

## Impact of International Remittances on Private Investments in Nigeria

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\*Corresponding author: Okeke Izuchukwu Chetachukwu | Received: 17.04.2019 | Accepted: 23.04.2019 | Published: 30.04.2019

DOI: [10.21276/sjef.2019.3.4.2](https://doi.org/10.21276/sjef.2019.3.4.2)

### Abstract

Remittance is one of the key locomotives of economic growth and poverty reduction in developing countries because it serves as development finance needed for investment purposes. This study sheds new light on this question by examining the impact of remittances on private investment in Nigeria. Data on remittance inflow in Nigeria was retrieved from World Development indicator. Error correction and Ordinary least squares is applied for this purpose. The result reveals that remittances increase the rate of private investment in Nigeria and the previous investment is a determinant of the current investment. It is therefore recommended amongst others remittance-receiving households should be encouraged to invest remittances in small and medium scale enterprises rather than use it for the consumption of goods and services.

**Keywords:** Migrants, Remittance, fiscal policy, Private Investment and Economic growth.

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## INTRODUCTION

Investment is one of the main components of aggregate demand and thus plays a critical role in the determination of equilibrium income [1]. It is a well known fact that an increase in investment will lead to an increase in productive capacity resulting to reduced unemployment, low poverty and high standard of living. There is fundamentally no nation in the world without the singular aim of accomplishing economic growth and development. However, this can only be achieved if a country has adequate resources at its disposal [2]. In many developing countries, the resources to finance the different business ideas are in short supply. This is because their economies are plagued with problems associated with low income, low domestic savings, vicious level of poverty, low tax revenue, macroeconomic instability, political instability, unstable exchange rate, limited foreign exchange earnings, and availability of natural resources amongst others. As a result of these, developing countries inevitably resort to policy that will enhance the flow of international migrant remittances or foreign finance in order to bridge the gap between the resources available to them and what is required for their advancement [3].

Moreover, in the face of inadequate resources to finance long term growth and development in developing economies and with unemployment and poverty reduction looking increasingly bleak or miserable, increasing the flow of international migrant remittances has assumed a prominent place in the strategies of developing countries. This is because, the experience of a small number of fast –growing East Asian newly industrialized economies has strengthened the belief that attracting international remittances could bridge the resource gap of low-income countries and avoids further build up of debt while directly tackling macroeconomic problems [4].

Remittance is one of the key locomotives of economic growth and poverty reduction in developing countries, evidence Bangladesh [5]. Remittances are considered an important mechanism of transferring resources from developed to developing countries. The inflow of remittances not only affects growth to the receiving economies through savings and investment but also it has short run effects on aggregate demand and output all the way through consumption [6]. Remittance constitutes a major portion of country's foreign exchange reserve which is crucial for its Balance of Payment condition. In the last two decades of 20<sup>th</sup> century, the remittance inflow had a positive

impact on the national foreign currency reserve in Pakistan and Bangladesh [7].

Remittances contribute to the GDP as well as foreign exchange earnings of developing countries at a greater extent. According to a World Bank report, workers' remittances provide valuable financial resources to developing countries, particularly the poorest [8]. Remittance plays a vital role toward economic development of any country especially for the developing nations. With remittances, an economy can spend more than it produces, import more than its exports or invest more than it saves, and this might even be more relevant for small economies [9]. Remittances play a potentially important role in the import demand functions both at the aggregate and disaggregated levels, particularly where there is a foreign exchange problem [10].

According to the [11], remittances have become a rising source of external funding for developing countries, reaching 360 billion dollars in 2018. In addition, remittances are the largest source of foreign capital in developing countries even more than Foreign Direct Investment (FDI). Developing countries in Africa, like many developing countries in other continents need a substantial inflow of international migrant remittances in order to make up for the savings and foreign exchange gaps associated with a rapid rate of capital accumulation. Nigeria needs international remittances as a source of capital for investment purposes to overcome widespread unemployment, misery, hunger, poverty, and Africa's development crisis as a whole is unique as it is the poorest region in the world and remains mired in debt.

Unlike other sources of external finance, remittances tend to be more stable making them a reliable source of financing for developing countries [12]. Remittances are often more effective than development aid since they are sent directly to the recipient thus making them less susceptible to bureaucratic bottlenecks and corruption. Moreover, because a large share of remittance inflows are sent through informal channels and are therefore not captured in official tabulations [13].

In spite of the upward surge in the amount of remittances to Nigeria, there are number of factors that impede their flow. The first is transaction costs. Presently, the cost of sending money to Nigeria is very high. On the average, to send \$200 to and from a

country in the region costs almost \$19 in the first quarter of 2018. In Africa, transaction cost as of the first quarter of 2018 is 11.18%. Sub-Saharan Africa's remittance price in the first quarter of 2017 is 9.81% as against South Asia's 5.40% which remains the cheapest receiving region. Intra-African transaction cost is about 15%. The high cost is mainly contributed by the exclusive arrangements between banks and international money transfer institutions as well as stringent regulations related to money laundering and terrorist financing [14].

Poor access to formal financial institutions, and high interest rate spread also plays a significant part in contributing to the low mobilization of diaspora remittances. [15] finds in a sample of selected Central America countries that financial development tends to increase the responsiveness of growth to remittances. However, the works of [16, 17] suggest that remittances boost growth in countries with an underdeveloped financial sector. In other words, in countries where the financial sector is unable to extend credit to the private sector, remittance receipts are a vital source of capital relative to financially developed societies. Moreover, it is argued that migrant transfers meant for investment purposes could be severely limited in the presence of acute political stability, corruption and go-slow bureaucracies. Hence, non-financial institutions and institutional qualities such as law and order, government stability, democratic accountability, etc, affect the growth of remittances positively, which will then influence the level of investment.

It is against this background that this study seeks to examine the impact of international migrant remittances on private domestic investments in Nigeria's economy.

### **Statement of the Research Problem**

An old phenomenon that is gaining increasing attention and importance in development finance as well as in international finance is the issue of migrant remittances. Yet, these international remittances by migrant workers from their employment income, particularly to developing countries, are usually overlooked in discussions on international financial flows. Data from the World Development Indicators (WDI) show that by 2014, remittances had out spaced Foreign Direct Investment (FDI) and official development Assistance (ODA), being second only to oil as a foreign exchange earner for Nigeria as of 2017. World Bank estimates show that as of 2013, Nigeria has

moved into the top five recipients of remittances in the world and received 77 and 82% of the total remittance inflow to West African countries in 2011 and 2017 respectively.

The rapid growth of remittances in Nigeria raises the question of whether these money(s) are used towards investment and thus expansion of the productive capacity of the economy. Despite the significant flow of remittances into the country in the recent past, not much is known about the impact of these remittances on private investment levels in the country. Empirical research from other countries has produced mixed results. Some studies suggest that remittances are primarily used for consumption purposes while other studies are of the view that remittances are used for investment rather than for consumption. Many of these studies used cross-country data where the behavioural pattern of remittances was analyzed by combining data from several countries. The result of this approach was that country specific dynamics were lost in the process. Furthermore, those studies merely established correlations which do not necessarily imply causation.

This study therefore seeks to empirically test the link between remittances and private investment in Nigeria by attempting to resolve these shortcomings in the existing literature.

### Objectives of the Study

The broad objective of this study is to examine the impact of international migrant remittances on private investment in Nigeria. The specific objectives of the study are:

- To evaluate short term effect of remittances on private investment in Nigeria;
- To proffer recommendations.

### Statement of the Hypothesis of the Study

In carrying out this research, the following hypothesis would be tested and either accepted or rejected based on the research findings.

$H_0$ : There is no significant short term effect of remittances on private investment in Nigeria's economy.

$H_1$ : There is a significant short term effect of remittances on private investment in Nigeria's economy.

## Theoretical Literature Review

### The Flexible Accelerator Theory

This is also called Capital Stock Adjustment model. This theory of flexible accelerator has been developed in various forms by Chenery, Goodwin, Koyck and Junankar but the most accepted approach is by [18] in his work "Distributed Lags and Investment". The flexible accelerator theory removes one of the major weaknesses of the simple accelerator principle that the capital stock is optimally adjusted without any time lag. In the flexible accelerator, there are lags in the adjustment process between the level of output and the level of capital stock. It holds that the larger the gap between the existing capital stock and the desired capital stock, the greater a firm's rate of investment. The hypothesis is that firms plan to close a fraction of the gap between the desired capital stock,  $K^*$  and the actual capital stock,  $K$  in each period. This gives rise to a net investment equation of the form of:

$$I = K^* - K = \Delta k$$

$$\text{so } I = \Delta K = k\Delta Y_t$$

Where  $I$  is net investment,  $\Delta k$  is a change in capital stock,  $\Delta Y_t$  is the change in the current output level where  $k$  is the capital-output ratio.

### Modern Portfolio Theory (MPT)

This theory was pioneered by [19] in his paper "Portfolio Selection", published in the Journal of Finance. Modern Portfolio theory is a theory on how risk-averse investors can construct portfolios to optimize or maximize, emphasizing that risk is an inherent part of higher reward. MPT is formalization and extension of diversification in investing, the idea that owning different kinds of financial assets is less risky than owning only one type. Its key insight is that an asset's risk and return should not be assessed by itself, but by how it contributes to a portfolio's overall risk and return. It's also called the Mean-Variance analysis. In this theory, remittances are viewed as a strategy by an emigrant worker to diversify his other savings. Accordingly, the decision to remit is based on the risk return differential of assets in both the host and recipient country. As such, the main determinants of the decision to remit include interest rate, and back exchange rate premium among others. Apart from these economic determinants, the desire to invest may also be driven by the desire of the emigrant worker to return back home with dignity in the event that the emigrant worker chooses to return home [20]. Since the desire to remit is purely motivated by investment opportunities,

## LITERATURE REVIEW

the correlation between remittances and GDP tends to be positive. Similarly, according to this theory, the correlation between remittances and private investment is positive since remittances are principally spent on investment activities.

## EMPIRICAL LITERATURE REVIEW

The empirical literature related to this study has been reviewed. A limited volume of literature is available on the relationship between migrants' remittances and investment because most studies are on remittances and poverty, welfare or labour supply. Most of these studies are cross-country analysis. It is only a study by [21] that dealt with investment-remittance nexus to the best of my knowledge. The remittance-investment nexus is ambiguous in the literature. Some studies have argued that remittance have no impact on private investment levels. In fact before 1990, no positive correlation between remittances and economic development had been established. The prevailing view in the literature was that remittances were primarily spent on consumption goods and repayment of debts. As a result remittances were thought to have insignificant effects on economic growth.

Cherono, M. R [13] sought to establish the impact of remittances on private investment in Kenya and how financial sector development influences the effect of remittances on private investment in Kenya. The paper found a positive and statistically significant relationship between remittances and investment in Kenya. Moreover, the coefficient on the interaction coefficient between remittances and financial sector development was found to be positive and statistically significant. This result suggests that remittances can complement the allocation of capital by credit markets to private investment activities in Kenya. Hrushikesh, M [22] utilizes an error correction model and the Dynamic Ordinary Least Squares procedure (DOLS) developed by [23] to investigate the impact of remittances on private investment in India. The paper finds that remittances crowds out private investment in India with the majority of income including remittances going towards consumption expenditure. In other words, remittance inflows led to a decline in the rate of private investment. As a result, the author suggests that the government should formulate policy to encourage the allocation of remittances towards private investment.

Mishra, P [24] also established a similar result to [22], finding that remittances crowd out domestic investment in Sub-Saharan Africa. The paper utilized a Generalized Method of Moments (GMM) estimation model to estimate the impacts of remittance inflows on domestic

investment in Sub-Saharan Africa. The author found that remittances negatively affect domestic investment in Sub-Saharan Africa. A 10% rise in remittances from emigrant workers led to a 20.9 percent decrease in domestic investment in Sub-Saharan Africa. Adam, R. H [25], while investigating the impact of remittances in 13 Caribbean countries found that a 1 percent increase in remittances contributed to a 0.6 percent increase in domestic investment. Adams, Richard H [26] is of a similar view arguing that remittances are used for investment rather than for consumption. In a household survey in Pakistan in late 1980s, the paper found that the marginal propensity to save was higher for households with remittance than households receiving other forms of domestic income. Specifically, for households receiving remittances, the marginal propensity to save was 0.71 compared to rental incomes where the marginal propensity to save was 0.08. The author argues that remittance flows were viewed as transient in nature and thus people saved them more than they consumed. The author believes that the increased savings from remittances contributes positively to investment.

Urama, N. E *et al.*, [27] investigated the household expenditure patterns in rural and urban areas of Guatemala. The study used data from a survey in 2000 of 7,276 households and did a comparison of the share of investment and consumption on households budgets of remittance receiving and non-remittance receiving households. Their finding was in line with the permanent income hypothesis which suggests that households are likely to invest if they perceive their income to be transient or uncertain. In particular, households receiving remittances were found to utilize 58.1 percent of their remittance on education at the margin than households that did not receive remittances. This according to the author underscores the way that households prefer to invest-rather than spend their remittance earnings.

Onah, F. O [28] made use of propensity score matching and log linear regression model to investigate the relationship between international migrant remittances and labour supply in Nigeria. Their results show that receiving remittances negatively affect the self employed in agriculture, teenagers and the elderly.

### Model Specification

The main objective of this study is to examine the impact of migrants' remittances on private investment in Nigeria. For this purpose, the model adopted for this study is [13] which is also predicated on the theoretical framework of Flexible Accelerator model of Investment regarding the ability of capital

stock (which is now migrants' remittances) to influence the level of investment. Using Ordinary Least Squares, [13] estimated an empirical model specified as follows:

$$PINV_t = \beta_0 + \beta_1 PINV_{t-1} + \beta_2 IMR_t + \beta_3 GDP_t + \beta_4 INTR_t + \beta_5 INF_t + \beta_6 FDI_t + \beta_7 REXCH_t + \beta_8 PCREDIT_t + \mu_t \dots\dots\dots (3.2)$$

Where:

- $\beta_0$  = Constant intercept term
- $PINV_t$  = Private investment at time t.
- $PINV_{t-1}$  = Immediate past value of Private investment
- $IMR_t$  = International migrant remittances at time t
- $GDP_t$  = Gross Domestic Product at time t
- $INTR_t$  = Interest rate at time t.
- $INF_t$  = Inflation rate at time t.
- $FDI_t$  = Foreign direct investment at time t.
- $REXCH_t$  = Real Exchange rate at time t.
- $PCREDIT_t$  = Private sector credit (also a proxy for financial sector development).
- $\mu_t$  = Stochastic error term

But given that nominal GDP, first, is a measure of economic size rather than economic growth, and second, is a poor economic indicator in the face of inflation, which might pose the problem of multicollinearity in the model, we introduce real GDP growth instead of nominal GDP. Also, investors are more likely to use real interest rate (rather than nominal interest rate) while making investment decisions in the face of inflation risks, we introduced real interest rate. Thus, the modified model for this study estimated using Generalized Least Squares (GLS) is specified as:

$$PINV_t = \alpha_0 + \alpha_1 PINV_{t-1} + \alpha_2 IMR_t + \alpha_3 RGDP_t + \alpha_4 INTR_t + \alpha_5 FDI_t + \alpha_6 REXCH_t + \alpha_7 PCREDIT_t + \mu_t \dots\dots\dots (3.3)$$

Where,

- $\alpha_0$  = Constant intercept term
- $PINV_t$  = Private investment at time t.

$PINV_{t-1}$  = Immediate past value of Private investment

$IMR_t$  = International migrant remittances at time t

$RGDP_t$  = Real Gross Domestic Product at time t

$RINTR_t$  = Real Interest rate at time t.

$INF_t$  = Inflation rate at time t.

$FDI_t$  = Foreign direct investment at time t.

$REXCH_t$  = Real Exchange rate at time t.

$PCREDIT_t$  = Private sector credit (also a proxy for financial sector development).

$\mu_t$  = Stochastic error term (the stochastic error term represents other determinants of private investment not explicitly taken into account by the above model)

$\alpha_1 - \alpha_7$  = Parameters

**Data Presentation, Analysis and Discussion of Findings**

The result of the unit root test conducted using the Augmented Dickey Fuller (ADF) tests is presented in Table-1. The series possess an intercept but no trend and the ADF test is run against the null hypothesis of non-stationarity. As a rule, once the ADF statistic is greater than the critical value at any chosen level of significance, the null hypothesis is rejected in favour of the alternate hypothesis and this implies that the data is stationary. Table-1 shows that all the variables are stationary at first difference using the 5% level of significance except for interest rate and private investment which are stationary at level form. This paper concludes that all the variables used for the analysis are stationary and cannot cause spuriousity of results obtained. A time series that is integrated of order zero is the time series that admits moving average representation. This implies that the autocovariance is decaying to zero sufficiently and quickly. This is a necessary but a sufficient condition for a stationary process. Therefore, all stationary processes are I(0), but not all I(0) processes are stationary. A process is integrated to order one if taking a difference yields a stationary process.

**Table-1: Unit Root Test**

Variable	ADF Statistic	Level of Significance	Critical Values	Order of Integration	Conclusion
RINTR	-5.494681	5%	-2.951125	I(0)	Stationary
IMR	-4.760332	5%	-2.943427	I(1)	Stationary
INF	-4.769208	5%	-2.951125	I(1)	Stationary
RGDP	-6.166795	5%	-2.943427	I(1)	Stationary
FDI	-7.912702	5%	-2.971853	I(1)	Stationary
REXCH	-5.724326	5%	-2.943427	I(1)	Stationary
PINV	-5.555001	5%	-2.963972	I(0)	Stationary

### Test for Cointegration

The test for cointegration in appendix 2 indicates that the residual is stationary hence using the Augmented Dickey-Fuller test, we conclude that there exists a long run linear relationship among the variables in the model.

### Error Correction Model

The existence of cointegration has necessitated the need for the construction of error correction mechanism so as to model the dynamic equilibrium relationship and correct short run disequilibrium. The result from the error correction model shows that the coefficient of the ECM (i.e. the lagged value of the residual) is 0.226230. This means that the system corrects its previous period's disequilibrium at a speed of 57.52% annually. Moreover, the sign of the error correction coefficient (residual(-1)) is positive and not significant indicating the non-validity of the long run equilibrium relationship between private investment and the explanatory variables as proposed by Flexible Accelerator theory of investment.

### Evaluation of Research Hypothesis

Evaluation of research hypotheses posed by the study suggests that:

$H_{01}$ : There is no statistical significant relationship that exists between international migrant remittances and private investment in Nigeria.

From Table-2, the sign of the coefficient of international migrant remittances is positive which conforms to a priori expectation that says that the higher the international migrant remittances, the more funds will be available for investment purposes. The result also show that international migrant remittances is statistically significantly different from zero, hence differs from the findings of other researchers like [27, 28]. It is clear from the coefficient of international migrant remittances that a percentage (1%) increase in international migrant remittances will lead to 19% increase in the level of private investment.

**Table-2: Shortrun Dynamic Model**

Dependent Variable: PINV				
Method: Least Squares				
Date: 12/31/18 Time: 00:51				
Sample (adjusted): 1978 2015				
Included observations: 38 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-24216.96	74231.67	-0.326235	0.7465
PINV(-1)	0.391815	0.177813	2.203517	0.0354
IMR	1.91E-05	7.29E-06	2.621504	0.0136
RGDP	0.117512	0.181497	0.647458	0.5223
INTR	-1200.118	1843.574	-0.650974	0.5200
INF	-73.33664	1725.911	-0.042492	0.9664
FD1	0.002729	0.003290	0.829677	0.4133
EXCH	-187.3848	853.9196	-0.219441	0.8278
R-squared	0.776179	Mean dependent var	171155.9	
Adjusted R-squared	0.723954	S.D. dependent var	320168.0	
S.E. of regression	168216.5	Akaike info criterion	27.08856	
Sum squared resid	8.49E+11	Schwarz criterion	27.43331	
Log likelihood	-506.6826	Hannan-Quinn criter.	27.21122	
F-statistic	14.86223	Durbin-Watson stat	2.100084	
Prob(F-statistic)	0.000000			

## DISCUSSION OF FINDINGS

The coefficient of Real Gross Domestic Product is positive and conforms to a priori expectation. Though statistically insignificant, the coefficient suggests that a unit increase in Real Gross Domestic Product will lead to 11% increase in the rate of private investment in Nigeria since Real Gross Domestic Product measures the productive sector of the economy.

The sign of the coefficient of interest rate is negative and conforms to a priori expectation. It is expected that as interest rate increases, the rate of private investment will be decreasing since people cannot afford to pay a high rate of interest for small amount of money borrowed from financial institutions. The result also show that interest rate in Nigeria is not statistically significantly different from zero which means that it is

not an indispensable variable in the determination of the rate of private investment in Nigeria. Its coefficient is negative which suggests that a percentage increase in interest rate will lead to more than 1200% increase in the rate of private investment.

The sign of the coefficient of Exchange rate is negative and does not conform to a priori expectation. The coefficient is 187.3848 which indicate that holding other variables constant, a percentage (1%) increase in the exchange rate will lead to more than 187% decrease in the rate of private investment. Furthermore, the sign of the coefficient of the lag of private investment is positive and conforms to a priori expectation. It is expected that the higher the level of investment by private individuals the previous year, the higher the rate of private investment in the current year since the Nigeria's economy has embarked upon the private sector-led growth. The result indicates that a unit increase in one period lag of private investment will lead to 58% increase in the rate of private investment in the current period and it's statistically significantly different from zero.

### Summary of Findings

Findings crystallized from this study include the following:

- International migrant remittances increase the rate of private investment in Nigeria.
- Previous investment determines the level of current investment in Nigeria.

## CONCLUSION

The study examined the impact of international migrants' remittances on private investment in Nigerian economy and shows that international migrants' remittances increase the rate of private investment. Thus, the study asserts that migrants should use part of their earnings to set up businesses in their home country, hence become an entrepreneur and an employer of labour. Youth in households receiving remittances should establish their own businesses which will lead to economic growth and development.

## RECOMMENDATIONS

The following policy recommendations are made on the basis of the findings of the study:

- Educational campaigns directed at recipients of remittances in agriculture regarding the benefit of investing remittance money in their agricultural businesses be encouraged, as

suggested by [23] rather than using the money for the purchase of consumables.

- Policies that will encourage the flow of remittances into Nigeria be implemented. Some of these policies may include strengthening the financial sector (i.e. the banking sector) and developing Nigerian institutions.
- Migrants should be encouraged to purchase financial securities from their home country so as to strengthen their capital base and supply loanable funds needed for investment purposes.
- The monetary authority should moderate volatility of the exchange rate so as to create a good investment climate that will attract both domestic and foreign investors.

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