MONETARY POLICY TRANSMISSION MECHANISMS, REMITTANCES INFLOWS AND ECONOMIC PERFORMANCE: EMPIRICAL ANALYSIS FROM NIGERIA

Sunday Oseiweh Ogbeide, PhD
Department of Accounting and Finance
Faculty of Humanities, Social and Management Sciences
Elizade University, Ilara- Mokin, Ondo State, Nigeria.
Corresponding Author's Email: sunnyogbeide2017@gmail.com
GSM: +234-8132490958

Mamudu Oshiozekha Ganiyu, M.Sc
Department of Business Administration & Management
School of Business Studies, Auchi Polytechnic, Edo State, Nigeria
Email: ganiyumamuduatap@gmail.com

ABSTRACT

Migrant remittance inflows have witnessed unprecedented surge over time in Nigeria in recent times. These remittances are commonly influenced through the monetary policy of the government towards driving economic activities and performance in a country. Yet, little is known on the empirical front on the nexus between monetary policy transmission mechanisms, diaspora remittances and economic performance. It is against this backdrop, this study is undertaken. The research used time-series data from 1960 to 2018 was sourced from the World Bank Indicators and Central Bank of Nigeria Statistical Bulletin. The study employed econometric techniques such as the Augmented Dickey-Fuller (ADF) unit root test, correlation statistics, Granger causality test and the general method of moment (GMM) to analyze the data. The study finding showed that remittances inflows are a major driver of economic activities and growth in the Nigeria clime. Exchange rate exerted a positive impact on gross domestic product per capita growth in Nigeria. Both remittances inflows and exchange rate maintained a bi-directional causality with the performance of the economy of Nigeria. The study concludes that remittances inflows have a correlation with monetary policy transmission mechanisms towards enhancing the performance of the economy of Nigeria. It is therefore recommended that the government needs to create investors' friendly environment capable of encouraging migrants to channel their resources into the economy. This will help to boost economic activities, reduce the unemployment rate, increases savings, with the end goal of engendering economic performance of Nigeria. This study, therefore, suggests that the Central Bank of Nigeria CBN) should urgently come up with a policy framework that can increase the country's capital stock instead of expending it as this has the capacity f influencing economic activities in the country.

Keywords: Remittances Inflows, Monetary Policy, Inflation Rate, Exchange Rate, Gross Domestic Product per Capita Growth

1. INTRODUCTION

Monetary policy is one of the major economic stabilization weapons of the apex bank in a country. It is one of the measures designed to regulate and control the volume, cost, availability and direction of money and credit in an economy towards achieving some specific macro-economic policy objectives. Monetary policy is often employed by the monetary authority to control the money supply and credit condition in an economy (Onouorah, Shaib, & Ekhikioya, 2011). Mishkin (2007) posits that monetary policy influences the economy through a variety of mechanisms which include interest rates, credit and/or bank lending, exchange rates, equity

and housing prices.

In Nigeria, the monetary authority does employ monetary policy transmission mechanisms to influence investment activities and in stabilizing the performance of the economy. The monetary policy transmission mechanisms are the channels through which changes made by the monetary authority affect the general price level of goods and services as well as the supply of money in the economy. Monetary policy transmission mechanisms are concerned with the changes associated with the alteration of money supply and the effects on prices of goods and services, the output of sectors and employment (Onyeiwu, 2012). One of the pivotal aims of monetary policy is inflation targeting and exchange rate control. This has been the focus and pursuit of the monetary authority overtime in the Nigeria clime.

Prior researches such as Kapur (2004); Babatunde and Shuaibu (2011); Ishioro (2013; Alvinasab (2016).investigated the effect of monetary policies on economic performance in varying countries; however, the impact of remittances inflows and monetary policy transmission mechanisms such as inflation rate and exchange rate in a unified model on the economic performance of Nigeria is yet to receive adequate attention. In the developed economies, substantial evidence abounds concerning the effectiveness of inflation rate and exchange rate on economic growth using cross-sectional, time-series data in country-specific, and cross-country basis (Srithitat & Sun, 2017; Iheanacho, 2019). The correlation between remittances inflows and monetary policy transmission mechanisms such as inflation rate and exchange rates as well as their impacts on the performance of an economy on the country-specific and cross-country basis via a dynamic estimation model lacks empirical evidence from Nigeria.

Fewer consensuses appear to exist about the precise nexus between inflation rate and economic performance (Chimobi, 2010). This has continued to generate a significant debate both theoretically and empirically (Chimobi, 2010). Several studies have reported inconclusive empirical evidence regarding the association between inflation and economic growth (Saaed, 2007). This was corroborated by the empirical research of Chimobi (2010) where the author states that many researches have been conducted on the nexus between inflation rate and economic performance in developing countries. Despite these plethoras of studies both for developing and developed countries, the literature on inflation and economic growth in Nigeria is scanty (Chimobi, 2010).

The flow of funds by migrants across the border has increased significantly particularly in developing countries, including Nigeria in recent times. According to the Central Bank of Nigeria (2019) report, Nigeria received about $613 billion in 2018 and this has made it become one of the top five recipients of remittance inflows globally. The World Bank (2018) records reveal that remittances in the context of Nigeria have been increasing astronomically over the last decade. Remittances by migrants increase the flow of funds from a foreign country to a home country. Remittances are spent partly on consumption and partly on investment. The direct effect of remittances on aggregate demand is because of the increase in consumption expenditure of the receiving households which in turn creates inflationary pressure. Nisar and Mishra (2013) posit that while remittances inflows encourage other development aid (ODA), enhances stock of money in an economy, it is, however, inflation inducing given the appreciation or depreciation of the exchange rate for a period. In the view of Balderas and Nath (2008), Narayan and Mishra (2011), Khan and Islam (2013) remittance inflows are capable of inducing inflation in recipient economies.

Methodologically, researches which have examined monetary policy transmission mechanisms on the economic growth of developed and developing countries employed estimation methods such as ordinary least squares regression method, co-integration, error correction model, vector error correction model, vector autoregressive method, autoregressive distributed lag and granger causality approach with less emphasis on the application of second step system general method of the moment. The second step system general method of moment (SGMM2), unlike the first and second steps, the differenced general method of moment, explicitly provides consistent estimates even if endogeneity, heteroscedasticity and serial correlation problems occur in the analysis (Alhad et al. 2018). It gives more efficient results than the differenced GMM even with unbalanced panel/time series data since it employs more instruments and consists of both level and first difference regression (Roodman, 2009). Second step system GMM takes care of endogeneity problems and removes dynamic panel time-series bias (Daher et al., 2018). The correlation of remittances inflows with monetary policy transmission mechanisms, viz-a-viz inflation rate and exchange rate towards impacting on the economic performance of Nigeria through a dynamic system general method of moment model lacks empirical evidence; hence this study is undertaken to bridge the gap.

Apart from the introductory section; section two dwells on literature review; section three concentrates on the methodology of the study; section four is on the empirical analysis; while section five is conclusion and recommendations.

2. LITERATURE REVIEW
Theoretical Framework
This study is hinged on the New Economics labour migration theory of Stark and Bloom (1985) and Stark (1991). The theory states that migration is a potent instrument which individuals and family members employ to enhance income and diversify other income sources. The theory views migration as a potent instrument for individuals and family members to enhance investment and diversify income sources. The NELM theory in the light of increasing remittance inflows captures a household investment decision applicable to Nigeria where it is common for households to pool resources towards sending one member abroad for work with an agreement/unvoiced expectation about returns on this investment often through remittances. Individuals or family members leave do travel out of the domestic country to a foreign country to work, generate income and then remit the earned income later into the same home country. From the foregoing, the new economics of labour migration theory in the light of increasing remittance inflows captures the Nigerian scenario where a household pulls resources together to send a family member out of the home country to a foreign nation with an agreement/unvoiced expectation to remit monies and capital goods back home.

The NELM theory assumes that monetary policy and remittances work through a purely economic, rational-choice lens. The main challenge of the assumption of the NELM theory is that it tends to ignore the critical issues of power dynamics at the micro-and macro-levels and the structural barriers that inhibit movement, thus providing insufficient explanations for labour migration across contexts. However, the assumptions of Stark NELM theory are in tandem with the economic growth literature, where several factors related to physical and human capital and technology increase output. The focus on the physical capital components of growth, especially the monetary transmission mechanisms is best elucidated through an explanation of the Mundell-Fleming-Dornbusch principles. The Mundell-Fleming-Dornbusch type model holds that ineffective and expansionary monetary policy, monetary policy variables such a remittance, exchange rate and capital accumulation lead to investment, increase in money supply and minimize inflation, indirectly and directly leads to acceleration in the levels of real output (Rafiq & Mallick, 2008). At higher interest rates money demand declines. The

aftermath of this is an increase in consumption rate in the economy as well as increase the volume of cash in circulation. Stark (1991) demonstrated that the key channel through which migrants improve economic performance is through human capital formation (see Olarinde, 2015 for applications to Nigeria) since the implication is that skills are built in a bid to get returns from migration, yet skill loss is below net human capital formation in the country.

Empirical Review

Adigun and Ologunwa (2017) examined the impact of remittances on economic growth of Nigeria between 1980 and 2015 using ordinary least squares and co-integration technique. The result shows that remittance remains positive sources of economic growth and can help the poor finance some of their consumption and investment expenditure. The authors concluded that remittance is significant but the magnitude of its impact on economic growth and development remain small. Ball, Lopez and Reyes (2013) used a theoretical model and panel vector auto-regression techniques to test the same effect using yearly as well as quarterly data for 21 emerging countries. Their theoretical model predicts that remittances inflow temporarily increase the domestic money supply and inflation under a fixed exchange rate regime. While it temporarily generates no change in the money supply, it decreases inflation and appreciates the real exchange rate under a flexible exchange rate regime.

Afolabi, Belford, Yemisi and Ehinomen (2016) examined the nexus between exchange rates and economic growth in Nigeria over the period 1978 to 2014. The study analyzed the data using ordinary least square (OLS) method. The finding shows that exchange rates positively and significantly influence economic growth. The short-run directional relations were established between the exchange rates and economic growth in the country via Pairwise Granger causality tests. The study concluded that exchange rates and economic growth are influenced by one another. Chen (2012) researched on the real exchange rate and economic growth with evidence from Chinese provincial data in the period, 1992 to2008. The results confirmed the positive effect of real exchange rate appreciation on economic growth in the provinces.

Ahmed and Mortaza (2005) empirically explored the relationship between inflation and economic growth in Bangladesh, using annual data set on real GDP and CPI from 1980 to 2005 using the co-integration and error correction models. The empirical evidence demonstrates that there exists a statistically significant long-run *negative* relationship between inflation and economic growth for the country as indicated by a statistically significant long-run *negative* relationship between CPI and real GDP. Chimobi (2010) determine the relationship between Inflation and economic performance in Nigeria between 1970 and 2005. Consumer price index (CPI) was used as a proxy for inflation and the GDP as a perfect proxy for economic performance. The research used Johansson co-integration technique and Granger causality test to analyze the data. The result showed no co-integrating relationship between Inflation and economic performance of Nigeria in the period. Unidirectional causality was observed running from Inflation to economic performance.

Srithilat and Sun (2017) investigated the impact of monetary policy on economic development in Lao People's Democratic Republic using time series data from 1989 to 2016. They employed Johansen co-integration and error correction model. The study finding indicates that inflation rate exerted a negative effect on the real GDP per capita in the long – run. Alavinasab (2016) studied the impact of monetary policy on economic growth in Iran. Error correction model was employed to analyze the time series data in the period by the author. The empirical finding reveals that inflation maintained a significant positive association with economic growth in Iran. Nibeza (2015) employed the Johansen co-integration technique and error correction

model to determine the long – run and short-run relationships of inflation rate in Rwanda. The result of the empirical analysis shows that inflation rate distorts the economic performance of the country.

It can be observed that the prior studies reviewed above failed to examine the association between monetary policy transmission mechanisms such as inflation rate, exchange rate and remittances on the economic performance of Nigeria. Similarly, non- of the researchers analyzed economic performance using gross domestic product per capita growth rate as a proxy. This constitutes a research gap this study seeks to fill on the empirical fronts.

3. METHODOLOGY

The study used the causal-effect and correlation research designs. The time-series data for the period, 1960 to 2018 were generated from secondary sources which include from the Central Bank of Nigeria Statistical Bulletin (various issues) and the World Bank Indicators (various issues). This represents about fifty-eight annual observations. Time series data on the relevant variables such as Gross Domestic Product (GDP) per capita, a proxy for economic performance; migrant remittances inflows, inflation rate and exchange were used. The study employs Augmented and Dickey-Fuller unit root test, correlation statistics and dynamic estimation methods to analyze the time-series data generated. The mathematical form of the model variables of the model in this study are stated as follow:

$$GDPPC_t = f(REMITR_t, INFR_t \text{ and } EXR_t) \ldots\ldots\ldots\ldots\ldots$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

This is further stated in a stochastic dynamic model as follow:

$$GDPPC_t = \alpha_{ot} + \beta_1 GDPPC_t - 1 + \beta_2\beta_7 REMITR_t + \beta_3 INFR_t + \beta_9 EXR_t + \varepsilon_t$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

Where; GDPPCG represents gross domestic product per capita; REMITR is migrant remittance inflows, INFR represents inflation rate and EXR is nominal exchange rate;

4. EMPIRICAL ANALYSIS

This subsection entails the presentation of the unit root tests, correlation and dynamic estimation results. The empirical results are presented sequentially as follows:

Unit Root Test Result

A standard practice in an econometric test of macroeconomic data analysis begins with the test of stationarity of variables using the appropriate unit root test procedures. This study employs the Augmented Dickey-Fuller (ADF) test to perform the unit root test in all the series of the model and examine their order of integration. The results of the ADF unit root test statistics in both level and first difference are presented in table1 below:

Table 1 shows the ADF statistics unit root tests

Variables	ADF Test Statistics at Level		ADF Test Statistics at 1ˢᵗ Difference	
	t-ADF	P- value	t-ADF	P- value
GDPPCG	-4.704122	0.0003*	–	–
REMITR	-	-	-3.146863	0.0292*
INFR	-		-5.971552	0.0000*
EXR			-4.919846	0.0001

Source: Authors' compilation from E-views 8.0

At 5 per cent significance level, the results of the ADF unit-root tests provide very strong evidence of stationarity at level for gross domestic product per capita growth. But at first

difference, remittances inflows, inflation rate and exchange rate displayed stationarity results which implied that the three series were integrated at order one. The test result indicates absence of spuriousness in the time series.

Correlation Statistics
Table 2: Correlation Matrix Result

VARIABLES	GDPPCG	REMITR	INFR	EXR
GDPPCG	1			
REMITR	0.01556	1		
INFR	-0.1247	-0.0009	1	
EXR	0.0685	0.9181	-0.1100	1

Source: Authors' Computation from E-views 8.0

Table 2 result indicates that gross domestic product per capita growth (GDPPCG) and remittance inflows (REMITR) are positively correlated (r = 0.01556). The result suggests that migrant remittance is a key driver of the economic performance of Nigeria. The finding is in tandem with the Gross domestic product per capita growth and inflation rate (INFR) are negatively correlated (r= -0.1247). The result is an indication that inflation reduces the economic performance of Nigeria. The finding is in consonance with the researches of Saaed (2007); Chimobi (2010). Gross domestic product per capita growth (GDPPCG) and exchange rate are positively correlated (r=0.0685) in the reference period. The result agrees with Afolabi et al. (2016). In the same vein, the inflation rate is negatively correlated with remittance inflows (r=-0.1100). The finding is contrary to the research outcome of Olabisi and Ogbeide (2020).

Table 3: Generalized Method of Moment Regression Result
Dependent Variable: GDPPCG

C	1.526*****	
	(2.237)	
	[2.682]	0.4979
REMITR	0.531*****	
	(2.204)	
	[3.241]	0.000
INFR	-0.075*****	
	(0.038)	
	[-3.509]	0.052
EXR	0.000*****	
	(0.021)	
	[2.087]	0.005
R-Squared	0.609	
Adjusted R-Squared	0.585	
J-statistic	4.405	
Instrumental Rank	5	
Durbin-Watson Stat	1.513	

Source: Authors' Computation from E-view 8.0 version

******Coefficient values, ( ) *standard error in bracket and [   ] * T- statistic value in parenthesis

From table 3, it can be observed that the Hansen J- statistic of over-identifying restrictions has a value of 4.405; and by implication accepts the null hypothesis that the variables were uncorrelated with the error term in the model. The coefficient of the individual explanatory variables shows that remittance inflow (REMITR) is positively signed (0.531) and statistically significant at 5% level on gross domestic product per capita, a proxy of the economic performance of Nigeria. The result implies that remittance inflows are a major driver of economic activities and growth in the Nigeria clime. Remittance inflows when channelled into

economic activities tend to boost the performance of the economy of Nigeria, assuming all factors are held constant. The result is in tandem with Ball, Lopez and Reyes (2013); Khan and Islam (2013); Adigun and Ologunwa (2017).

The inflation rate is negative (-0.075) and statistically significant at 5% level. It is an indication that a high level of inflation rate distorts the performance of the economy in Nigeria, notwithstanding the volume of migrant remittances inflows into the economy. This distortionary effect is one of the reasons the monetary authority in Nigeria always seeks to influence the economy through effective monetary policy, which aim is targeted at reducing the inflation rate as much as possible. While the empirical result is in consonance with Nibeza (2015)' it is, however, contrary to the research outcome of Alavinasab (2016) which revealed that inflation maintained a significant positive association with economic growth in Iran. The exchange rate is positive (0.000) and statistically significant, although the value of the coefficient is zero values on the economic performance of Nigeria in the reference period. The result may not be unconnected with the several exchange rate deregulation policies maintained over time by the Federal government of Nigeria, via the Central Bank of Nigeria (CBN). The empirical finding is in line with the research outcome of Chen (2012), Afolabi et al. (2016). Adjusted R-squared value of 0.585, portrays that the independent variables accounted for about 58% impact of the performance of the economy of Nigeria. The Durbin-Watson statistics value of 1.513 connotes the absence of serial autocorrelation in the regression result. This makes the empirical finding very useful for policy implication by a concerned regulatory agency and the Federal government of Nigeria.

Table 4: Pairwise Granger Causality Test Result

Pairwise Granger Causality Tests
Date: 09/10/20   Time: 20:11
Sample: 1960 2018
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
REMITR does not Granger Cause GDPPCG	57	0.24157	0.7003
GDPPCG does not Granger Cause REMITR		0.15736	0.0040
INFR does not Granger Cause GDPPCG	54	0.75160	0.0000
GDPPCG does not Granger Cause INFR		0.30886	0.0050
EXR does not Granger Cause GDPPCG	57	0.28450	0.0006
GDPPCG does not Granger Cause EXR		0.07487	0.0000
INFR does not Granger Cause REMITR	54	0.66742	0.0001
REMITR does not Granger Cause INFR		1.19441	0.0005
EXR does not Granger Cause REMITR	57	2.33743	0.0001
REMITR does not Granger Cause EXR		3.54907	0.0359
EXR does not Granger Cause INFR	54	0.28418	0.7539
INFR does not Granger Cause EXR		0.67349	0.5146

Source: Authors' Computation from E-views 8.0

Table 4 analysis shows that bi-directional causality between remittances inflows and economic performance of Nigeria. It is a pointer that Migrant remittances inflows boost economic activities in migrants' home country if judiciously invested. The finding is contrary to Ogbeide and Olabisi (2020). Exchange rate and gross domestic product have a-two way causal

relationship. This affirms the research finding of Afolabi et al. (2016). Inflation rate and remittances inflows granger causes each other, suggesting that remittances inflows in Nigeria may be inflation inducing. The result is quite contrary to expectation in a study like this. The research outcome is however contrary to the research outcome of Ogbeide and Olabisi (2020). There is bi-directional causality between exchange rate and remittances inflows. Theoretically, in a period of exchange rate appreciation in a home country's economy, migrants' remittances could be very beneficial in terms of enhancing unearned income levels, consumption and investment capacity.

5. CONCLUSION AND RECOMMENDATIONS

The study has examined the nexus between monetary policy transmission mechanisms, viz-a-viz, inflation rate, exchange rate and remittances inflows towards the enhancement of the economy of Nigeria in the period 1960 to 2018. The study finding showed that remittances inflows are a major driver of economic activities and growth in the Nigeria clime. Remittance inflows when channelled into economic activities tend to boost the performance of the economy of Nigeria, assuming all factors are held constant. Inflation rate contributed negatively to the performance of the economy of Nigeria in the reference period. Exchange rate exerted a positive impact with gross domestic product per capita growth in Nigeria. Both remittances inflows and exchange rate maintained a bi-directional causality with the performance of the economy of Nigeria. The study concludes that remittances inflows have a correlation with monetary policy transmission mechanisms towards enhancing the performance of the economy of Nigeria. It is therefore recommended that the government needs to create investors' friendly environment capable of encouraging migrants to channel their resources into the economy. This will help to boost economic activities, reduce the unemployment rate, increases savings, with the end goal of engendering economic performance of Nigeria. To mitigate the effect of Inflation in Nigeria, this study suggests that the policy monetary authority (CBN) needs to come up with a policy framework that can increase the country's capital stock instead of expending it.

6. REFERENCES

Adigun, R., & Ologunwa, M. (2017). Remittances and economic growth in Nigeria. International Journal of Research in Management, 7(6), 29-41.

Afolabi, B., Belford, A.U., Yemisi, E.K., & Ehinomen, C. (2016). Exchange rate and economic growth: The Nigerian experience. International Research Journal of Finance and Economics, 153, 85-94.

Ahmed, S., & Mortaza, G. (2005). Inflation and economic growth in Bangladesh, Policy Analysis Unit (PAU), Working Paper 0604

Alhadi, S.A., Senik, R., & Johari, J. (2018). Institutional ownership and earnings quality pre-and post-IFRS. International Journal of Economics and Management, 12(82), 747-757

Alvinasab, S.M. (2016). Monetary policy and economic growth. International Journal of Economics, Commerce and Management. Retrieved from http://ijecm.co.uk/wpcontent/uploads/2016/03/4315.pdf.

Babatunde, M. A. & Shuaibu, I. M. (2011). Money supply, inflation and economic development in Nigeria. Assia-African Journal of Economics and Econometrics, 11(1), 147-163.

Balderas, T., & Nath, K. (2008). A Vector error correction modelling of money demand function
   in Nigeria. Economics Bulletin, 3, 1-8.

Ball, C., Lopez, C., Reyes, J. (2012). Remittances, inflation and exchange rate regimes in Small open Economies. MPRA Paper No. 39852, University Library of Munich, Germany.

Central Bank of Nigeria, (2019). Determination of inflation threshold for Nigeria, a paper

presented at the MPC workshop, October 2013.

Chimobi, O.P. (2010). *Inflation and economic growth in Nigeria. Journal of Sustainable Development,* 3(2), 159-166.

Daher, H., Masih, M., & Ibrahim, M. (2015). The unique exposures of Islamic banks' capital buffers: a dynamic panel data analysis, Journal of International Financial Markets, Institutions and Money, 36(2), 36-52.

Iheanacho, O. I. (2019). Does inflation weaken economic development? Evidence from Nigeria. *European Journal of Accounting Auditing and Finance Research,* 1(4), 139-150.

Ishioro, B. O (2013). Monetary transmission mechanism in Nigeria: A causality test. *Mediterranean Journal of Social Sciences,* 4(13), 377-388.

Kapur, M. (2004). Exchange rates and monetary policy: The Indian experience, paper presented at the *BIS Autumn Economists' Meeting,* 28-29 October, Basel.

Khan, Z. S., Islam, S. (2013). The effects of remittances on inflation: Evidence from Bangladesh. Journal of Economics and Business Research, 19(2): 198-208.

Mishkin, F. (2007). *The Economics of Money, Banking, and Financial Markets.* 8th edition. Pearson education international, USA.

Nrarayan, K.L., & Mishra, P (2011). Monetary policy transmission in emerging market economies: What is new?' BIS Papers, no 35, Bank for International Settlements.

Olabisi, E.O., & Ogbeide, S.O. (2020). Financial development, remittances inflows and economic growth in Nigeria: A time series analysis. South Asian Journal of Social Studies and Economics, 7(4), 37-43. DOI: 10.9734/SAJSSE/2020/v7i430198

Onouorah, C.A., Shaib, & Ehikioya (2011). Long run relationship between private investment and monetary policy in Nigeria. *Research Journal of Finance and Accounting,* www.iiste.org., 2(6).

Onyeiwu, C. (2012). Monetary policy and economic development of Nigeria. *Journal of Economics and Sustainable Development,* 3(7), 62 – 70.

Saaed, A. (2007). Inflation and economic growth in Kuwait: Evidence from Co-integration and error correction model' *Applied Econometrics and International Development* 7(1), 12-19.

Srithilat, K., & Sun, G. (2017). The impact of monetary policy on economic development: evidence from Lao PDR. Munich Personal RePEc Archive. MPRA Paper No. 79369. http://mpra.ub.uni-muenchen.de/79369.

World Bank (2018). The World Bank migration and remittances data. Retrieved from bilateral remittance matrix. https://www.world bank.org/en/topic/migration remittances diaspora.

Appendix A
Estimation Results

Null Hypothesis: GDPPCG has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.704122	0.0003
Test critical values:	1% level	-3.548208	
	5% level	-2.912631	
	10% level	-2.594027	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDPPCG)
Method: Least Squares
Date: 09/09/20   Time: 17:47
Sample (adjusted): 1961 2018
Included observations: 58 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPPCG(-1)	-0.567872	0.120718	-4.704122	0.0000
C	0.681663	0.849934	0.802019	0.4259

R-squared	0.283234	Mean dependent var	-0.031386
Adjusted R-squared	0.270435	S.D. dependent var	7.456734
S.E. of regression	6.369137	Akaike info criterion	6.574679
Sum squared resid	2271.691	Schwarz criterion	6.645729
Log likelihood	-188.6657	Hannan-Quinn criter.	6.602355
F-statistic	22.12876	Durbin-Watson stat	1.846512
Prob(F-statistic)	0.000017		

Null Hypothesis: D(REMITR) has a unit root
Exogenous: Constant
Lag Length: 5 (Automatic - based on SIC, maxlag=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.146863	0.0292
Test critical values:	1% level	-3.562669	
	5% level	-2.918778	
	10% level	-2.597285	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(REMITR,2)
Method: Least Squares
Date: 09/09/20   Time: 18:15
Sample (adjusted): 1967 2018
Included observations: 52 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(REMITR(-1))	-1.579736	0.502003	-3.146863	0.0029
D(REMITR(-1),2)	0.472936	0.429113	1.102125	0.2763
D(REMITR(-2),2)	0.194831	0.353134	0.551720	0.5839
D(REMITR(-3),2)	0.018478	0.282782	0.065343	0.9482
D(REMITR(-4),2)	-0.232386	0.193654	-1.200006	0.2364
D(REMITR(-5),2)	-0.218399	0.123396	-1.769905	0.0835
C	-0.065845	0.040804	-1.613687	0.1136

R-squared	0.644949	Mean dependent var		-0.005478
Adjusted R-squared	0.597609	S.D. dependent var		0.367435
S.E. of regression	0.233080	Akaike info criterion		0.049779
Sum squared resid	2.444682	Schwarz criterion		0.312447
Log likelihood	5.705738	Hannan-Quinn criter.		0.150480
F-statistic	13.62372	Durbin-Watson stat		2.077697
Prob(F-statistic)	0.000000			

Null Hypothesis: D(INFR) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.971552	0.0000
Test critical values:	1% level	-3.574446	
	5% level	-2.923780	
	10% level	-2.599925	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INFR,2)
Method: Least Squares
Date: 09/09/20   Time: 17:48
Sample (adjusted): 1965 2018
Included observations: 48 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INFR(-1))	-2.042019	0.341958	-5.971552	0.0000
D(INFR(-1),2)	0.998128	0.277888	3.591839	0.0008
D(INFR(-2),2)	0.440878	0.201766	2.185100	0.0344
D(INFR(-3),2)	0.369853	0.142018	2.604263	0.0126
C	-0.117469	1.884737	-0.062326	0.9506

R-squared	0.639825	Mean dependent var		0.032731
Adjusted R-squared	0.606320	S.D. dependent var		20.80011
S.E. of regression	13.05080	Akaike info criterion		8.073908
Sum squared resid	7323.905	Schwarz criterion		8.268825
Log likelihood	-188.7738	Hannan-Quinn criter.		8.147568
F-statistic	19.09661	Durbin-Watson stat		2.029853
Prob(F-statistic)	0.000000			

41

Null Hypothesis: D(EXR) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.919846	0.0001
Test critical values:	1% level	-3.550396	
	5% level	-2.913549	
	10% level	-2.594521	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXR.2)
Method: Least Squares
Date: 09/09/20   Time: 17:49
Sample (adjusted): 1962 2018
Included observations: 57 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXR(-1))	-0.518592	0.105408	-4.919846	0.0000
C	-2.317127	1.820000	-1.273146	0.2083

R-squared	0.305598	Mean dependent var	0.952421
Adjusted R-squared	0.292973	S.D. dependent var	15.21310
S.E. of regression	12.79192	Akaike info criterion	7.969962
Sum squared resid	8999.824	Schwarz criterion	8.041648
Log likelihood	-225.1439	Hannan-Quinn criter.	7.997821
F-statistic	24.20489	Durbin-Watson stat	2.308680
Prob(F-statistic)	0.000008		

Dependent Variable: GDPPCG
Method: Generalized Method of Moments
Date: 09/09/20   Time: 18:17
Sample: 1960 2018
Included observations: 58
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed
    bandwidth = 4.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: GDPPCG C REMITR INFR EXR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.526740	2.237448	2.682358	0.4979
REMITR	0.531325	2.204050	3.241068	0.0004
INFR	-0.075625	0.038202	-1.979591	0.0529
EXR	0.000550	0.021656	2.087411	0.0053

R-squared	0.609439	Mean dependent var	1.009482
Adjusted R-squared	0.585593	S.D. dependent var	6.836612
S.E. of regression	6.990725	Sum squared resid	2638.993
Durbin-Watson stat	1.513972	J-statistic	4.405728
Instrument rank	5	Prob(J-statistic)	0.035818

	GDPPCG	REMITR	INFR	EXR
GDPPCG	1	0.01556713836110153	-0.1247227437298211	-0.06850898360159596
REMITR	0.01556713836110153	1	-0.0009469534098332093	-0.9181413399443038
INFR	-0.1247227437298211	-0.0009469534098332093	1	-0.1100295320131428
EXR	-0.06850898360159596	-0.9181413399443038	-0.1100295320131428	1

Pairwise Granger Causality Tests
Date: 09/10/20   Time: 20:11
Sample: 1960 2018
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
REMITR does not Granger Cause GDPPCG	57	0.24157	0.7003
GDPPCG does not Granger Cause REMITR		0.15736	0.0040
INFR does not Granger Cause GDPPCG	54	0.75160	0.0000
GDPPCG does not Granger Cause INFR		0.30886	0.0050
EXR does not Granger Cause GDPPCG	57	0.28450	0.0006
GDPPCG does not Granger Cause EXR		0.07487	0.0000
INFR does not Granger Cause REMITR	54	0.66742	0.0001
REMITR does not Granger Cause INFR		1.19441	0.0005
EXR does not Granger Cause REMITR	57	2.33743	0.0001
REMITR does not Granger Cause EXR		3.54907	0.0359
EXR does not Granger Cause INFR	54	0.28418	0.7539
INFR does not Granger Cause EXR		0.67349	0.5146