specifications in the model are considered satisfactory, with a one percent level of significance in each case. This is indicative that, all the exogenous variables jointly explained significantly the economic growth process across ECOWAS member countries over the study period.

The Blundell-Bond (system-GMM) robust estimates Table 4.1 indicates that growth dynamics are crucial and significant among ECOWAS member countries. An inspection of these results reveals that past realizations of economic growth produce some contemporaneous positive impact on economic growth. Precisely, a 1% change in the past realizations of growth explained positively, about 0.795% of current growth levels. This is a positive and significant outcome is across the four specification options. This result agrees with Ahortor and Adenutsi (2009).

The remittance variable has shown a positive impact but insignificant effect on economic growth among ECOWAS members within the study period across all specifications. This finding suggests that, even though a positive relationship exists between remittances and economic growth for the study period, the significance of the relationship is weak; implying that, remittances into member countries are directed intentionally or otherwise at some economically unproductive uses. A positive relationship established the point to the fact that remittances have rendered a positive association with economic growth, implying it is a variable with the potential to enhance economic growth if properly harnessed among member countries. This finding is consistent with the findings of Fasanya and Baruwa (2016), Meyer and Shera (2016), and Zghidi, Sghaler, and Abida (2016), however, in disagreement with the findings of Williams 2017, Chami et al (2003) and Okodua (2012).

Human capital development is positively signed and statistically significant when the two-step system GMM option is considered. This result indicates that a 1% change in human capital will explain a 0.714% change in economic growth in ECOWAS countries. This result is not surprising given the huge potential for human capital development among member countries. This relationship reflects a huge potential for growth if properly developed. The implication is that a well-developed human capital that does not emigrate will directly impact productivity leading to output growth as long as ECOWAS economies operate within the positive region of the production function. The implication for theory is that the economic growth-enhancing role of human capital development is theoretically and empirically plausible even in ECOWAS countries. However, the impact may be most acknowledged with an improved commitment to human capital development initiatives.

Credit to the private sector variable which is a measure of financial development is found to be positive and statistically significant at one percent. The result indicates that a 1% change in financial development will explain about 0.144% change in economic growth among ECOWAS member countries. The significance of this variable is consistent irrespective of the specification option adopted. The theoretical plausibility of these findings rests on the fact that; growth

augmenting the role of financial development is found relevant among ECOWAS member countries.

Surprisingly, domestic investment is positively signed but insignificant. Capital inputs arising from remittances inflow, in this case, turns out not to be a major consideration in driving economic growth in the sampled economies even though it renders a positive contribution towards economic growth. This fact may not be unconnected with the relative dominance of the labor-intensive sector in most ECOWAS member economies.

Inflation within the sample period exudes positive but insignificant affiliation with economic growth regardless of the specification options adopted. A 1% change in inflation will explain a 0.0522% change in economic growth among ECOWAS member countries. Theoretically, this result confirms that a mild level of inflation rate may be consistent with the goal of economic growth. This finding may be plausible on account of high-profit expectations that may encourage increased investment levels which are consistent with economic growth.

For trade openness, the result indicates a negative but significant association with economic growth using the two-step specification option. A 1% change in the index of trade openness will explain about -0.204% change in economic growth among ECOWAS member countries. This finding upholds ECOWAS member countries' realism where trade is one-sided by heavy imports of finished consumables with relatively little exports and in most cases, the exports are in raw form. This, however, is expected to render a negative association with economic growth.

However, democratic institutions (polity2) render a positive and significant relationship with economic growth. The result reveals that a 1% improvement in democratic institutions will explain a 0.027% change in economic growth in ECOWAS member countries. This result is significant and robust to all specification options.

5. Conclusion

The question of whether remittances impact the economic growth of ECOWAS countries has been extensively explored in this study. The application of the system GMM estimator to a dynamic panel data model in investigating the research problem has proved quite intuitive and immensely suitable. The empirical study sheds new light on the growth-remittances nexus that is useful in the design of macroeconomic policies in the ECOWAS sub-region and also provides the basis on which the policies can be evaluated. The results of this study highlight the role of remittances in the growth of the economies and the policy options available to the governments of these countries. Remittances may not be strongly relied upon for now to promote economic growth in the sub-region. The sustenance of remittances inflows and the productive use of all such inflows by ECOWAS countries demand urgent attention from governments and monetary authorities in terms of the provision of relevant policy direction. Every related policy measure, therefore, should be targeted towards the reorientation of senders and recipients of remittances to ensure that these flows are regularly engaged productively. Moreover, it will not be out of place if policy incentives are given a sectoral focus such that remittances are used productively in sectors that are of greatest interest to the recipients. This will hopefully allow for stable and sustainable economic growth and development in the ECOWAS sub-region. The study therefore recommends the establishment of a credit guarantee scheme by the individual monetary authorities in the ECOWAS sub-region. This policy should be

designed to divert remittance receipts into more productive uses. To ensure this is achieved, every regular remittance recipient who indicates interest to use such credit for investment purposes only should be extended the facility. Such recipients must, however, demonstrate convincing business ideas to the participating banks (in the credit guarantee scheme) and the stream of remittances flows to the beneficiary must have been regular and stable over a specified minimum period. This is necessary on account that, most remittances recipients receive these funds in small tranches that in most cases may not be enough to convert to meaningful investment. This will ensure that a credit guarantee scheme will provide the needed capital flow for investment.

REFERENCES

Adarkwa, M. (2015). Impact of remittances on economic growth: evidence from selected West African countries Cameroon, Cape Verde, Nigeria, and Senegal. *African humane mobility review*, vol.1, no.2

Ali, A. and Alpaslan, B. (2013). Do migrant remittances complement domestic investment? New evidence from panel cointegration. *The school of economics discussion paper series 1308, economics.* The university of Manchester.

Arellano, M., and Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58: 277–297.

Arellano, M. and Bover, O. (1995). Another look at the instrumental variables' estimation of error component models. *Journal of Econometrics*, 68: 29–51.DOI:10.1016/ 0304-4076(94)01642-D.

Azizi, S. S., (2016) Altruism: primary motivation of remittances. *Applied Economics Letters,* DOI:10.1080/13504851.2016.1267840

Baldé, Y. (2010). Migrants' remittances and economic growth in Sub-Saharan Africa. *Laboratory of economic analysis and perspective (LAPE),* University of Limoges, France.

Barro, R. (1999). Determinants of democracy. *Journal of Political Economy* 107: S158–183. DOI:10.1086/250107.

Barro, R., & Sala-i-Marin, X. (1995). Economic growth. New York: *McGraw-Hill.*

Barro, R.J., (2003). Determinants of economic growth in a panel of countries, CEMA Working Papers505, *China Economics and Management Academy, Central University of Finance and Economics.*

Barro, R. J. & Lee, J. (1993). International comparisons of education attainment, *Journal of Monetary Economics, Elsevier*, vol. 32(3), 363-394, December.

Bayar, Y., (2015). Impact of remittances on the economic growth in the transitional economies of the European Union. *Economic Insights – Trends and Challenges*, IV(LXVII), 1-10.

Beyene, B. M. (2011). The effect of international remittances on poverty and inequality in Ethiopia.http://www.pmbf.ait.ac.th/www/images/pmbfdoc/research/report_sharifmahmud.pdf

Blundell, R., and Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87: 115–143. DOI:10.1016/S0304- 4076(98)00009-8.

Blundell, R., Bond, S. and Windmeijer, F. (2009). Estimation in dynamic panel data models: improving on the performance of the standard GMM estimator. *Advances in Econometrics,* 15, 53-91.

http://dx.doi.org/10.1016/S0731-9053(00)15003-0

Blundell, R., Bond, S. and Windmeijer, F. (2009). Estimation in dynamic panel data models: improving on the performance of the standard GMM estimator. *Nonstationary Panels, Panel Cointegration, and Dynamic Panels*. 15:53–91.

Bhattacharya, M., Inekwe, J. and Paramati, S.R. (2018). Remittances and financial development: empirical evidence from the heterogeneous panel of countries. *Applied Economics,* DOI: 10.1080/00036846.2018.1441513

Chinn, M. D. and Hiro, I. (2008).A new measure of financial openness.*Journal of Comparative Policy Analysis: Research and Practice*, 10(3):309-322.

Chowdhury, M., (2016).Financial development, remittance, and economic growth: evidence using a dynamic panel estimation. *The journal of applied economics research.*Vol. 10(1), pp. 35-54 https://doi.org/10.1177/0973801015612666

Dastidar G. S.(2017). Impact of remittances on economic growth in developing countries: The role of openness. *Global Economy Journal, De Gruyter*, vol. 17(2), 1-12

Dollar, D. (1992). Outward-oriented developing economies do grow more rapidly: evidence from 95 LDCs, 1976–85. *Economic Development and Cultural Change*, 40(3):523–544.

Dollar, D. and Kraay, A. (2000). Trade, growth, and poverty. *The World Bank Development Research Group, Washington, Mimeo.*

Easterly, W. (2001). The elusive quest for growth: economists adventures and misadventures in the tropics.*Cambridge MA: MIT Press*

Easterly, W. and Levine, R. (1997). Africa's growth tragedy: Policies and ethnic divisions. *Quarterly Journal of Economics,* 112(4): 1203-1250.

Easterly, W. and Rebelo, S. (1993). Fiscal policy and economic growth: An empirical investigation. *Journal of Monetary Economics,*32(3):417-458.

Giuliano, P. and Marta, R.,(2009). Remittances, financial development, and growth, Journal of Development Economics, Elsevier, vol. 90(1), 144-152,

Hall, R., and Jones, C. (1999), Why do some countries produce so much more output than others? *The Quarterly Journal of Economics*, 114(1): 83-116.

Hassan, M.K., Sanchez, B. & Yu, J., (2016). Financial development and economic growth: New evidence from panel data, *Quarterly Review of Economics and Finance*. 51, 88-104.

Jena, F. (2017). Migrant remittance and physical investment purchases: Evidence from Kenyan Households. *The journal of development studies*, vol. 54(2) 312-326 https://doi.org/10.1080/00220388.2017.1288219

Jidoud, A. (2015), Remittances and macroeconomic volatility in African countries, IMF *Working Paper No. 15/49*. Available at SSRN: https://ssrn.com/abstract=2594133

Karikari, N.K., Mensah, S. and Harvey, S.K. (2016) *Springer Plus* 5: 1011. https://doi.org/10.1186/s40064-016-2658-7

King, R.G., and Levine, R., (1993). Finance and growth: Schumpeter might be right. *Quarterly journal of economics.* 108(3): 717-737

Knack, S. and Keefer, P. (1995). Institutions and economic performance: Cross-

country tests using alternative institutional measures. *Economics and Politics,* 7(3): 207-227.

Krueger, A. and Lindhal, M. (2001). Education for growth: Why and for whom? *Journal of Economic Literature,* 39(4): 1101-1136.

Mandelma, J.S. (2012). Monetary and exchange rate policy under remittance fluctuation. *Journal of development economics*, vol. 103 128-147.

Mankiw, N., Romer, D. and Weil, D. (1992), A Contribution to the empirics of economic growth. *Quarterly Journal of Economics,* 107(2): 407-437.

Mauro, P. (1995). Corruption and growth, *Quarterly Journal of Economics*, 110(3): 681-712.

Meryar, D. and Shera, A., (2016). The impact of remittance on economic growths: An econometric model. *Economia*, vol. 18(2) 147-55 https://doi.org/10.1016/J.econ.2016.06.001p64

Mwangi, B., &Mwenda, S. (2015). The effect of international remittances on economic growth in Kenya. Microeconomics and Macroeconomics, 3(1), 15-24

Naidu, S. P., and Chand, A., (2017). A Johansen cointegration test for the relationship between remittance & economic growth of Japan. *Journal of modern applied science,* vol. 11(10)137. Doi:10.5539/mas.vllnlop137

Najibullah, S., and Masih, M. (2015), Remittances and economic growth nexus: Do financial development and investment act as transmission channels? An ARDL bounds approach, *MPRA Paper 65837, University Library of Munich, Germany*.

North, D. (1990). Institutions, institutional change and economic performance, *Cambridge*: Cambridge University Press.

Ojapinwa, T.V. and L.A. Odekunle, (2013). Workers' remittance and their effect on the level of investment in Nigeria: An empirical analysis. *International Journal of Economics and Finance, 5(4): 89.*

Okodua, H. (2012). Migrant workers' remittances and output growth in Sub-Saharan African Countries.*European scientific journal.*Vol.8(19)

Pritchett, L. (2001). Where has all the Education Gone? *World Bank Economic Review*,15: 367-391.

Rajan, R. G., & Zingales, L., (1998). Financial Dependence and Growth, American Economic Review, *American Economic Association,* vol. 88(3), 559-586, June.

Rena, R. (2008), Recent Trends in the World Economy: A Case Study of Africa, Mumbai (India); *Journal of Global Economy*, Vol.4. No.2, (April-June), pp.85-101.

Rodrik, D. (2000). Institutions for high-quality growth: What they are and how to acquire them. *Studies in Comparative International Development*, 35:3-31.

Sabra, M. (2016). Remittances impact on economic growth, domestic savings and domestic capital at the presence of ODA and FDI in selected MENA countries. 10.6007/IJAREMS/v5-i1/2135.

Sachs, J.D. and Warner, A. (1995). Economic reform and the process of global integration. *Brooking Papers on Economic Activity*, (1):1–118.

Sala-i-Martin X. (1997). I just ran two million regressions. *American Economic*

Review. Papers and Proceedings, 87(2): 178-183.

Solow, R. M., (1956). Contribution to the theory of economic growth, *Quarterly journal of economics*, Vol. 70(1), 65-94.

Swan, T.W., (1956). Economic growth & capital accumulation. *The economic record*, Vol. 32(2) 334-61

Tahir, M. Khan, I. and Shah, A. M. (2015). Foreign remittances, foreign direct investment, foreign imports and economic growth in Pakistan: A time series analysis. *Arab Economic and Business Journal, 10: 82–89.*

William, K. (2017). Is remittance good for economic growth? The role of political institutions. *Journal of applied economic letters*, vol. 25(1) 56-60. https://doi.org/10.1080/13504851.2017.1293781

Williams K. (2017). Does remittance improve political institutions? Evidence from Sub-Saharan Africa.*Journal of economic modeling*, vol. 61 65-75.

Williams, K. (2016). Remittance and financial development: Evidence from Sub-Saharan Africa. *African development review* vol. 28(3) pp 357-367. https:/doi.org/10.1111/1467-8268.12202

Windmeijer, F. (2005), A finite sample correction for the variance of linear efficient two-step GMM estimators, *Journal of Econometrics, Elsevier*, vol. 126(1), 25-51, May

Zghidi, N. and Abida, Z., (2015). Remittance, economic freedom, and economic growth in North African countries. *The Romanian economic journal*, vol. 18(58), pp. 18(58), 139-164(24).

Zghidi, N., Mohamed S. Imen and Abida, Zouheir. (2016). Remittances, institutions, and economic growth in north African Countries. *Journal of the Knowledge Economy.10.1007/s13132-016-0377-5.*

Back to the CONTENTS Top of the Article