MACROECONOMIC DETERMINANTS OF MIGRANT REMITTANCES IN NIGERIA

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MAY, 2019.

CERTIFICATION

I hereby certify that this research work titled, **Macroeconomic determinants of migrant remittances in Nigeria** by Onwuka Cletus Offor with registration number 2008117001F is an original research carried out by me, except where references are made to published literature, and has not been submitted elsewhere for the award of any certificate, degree or diploma.

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This research work is dedicated to my dear wife, Chinyere Onwuka and our children, Chidera, Chikadibia, Chukwuemeka and Chinaemerem.

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ABSTRACT

Given the rising share and rising importance of migrants' remittances as well as the evidences that migrant remittance transfers have significant effects on receiving economies as debated by optimistic and pessimistic theories, quite a number of studies on remittances have focused on the socio-economic determinants of migrant remittances while others focused on the impact of remittances on economic growth. This study focuses on determining the macroeconomic determinants of remittances in Nigeria from the period 1970 to 2016. It specifically investigates whether interest rate, inflation rate, exchange rate, population growth, unemployment rate, real GDP and financial development determine the size of remittance inflows to Nigeria. Data for the study were secondary and were sourced from Central Bank of Nigeria Statistical Bulletin of various years and World Bank Development Indicators. Data were analyzed using the autoregressive distributed lag and vector autoregressive techniques. Our findings show that in the long run real GDP, financial development, unemployment rate and population growth had positive impacts on migrant remittance inflows, while inflation rate, interest rate and exchange rate impacted negatively on migrant remittances. In the short run, only real GDP, unemployment rate and exchange rate were found to be satistically significant. The impulse response function indicated that migrant remittances respond to shocks in these macroeconomic drivers (interest rate, inflation rate, exchange rate, population growth, unemployment rate, real GDP and financial development). Migrants are more willing to invest funds in Nigeria if inflation is moderated and exchange rate is reasonably stable.The study recommends among others, that since Nigeria receives large remittances, it needs to design appropriate policies to deal with possible macroeconomic shocks. Government should strengthen and deepen the financial reforms as well as encourage receiving households to either save larger shares of their remittances income in the formal money market or to direct remittances to growth oriented investments.

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION

CHAPTER TWO: REVIEW OF RELATED LITERATURE

CHAPTER THREE: RESEACH METHOD

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AML	Anti – money Laundering
ARDL	Autoregressive Distributed Lag
BOFI	Banking and Other Financial Institutions
BDC	Bureau De Change
CBN	Central Bank of Nigeria
CFT	Combating of Financing of Terrorism
CUSM	Cumulatve Sum of Square
DFID	Department for International Development
DMB	Deposit Money Bank
ECM	Error Correction Model
EFCC	Economic and Financial Crimes Commission
FATF	Financial Action Task Force
FDI	Foreign Direct Investment
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
HTA	Home Town Association
IMF	International Monetary Fund
IOM	Iternational Organisation for Migration
MTO	Money Transfer Operator
NCCF	Non – cooperative Countries or Territories
ODA	Official Development Assisttance
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Square
RSP	Remittance Service Provider
UK	United Kingdom
UN	United Nations
USA	United Staes of America
VAR	Vector Auto Regressive

CHAPTER ONE

INTRODUCTION

1.1　Background to the Study

Remittances refer to monetary funds sent by individuals working abroad to recipients residing in another country. International remittances have increasingly grown to become an integral source of fund for development. Remittances represent a vital source of income for poor households and a significant contributor to the gross domestic product (GDP) of nations especially developing countries. According to Hernandez- Coss and Bun (2006), Nigeria is the largest recipient of remittances in Sub-Saharan Africa; it receives nearly 65 percent of officially recorded remittance flows and 2 percent of global flows. The continous migration of Nigerians to foreign countries, though considered as an escape from hardship on the home front and a depletion of human capital is somehow paying off for the country. This is in view of the revelation that Nigerians abroad contributed $7billion in the year 2008 to the country's GDP and that Nigeria is the sixth highest destination of remittances from its citizens living in the diaspora in the region (World Bank, 2008; The Nation, 2009). Remittances reflect the local labour working in the global economy and have been shown to explain partly the connection between growth and integration with the world economy (Addison, 2004).

In recent times, the flow of funds from migrant workers back to their families in their home country has been a very important source of income. The recipients often depend on remittances to cover day- to- day living expenses, to provide a cushion against emergencies or in some cases, as funding for small investments. It represents one of the sources of financial flows to developing countries. According to Ncube and Brixiova (2014) remittances are unrequited, non-market financial transfers between individuals living in different countries. Essentially, remittances are mostly associated with migration, therefore, migration which involves both voluntary migrants and international refugees are the major drivers of remittances inflow. Remittances have proved to be less volatile, less procyclical, and therefore a more reliable source of income than other capital flows to developing countries, such as foreign direct investment (FDI) and development aid (Gammeltoft, 2002; Ratha, 2003). Currently, it is becoming very important source of foreign financial flows,

especially in developing countries, both in size and growth rate, exceeding the inflows of most forms of financial flows.

Remittances to Africa play an important role to national economies. However, little data exist as many rely on informal channels to send money home. Immigrants from Africa today number approximately 20 to 30 million adults, send around $40 billion USD annually to their families and local communities back home, (World Bank, 2015). For the region as a whole, this represents 50 percent more than net official development assistance (ODA) from all sources and for most countries, the amount also exceeds foreign direct investment (FDI). In several fragile states, remittances are estimated to exceed 50 percent of GDP (Chami et al, 2008).

However, trends in inflows of financial resources to Africa show that remittance flows have declined by 6.1 percent and reached $33 billion in 2016 (Ratha, Plaza & Dervisevia, 2015) in Migration and Remittances Fact Book, 2017.The reasons for the decline were slow economic growth in remittance sending countries, decline in commodity prices, especially oil prices, impacting countries receiving remittances from regional commodity exporters, and diversion of remittances to informal channels due to unattractive official exchange rate regimes.

Over the years, migrants' remittances to Nigeria have increased steadily and have now become a significant proportion of the financial inflows into the nation. This is partly due to the increasing numbers of Nigerians in Diaspora. For instance, Constantinescu and Schiff (2014) pointed out that increase in international migration is a major factor driving the growth of global remittances. Nigeria has a population of about 173 million (World Bank, 2014a), accounting for nearly one-fourth of the total population in sub-Saharan Africa and ranks as the seventh most populous nation in the world (World Bank, 2014b).

Many schools of thought in economics have also tried to explain third world migration and remittances by focusing on the pull of differential expected earnings between migrants home and host country.It has also been observed that domestic labour market situations (especially unemployment level) are important determinant of migrants' remittances in Nigeria. This supports the law of migration which states that migrants move from areas of low opportunity to areas of high opportunity (Lee, 1966; Todaro 1969). However, creating more jobs in Nigeria would significantly affect remittances and therefore cause migration pressures to decline.

According to the International Organization for Migration (2010), Nigeria witnessed a dramatic increase in remittances sent home from overseas Nigerians, growing from USD 2.3 billion in 2004 to 17.9 billion in 2007, representing 6.7 percent of GDP. According to World Bank (2017), Nigeria is by far the top remittance recipient in Africa, accounting for $20.8 in 2014, $21.06 in 2015 and $19 billion in 2016 respectively. Major sources of foreign-exchange earnings for Nigeria are remittances sent home by Nigerians living abroad. In 2014, 17.5 million Nigerians lived in foreign countries, with the UK and the USA having more than 2 million Nigerians each (Nigerian Tribune, 8 Sept. 2014). The United States accounts for the largest portion of official remittances, followed by the United Kingdom, Italy, Canada, Spain and France. On the African continent, Egypt, Equatorial Guinea, Chad, Libya and South Africa are important source countries of remittance flows to Nigeria.

However, remittances to Nigeria decreased from $21 billion in 2015 to $19 billion in 2016 (Remittance Fact Book, 2017)). Nigeria witnessed a significant decline in foreign exchange revenue, caused by the fall in oil prices, which resulted in tighter capital controls and   a managed exchange   rate policy. Recently the backdrop of weak exports and falling levels of international reserves, several remittances recipient countries imposed exchange controls, which gave rise to black market exchange premiums and also an apparent shift in remittances flows to informal channels. According to the Global Partnership on Migration and Development labor market nationalization policies in the Gulf Cooperation Council (GCC) countries and anti-immigration sentiments in high-income nations discouraged the hiring of foreign workers and dampened remittance flows, especially through formal channels (Migration and Development Brief, 2017: 27).

Personal remittances received (percentage of GDP) in Nigeria was 8.45 percent as of 2011. Its highest value over the past four decades was 13.04 percent in 2005, while its lowest was 0.01 percent in 1978 but 4.6 in 2016 respectively (IMF,2016). The macroeconomic stability in the home and host countries determine the remitting decision of the migrant (Akkoyunlu & Kholodilin, 2006 and Schiopu & Siegried, 2006). From macroeconomic perspective, there is a positive relationship between migrant remittances and real GDP. Remittances can boost aggregate demand and thereby spur economic activity in both host and home countries.This is reflected in one of the studies carried out by Swamy (1981) that examines the relationships between fluctuations in remittances in relation to the fluctuations in GDP. He observed that the level and cyclical fluctuations in economic activity in the host countries explained 70 to

90% of the variation in the migrant's remittances. This result may be attributed to the changes in macroeconomic indicators that reflect changes in the demand for migrant workers and possible changes in their wage rates.In the same vain El-Sakka and Mcnabb (1999) further supported the analysis that the level of economic activity in host countries has an impact on migrants remittance flows. The level of real earnings available to migrants in the host countries where they work is found to have a significant positive effect on the inflow of remittances though it appears that the impact takes some time to work through.

Again, at individual country level, Nigeria's remittances inflows have been the highest in Africa followed by Egypt and the rest as shown in Figure 1.1.The increase in the volume of remittances as shown in the figure below is expected to have led to a considerable macroeconomic effect on the recipient economies. Hence, most governments are now considering remittances as being of high policy interest and wish to analyse their macroeconomic determinants.
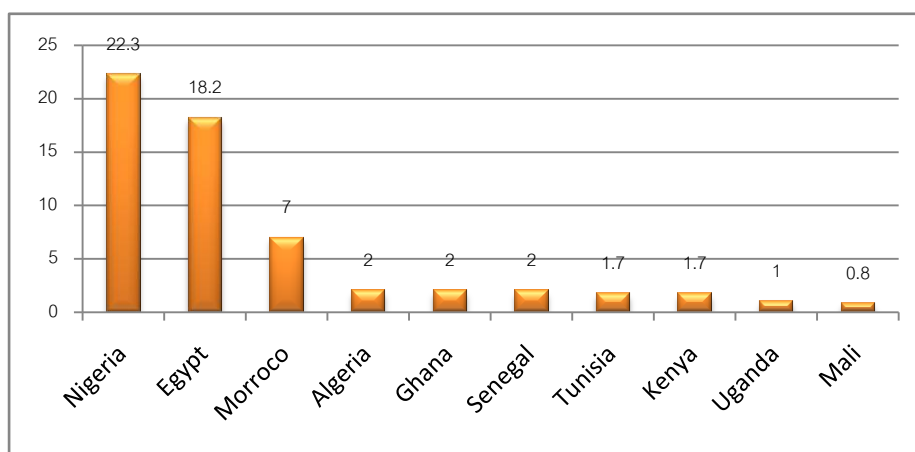
Source: IMF (2017), World Bank Development Indicators (2017)

Figure 1.1: Top Ten Recipients of Remittances in Africa (Billion US $)

Figure 1.1 understates significantly the actual value of remittances, given that a large share that is accounted for is believed to flow through the informal channels (Sander & Maimbo, 2003). Although the World Bank (2010) has predicted increase in remittances inflow into Nigeria, the country has no extant policy to regulate its use for national development apart

from the usual consumption behaviour of remittances recipient households. It is imperative to mention that in spite of the position of Nigeria as top remittance recipient country in Africa and fifth in the world in 2013 financial year, the Central Bank of Nigeria is uncertain about the actual amount of money remitted to the country due to its lack of methods to measure informal/unofficial ways through which remittances enter the country. This suggests that remittances enter the country through informal ways and this could make the official figures a less than accurate reflection of the reality as people prefer to send remittances home at low cost, mostly through friends who are visiting their home country.

The statistical interrelations between different macroeconomic indicators and remittances also show that the level of interest rate determines the inflows of remittances, Swamy (1981) though scholars strongly disagree on the direction of the impact. From investment motive and portfolio choice high interest rate in the migrant home country could be interpreted as a sign of unfavorable macroeconomic environment and therefore deter remittances inflow. The situation also raises concerns about the differentials between the workers' home country and her country of residence. In terms of monetary effects, theoretically remittances increase the supply of money in the recipient country. Money expansion increases the availability of loan able funds which lower the interest rates. This can aid investment as more liquid in the banking sector encourages borrowing, which gets invested.Since private investment is assumed to be inversely related to prevailing interest rates, investments expand as interest falls, and thereby contributing to higher levels of economic activity.

Despite the above facts, migrants that are informed and knowledgeable in economic and investment decisions consider the level of inflation in sending remittances for investment. Higher inflation creates greater uncertainty about future prices and leads to an acceleration of remittances to hedge against future inflation. Increase in price levels of the recipient country goods and services makes the situation of the remaining households more difficult leading to a necessity to remit more funds by the migrants, especially for altruistic reasons (IMF, 2005 and El-Sakka & McNabb, 1999).

In the recent time, the enthronment of well articulated remittance management regime since 1980s and 90s to aid growth and development by providing much needed foreign exchange has created a lot of fluctuations in exchange rate management in Nigeria. Exchange rate misalignments still drive remittance inflows to the underground economy coupled with its

adverse effects on growth and development. For instance, on 22 February 2016 in the Lagos black market, the dollar was being bought at 367 naira and sold for 372 naira and the official exchange rate was around 195 naira (Parallel Market Exchange Rate Daily update,2016) such large differences between official exchange rate and black market rates tend to drive remittances to informal channels. Regarding the importance of institutional environment Chandavarkar (1980) states that realistic rates of exchange and facilities for holding remittances in foreign currency accounts with banks in the countries of origin, are useful incentives that have been widely used by governments of labor-sending countries for attracting migrants' funds. Exchange rate could determine remittance inflows, whether the motive is for investment or altruism. In the case of altruistic motive, the depreciation of local currency increases the purchasing power of foreign currency denominated remittances, thus, making migrants send less remittance. Under investment motive, such depreciation may signal weakness in macroeconomic policies and discourage the flow of remittances for investment purpose. (IMF, 2005 and El-Sakka & McNabb, 1999).

The level of development of payments system in Nigeria has to a large extent determines the inflow of remittances. The inadequate number of bank branches in rural areas adversely affected the size of inflow of remittances to the migrants dependent relatives in the rural areas. It is also generally believed that the level of sophistication of financial markets and institutions affect the flow of remittances, and that the increasing disparity in the structure of the financial system in developed and developing economies will continue to be a strong determinant of remittance inflow through the unofficial channels. According to Wahba (1991) the availability of financial intermediation is one of most important factors affecting the flow of remittances. He indicates that many workers use the parallel market because of absence of a more efficient channel of transfer.

The migrant stock (population) in the host country is considered as a crucial determinant of remittance.The higher the volume of workers in the host country, the greater the volume of remittances (Hagen-Zanker & Siegel, 2007).The nature of migration phenomenon in Nigeria took two different epoch after her independence in 1960. Post independence migration periods took the form of Nigerians moving abroad to acquire education due to apparent dearth of manpower at home. Thereafter, especially from the early 1980s, migration took different dimension. Migrants left for different reasons and could be mostly grouped as economic migrants. According to the estimates of the Presidential Committee on Brain Drain

in Nigeria set up in 1988 by the Gen. Ibrahim Babangida administration between 1986 and 1990, the country lost 10,694 professionals from tertiary institutions, while total estimates including those who left public, industrial and private organizations are over 30,000. Ever since then, the figure has continued to grow.

1.2   Statement of the Problem

Migrant workers' remittances have been generally adjudjed as one of the negleted item in the balance of payment account, despite the fact that remittances have grown to emerge as the second most significant source of foreign exchange for Nigeria. Remittance is currently celebrated as exceeding all non- oil receipts in Nigeria, including official development assistance (ODA), foreign direct investment (FDI), portfolio capital inflows and non – oil exports (Oduh & Urama, 2012). In fact, several studies have investigated that in developing countries total remittances already exceed foreign aid and compete in size with foreign direct investment (Connel & Brown, 2004; De-Haas, 2006; Heilmann, 2006; and Chami et al, 2008). Despite the above facts Nigerian authorities and banks pay scant attentions on the inflow of migrants' remittances.

The dearth of capital for financing developmental policies and project has been a major problem plaguing the country and has forestalled projected growth in Nigeria (Ihimodu, 2005). Furthermore, the inability of government in Nigeria to generate sufficient foreign exchange due to heavy reliance on a mono-product export which is prone to negative price shock in the case of oil at the international market has led to many years of instability in government revenue and consequently served as checks on import demand and a constraint to effective implementation of national development plans (Adewuyi & Adeoye 2003). This development constraints caused by inadequate fund for excuting current and capital projects has led the government into huge deficit financing through borrowing both internal and external debt with internal debt more than tripling in the period under study; rising from N419975.6 in 1996 to N5228032.5 in the first half of 2014 alone, and foreign debt also rising four times over from N617320.0 in 1996 to N5695072.2 in 2015 (Migration and Development Brief, 2015). Hence, Murinde (1993) asserts that from the perspective of the home country remittances are a major source of foreign exchange and its limited availability acts as a major challenge on economic development programs and stabilization policy. From

the migrants view point, remittances from migration aid them and their families to consume and invest more.

Nigeria's remittances inflows have been the highest in Africa followed by Egypt and the rest as shown in Figure 1.1.The increase in the volume of remittances is expected to have led to a considerable macroeconomic effect on the recipient economies (Chami et al, 2008). Hence, most governments are now considering remittances as being of high policy interest and wish to criticaly analyse their macroeconomic determinants. However, viewing from policy measures and incentives, it is safe to assert that policy interest in migrant remittances is still weak in Nigeria despite high human capital migration from the country.Most governments are now considering remittances as being of high policy interest and wish to relate their impact on economic development and security. According to IMF (2008), the G-8 Heads of State have been promoting improvements in the availability of statistical data on remittances as they identified remittances as an important factor in defining their relationship with developing countries.

Eestimation periods of most of the studies are rather short. The main reasons for these are the scarcity and inaccuracy of data.The existing literature on remittance show that most of the studies on remittances are geared towards finding its impacts on poverty eradication and inequality in income distribution. However, little has been done on the determinants of this migrant money flow with respects to macroeconomic variables such as output, exchange rate, interest rate, unemployment, population growth, inflation rate and financial development. Even among the few existing works on the macroeconomic determinants of remittances, there has not been any consensus on the macroeconomic determinants of the flows on the recipient economy and majority focused on cross country analyses. For instance, while El-Sakka and Mcnabb (1999) and Elbadawi and Rocha (1992) agree on the negative effect of the black market premium, they disagree on the effects of differential interest rate and domestic inflation. According to Elbadawi and Rocha (1992), differential between domestic and foreign interest rates has no significant effect on remittances, while El-Sakka and Mcnabb (1999) argue that it negatively affect the remittances. Moreoever, both Katselli and Glytsos (1986) and Elbadawi and Rocha (1992) find significant negative effect of inflation on remittance flows, while El-Sakka and Mcnabb (1999) argue that it has a positive effect.Hence, the recommendation by Chami et al, (2008), that there is the need for country by country study of macroeconomic impacts of remittances.

One school of thought suggest that economic policies and institutions in the home country, like exchange rate restrictions and black market premiums, discourage remittance inflows as well as shifts remittances from the formal to the informal sector.According to this group remittance inflows through informal channels complicate the implematation of effective macroeconomic policy and lead to a policy trap. This is particularly true given the high dollarrisation partly fueled by remittances. Hence, IMF (2005) and El-Sakka and McNabb (1999) find that macroeconomic instability such as real exchange rate and inflation rate could have a similar negative effect. In Nigeria it has been observed that in spite of the recognized advantages of well articulated remittance management regime to aid growth and development by providing the much needed foreign exchange, exchange rate misalignments still drive remittance inflows to the underground economy.

This study is therefore designed to address the gap in existing literature by critically determining the macroeconomic determinants of migrant remittances in Nigeria.

1.3   Research Questions

Leaning on the identified problems, the following research questions become imperative;

1. Is there a long run relationship between macroeconomic variables (such as real gross domestic product, interest rate, inflation rate, exchange rate, population growth, unemployment rate, and financial development) and size of remittances inflow in Nigeria?
2. What are the long-run impacts of the identified macroeconomic variables on migrants' remittances inflow in Nigeria?
3. What are the short-run impacts of the identified macroeconomic variables on migrants' remittances inflow in Nigeria?
4. How do migrants remittance inflows respond to macroeconomic shocks caused by these variables in Nigeria?

1.4   Objectives of the Study

The broad objective of this study is to establish the nature of relationship between macro-economic variables and the size of migrant remittances in Nigeria. To achieve this, the following specific objectives will be pursued.

1. To determine if a long run relationship exist between the identified macroeconomic variables and migrants remittance inflows in Nigeria.

2. To ascertain the long-run impacts of the identified macroeconomic variables on migrants' remittance inflows in Nigeria.

3. To ascertain the short-run impacts of the identified macroeconomic variables on migrants' remittance inflows in Nigeria.

4. To determine if migrants remittance inflows respond to macroeconomic shocks in Nigeria.

1.5   Research Hypotheses

The study is guided by the following hypotheses in line with the study objectives: The hypotheses are specified as follows:

1. H_o: There is no long run relationship between the identified macroeconomic variables (output, exchange rate, interest rate, inflation rate, unemployment rate, population growth and financial development) and migrants' remittance inflows in Nigeria.
   H_1: There is a long run relationship between the identified macroeconomic variables (output, exchange rate, interest rate, inflation rate, unemployment rate, population growth and financial development) and migrants' remittance inflows in Nigeria.

2. H_0: The identified macroeconomic variables have no significant impacts on migrant remittance inflows in the long-run.
   H_1: The identified macroeconomic variables have significant impacts on migrant remittance inflows in the long-run.

3. H_0: The identified macroeconomic variables have no significant impacts on migrant remittance inflows in the short-run.

   H_1: The identified macroeconomic variables have significant impacts on migrant remittance inflows in the short-run.

4. H_o: Migrants' remittances do not respond to shocks in macroeconomic variables these macroeconomic variables.

   H_1: Migrants' remittance inflows do respond to shogks in macroeconomic variables.

1.6   Significance of the Study

This work is significant in a number of ways:

Inflow of remittances holds a significant potential for Nigeria economic development and the findings from this work provides more accurate and recent data that will provide policy – makers with more reliable information to develop appropriate monetary policy/financial regulations and enhance research efforts of scholars.

The researcher's findings would help the remitters to make efficient decisions and channel their remittances accordingly thereby realizing their intended purposes.

The findings from this work would sensitize government to pay more attention on migrant remittances as it complements development resources by providing a consistent source of additional income for investments as they are adjudged to be more stable than other sources of foreign inflows.

Knowledge gained from the findings of this work would motivate government to encourage the use of formal channel remittances that plays an important role in alleviating foreign exchange constraints and supporting the balance of payments and other macroeconomic shocks in Nigeria.

1.7.   Scope of and Limitations to the Study

The study is designed to investigate these sellected macroeconomic variables of real gross domestic product, exchange rate, interest rate, inflation rate, population growth, unemployment rate and financial development that determine the volume of migrant remittances in Nigeria with data spanning from 1970 to 2016. The estimated data were analysed using econometric techniques. Poor data availability   and coexistent of formal and informal remittances channel constitute a major constraint. However, to circumvent these difficulties we analysed various recent studies/dataset from formal channels to test the theoretical predictions by being country specific in our analysis and also being critical in the management of the available resources.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The essence of this chapter is to provide a theoretical framework for analyzing inflow and an up-to-date understanding of the subject and identify the methods used in previous research on the topic.This chapter is organized as follows; theoretical literature review, conceptual framework, other related theoretical considerations, basic theories, empirical literature, summary of empirical literature reviewed and justification of the study only. The review placed emphasis on the Nigerian economy but was not actually constrained to that as works done in other countries were also reviewed.

2.1 Review of Theoretical Literature

2.1.1 Review of Conceptual Literature

1. Remittances Flows

The concept of remittances has been linked to the theory of migration. Its definition however, can be linked to its motives, effects, uses, kind of transfer and the channel of funds transfer. Remittance flows represent any monetary and/or in-kind transfers that migrants send home to family members or other beneficiaries - be it via formal or informal channels (World Bank, 2005).International Organization for Migration (IOM) broadly defined remittances as the financial flows associated with migration, in other words, personal cash transfers from a migrant worker or immigrant to a relative in the country of origin. For Singh and Sausi (2010), it is honoring commitments to households and communities that support individuals as they migrate to other countries; a demonstration of continuing familial responsibilities, unselfishness and an investment for possible future return to country of origin. It has therefore been described as one of the most important outcomes of migration (Nwosu, 2010). Migrant remittances come in different shades. According to Nwosu (2010), International Monetary Fund (IMF) splits remittances into three categories: (a) workers' remittances, from workers who have lived abroad for more than one year; (b) compensation of employees or labour income, including wages and other compensation received by migrants who have lived abroad for less than one year; and (c) migrants' transfers, the net worth of migrants who move from one country to another. Another classification by Goldring (2004) categorized remittances into three - family, collective and investment. Family/individual remittances is

seen as an income source and therefore spent on individual, household or family expenses. Because it is seen as income, it also has a poverty reduction effect. Collective remittances on the other hand are not seen as income used for expenses as in the case of family remittances. Singh and Sausi (2010) addthatcollective remittances are sums of money sent by migrant associations or church groups to their home communities. As a communal or collective, Singh and Sausi (2010) agree thatthese remittances are different from individual remittances. The remittances come from individuals who have joined migrant associations to support projects or other activities in their home villages (Levitt, 2003).

Remittances to Nigeria can however, be for individual or collective use. It is normal for a migrant to remit money to friends on a regular basis to provide for the welfare of his or her relatives, for example, elderly parents (Coss & Bun, 2007; Singh &Sausi, 2010). Another growing trend is for Nigerians living abroad to send their children to boarding schools in Nigeria and bring them back to the UK for their university education. These parents often remit money to their children in the boarding schools for living expenses. The length of stay and the level of skills of the sender determine the remittance patterns for individual remittances. Migrants can also send collective remittances. Singh and Sausi (2010) define collective remittances as the sums of money sent by migrant associations or church groups to their home communities. Being communal or collective, these remittances are different from individual remittances and the amounts depend on the effectiveness of the associations. The remittances come from individuals who have joined migrant associations to support projects or other activities in their villages in Nigeria (Levitt, 2003).

In another vein, remittances are procyclical if they are driven by investment and profit motives. Remittances behaving procyclically are premised on the optimization of investment motives of migrants. This is what is referred to as the portfolio approach in which case remittances respond positively to favourable macroeconomic indicators in the migrant's home country. For instance, migrants that are informed and knowledgeable in economic and investment decision consider the level of inflation when sending remittances for investment. Thus, stable and lower inflation rate will positively influence the inflow of remittances.

A distinction is also made amongst remittance flows based on the transmission mechanism. In the words of Leon and Sarah (2012), it is common to group these transactions in binary categories, which may include: official versus unofficial, formal versus informal, regulated versus unregulated, legal versus illegal and recorded versus unrecorded. These binary

categories reflect different things. For instance, "informal remittances" are usually defined as transfers initiated outside the formal banking system and outside the main money transfer businesses such as the Western Union. Many informal remittances, such as hand carried money, could still be legal. "Unrecorded remittances" are those that do not appear in official government statistics, either because the flows are sent through informal channels where there is no record of the transaction or because the government has decided not to collect these data in a systematic way. Yet, in the literature these two concepts are often used interchangeably.

2. Macroeconomic Determinants of Remittances

Generally, a conducive macroeconomic environment stimulates investment and capital formation that are vital to economic growth and development. Among the macroeconomic factors affecting remittances includes number of migrants and their income level, the economic activity in host and sending countries, exchange rates, interest rate differences between the worker‐sending and the receiving countries, unemployment rate, the potential political risks at the origin country and the facility of transferring funds have already been underlined by Russell (1986). Macroeconomics analyses that establish the functional relationship between these large aggregates are indicated below:
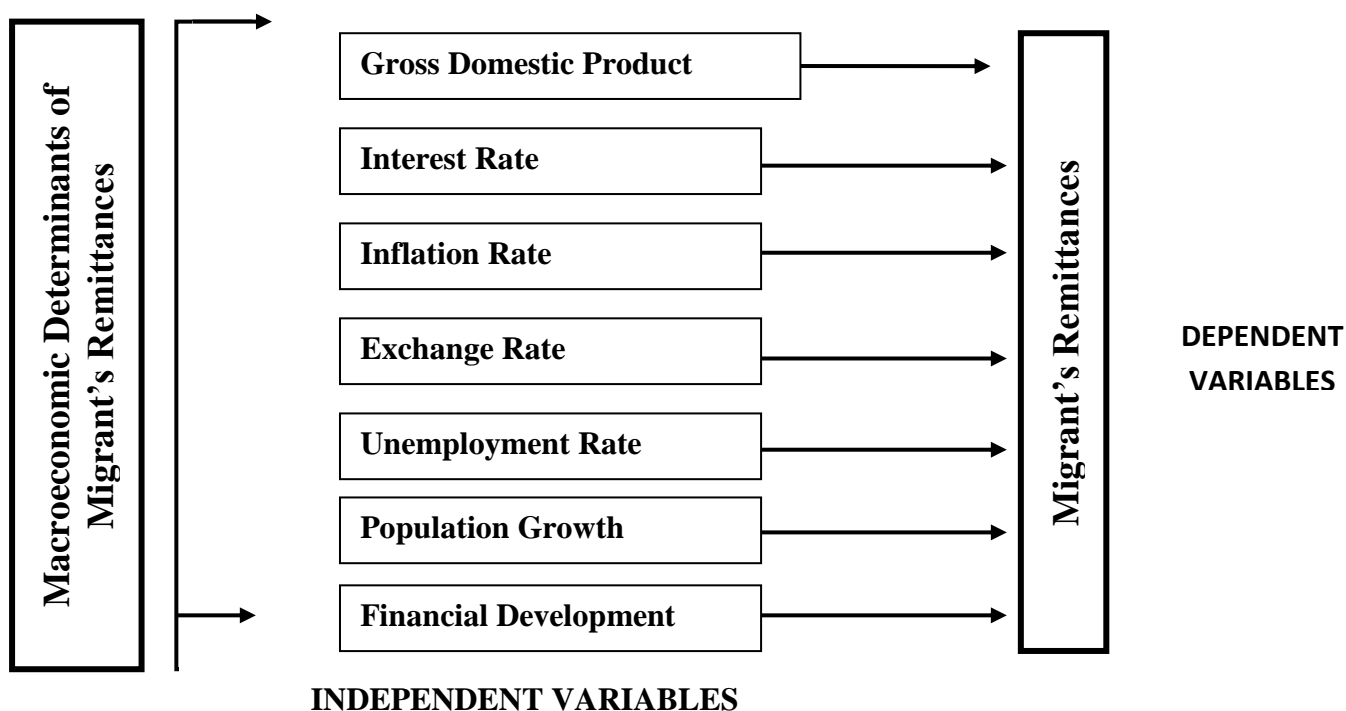
Figure: 2.1 Conceptual Framework

Gross Domestic Product (GDP).

The gross domestic product (GDP) is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products during a period of time irrespective of the nationality of the people who produced the goods and services. In view of the fact that remittances bring an increase in income and boast aggregate demand, it has a magnified effect on real GDP growth. Economic activity in the migrant workers' home and host country has been proved to affect the economies of both country positively and allow migrants to increase their employment and earnings prospects, which in turn allows migrants to send more money home (IMF, 2005).The magnification depends on the multiplier and the size of remittances. The multiplier itself depends on marginal propensities to import and to save.

As is well known from the works of Modigliani or Friedman, the propensity to consume must be related to the agents' expectations regarding future income streams (including remittances). However, when remittances constitute a significant source of foreign exchange, they may clearly affect the equilibrium level of the gross national product and other macroeconomic variables.

Obviously, exchange rate behavior on remittances can be traced to the seminal work of Mundell (1963) and Fleming (1962) that establish the Mundel- Fleming condition. The notions indicate that governments face a trade-off between efficiency credibility and flexibility (Frenkel,1999), Efficiency suggests that exchange rate is fixed and can only change when awareness has been created in advance. As a result, exchange rate volatility was eliminated or reduced and this encourages international capital inflow such as remittances (Calvo & Reinhart 2002).

On the other hand, flexibility is associated with floating exchange rates, which compelled the monetary authorities to adjust interest rates based on economic circumstances. Under flexible rates, the authorities can flirt with monetary variables to stabilize employment and output. Moreover, the exchange rate can adjust to counteract current account imbalances. This flexibility comes at the cost of lower monetary policy credibility, because in the absence of a transparent target for the exchange rate, the public is unsure of policy makers' commitments to maintaining stable prices. The implication of this is that flexibility may not attract more remittances.

But if exchange rate and remittances stems from the motive of remittances - portfolio or self-interest motive. Foreign investors and creditors prefer fixed exchange rate and so, to the extent that remittances are for investment purposes, fixed exchange rate facilitates remittances (Blomberg et al 2005; Frieden 2002; Frieden et al 2001). But under the condition of self-interest motive, floating exchange rate is preferred against fixed exchange rate. Meanwhile, in a country where exchange rate parallel market exists and if the purpose of remitting is altruistic or self-interest, then devaluation creates arbitrage opportunities for remitters to remit through unofficial channel and reduce remittances through the official channel.

Thus, if official exchange rate negatively affects remittances, it could be that parallel market is very active (El Sakka & McNabb, 1999). But if tacit action was observed against parallel market practice, cost of conversion tends to rise and if it rises above the expected premium, remitters will be forced to do conversion through the official exchange rate. It follows that under pegged exchange rate, if the cost of arbitrage opportunities is high in the parallel market, exchange rate may not have any effect on remittances. But if the cost of arbitraging is not so high that it overweighs expected premium, official remittances will decrease while unofficial remittances will increase.

Inflation

According to one school of thought domestic inflation can affect remittance flows through its impact on domestic real income and the purchasing power of worker's family in the home country. The impact of inflation according to this view will be positive because, in periods of high inflation the workers will remit more in order to maintain family consumption levels at home. (El-Sakka and Mcnabb, 1999). In view of another school of thought, a high rate of inflation is a sign of economic, and possibly political, instability. (Elbadawi and Rocha, 1992) So, a high rate of domestic inflation can be a proxy for uncertainty and risk. The impact of inflation in this case will be negative. Another alternative view is that migrants remit more in periods of high inflation to purchase real assets, because real value of these assets are constant or rising in these periods. (El-Sakka and Mcnabb, 1999). However, high inflation may be interpreted as a signal of instability as well and therefore generates a decrease in remittances (Glytsos, 1988; Elbadawi and Rocha, 1992; Aydaş *et al.*, 2004).

Real interest rate

Remittances could be used by migrant workers to finance financial or real investments. If domestic rates of return are low compared with those in the host country, migrants will prefer

to keep their savings abroad. So, it is expected that the larger the premium of domestic rates over foreign ones, the more will the workers sent their savings to home. However, to which extend remittances are affected by the origin country's interest rate differentials compared with the host country, is still an issue for the ongoing debates. While according to Swamy (1981), Straubhar (1986) and Chami *et al.* (2003) there is no relationship between remittances and this variables, other studies, especially as regards Turkey show the opposite. Regarding the interest rate differentials, Wahba (1991) states that the flow of discretionary remittances is determined primarily by the difference between the real domestic interest rate and the real foreign interest rate. Furthermore, for these remittances to flow through official channels the exchange rate difference must be greater than the cost of going to the parallel market. Because of this reason, most labor exporting countries offered foreign exchange accounts with premium interest rates to their migrant workers abroad.

Population (Stock of migrant)

The aggregate stock of migrants in the host country is positively linked with remittance flows authenticating that the two phenomena—migration and remittances—are closely associated. Hence,one would like to include the stock of migrants from the receiving country in the analysis. In most cases, as the number of workers in the host countries increase, the inflow of the remittances also increased. In many previous studies, Swamy (1981),Straubhaar (1986), Elbadawi and Rocha (1992) found stock of workers to have a positive and significant impact on the level of remittances. Swamy (1981) also notes that the number of migrants abroad and their income explain over 90% of the variation in remittance inflows. The author also states that most of the variation was due to the number of workers abroad. In view of the fact that the numbers of workers in the host country and wage rates are both related to the levels of economic activity, both in the host country and in the labor-sending country, Swamy (1981) further examines fluctuations in remittances in relation to the fluctuations in GDP. He finds that the level of, and cyclical fluctuations in, economic activity in the host countries explained 70 to 90% of the variation in the remittances. The result of this analysis may be attributed to the fact that changes in these macroeconomic indicators reflect changes in the demand for migrant workers and possible changes in their income levels.

Effects of Financial Development on Migrant's Remittances.

This involves positive changes in the financial institutions, financial instruments, or business practices in the financial sector.The level of development in the financial sector has a direct

bearing on the inflow of remittances. Remittances can lead to financial development in developing countries (Orozco & Fedewa,2005) based on the concept that money transfer through financial institutions paves the way for recipients to demand and gain access to financial products and services. Remittances can make a positive contribution to the growth of the capital stock either through their impacts on widening the deposit base of the bankingsystem or directly through financing business investments. This opinion is particularly true for Nigeria with her under- developed financial system.The growth of remittances contributes to the availability ofloans and expands the use of different financial instruments.Remittannces are considered a secondary source of income when banks make credit decisions.

Based on the above discussions some selected macroeconomic variables such as gross domestic product, inflation rate, interest rate, population growth, unemployment rate, exchange rate and financial development have been shown to affect migrant remittances.

2.1.2 Review of Basic Theories

A plethora of schools of thought captures migration and migrant remittances in relation to growth both at micro-economic (pure altruism, pure self-interest, co-insurance) and macro-economic levels. According to de Haas (2007), this development has changed with the emergence of more nuanced views in the 1990s and the current rediscovery of remittances, as well as the concomitant resurgence of optimism on migration and development in recent years. The theoretical debate about the determinants of remittances was triggered by Lucas and Stark (1985). Lucas and Stark studied remittances on a household level and hypothesized the main determinants to be "pure altruism", "pure self-interest" and "tempered altruism or enlightened self-interest". However, various arguments are considered under the following;

1. Pure Altruism

The Pure Altruism theory indicates clearly that migrants remit money back home in concern of the welfare of the remaining family members and relatives (Hagen-Zanker & Siegel, 2007:5; OECD, 2006:145). Chami *et al.* (2003:4) report that in this model, the migrant's utility is derived from that of his/her family back home. The migrant is rather satisfied when the welfare of his family back home is better off (OECD, 2006:145). This implies that the migrant is motivated to remit more funds to his family when there are shock or unfavourable economic conditions holding in the home country. The theory observes that remittances are

"compensatory transfers" since they increase when the migrant's home country is faced with economic disruptions such as floods ,droughts and a financial crisis (Chami *et al.*, 2003:4).

According to Chami *et al.* (2003:4), for the migrant to remit more funds, the economic disruptions or "bad luck", must be creating a shortfall for the remaining family. As a result, the compensatory nature of remittances under the Pure Altruism model,the implications are that remittances are countercyclical in nature, that is they increase when there is deterioration in economic conditions in the business cycle (Vargas-Silva, 2008:292; Chami *et al.*, 2003:4). The Bank of Uganda (2007) emphasises that altruistic remittances can be countercyclical to GDP patterns possibly because migrants tend to remit more during periods of economic disturbances in order for their families in the home country to smoothen their consumption. Also commenting on behavioural patterns of remittances under a Pure Altruism model, Brown (2006:63) suggests that there is an inverse relationship between the volumes of remittances and economic conditions holding in the home country. Under this model, favourable economic conditions in the home country would imply a reduction in the volume of remittance inflows.

2. Pure Self-interest

Pure self-interest motives for remitting can be perceived as a market in which family members aim at entering into mutually beneficial agreements. Theories that have macroeconomic implications have focussed in particular on aspects of inheritance, loan repayment, insurance and exchange. Stark (1981a, 1981b) and Lucas and Stark (1985) view remittances as the result of an intergenerational contract between migrants and their parents in the home country. In contrast with the altruistic motive, remittances should increase in the family's income and wealth if sending remittances is a way of migrants to compete for inheritance. Third, the phenomenon of migration might be seen as a means of reducing risk by diversifying the sources of a family's income (Stark 1991). In this framework, remittances act like an insurance against income shocks that might hit the recipients in the home country (Agarwal and Horowitz 2002, Gubert 2002). At the macroeconomic level, this implies that remittances will increase if output is more volatile in the recipient country. Finally, remittances may be seen in an exchange framework, where they represent a paymentby the migrant for services provided by family members, such as taking care of her relatives or property (Cox 1987; Cox, Eser and Jimenez 1998). If the family's marginal utilitydecreases in income, more remittances are required to guarantee the provision of services at home.

Hence, a higher pre-transfer income of the family and lower unemployment at home would raise the amount of remittances.

 3. Co-insurance

Whether remittances are sent as part of a co-insurance contract between migrants and households can be measured by analyzing the effects of household shocks and migrant (income, employmentand living) risk on remittances. According to most studies that included household shocks, shocks of the household (e.g. illness) lead to a higher probability of remittances and larger sums of remittances de la Briere et al,(1997), Hoddinott (1994) and Pleitez-Chavez (2004). Unfortunately, this cannot be distinguished from altruistic behavior.The variable length of stay can also be used to measure the risk level of the migrant as after a longer stay the migrant generally knows the destination country better, has a steadier job,etc. As   ealier stated length of stay generally has a positive effect on remittances.This means that lower risk is accompanied with more remittancs (so more insurance), which is some evidence against remittances as insurance. On the other hand, while few papers found a significant relationship for other measures of the migrant risk level (e.g. legal employment), almost all those that did, found a positive relationship Durand et al (1996) and Konica (2006). In these cases, migrants sent home more remittances when they faced greater risk in order to insure themselves against the loss of a job, etc. Amuedo-Dorantes and Pozo (2006) went further in measuring the insurance motive by distinguishing between self and family insurance and at the same time altruism. They did so by looking at what remittances are used for. Figure 2.2 outlines this hypothesis.
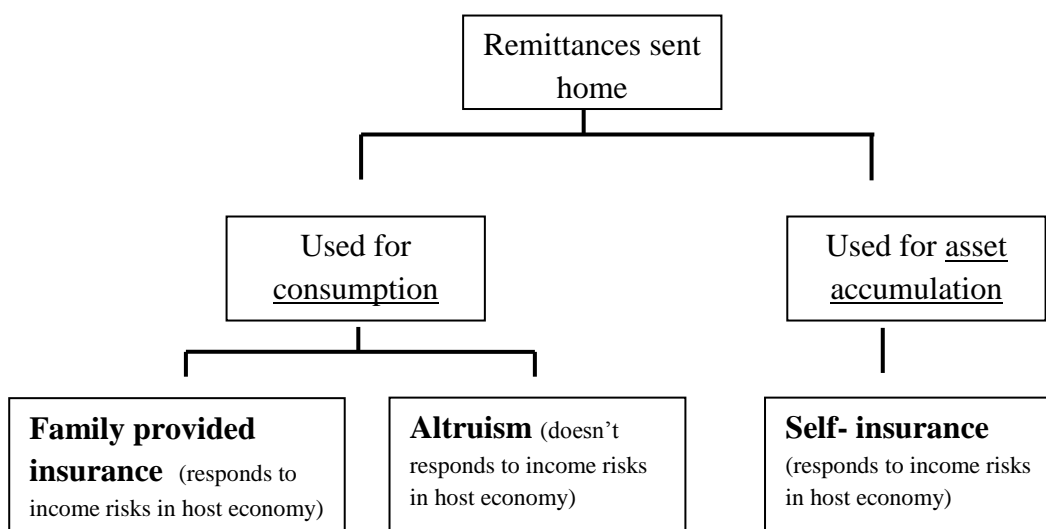
Figure 2.2: Insurance motives for remitting

Source: Based on Amuedo-Dorantes & Pozo (2006).

If remittances respond to income risks in the host economy and are used for consumption they are sent to the family as part of a co-insurance agreement. If they are used for asset accumulation instead, the family acts as an investor for the migrant, so it is self – insurance (like saving). The authors' findings show that those migrants with greater income risk remit more and different types of migrants use different insurance methods. For instance, young male migrants who have low levels of education and large families at home are more likely to use co-insurance (Amuedo-Dorantes &Pozo, 2006).

Macroeconomic Theories

Possible theorises for assessing the macroeconomics of remittances include the Keynesian model, the Mundell-Fleming model and the Rybczynski effect. For instance:

The Keynesian model
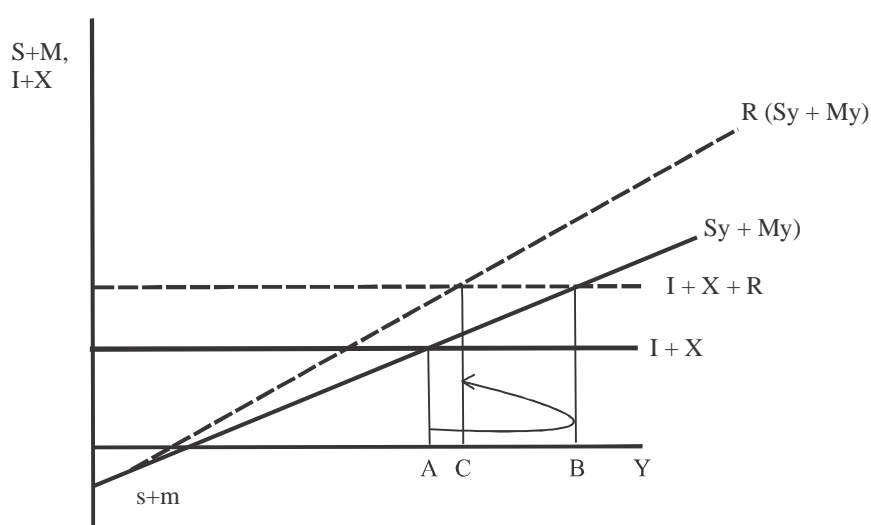
Figure 2.3: The Keynesian model

The pure Keynesian model is the oldest model that tries to capture the short-run macroeconomic impact of international transfers. Under the assumptions of sticky prices, fixed exchange rate, financial development and interest rates, and in the absence of supply constraints, this model shows that any shock on the demand side has a disproportionate effect on the national output. Obviously, the magnitude of this impact depends on the Keynesian multiplier (which, itself, depends on several parameters such as the marginal propensity to import), and on the size of the transfer shock (which itself depends on the amounts received and on the recipients' marginal propensity to consume remittances). As is well known from

the works of Modigliani or Friedman, the propensity to consume must be related to the agents' expectations regarding future income streams (including remittances).

In view of the fact that remittances bring an increase in income and boost aggregate demand, it has a magnified effect on real GDP growth. Eeconomic activity in the migrant workers' home and host country has been proved to affect the economies of both country positively and allow migrants to increase their employment and earnings prospects, which in turn allows migrants to send more money home (IMF, 2005).The magnification depends on the multiplier and the size of remittances. The multiplier itself depends on marginal propensities to import and to save. In the Keynesian model investment *(I)* and exports *(X)* are completely autonomous from the level of output *(Y)*. Therefore, an increase in a country's overall income by way of remittances *(R)* can be indicated either as an autonomous increase in export receipts or as additional investment. Savings *(S)* and imports *(M)* consist of an autonomous component independent of *Y*, and an income induced component. In a spending-output space, where *S* and *M* are seen as leakages and *I* and *X* as injections, an additional inflow of remittances *(R)* will initially lead to an increase in equilibrium output from *A* to *B*. However, the final equilibrium will crucially depend on the impact of *R* on the marginal propensities to import *(m)* and to save *(s)*. Most likely, both will also increase, and the spontaneous leakage will push the final equilibrium back from *B* to *C*, with the output level only marginally higher than the original. If *m+s=1*, the Keynesian multiplier equals unity, and the whole amount of *R* will be leaked with *Y* unchanged. The more open the economy, the smaller the multiplier and the less significant the impact of remittances on output.

The Mundell-Fleming Model
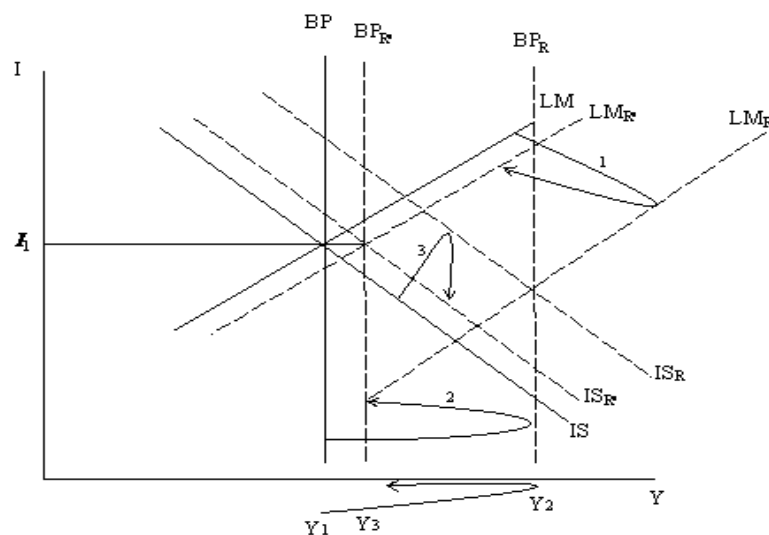
Figure 2.4: The Mundell-Fleming Model

The Mundell-Fleming model

Remittances are a vital component of liquidity flows in Nigeria. The monetary policy rate first impacts intervening variables- exchange rate, interest rate, inflation etc- which in turn impact remittance flows.The impact of a nominal shock on real growth depends on the exchange rate regime and the degree of capital mobility. Assume that capital flows do not react to changes in the interest rate and are overall insignificant, remittances therefore can be viewed as part of the money supply.Though, remittances are interest rate sensitive when tailored towards financial investments. A positive interest rate differential in favour of the receiving country would call forth more remittances. However, the flows will be conditioned on the expected behaviour of exchange rate (Loser et al., 2006) Bouhga-Hagbe (2004) show that there is no evidence that an increase in the interest rate differential in favour of Morocco will increase the long-run amount of deposits held in Morocco by Morrocans living abroad.

Monetary policy is an efficient instrument for stimulating real growth under a flexible exchange rate arrangement and inefficient with a fixed exchange rate regime. In the real income (Y) and real interest rate (i) space, the real (*IS*), monetary (*LM*) and external (*BP*) sectors are in simultaneous equilibrium, when output is at y_1 and the interest rate is at (i_1). The *BP* curve is perfectly inelastic as capital flows do not respond to changes in the interest rate. Driven by the inflow of remittances (R), the expansion of money supply to *LMR* in principle should immediately produce a substantial growth in output toY_2, making more domestic credit available.

However, the inflow of foreign exchange and the corresponding rise in demand for local currency will cause pressure on the exchange rate toward its appreciation. The resulting decline in export demand and the incipient balance of payments deficit will hamper all, or at least a significant part, of the initial impact of the monetary expansion on growth and can reduce output from Y_2 to Y_3, where $Y_3 > Y_1$ or—at the extreme and depending on elasticities—it can even be that $Y_3 \leq Y_1$. Money demand adjusts to the lower output level. But as the interest rate declines, real sector activity may pick up driven by higher investment financed by remittances. Therefore, even with contracting export demand, the ultimate outcome of the adjustment to the inflow of remittances depends on the behavior of the real sector. With increased investment helping growth, and appreciation hampering it, the out come is ambiguous. In the best-case scenario, the whole economy moves to a new

equilibrium with just a slightly higher output level at Y_3, and an interest rate equal, higher, or lower when compared to its pre-remittances level.

The Rybczynski effect
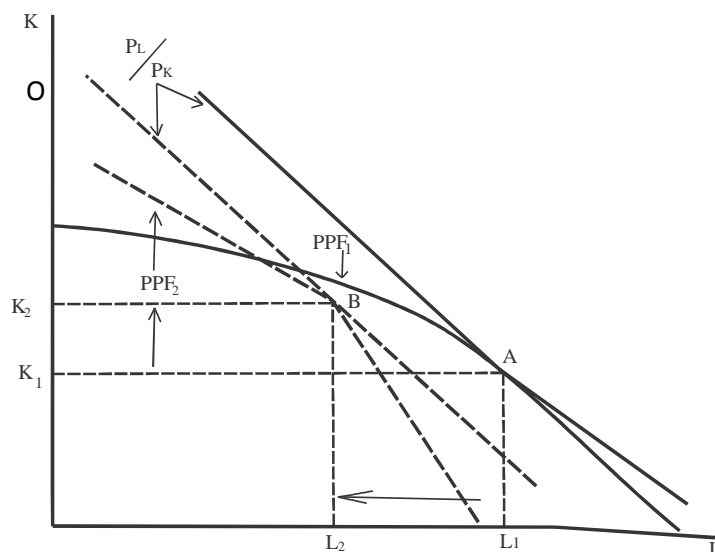
Figure 2.5: The Rybczynski effect

The Rybczynski effect

The stock of migrant workers in a host country is seen to be an obvious determinant of remittances: the greater the volume of workers, the greater the volume of remittances.In an extension of the Heckscher-Ohlin model, labor emigration can be seen as a decreased availability of the factor of production in the home country, with the impact on growth depending on the behavior of other factors and the degree of substitution among them. If the economy produces two key goods, one labor intensive and the other capital intensive, using two factors, labor (L) and capital (K) , an exodus of labor will shift the PPF inwards along the axis of thelabor-intensive commodity, from L_1 to L_2. The impact of a lower labor supply on capitais ambiguous: on the one hand, less capital may be needed for the labor-intensive good, on the other hand, new capital inflow can substitute for the declining factor. Assumingthat the decline in labor is accompanied by an increase in capital, the PPF shifts in an asymmetrical manner, from *PPF₁* to *PPF₂. As* in the case of a small country, the relative price between the two goods will not change $\frac{(P_l)}{P_k}$ and the production point will move from the point of tangency *A* to *B*. As the final shape of *PPF₂* is unknown, the position of *B* is also

uncertain. As is shown, however, the output in the labour-intensive good declines and the output of the capital-intensive good increases.

The welfare implication of the decline in the abundant factor should be positive, as per capita income of those left in the home country would increase. In the case of Nigeria, the described move from point A, which is at the PPF, i.e. full employment, towards point B inside the frontier, can also be viewed as the reverse of reality as countries that are a source of migrants are usually characterized by high unemployment.

2.1.3   Review of Other Theoretical Issues

In this section we discuss some of the related theoretical issues that are relevant to the study.

1.   Concept of Migration

Vargas (2006) asserts that as long as homo sapiens have existed, members of the species have migrated in search of food or to escape from disasters or conflicts. Population movements are frequent during every epoch. The worldwide population of migrant workers, who are definedas people who are economically active in a country of which they are not nationals but excluding asylum seekers and refugees, is estimated by the ILO to be between 36 and 42 million in the world (ILO, Bulletin of International Migration, 2000).

 However, migration refers to a situation where people leave their home to work and earn abroad, in order to remit and keep the household afloat under generally depressing political and economic circumstances (Singh & Sausi, 2010).They further opine that in most cases only one family member migrates leaving behind spouses, children and parents who in some way have to rely on the support of this migrant who assumes the role of provider. However, a standard definition of migration was given by the International Organization for Migration (IOM). The IOM defined migration as the movement of person or group of persons, either across international border or within a state. It is a population movement, encompassing any kind of movement of people, whatever is length, composition or causes. According to the UN, migration is generally consensual, although it includes movement prompted by a force of socio-economic or political circumstance. Little wonder, Hass (2000) concludes that remittances is a reflection of economic, social and cultural dimensions of the migration process in which "earning money for oneself" is not a legitimate reason to migrate abroad; a point that has attracted scholars to study the reasons behind migration.

2. Economic and Political Context of Migration

Migration can have a range of social, cultural, political and economic effects. It involves transfer of know-how and skills, financial assets (including remittances), and the transfer of people from one location to another. Migration also has consequences for the individual, the area of origin and the area of destination – on the family, household, society, the economy and development as a whole. The effect of international migration is not limited to remittances and cash inflows alone.The acceleration of economic globalization over the past thirty years has seen increased integration of the world's economies, facilitated by revolutions in communication, transport, finance, and others.Growth since the millennium has been extensive, with total migrant stocks in the OECD increasing 20 percent, and high-skilled stocks by 70 percent, between 2001 and 2011 versus 130 percent 1999-2010 (Nathan, 2014). Considering the recent growth in and new found scale of migrant stock, the impact of migration on growth is now a 'macro-critical' policy issue (Jaumotte et al., 2016). Migrants for tens of thousands of years had been on the vanguard of the advancement of civilizations. The first era of globalization in the second half of the nineteenth century was associated with the first mass voluntary movement of people, as millions of people migrated internationally in search of greater security and opportunity.

In view of the argument raised by Haas (2000), several studies classified the motive behind migration into five categories.They are economic factors ,demographic factors, socio-cultural factors and political factors. (i) Economic factor; Most of the studies indicate that migration is primarily motivated by economic factors. In developing countries, low agricultural income, unemployment and underemployment are considered basic factors pushing the migrants towards developed area with greater job opportunities. Thus, almost all studies concur that most of migrants have moved in search of better economic opportunities. Furthermore, the common push factors are low productivity, unemployment and underdevelopment, poor economic conditions, lack of opportunities for advancement, exhaustion of natural resources and natural calamities. The pull factors are factors which attract the migrants to an area. Opportunities for better employment, higher wages, better working conditions and attractive amenities are pull factors of an area.

Finally, migration is not only induced by socioeconomic, environmental and political factors, but it also considerably impacts various developmental areas, at the macro and micro levels. This has two implications for policymaking. First, migration policies can no longer take a

purely restrictive approach but must consider how changes in the migration governance framework influence socioeconomic and environmental issues. Across the OECD, higher numbers of migrants are now associated with increasingly restrictive migration policies (Hatton, 2014). Attitudes to migration can be distilled down to two interacting factors: solidarity and scarcity. Solidarity here reflects differences in social values. The greater the degree to which individuals defines themselves, and those they identify with, in an exclusive, nationalist fashion, the more likely they are to oppose migration. Scarcity here reflects the degree to which individuals see resources, such as jobs or public services, as under pressure. The greater the belief that resources are limited, the more likely they are to oppose further migration Second is the vital importance of migration mainstreaming whereby other sectoral policies account for the developmental impact of migration, such as those relating to demography, labour market regulation, employment, social welfare, economic development, regional development, poverty reduction and health.

3. New Economics of Labour Migration and Livelihood Hypothesis

Stark and Bloom (1985) developed what is the New Labour Economic of Migration (NELM) and focused on explaining remitters' behavior by viewing the household as the relevant unit for the analysis.The New Economics of Labour Migration (NELM) hypothesis states that due to market failures and infrastructural rigidities in the source country (for example a poorly developed social protection system), a household member migrates to a non-correlated labour market, entering a type of coinsurance agreement with the household left behind. The models are based on the neoclassic theory of Todaro (1969) that focused on migration behavior as an individual decision, in which a person compares his sector or geographic areas. Remittances are sent home when the household experiences shocks and to enable the household to invest in new technology. At the same time, the household also supports the migrants, e.g. by paying costs of migration or during spells of unemployment. Remittances consequently increase when the household's income decreases or a shock occurs (like for altruism), but also when the risk-level of the migrant increases. Risks at home and risks in the foreign country should not be correlated for this co-insurance agreement to work properly. This agreement reduces uncertainty for all household members. The level of development of the households' community also plays an important role here. While poor economic conditions (e.g. high unemployment) may be a cause of migration, the household's community needs to have a certain level of development for investment by the household to be effective.

According to Stark (1991), migration is a tool that households use to maximize income as well as diversify sources of income. By sending a family member away from home to work, a household makes an investment that will be recovered given that the migrant's remit some income later. They posit that if individuals migrate to increase their own income, as suggested by Hay and Co (1980) in Stark, (1991), then they are not expected to send remittances back home. The NELM theory fits into the Nigerian situation where a household pulls resources together to send one member out of the country with an agreement/unvoiced expectation to remitting back home. This is collaborated by Stark and Lucas (1988) in their argument that there exists an implicit or explicit contractual arrangement between the family and the migrant.

The family ties of migration as indicated by Taylor (1999) is more often mentaned, although individuals migrate, they do not sever ties with their source households. That is, the family seeks to maximize utility instead of the individual. Migration may have important impact on household economic activities regardless of the theories. Migrant- sending households are often recipients of remittances from migrants. As Taylor et al (2001) indicated, migrants are usually attached to their rural homes and as a result of their "homeward" focus they have economic incentives to promote and enhance the welfare of those left behind. This is possible, through remittances that they send back home to loved ones.

The proponents of NELM is of the view that differential wage rate is not a significant condition for making a decision about migration because international migration does not necessarily stop when differences in wages disappear. There is always a pull and push factors that can motivate international migration.The theory indicates that migration stems from market failures outside the labor market. According to NELM theory, missing, inefficient, or poorly functioning markets are conditions necessary for the migration of labor to occur.

4. Migration Trend in Nigeria

Currently, Nigerian population is estimated to be more than 180 million and being Africa's most populous country, Nigeria is still experiencing high internal and external migration due to the size of her population, her harsh economic climate, war and violence desire for higher education, porous borders etc.

In Africa and by extension, Nigeria is also known for its long history of migration within and beyond the vast continent. The number of people of African descent that live outside the continent is put at about 140 million, most of them in the Western Hemisphere (Shinn, 2008

in Ratha, 2011). Ratha, (2011) however, opine that many of these people are not emigrants but members of families that have lived in destination countries for many generations and may have few ties to Africa. In contrast, migrants that left their country in recent decades, conservatively put at over 30 million, have been able to keep close contact with their relatives and maintain economic, social, and political relationships with their country of origin, mainly credited to globalization and improvements in communications technology.

In the colonial era, Nigerians migrated to countries like the UK principally to acquire higher education. After independence in 1960, it continued in an increasing proportion but significantly included businesses and labour services (De Haas, 2006). In the wake of oil crisis and skyrocketing oil prices, the associated economic boom launched Nigeria into the status of a major migration destination within Africa. Rising incomes of the urban middle class and rapid industrialization attracted substantial number of West African labour migrants. However, Arthur (1991) gathers that, decreases in oil prices in early 1980s heralded a long period of economic downturn alongside with sustained political repression and violence. This brought about a reversal and a surge in Nigeria's migration trend. Other, factors that influenced the emigration processes were associated with issues such as rapid urbanization, political unrest, ethnic conflicts and fragmentation of rural families and communities (Singh & Sausi, 2010).

These and more transformed Nigeria from a net immigration to a net emigration country (Black, 2004). In Africa, Nigerians have increasingly immigrated to countries such as Ghana, Cameroon, Gabon, Botswana and South Africa. Since 1994, South Africa became a major destination for Nigerian migrants from various African countries Adepoju (2000). An increasing number of Nigerians have migrated to countries such as Germany, France, the Netherlands, Belgium as well as the Gulf states. In the 1990s, Spain, Italy and Ireland have emerged as new major destinations of labour migrants from West Africa and Nigeria (Black, 2004). There has also been an increasing tendency of Nigerian migrants towards permanent settlement. Increasing restrictions and controls on immigration in Europe have not led to a decrease in Nigerian emigration; rather, migrants are more often undocumented and the itineraries tend to be longer and more perilous; a phenomenon, that has made Nigerian migrants more vulnerable to exploitation and marginalization (de Haas, 2006). According to de Haas (2006), there is a circumstantial evidence that migrants to the European countries in recent times are less skilled on the average, and that they are often engaged in the formal and

informal services, trade and agricultural sectors of the economy. The UK and US (through student and professional migration as well as the Green Card lottery) generally continue to attract relatively higher skilled workers (Coss, 2006). The need to expand the UK National Health Service has for instance, created opportunities in which poorly paid and unmotivated professional health workers in home countries find irresistible (de Haas, 2006) also observes that some Nigerians migrate with their children to pursue studies in the US or the UK, to escape the dismal state of the Nigerian educational system. Labour migration from Nigeria has also become increasingly feminine. For instance, an increasing number of female nurses and doctors have been recruited from Nigeria to work in Saudia Arabia (Adepoju, 2000 in De Haas, 2006). A significant number of Nigerians apply for refugee status in European countries. In 2004, Nigerians were the fifth largest group of asylum seekers in Europe (Carling, 2005).

The rate of development in Nigeria has been greatly affected by the increasing number of irregular migration. This is because the bulk of irregular migration in Nigeria occurs among youth age 18-35, which is the most productive age within the labour force and this is largely driven by economic incentives. A high rate of unemployment, insecurity and the rising cost of living are the major factors contributing to the high migration levels among these groups.

The root causes of this irregular migration in Nigeria have been attributed to corruption and endemic poverty with nearly 70 percent of her population living below the poverty line (NBS: 2010). Scarce employment opportunities, corruption and poverty force thousands of Nigerians to emigrate every year in search of better quality life. Illegal migration is fast on the increase and is largely facilitated by forgery of passports, visas, false asylum claims, bogus marriages under false pretense, human smuggling, and human trafficking and a host of other avenues.

5. **Migration of skilled workers in Nigeria**

Given the productivity enhancing characteristics of skilled migrants, it is no surprise that there has been a global race for talent among the OECD economies in recent decades (Kerr et al., 2016). In general, skilled workers are part of a more integrated global labor market, in comparison to other migrants. Market integration here also seems to be progressing more quickly. The implication is that skilled migrants gravitate to areas in which they are likely to be more productive to a greater degree than other workers; this being where they can maximize their earnings. The result of this integration, just as with global migration has been

an increasing concentration of skilled emigrants from an increasingly disparate set of source countries in a shrinking set of 'destination' economies.

In the case of Nigeria, the estimates from the Presidential Committee on Brain Drain set up by the Babangida Administration, showed that between 1986 and 1990, Nigeria lost over 10,000 academics from tertiary institutions alone. It is also estimated that over 30,000 highly skilled personnel left the country, including the public and private organizations. This period also coincided with the massive collapse in the economic and social infrastructure in the country, which in itself was the fallout of the ill-advised Structural Adjustment program. Nigerian migrants to the United Kingdom have continued to increase from the 1980s to the present moment. In a recent study by David Owen of Warwick University in the UK, it was found out that in 2006-2007, the number of Nigerian migrant workers to the UK was 12, 500 based on the number of National Insurance authorization issued (Owen n.d., 12). In the United States and Europe, 83 per cent and 46 per cent, respectively, of the Nigerian immigrant population are highly skilled. On average, 64 per cent of the Nigerian emigrant population have tertiary education (Docquier and Marfouk, 2006). In the medical field, 14 per cent of physicians who trained in Nigeria worked abroad, 90 per cent of whom live and work in the United States and the United Kingdom (Clemens & Pettersson, 2007).

Ironically, while the developed countries keep attracting the best of African human capital, it is increasingly becoming a disturbing pattern to see semi-qualified personnel dubbed as 'experts' taking very critical and important positions in lucrative sectors such as oil and gas as well as communication companies in most African countries. These 'experts', who are usually paid in hard currencies (such as dollars, Euros and British pounds), create a disincentive to the development of indigenous human capacities in African countries because they are made to occupy positions that are otherwise supposed to be occupied by Africans. As we stated earlier, the developed countries have established different programs to attract more qualified Africans to migrate. The justification for this is the tenuous argument that international migration has some beneficial effects on the sending countries. Such beneficial effects could include remittances, return migration, creation of trade and business networks and incentive effects on human capital formation at home (de Haas 2007). For instance, the volume of remittances sent home by migrants to low and middle-income countries has grown rapidly in recent decades and in 2017 were estimated to exceed $466 billion, over three times foreign aid. One important destination of these private flows are investments in health,

education, and new businesses back home, underlying the extent to which migrants contribute to the dynamism and growth of both their new adopted homes and the countries they are leaving.

Apart from the uncertainty in estimates of remittances, assessments of impact need to be sensitive to the complexity in which these financial flows are embedded. As de Haas further argued, such assessment need to take account of the fact that this considers only successful migration, and there is a possibility that many migrants have not remitted despite having invested heavily in relocating (de Haas 2007). In view of the ongoing global economic crisis and the resultant deceleration in the rate of growth in developed countries,the possibility of migrants securing jobs looks unpromising. No jobs implies fewer remittances. It is also important to state that with regards to brain drain, remittances need to be offset against the (public) investment in education and other forms of publicly funded investment, This is because, regardless of the amounts being remitted, the sending countries remain at a very strong disadvantage in other areas of potential benefits like taxation, mentoring, leadership development, patriotism and other dimensions of contribution which the skilled personnel would have made to the economies.

For instance, Papademetriou and Martin (1991), Durrand et al. (1996a, 1996b) show that income from migration stimulates economic activity, both directly and indirectly and that it leads to significantly higher levels of employment, investment and income. For extremely poor people,very small amounts of remittances can be vital for food security. Notwithstanding the above arguments, we contend that the negative effects of forced economic migration both at the domestic and international level far outweigh its positive contribution to the development of the sending countries. Docquier and Rapoport (2004) contend that international migration has increasingly become selective. According to them, detrimental effects of migration include international inequality, particularly if migrants are disconnected from those left behind at home. As we mentioned above, the consistent depletion of the skilled.

In the health sector for instance,the high percentage of the medical personnel that have migrated abroad could have been available to render high quality service to the people,

There by contributing to the improvement of the health sector. Also, given that most of the skilled personnel that have migrated were trained with public money, it amounts to loss of investment, and at best, a negative return, for people to migrate without giving back to the

society, which has invested in them. In the same vein, the income redistribution effect that the presence of the skilled professionals that have migrated could have had on the sending countries is conspicuously missing. Other negative effects of migration of skilled professionals on the economies of the sending country such as Nigeria are:

a. Reduction of the critical skilled manpower

b. Continual dependence on foreign technical aids

c. widening of the gap between Africa and the industrialized countries;

d. The loss of money in taxable income from the skilled manpower which would have been a potential contribution to the Gross Domestic Product (GDP).

The high rate of migration of people in Nigeria and other African countries is a direct result of the social, economic and political conditions. These conditions have not been favorable to the majority of the citizens in the continent. Most states in Africa today are suffering from crisis of identity. As Adejumobi (2005) observes, the content and character of globalization promote social fragmentation, disintegration and disaggregation; split groups and identities into warring factions; undermines the state by emptying it of its social content and relevance; and sacrifices the human soul for the fundamentalism of the market. These immenient tendencies erode the social basis of existence and warrant the struggle for survival at all costs, including searching for greener pastures outside the shores of one's country.

From a macroeconomic point of view, a deterioration of the economic situation in the home country of origin, accompanied by strong frictions on labour market encourage labour force to migrate to high income countries seeking a better life. Given the strong social link existing between the migrants and their families, they would transfer more funds to the latter in order to meet their needs and thus, increase their consumption. Therefore, in times of economic recession, high inflation, unstable exchange rate and constraints in the credit market in the country of origin, migrants are expected to remit more money regularly to their families (Vargas-Silver & Huang, 2006).

6. Positive effects of remittances on economic growth

Net remittance inflows have, in the short run, a positive influence on GDP growth though its multiplicative effect on consumption and investment. Remitted money is directed towards additional demand for goods and services. Money transfers also help to finance demand for durables, especially the acquisition of real estate, land, repair etc. Remittances can have a direct positive effect on economic growth, through investment in physical and human capital.

They generally finance education, health and increase investment. So the remittances in an economy may lead to an increase in domestic investment. More recent econometric analyses have shown that remittances have a positive and statistically significant impact on growth (Mansoor and Quillin, 2006; Ang, 2007) and/or poverty reduction (Adams and Page, 2003).

Again remittance has a positive influence on the development of financial system, simplifying the process of landing and also contributing to deposits in the banking sector. A good investment climate with well-developed financial systems and sound institutions do contribute to a higher share of invested remittances. Remittances promote development by creating specific kind of capital like increased commercial ties, ties which can stimulate trade and investment (Herander and Saavedra, 2005).This can come about because migrants improved their job skills in the result of learning abroad. Economic growth is classically seen as a function of labor, capital and the total factor of productivity: a favorable business environment, strong institutions, and financial development may all contribute to the effectiveness of factors of production that brings economic growth. A good investment climate with well-developed financial systems and sound institutions will contribute to a higher share of invested remittances. The main factor in increasing the effectiveness of remittances is: to implement economic and governance policies that support a sound business environment; and to provide for the security of the financial sector and the quality of public services (e.g. education and health care).

7. Negative effects of remittances on economic growth.

Several studies have discussed the possible negative effects of remittances on growth and development. This can be expressed by moral hazard or reduced incentives for recipients to work, by brain drain, Dutch disease. The moral hazard problem was first formalized by Chami (2003). He has found out that remittances can negatively affect the labor supply, investment, and policymaking. The moral hazard problem manifests itself in two ways: recipients reduce their labor market effort and they make riskier investments reducing economic growth. Another important factor is that large outflows of workers (especially skilled workers) can reduce growth in countries of origin. Despite remittances being invested in human capital, deterioration in the labor force caused by migration has a much larger negative short-term impact (on labor supply).Net remittance flows reduce the competitiveness of the Nigeria economy by making exports expensive and by increasing import attractiveness. In economically overheated period remittances positively affect the real

effective exchange rate. For instance, in small open economies theoretical analyses of Dutch disease effects (capital inflows, remittances in our case) have largely been based on the open economy model, also known as the "Salter-Swan-Corden-Dornbusch model". Within this framework, higher disposable income triggers an expansion in aggregate demand, which for exogenously given tradable goods stimulates higher relative prices for non-tradable goods (spending effect) that corresponds to real exchange rate appreciation. The higher non-tradable price leads to an expansion in the non-tradable sector (which is relatively labor intensive) causing a further reallocation of resources toward the non-tradable (resource movement effect). In this case an additional transmission mechanism can operate: remittances have a propensity to increase household income and thus they result in a decrease in the labor supply. A reduction of labor supply is related to higher wages (in terms of the price of tradable output), that in turn leads to higher production costs and a further contraction of the tradable sector.

An increase in demand for non-tradable goods (like real estate) can lead to an increase in inflation. Similarly, negative effects can occur if domestic production cannot keep up with increased demand. This can result in an increase in imports and/or an appreciation of the exchange rate, impairing domestic production as exports become more expensive on the international market and, as a result, less competitive.

8. Government Policies towards Migration in Nigeria

According to national migration policy 2015, the law regulating immigration issues in Nigeria is the Immigration Act of 1963. Other subsidiary legislations are the Immigration Regulations of 1963; the Immigration (Control of Aliens) Regulations of 1963, and the Passport (Miscellaneous Provisions) Act of 1990. Notwithstanding, migration has always attracted global attention, with a special focus on its linkages to socioeconomic development. For instance, as early s 2001, the African Union (AU) adopted Resolution CM/Dec 614 (LXXIV) at the Council of Minister s' meeting in Lusaka, calling on Member States to ensure the integration of migration into the national and regional agenda for security, stability, development and cooperation. Increasingly, calls were made at various international meetings for mechanisms to protect the human rights of migrants and to discourage irregular forms of migration, through various strategies, including increased access to jobs and basic social services for all in more developed nations. Nigerian stakeholders in migration continued to raise the alarm at the increasing frequency with which Nigerian youths were losing life and

limb in a bid to gain entry into Europe through the deserts of North Africa and across seas and oceans.

In 2008, when Dr. Goodluck Ebele Jonathan (GCFR) was still the Vice President, he directed the Secretary to the Government of the Federation (SGF) to establish a committee to investigate setting up a structure to implement migration and internally displaced persons (IDPs) policies. The Committee submitted its recommendations to the SGF in January 2009. In February of the same year, then-President Umaru Musa Yar'adua, approved one of the recommendations for the expansion of the mandate and a change in the nomenclature of the National Commission for Refugees, Migrants and Internally Displaced Persons (NCFRMI) to include migration management and the resettlement and rehabilitation of IDPs.

On June 6th 2016 the international organization for migration officially presented the National Migration Policy (NMP) to the Government of Nigeria. Development of the NMP started in 2006 and on 13 May 2015, the policy was adopted by the Federal Executive Council.. It addresses issues relating to diaspora mobilization, border management, decent treatment of migrants, internally displaced persons (IDPs), asylum seekers, and the role of civil society in migration management. The NMP was presented to Margaret Essien, the Acting Federal Commissioner at the National Commission for Refugees, Migrants and Internally Displaced Persons (NCFRMI) by IOM Chief of Mission in Nigeria Enira Krdzalic. The Commission is sadled with the responsibility to ensure wide dissemination of the policy, as well as build synergies with other relevant institutions to establish mechanisms for smooth implementation of the policy in Nigeria. The Commission is expected to work with the Technical Working Group on migration and development established by the project to ensure effective implementation of the policy in Nigeria. The NMP will, among other things, provide strategic direction for the efficient management of migration in and from Nigeria. It will serve as a blueprint for engaging governments, institutions, and all entities on migration and related issues that concern or affect Nigerians in the interest of the Government and people of Nigeria.

Despite the fact that Global trends in migration policies cannot be easily defined or tracked, because available indices cover different aspects of migration for different periods and regions, and because migration policies are highly contextual, there is no doubt that the National Policy on migration, when fully operational, will reduce the incidence of irregular migration and provide a mechanism for the protection and monitoring of the well-being of Nigerians abroad

as well as foreign migrants within Nigeria. In addition, the Policy will enhance the development of more efficient, effective and cheaper means of sending remittances and foreign direct investment by Nigerians in the diaspora, thus ensuring that remittances become one of the top three sources of foreign exchange.

9. Remittances and Nigeria's Regulatory Environment

International remittance flows occur within a regulatory framework and in an intermediation market place. Until in the 1990s, Nigerian policy makers and banks paid scant attention to the issues of remittances. The Nigerian government and banks were pre-occupied with large money transfers and major investments by Nigerians living abroad; hence, small-scale person-to-person remittances were no major issue of interest.

According to Orozco (2007), regulations for money transfers in Nigeria are mostly based on the Foreign Exchange Act of 1995, and the Banks and Other Financial Institutions Decree of 1991, amended in 1999. The Act authorizes banks to perform foreign currency payments under its narrow definition of "authorized dealers" in foreign currency. Section 14 of the Foreign Exchange Act (Monitoring and Miscellaneous Provisions) regulates outbound payments under specific circumstances or conditions. By establishing a very low limit of N5000 as the unrestricted allowance for outbound transfers, the Act implicitly restricts most transfers (Orozco, 2007). The Foreign Exchange Act also establishes an autonomous Foreign Exchange Market and provides for the monitoring and supervision of the transactions conducted in the market. In April 2006, the Central Bank of Nigeria issued a circular allowing the exchange bureaus (bureaux de change) to sell foreign currency of up to US$5,000 (or its equivalent) for specific purposes, such as mortgage payments, school and medical fees abroad, credit card payments, utility bills, and life insurance. Through the Act, the Central Bank is the authority appointing authorized dealers in foreign currency, narrowly defined as banks and buyers of foreign currency through any bank or non-banking corporate organization (Orozco, 2007).

The supervisory process involves both on-site and off-site supervision. To participate in the Nigerian remittance market, a money transfer operator must enter into an agreement with a Nigerian bank, and a Nigerian bank needs CBN approval before it can enter into an agreement with a Money Transfer Organization. The CBN allows Nigerian residents to operate foreign domiciliary accounts or home remittances which accelerated the inflow of

remittances. Unprecedented surge in remittance flows during the 1990s necessitated the beginning of remittance documentation in 2002 by the CBN (Coss & Bun, 2007; Singh &Sausi, 2010). CBN also mandates banks and the exchange bureaus to submit monthly reports to the CBN. Since only banks can pay out remittances, their reports include information on home remittances. Orozco (2007) observes that the consolidation of over 70 banks in Nigeria in 2005 and 2006 has created a space to further deepen financial access for many. The consolidation implies the reconsideration of several agreements that force a new bank to choose between Western Union and MoneyGram.

In 2006, Nigerian government set up a technical committee in other to ensure a coherent policy on migration and development; a process facilitated by International Organization for Migration in the country. According to de Haas (2006),the national agencies relate with International Organization for Migration to support the policy development process by providing guidelines or examples of other similar policies in other countries. International Organization for Migration suggests using the African Union Strategic Framework on Migration drafted in 2006 to guide the process. The International Organization for Migration is also designed to provide training on migration management. De Haas (2006)further reveals that the main components of the migration policy focused on mapping Nigerian migration and identifying the most needed expatriates, how not to lose skilled labour, how to bring back the Diaspora, and how to prevent undocumented migration related activities. As regards outbound travel, the Nigerian government has two different restrictions. Individuals traveling under the Business Travel Allowance are eligible for a maximum of US$2,500.00 per quarter or US$10,000 a year in the foreign exchange market. Under the Personal Travel Allowance, beneficiaries above 12 years old are eligible for US$2,000.00 twice a year. For travels to countries in the ECOWAS sub-region, Business Travel Allowance and Personal Travel Allowance are issued in ECOWAS travelers' checks (Coss &Bun, 2007).

Significant constraints however, have been identified to trail Nigeria's remittance transfer process. Orozco (2007) believes that most of these challenges stem from the way competition works and from the regulatory environment operating in Nigeria. Perhaps the most serious problem with remittance transfers to Nigeria is the fact that the regulated money transfer market is controlled almost entirely by Western Union. This problem however, is not in sync with the World Bank's *General Principles for International Remittance Services*, which emphasizes affordable and cost-effective systems are integral to payment transfers. In

Nigeria, the problem of exclusivity agreements is exacerbated by a lack of clear and effective regulation regarding this issue in particular, and competition law and policy in general (Orozco, 2007). At the end of 2004 G8 summit, countries agreed to engage in remittance partnerships. Nigeria has relations with all G8 countries; thus, engages them in partnership. However, De Haas (2006) asserts that the partnership arrangements have been obstructed by a (i) general lack of information on remittances and migrants abroad and (ii) very little interest by the Nigerian Central Bank to engage in the discussion.

Also, Nigeria is one out of two countries on the Financial Action Task Force (FATF) Non-Cooperative Countries or Territories (NCCT) list. According to the Annual Review of the NCCT list on July 2, 2004, Nigeria demonstrated an unwillingness or inability to co-operate with the FATF in the review of its system, and when placed on the NCCT list in June 2001, met criteria 5, 17, and 24. It partially met criteria 10 and 19, and had a broad number of inconclusive criteria as a result of its general failure to co-operate in the exercise (FATF, 2004). Since 2001, Nigeria has "substantially improved its co-operation with the FATF and its willingness to address its anti-money-laundering deficiencies". Furthermore, Nigeria has enacted several pieces of legislation that strengthen its Anti-Money Laundering and Combating of Financing of Terrorism (AML/CFT) regime. Later enactments improved licensing requirements for financial institutions; (2) broadened the interpretation of financial institutions and scope of supervision of regulatory authorities of money laundering activities; (3) improved customer identification requirements; and (4) improved Suspicious Transaction Reporting (STR) provisions by removing a previous threshold. Later enactments (i) improved licensing requirements for financial institutions; (ii) broadened the interpretation of financial institutions and scope of supervision of regulatory authorities (Coss& Bun 2007; FATF, 2004).

Since 2001, Nigeria has substantially improved its co-operation with the FATF and its willingness to address its anti-money laundering deficiencies. Furthermore, Nigeria has enacted several pieces of legislation to improve its AML/CFT regime (Coss & Bun, 2007). In December 2002, Nigeria was placed on the NCCT list and under threat of a FATF recommendation for countermeasures. At that point, the country enacted three pieces of legislation: (i) Amendment to the 1995 Money Laundering Act to extend the scope of the law the proceeds of all crimes (ii) Amendment to the 1991 Banking and Other Financial Institutions (BOFI) Act expands coverage of the law to stock brokerage firms and foreign

currency exchange facilities, gives the CBN greater power to deny bank licenses, and allows the CBN to freeze suspicious accounts (iii) Economic and Financial Crimes Commission Act to establish the EFCC, which coordinates anti-money-laundering investigations and information sharing. Nigeria enacted the Money Laundering (Prohibition) Act and the Economic and Financial Crimes Commission (EFCC) Act in 2004, respectively. These laws repeal the previous versions and address the main remaining legal deficiencies. In 2004, the FATF noted that Nigeria must focus on comprehensively implementing these AML reforms, including fully establishing the EFCC to enable it to function as an effective Financial Intelligence Unit (FIU) (Coss & Bun 2007; FATF, 2004).

10. Remittance Institutions in Nigeria.

Official versus Unofficial Channels

Another important factor affecting the level of recorded remittances is clearly the channelused to remit. Workers can send their remittances to their country of origin through official or unofficial channels. According to many studies the volume of unofficial remittances is substantial in many labor-exporting countries. For example, in Sudan, only 24 percent of migrants surveyed used official banking channels (Serageldin et. al.1981).According to Wahba (1991), regarding the workers' choice of the use of a channel, argues that whether the workers send their fixed remittances through the official or the unofficial market will depend on the difference between the official exchange rate and the parallel (or black market) rate, and the cost of going through the unofficial market. This cost is related with the search for a means of sending the remittances and the worker's willingness of the risk in using the unofficial channels.

a. **Formal Channels**:

Africa is one of the major regional destinations for UK remittances (DfID 2005). According toAgu (2009) most Nigerian banks in the remittance service industry act as agents of the globalMoney Transfer Operators (MTOs), the most prominent being Western Union, MoneyGram, Travelex, Vigo, and Cash4Africa with Western Union and MoneyGram dominates the industry, NIPOST also work with some MTOs to provide remittance services. Also many of thetelecommunications operators provide indirect remittance instruments for consumers usingrecharge cards as instruments for funds transfers among family members and acquaintances.

The Central Bank of Nigeria (CBN) is the principal institution for financial services andconsequently remittance regulation and every Remittance Service Provider (RSP) with theexception of NIPOST must be registered with the CBN. There is no tax by the Nigerian government on the amount remitted because it is considered the principal however; a value added tax is levied on the income of banks from remittance services. The banks, in turn,incorporate this tax into their user fees. In the area of remittances, the consolidation implied thereconsideration of several agreements and as a result, a new bank was meant to choose betweenWestern Union and MoneyGram. The partnerships between banks and Western Union orMoneyGram are based on agreements containing exclusive partnership provisions. As a result Western Union prevents these banks from forming partnerships with other MTOs, despite theexpressed interests among most banks in doing business with other MTOs (Orozco, 2007). This results in the Western Union having significant control of the market at monopoly levels. Nigeria has 24 deposit money banks (DMBs) and several other classes of financial institutions providing remittance service.

About 59 percent of DMBs have working relationships with Western Union and another 18 percent are allied with Money Gram. The rest of the MTOs, including Travelex and Vigo,account for the balance of market share (Agu, 2009). As agents, the DMBs provide fund-transferdesks for the MTOs, while the MTOs design the transfer instruments and set the rules, including identification procedures for remittance recipients.

b. **Informal Transfer Channels:**

Migrants use a wide array of informal mechanisms to remit money back home. Since systematic research on the determinants of workers' remittances was undertaken in the 1980s, there has been a recognition that an important part of the money remitted back home by migrant workers flows through informal channels worldwide. Remittances are also sent through informal channels reflecting the social networksystem of a typical African country, which may be in form of cash, valuables such as jewelry,electronics, cars, and clothing usually carried by traveling individuals. The benefits of remittances through informal channels include reduced fees (or no fee at all) for senders and favorable exchange rates for recipients using the black market (Osili 2004; Agu, 2009). Althoughthe informal channels of sending remittances in Nigeria is neither organized nor recognized but these informal channels make it difficult for accurate estimation of remittances inflow and their effect cannot be captured on policy formulation (Orozco, 2007). According to Straubhaar and

Vădean (2006), Asian migrants use an additional informal transfer mechanism by which money is not physically or electronically transferred. This system is known as "hawala" (meaning transfer) in Pakistan and Bangladesh, "hundi" (meaning collect) in India, "feich'ien" (meaning flying money) or "chits/chops" (meaning notes/seals) in China. As described by El-Qorchi (2002), transfers from country A to country B through this mechanism involve two intermediaries, called hawaladars. The hawaladar in country A receives funds in one currency from a person from country A to be transferred to another person in country B. The person in country A receives a code for authentication proposes. The hawaladar then instructs his/her correspondent in country B to pay an equivalent amount in local currency to the designated beneficiary, who needs to disclose the code to receive the funds. Although the remittance is immediately transferred, the liability the hawaladar in country A has to his counterpart in county B is set through various mechanisms of compensation occurs at different moments and often does not involve direct payment between the two hawaladars (Straubhaar &Vădean,2006;Singh &Sausi, 2010).

A growing trend in transnational social movements is the joint efforts of migrants to maintain and foster links with their places of origin through the creation and organization of hometown associations (HTAs). HTAs are established not only in response to the social and cultural challenges faced by new immigrants in adjusting to life in a foreign country, but also to fund small-scale development projects in home communities through collective remittances(Vargas et. al., 2008). Nigerian migrants often seek to locate other Nigerians whenever they land abroad. They also search for organizations that represent their specific interests in terms of geographical origins and ethnic associations. Religious institutions such as churches and mosques are come more visible than other forms of associations that cater for individual and community needs. Such institutions serve as institutionalized and formal associations that generally operate within legislative norms and social expectations (Singh & Sausi, 2010). Another way of keeping in touch with home is engagement in voluntary associations also known as Home Town Associations (HTAs). This type of voluntary associations has been defined by Massey (1993) as "organizations that allow migrants from the same village, city or region to maintain ties with each other and materially or emotionally support each other in the host country or those left in their countries of origin." For the newcomers, voluntary associations serve as a buffer, for people of similar backgrounds, against loneliness, isolation and the challenges of adaptation.

In the process of integration into their new surroundings, voluntary associations serve to establish a basis for a transnational identity that is rooted in the migrant's country of origin as well as their newly adopted home (Massey, 1993). The added purpose of voluntary associations is to support one another through informal ways of remitting money to their families especially, when individuals return home for family visits or reunions of any sort. Some estimates suggest that the prevalence of informal transfers in Africa is the highest among all developing regions (Page & Plaza, 2006; Ratha & Shaw, 2007) and these reasons have been advanced by Ratha et al (2011) to occur as a result of the high cost and limited reach of formal channels - as well as the informal and seasonal character of African migration. Straubhaar and Vădean (2006) however state that, unstable macroeconomic environment in the home country is deemed significant for migrants' choice of informal remittance mechanisms.

11. Migrant Remittances and Other Capital Flows

At the national or macro level, there is a substantial postulation on the relationship between migrant remittances and macro-economic variables. There is no doubt that spending on entrepreneurial investment has a positive direct effect on employment and growth. However, other scholars document that even the disposition of remittances on consumption and real estate may produce various indirect growth effects on the economy which include the release of other resources to investment and the generation of multiplier effects (Straubhaar and Vădean, 2006). de Haas (2007) and Kapur (2003) assert that remittances increasingly remains an important and a relatively stable source of external finance. According to them, it also plays a critical social insurance role in countries afflicted with economic and political crises. Remittances has proven to be less volatile, less pro-cyclical and therefore, a more reliable source of foreign currency than other capital flows to developing countries such as Foreign Direct Investment (FDI) and Official Development Assistance (ODA). It is claimed that remittances is nearly three times the value of the ODA available to low-income countries, and comprise the second largest source of external funding for developing countries after FDI (Global Commission on International Migration, 2005; de Haas, 2007). Agu (2009) buttresses these points haven said that remittances differ from other private flows in more significant ways. He believes that such significance impacts on the economy places some distinction relative to FDI and Portfolio flows which are top-down flows while remittances is a bottom-up flows. Returns from FDI and portfolio flows, are significant capital concentrated in the hands of a few compared to remittances which are small funds spread over the hands of large

population. While FDI can potentially provide formal, high earning employment for a few individuals with the expectation that the flows should trickle down to the rest, remittances provide relatively lower sources of income for a much larger proportion of the population and potentially leads to more efficient resource allocation as private agents naturally work to maximize individual utility. International remittances tend to be less volatile than FDI and Portfolio Flows. Moreover, for a growing number of households in destination countries, remittances from migration may significantly impact on household welfare with insurance against shocks with the resources available from the origin household (Osili 2007). Therefore, the capacity of remittances to alleviate poverty across a wider spectrum of the poor is much higher than the capacity of any other kind of flows to do the same (Agu, 2009; Pieke, *et al.* 2005). Nwosu (2010) concurs with Agu's (2009) position saying that migrant remittances into the West African region of Nigeria, Ghana and Ivory Coast, exceed FDI.

12. Circumstances that Influence Sender Choices

Convenience, favourable foreign exchange rate, sender's residency status, use of formal financial services and limited knowledge of available remittance options are the main factors influencing sender's choice. Senders consider money transfer operators (MTOs) and gradually banks, as the most reliable means of sending money home.Sender also perceives informal providers, such as migrants carrying cash to offer security and ultimate sending and receiving convenience with the commission (DFID,2005).

Remittance channels that offer customers convenience attract more clientele. It is convenient to send cash through persons traelling home to Nigeria to deliver to family, friends and acquaintance.The sender enjoys a personal contact with the courier and does not need to go to the physical office of a bank or an MTO. The persons transporting cash do it as afavour, at no cost to the remitter. With a few exceptions, sending cash through this mechanism is reliable because both the senders and recipients know and trust the migrant carrying cash.The migrant also gives the recipient news of their relatives' welfare in the host country and deliver letters and gifts from the remitters.On the other hand, sending money through MTOs is convenient especially during emergencies when no one is available to physically transport cash.

Senders want their beneficiaries to get a favourable exchange rate and more value in the local currency. In Nigeria recipients have the option of receiving the remittance sent through banks and MTOs in Nigeria Naira or in hard currency such as U.S.dollars, British pounds, Euros

and CFA. Money sent physically in hard currency also relies on bureau de change (BDCs) for foreign exchange instead of a bank, for the same reasons.

The residency status of the sender in the host country is a consideration when choosing a remittance channel. Undocumented residents may prefer to send money through the informal sector to avoid interaction with formal institutions that require indentification cards such as passports. These individuals fear disclosing their immigration status and possible deportation. Users of the informal systems often have a low level of awareness of the benefits and incentives available in the formal system.

2.2   Review of Empirical Literature

There are numerous empirical research works in the development world which seeks to evaluate the macroeconomic determinants of migrants remittance inflows and economic implications of the recently growing impact of workers remittances. However, as stated in the theoretical framework, Lucas et al (1985) on motivation to remittances serves as the basis that stimulated research in this field of discourse and constitute the backbone of empirical work in the area of economic enquiry. However, the existing literature has recognized two types of determinants of workers remittances (Aydas, Neyapti, & Metin-Ozean, 2004). The first category refer to microeconomic determinants such as socio demographic characteristics of migrants and their families; these include migrant income, gender, marital status, age, education level, migrant spouse, wealth, shock and dependency, ratio (Agarwal & Horowitz 2002, Amudo-Dorantte & Pozo 2005, 2006). The second type of determinants deal with macroeconomic variables such as the economic activity in the host and home countries, exchange rate, interest rate, number of workers, inflation rate, financial development and the scope of this research is confined to analyse these macroeconomic determinants of remittances inflow.

2.2.1   Review of Oversea Studies

There are several empirical studies on the macroeconomic determinants of migrant remittances in the oversea countries both on cross and specific country analysis. For instance:

Chandavarkar (1980) offered one of the empirical studies on the macroeconomic determinants of remittances in Turkey between 1973 and 1977. Empirically, the following independent variables were tested exchange rate, inflation rate, interest rate, gross domestic

product, institutional development and a dependent variable remittance. Using econometric method of ordinary least square technique, the study finds that exchange rate has a positive impact on remittances inflow as well emphasized on the importance of a stable institutional environment. Though few studies opine that neither interest rate differentials between the host and home countries, nor the variation in exchange rates have any effect on remittance flows (Swamy 1981, Straubhaar 1986 and Glytsos 1988).This study did not explain fully the impact of other variables in the model and their linkages.

Swamy (1981), note that the stock of migrants abroad and their wages explain over 90% of the variation in remittance inflows. Swamy (1981) also emphasize that, the level of cyclical fluctuations in economic activity in the host countries explained 70 to 90% of the variation in the remittances. He further argues that returns to capital (incentive) interest rates in the country of origin relative to the interest rate in the host countries, the difference between the black market exchange rate and the official exchange rate, that is the black market premium, in the home country do not significantly affect total migrants remittance flows . Since governments of labor-exporting countries introduced special incentive schemes to increase the flow of workers' remittances through official channels, Swamy's results question the use of such policies. On the other hand, Elbadawi and Rocha (1992) explain Swamy (1981)'s failure to find a significant impact of interest differentials on remittances by a potential correlation with interest differentials and other variables included in the model.

Straubhaar (1986), introduce a simple model to examine the remittances of Turkish workers in Germany. In support of Swamy (1981), Straubhaar (1986) notes that Contrary to the common belief that incentives do attract emigrants' remittances, the volum of migrants remittances have not been very encouraging.In the same vain variation in exchange rates do not reflect the governmental intention to drive remittances by premium exchange rates, nor changes in the real return of investments (reflecting the governmental intention to attract remittances by foreign exchange deposits with higher returns) affect the flows of remittances towards Turkey.

In addition El Sakka and McNabb (1999) examined the macroeconomic determinants of workers remittances in Egypt. The explanatory variables used in the econometric analysis include the stock of workers abroad, inflation rate, exchange rate, interest rate and income. Using ordinary least squares technique, they find that remittances flows are highly responsive

to the differential between the official and black market exchange rates. The differential between domestic and foreign interest rates has a negative and significant impact on the inflow of remittances through official channel and domestic inflation was found to have a positive and significant effect on the inflow of remittances. This means that for the Egyptian case, the altruistic motives are dominant in remitting decision. Inflation increase has a negative effect on the real income of households. To offset the income effect, emigrants prefer to remit more. However, El-Sakka and Mcnabb (1999) and Elbadawi and Rocha (1992) agree on the negative effect of the black market premium, they disagree on the effects ofdifferential interest rate and domestic inflation. According to Elbadawi and Rocha (1992), differential between domestic and foreign interest rates has no significant effect on remittances, while El-Sakka and Mcnabb (1999) argue that it negatively affect the remittances. Moreoever, both Katselli and Glytsos (1986) and Elbadawi and Rocha (1992) find significant negative effect of inflation on flows, while El-Sakka and Mcnabb (1999) argue that it has a positive effect.

Rahman (2003) examined the determinants of foreign workers' remittances in Saudi Arabia by taking the time series data from 1975 to 2001. The error correction model was utilized to attain the connection among the variables incorporated in the research. The variables incorporated for the research included the real GDP, wages per worker, returns, and some multiple indicator of socioeconomic features and indicators of risk in the Kingdom. The study discovered that the wage rate has a direct impact on the level of per worker remittances. In addition a positive relationship was found among the level of per capita GDP and workers' remittances. The return in the country measured by nominal and real interest rates countries were negatively related with the remittances. The study indicated risk variables represented by lower index scores and resulted in higher remittance outflows from the country affected the remittances negatively. The models also utilized composite socio-political instability indices that showed a reverse association between the level of remittances and instability. It meant that the higher the level of instability in Saudi Arabia the higher will be the flight of remittances from the country to other countries.

Buch and Kuckulenz (2004) examined workers remittances and capital flows to developing countries. The study employed variable including unemployment rate in the home country, inflation rate, gross domestic growth, population, interest rate and GDP per- capita. Using ordinary least squares method of analysis, they find that the impact of domestic inflation on

remittances is negative and they do not find a strong correlation between the two. They opined that perhaps this occurs because "while an unstable macroeconomic environment creates incentive to migrate abroad, high inflation might also have a positive impact on remittances" because high inflation causes greater uncertainty about future prices and leads to an acceleration of remittances to hedge against future inflation.

Using co-integration techniques, Bouhga-Hagbe (2004) in his work titled a theory of workers' remittances in Morocco provided a model on how altruism, "attachment" to the home country, and portfolio diversification may act as potential motives behind workers' remittances.Employing the following variables for the study; RGDP, stock of financial assets, trade balance,inflation rate, exchange rate and reserve accumulation, their findings show that the impact of workers' remittances on Morocco's external position and the conduct of monetary policy were significant. Remittances almost covered the trade deficit and had contributed to surpluses of the external current account, as well as the overall BOP. The study shows that remittance increase with poor economic performances in the home country. Altruism as a motive for remittance according to them, could also contribute positively to the stability of remittances in the long run, also exchange rate through the "substitution" and "wealth" effects could influence the level of remittances.

Huang and Vargas-Silver (2005) examined the macroeconomic determinants of official remittance flows to Mexico. They tried to find whether the following macroeconomic variables income, gross domestic product, inflation rate, exchange rate and interest rate affect the host and / or home country macroeconomic conditions. They employed vector error correction technique to study the relationships. They find no significant effect of home country economic conditions on remittances. In their study unemployment was used as a proxy of host country income and viewed as a better reflection of the income generating opportunities of the emigrants than the GDP.

Aydas (2005) investigated the effect of macroeconomic variables on workers' remittances flows to Turkey. Their study is based on time series analysis using data for the period 1964-1993. The variables employed in the study were black market premium, interest rate differential, inflation rate, growth in home and host country income, periods of military regime. Using Ordinary Least Square method (OLS), the regression results for worker remittances flows with the control of stock of migrants abroad indicate that stock of migrants appears to effect remittance flows for the 1965-1993 periods but not for the 1979-1993

periods. The study consider this as a result of the weakening of the increased family unification which decreases the number of person that can also be due to the increased family unification which decreases the number of person that the migrant worker is responsible for in his country of origin. The significance of black market premium and per capita income of Turkey disappears in the 1965-1993 period. On the other hand, both domestic inflation and domestic growth become significant in the 1979-1993 periods with negative and positive signs respectively. The study concluded that the significance of these two variables (black market premium and per capita income) as indicators of economic stability in explaining total remittance flows combined with earlier observations indicates that in the period after 1979, investment becomes an effective motive for the remittance flows in Turkey besides the consumption smoothing motive.

Netapti (2005) investigated the determinants of Workers' remittances in Turkey, using official cash remittances, stock of workers abroad; per capita income of Turkey, black market premium, domestic inflation and domestic output growth. Other variables included a dummy variable for years of military rule as well as the host country per capita income and interest rate differential of about eleven host countries with the largest stock of Turkish emigrants. The paper employed the Ordinary Least Squares (OLS) technique. Their finding shows that higher interest rate in Turkey attracted remittances while political instability significantly discouraged remittance flows. They found that for the period 1979–1993, macroeconomic variables such as black market premium, interest rate differentials, inflation rate, and period of military rule significantly affected remittance flows. The central thrust of their finding is that a sound exchange rate policy coupled with economic and political stability was key factors in attracting remittance flows.

Employing the Ordinary Least Squares (OLS) technique, Abeng (2006) reviewed the work of Netapti et al (2005) titled Determinants of Workers' Remittances: The Case of Turkey. In his review, he indicated that the Turkish economy was similar to that of the Nigerian economy because historically the Turkish economy just like the Nigerian economy in the 1960s was predominantly agricultural before being transformed into an industrialized economy. Based on the existing literature and the economic topography of the country they used a macroeconomic model in the analysis of the determinants of workers remittances, and estimated using official cash remittances, stock of workers abroad, per capita income of Turkey, black market premium, real overvaluation, domestic inflation, and domestic output

growth. Other variables included a dummy variable for years of military rule as well as the host country per capita income and interest rate differential of about eleven host countries with the largest stock of Turkish emigrants. Their findings included that higher interest rate in Turkey attracted remittances while political instability significantly discouraged remittance flows. They found that for the period 1979-1993, macroeconomic variables such as black market premium, interest rate differentials, growth, inflation rate, and period of military rule significantly affected remittance flows. The central thrust of their findings was that a sound exchange rate policy coupled with economic and political stability was key factors in attracting remittance flows.

Chami, et al, 2006 in a study for the IMF (based on annual panel data) of 87 countries within the period 1980-2003 showed that while host country GDP has a positive significant impact on remittances, home country GDP, presence of multiple exchange rates and black market premia, restrictions on holding foreign exchange deposits have a statistically negative impact on remittances. Variables like financial development, political risk, law and order, relative investment opportunity were found to be of little significance in influencing inward remittance flows. The study also investigated and found that removal of all exchange rate distortions led remittances to increase by 1-2 percentage points of GDP, implying that policies and regulations have important bearing on the inflow of remittances.

Lueth (2007) explained the determinants of workers' remittances in Turkey by taking the data from 1995 to 2004. In his review, he used pooled Ordinary Least Squares (OLS) techniques with the folowing variables; real GDP, physical distance between two countries, oil prices, exchange rate, price level, investment climate and political stability. Results revealed that remittances decline when exports grow weaker and growth of GDP gets slow. Remittances also decrease with the deteriorating domestic investment and political environment and with the depreciation of the residence country's currency, suggesting the limited insurance of remittances aligned with balance of payment crisis. The distance among the two countries also determines the remittances; the flow of remittances will be less if the distance is greater among the two countries as the cost of monitoring remittances increases with increasing trips cost to home country and falling phone calls due to diversity in time zones.

Barua, Alauddin and Akhtaruzzaman (2007) studied the determinates of workers' remittances in Bangladesh. The study engaged variables used such as workers remittance migration stock, host country economic condition, home country economic condition, income differential,

inflation differential return on financial assets, exchange rate. Using ordinary least squares OLS technique, they found income differential between host country and income country to be positively correlated with the inflow of remittances to Bangladesh in all the regression result, an indication of altruistic motive to remit. There was no evidence of investment motive to remit in their preliminary model. They found Stock of migrants abroad and exchange rate to be positively significant in most of their regression analysis but found inflation differential (difference of home-host country inflation using consumer price index) to be negatively correlated with the remittances where real interest rate was excluded.

In a similar manner Elkhider (2008) investigated the determinants of workers remittances in morocco, using the VAR model to investigate the relationship between remittances and these macroeconomic variables (agricultural GDP and exchange rates). The results showed remittances have no effect on themselves but they have a permanent negative shock on the exchange rate over a period of one to three years and that the exchange rate had a negative effect on remittances, while agricultural GDP had a positive influence. Their results suggest that exchange rate policy (devaluations, changes in parity or the parity premium, etc.) does not have a positive impact on remittances. On the other hand, a change in agricultural GDP resulted in a change in remittances in the same direction. For the short-term trend under the VECM, the exchange rate had a positive effect on remittances. The exchange rate has a provisional or transitory shock effect on itself. It also had a transitory shock effect on remittances and GDP. GDP had a transitory shock effect on itself and remittances and the exchange rate.

Another study conducted by Kumar (2009) explored the macroeconomic determinants of remittances in Mexican economy using data of national accounts from 1980-2006.Study estimates a vector auto regression (VAR) model using de-trended series of several economic indicators including Mexican GDP, United State Gross National Income (US GNI), and access to financial services. Evidence advocates that remittances are pro cyclical with US income; an increase in US GNI has the tendency to increase the remittance inflows, whereas remittances are countercyclical with Mexican GDP, decreases with increase in Mexican GDP; however the extent of both effects is neither persistent nor significant. The study found that remittances do not respond to changes in home or host country income. The authors claim that access to financial services is a precondition for stable flow of remittances. The

quality and quantity of financial services facilitates migrants to send more remittances to home country.

Lin (2011) investigated the macroeconomic determinants of remittances in Tonga from 1994 to 2009, from three countries including Australia, New Zealand, and the United States using regression analysis. The explanatory variables used for the study are GDP growth, unemployment rate, inflation rate, terms of trade, trade openness, financial openness and exchange rate. The result specifies that macroeconomic environment in host countries and fluctuations of exchange rate influence remittances. In particular the study found that the remittances declined with the appreciation of Tongan currency but have positive relationship with the growth of real GDP and rate of unemployment in the host countries. The effect of these determinants fluctuates with an appreciation of the Tongan currency and the interest rate differential between Tonga and remitting countries than remittances to households.

2.2.2 Review of Studies on the Nigeria Economy

Presently, there are fewer studies on macroeconomic determinants of migrant remittances in Nigeria. For instance:

Oke (2008) uses survey data on Remittance and the Socio-Economic Conditions of Nigerian Migrants in the Netherlands. Some of the findings include that the degree of integration into host country matters for Nigerian migrants to settle and send remittance home. Secondly, his work authenticated the countercyclical nature of remittances.The paper also confirmed that the probability to remit is not dominated by income. The work indicated that most of the Nigerian migrants migrated on their own against the household theories of migration to escape socio-economic hardship and to better their life. However, their major aim for coming might also be connected with remittance according to migration theory.

Agu (2009) in his paper titled remittance for growth evaluated the relationship between remittance flows and the rest of the economy. The study specifies and estimates a four-sector medium scale macro model with 49 variables comprising of 18 endogenous variables, 31 exogenous variables and 14 identities. It found very weak link between remittances and the real sector as well as components of aggregate demand with the exception of private consumption for which impact is marginally significant. Estimates indicate significant leakages for remittance proceeds through imports, possibly accounting for the weak relationship between remittances and the rest of the domestic economy. This also implies that

relative spillover effects of remittances on domestic output and employment might remain weak if not redirected using specific policies. There are indications that non-subsistent remittances are channeled into the stock market, further entrenching the financial supermarket tendencies in the Nigerian economy. Interestingly, such relationships do not seem to impact prices. In turn, however, it could not be confirmed that any of these macroeconomic variables drive remittance.

Ojapinwa (2012) evaluated the determinants of migrants' remittances in Nigeria. The the following variables were used for the econometric analysis; migrants remittances, real gross domestic product, population growth, openness, real interest rate, inflation rate, financial deepening, exchange rate and unemployment. Using ordinary least squares method, they find that a one percentage rise in real GDP is expected to generate at least a 16.48 percent increase in migrants'remittances. The variable (inflation rate) measuring macroeconomic instability have negative sign, confirming that an unstable macroeconomic policy environment will act to discourage migrants remittances inflows into Nigeria. However, improving financial market deepening, intermediation and preventing exchange rate misalignments would help to increase the flow of remittances. On the basis of the above analysis, migrants' will be more willing to send and invest if inflation is kept under control and financial conditions are reasonably stable. These macroeconomic variables that involve time series data are non-stationary and a dynamic model rather than static would be suitable for this study. The study examined the determinants of migrants remittances for the period 1977- 2009 but the present study examine the macroeconomic determinants from 1970 – 2016 so as to get a more robust result.

Omobitan (2012) studied the reconciling of international migrants remittances flow determinants in Nigeria, examined the impacts of the following independent variables on workers remittances; consumer price index, gross domestic product, openness United State (US) unemployment rate and exchange rate, in determining the inflow of remittances to Nigeria. Using the Ordinary Least Square (OLS) technique finds that remittances to Nigeria are mostly affected by fluctuations that directly affect the household, such as price variation, exchange rate devaluation and international labour market situation. Other variables like economic performance of both country of origin and the host country do not hold similar effects. On the basis of the above analysis, the flow of remittances can be improved through the maintenance of macroeconomic and financial stability, which constitute important

preconditions for the success of any policy related to workers' remittances. Migrant will be more willing to send and invest remittances if inflation is kept under control and exchange rate is reasonably stable. The model found the coefficient of worker's remittances to be positively related to the Nigeria economic growth. The study provides an unclear effect on the economic performance of both the host and the country of origin. Thus it can be concluded that US labour market situation especially unemployment level is not an important determinant of migrants' remittances in Nigeria. The study omitted exchange rate in its analysis and that could cause a serious policy implications.

Temitope and Daniel (2015), for instance investigated the determinants of remittances in Nigeria. The variables employed for the empirical research were income per capita,inflation rate, depositrate, domesticcredit, exchangerate, financial deepening, interest rate, secondary school enrolment and openness. This research attempted an analysis of the macroeconomic determinants of remittances using the vector correction model. Their findings indicate that remittances receipts in Nigeria are largely influenced by portfolio options rather than altruism as they seem to respond positively to differentials in exchange rate, deposit rate and interest rate. In other words, remittance flows to Nigeria are procyclical in nature rather than countercyclical.This implies that remittances are procyclical if they are driven by investment motives. This is what is referred to as the portfolio approach, in which case remittances respond positively to favourable macroeconomic indicators in the migrants' home country. The study further indicates that remittances appear to respond to the level of openness in the home country and a causality running from deposit rate, exchange rate and openness in Nigeria.However, our study incorporates real gross domestic products, population and unemployment on the presumption that it gives more insight on the nature and size of remittances to Nigeria.

Table 2.1: Summary of Empirical Literature Reviewed

Author/ year	Location of the study	Purpose	Variables	Method of analysis	Findings	Knowledge Gaps
Temitope & Daniel (2015)	Nigeria	An evaluation of the determinants of migrants remittances	Remittances, income per- capita, Inflation, Domestic credit, Deposit rate, Exchange rate, Financial deepening, Interest rate differential, trade openness and school enrolment	VAR	Remittances receipts in Nigeria are largely influenced by portfolio options rather than altruism	The data covered from 1980-2013Access to more robust data could provide a better insight into the foregoing phenomena..
Ojapiuwa (2012)	Nigeria	Determinants of migrant remittent remittances in Nigeria	Migrant remittances, real GDP, population, interest rate,CPI andfinancial deepening .	OLS	Migrants will be more willing to send money and invest if inflation is kept under control, exchange rate and financial conditions are reasonably stable.	Use of OLS.lt failed to conduct structural stability test; structural breaks as the study covered a long period.
Omobitan (2012)	Nigeria	Reconciling international migrants remittances flow determinants	Workers remittances, CPI, GDP, US unemployment and trade openness.	Engle-Granger 2 stage method	The study find a significant co integration relationship between migrant remittances and consumer price index, GDP and openness in Nigeria.	The study omitted exchange rate rin the analysis and that could cause a serous policy mplcaton.
Lin (2011)	Tonga	Determinants of migrants remittances	GDP growth, unemployment, inflation rate, terms of trade openness, exchange rate and financial openness	VAR	Macroeconomic environment in the host country and fluctuations of exchange rate influence remittances in the home country.	The study failed to test for structural breaks and remittances to Tonga are primarily used for consumption unlike Nigeria.
Adams (2009)	Cross country	Determinant of remittances inflow	Exchange rate, poverty level, rate of interest, per capita GDP and skills of migrants.	OLS	Migrant's skills is most important factor in influencing the remittances inflows.	Variance decomposition and impulse response function could have been used so as to effectively determine the size and nature of remittances.

Table 2.1: Summary of Empirical Literature Reviewed (Cont'd)

Author / year	Location of the study	Topic	Variables	Method of analysis	Findings	Knowledge Gaps
Agu (2009)	Nigeria	An evaluation of the relationship between remittance flows and the rest of the economy	Exchange rate, inflation rate, net foreign assets, credit to government and private sector.	Four- sector medium scale model.	Weak link between remittances and the sector as well as components of aggregate demand with exception of private consumption for which impact is marginally significant.	There is high challenges on the specification of the macroeconomic variables that could drive remittances..
Kumar (2009)	Mexico	The determinant of remittances	GDP, US GNI, Financial development	VAR	Remittances do not respond to changes in home or host country income. Access to financial services is a precondition for stable flow of remittances.	The model specification concentrated on financial development and ignores key variables like exchange rate..
Barua et al (2007)	Bangladesh	Determinants of workers' remittances	Workers remittance, migration stock, host country economic condition, home country economic condition, income differential, inflation differential return on financial asset and exchange rate.	OLS	Income differential between host country and home country are positively correlated with the inflow of remittances to Bangladesh in all the regression result, an indication of altruistic motive to remit.	No evidence of investment motive to remit in their preliminary model. The study also failed to test for structural breaks.VAR would be more robust for the analysis..
Lueth (2007)	Srilanka	The determinant of workers' remittances	Real GDP, physical distance between two countries, oil prices, exchange rate and price level.	OLS	Remittances decline with deteriorating exports, domestic investment, depreciation of the residence country's currency and trips cost between countries.	Variance decomposition and impulse response function could have been used so as to get more robust result.
Silva (2006)	Mexico	The determinant of workers' remittances	CPI, GDP, M2, exchange rate and unemployment rate.	VAR	Remittances are mainly responsive to change in the macroeconomic environment of the host country than the home country.	No control variable in the model specified.

Table 2.1: Summary of Empirical Literature Reviewed (Cont'd)

Author / year	Location of the study	Topic	Variables	Method of analysis	Findings	Knowledge Gaps
Aydas et al. (2005)	Turkey	Investigated the effect of macroeconomic variables on workers' remittances flows to Turkey.	Black market premium, interest rate differential, inflation rate, growth in home and host country income, periods of military regime.	OLS	Worker remittances flows with the control of stock of migrants abroad indicate that stock of migrants appears to effect remittance flows	Used OLS. It failed to conduct structural stability test for breaks as the study covered a long period.
Huang, Vargas-Silver (2005)	Mexico	Macroeconomic determinants of official remittance flows	Income, gross domestic product, inflation rate, exchange rate and interest rate affect the host and / or home country macroeconomic conditions.	VECM	They find no significant effect of home country economic conditions on remittances.	Failed to expatiate how unemployment can be a better reflection of the income generating opportunities of emigrants than the GDP.
Netapti et al (2005)	Turkey	The determinant of workers remittances	Migrant stock, per capita income, black market premium, inflation rate and GDP	OLS	Macroeconomic variables such as black market premium, interest rate differentials growth significantly affected remittance flows.	Failed to test for structural breaks .Variance decomposition and impulse response could have been used.
Buch and Kuckulenz (2004)	Cross country	Workers remittances and capital flows to developing countries.	Unemployment in the home country, inflation rate, GDP, population and interest rate.	OLS	Financial development; Domestic income, wage rate, inflation rate, exchange rate, female employment are influence by demographic/ economic factors.	Failed to test for structural breaks. Variance decomposition and impulse response functions were not analysed.
Rahman (2003)	Saudi Arabia	Determinant of foreign worker remittances	Real GDP, wage rate, returns: interest rate nominal interest rate per-capita income workers remittances	VAR	The wage rate has a direct impact on the level of per capita worker remittances. And also the higher the level of instability the higher will be the flight of remittances from the country to other countries.	Composite risk variables were included in the model specification. But the study was mainly on macroeconomic determinants of remittances.

Table 2.1: Summary of Empirical Literature Reviewed (Cont'd)

Author / year	Location of the study	Topic	Variables	Method of analysis	Findings	Knowledge Gaps
El Sakka&McNabb (1999)	Egypt	The macro-economic determinants of migrant remittances	Stock of workers abroad, inflation rate, exchange rate, interest rate and income.	Ordinary Least Square (OLSEM)	Remittance flows are highly responsive to the differential between the official and black market exchange rates. There is also a positive relationship between the domestic inflation and the remittances.	Variance decomposition and impulse response could have been used to determine the impact. Also failed to test for structural breaks.
Chandavarkar (1980)	Turkey	Macroeconomic determinants of remittances	Exchange rate, inflation rate interest rate, gross domestic product, institutional development	OLS	Exchange rate has a positive impact on remittances inflow as well emphasized on the importance of a stable institutional environment.	Failed to test for structural breaks given that the study covered a long period .

Source: Researchers' Compilation, 2018

2.3 Summary of Literature Reviewed

The literature on the determinants of remittances generally finds altruistic and investment motives to remittances (Lucas & Stark, 1985).When guided by altruistic motives, remittances aim to support recipients in their daily expenditure and / or compensate them for catastrophic events. In this case, remittances are negatively correlated with economic conditions (real GDP growth and employment) in the home country. The end use of remittances is primarily consumption. When guided by investment motives, remittances aim to take advantage of high returns or other opportunities for profits in the home country. In this case, remittances are positively related to economic conditions and investment opportunities in the home country. On the other hand, remittances are categorized at macro level based on the assumption that flows of international remittances can be countercyclical, procyclical or acyclical.

The nature of relationship between remittances and these macroeconomic variables (exchange rate, interest rate, inflation rate, financial development, unemployment, real GDP and population growth) can not be predicted with precision, indicating for each country of interest, there would be need to set preconditions for analysis for a meaningful interpretation

of empirical results. Also, for interest rates, the fact that differentials between host and home country might be strong determinant of remittances for investments, research results are divergent, ditto other variables.

As also indicated in El-Sakka and Mcnabb (1999), the contradictory findings reported in the literature may reflect the fact that the focus of some studies is often limited to only a few macroeconomic variables often ignoring key determinants such as the black market exchange rate. In addition, because of the lack of data in labor exporting countries estimation periods of most studies are really short. Also, the estimations in previous studies (see, for example,c Elbadawi and Rocha (1992), El-Sakka and Mcnabb (1999) are generally based on modeling remittances with the levels of potential determinant variables, while these variables are generally non-stationary. All these factors lead us to question the reliability of the general conclusions in the previous literature.

For instance, economic policies and institutions in the home country, like exchange rate restrictions and black market premiums, may discourage remittances from being sent and may also shift remittances from formal to informal sector (IMF, 2005). The literature reviewed also revealed an inverse relationship between remittances and inflation in the long-run. Interestingly, the short- run reveals a positive relationship. The short- run relationship suggests that remittances received increase as price level in the recipient economy goes up. This is in consonance with the findings of El- Sakka and McNabb (1999). They opined that remittances increases with a country's price level using the Egyptian example. However, the long-run result with an inverse relationship suggests a procyclical situation. This conforms to the findings on remittance to Latin America and the Caribbean from the USA by Aydas et al (2005). Infact, there is heterogeneity among the scholars on the nature of relationship between these macroeconomic variables and the size of migrants remittances.

In the literature reviewed, the stock of migrant workers on a host country is seen to be an obvious determinant of remittances; the greater the stock of workers, the greater the volume of remittances. Freund and Spatafora (2005) estimate that a doubling of the stock of migrants would lead to 75 percent increase in recorded remittances.

However, the pure Keynesian model is the oldest model that tries to capture the short – run macroeconomic impact of international transfers, under the assumptions of sticky prices, fixed exchange rate and interest rates.In the absence of supply constraints, this model shows that any shock on the demand side has disproportionate effect on the national output.

2.4   Justification for the Study

This study is first justified by the dearth of capital problem plaguing the country which has forstalled projected growth and the consensus by economists that remittances could be used as an alternative source of development finance. Even though Nigeria is agreed to be the largest recipient of remittances in Sub Saharan Africa and the seventh largest recipient of remittances in the world as at 2015 (Global Eeconomic Prospect, 2016). It is yet to be ascertained the direct impact of remittances on economic growth in Nigeria. Much attention has been placed on other sources of foreign capital like FDI and foreign aid but very little attention has been placed on remittances inflow in the country.

On the other hand, given the volume of remittance inflow into Nigeria in recent years it is critical to carry out this research to find out if remittances have had any significant relationship both in the long and short run with the above mentioned macroeconomic variables. In the same vain, understanding the responds of migrant remittances on the selected macroeconomic variables should create a climate for policies that have the capacity to encourage and fully harness the benefits of remittances towards economic growth and development in Nigeria.

Policy makers and forecasters are particularly interested in what policies may encourage remittances and how they move with other macroeconomic variables,including GDP in the host country, or the exchange rate in the home country. The latter will help illuminate the role of remittances in buffering economic shocks,such as term-of-trade shocks, large swings in capital flows.

As also indicated in El-Sakka and Mcnabb (1999), the contradictory findings reported in the literature may reflect the fact that the focus of some studies is often limited to only a few macroeconomic variables often ignoring key determinants such as the black market exchange rate. In addition, because of the lack of data in labor exporting countries estimation periods of most studies are really short. Also, the estimations in previous studies (see, for example, Elbadawi and Rocha (1992), El-Sakka and Mcnabb (1999) are generally based on modeling remittances with the levels of potential determinant variables, while these variables are generally non-stationary. All these factors lead us to question the reliability of the general conclusions in the previous literature. Hence, the relationships between the size of remittances and these macroeconomic variables is an empirical issue which cannot be generalized across countries, (Amuedo-Dorantes & Pozo, 2004; Adams & Page, 2003;

Humberto 2005; El-Sakka & McNabb, 1999; Belshaw *et al.* 1999; Kihangire & Katarikawe, 2008). Hence, confirming the recommendation by Chami *et al.,* (2008), that there is need for country by country study of both the micro and macro impact of remittances.

CHAPTER THREE

RESEARCH METHODS

This chapter discusses the econometric research techniques that are appropriate to this study. Specifically, it focuses on the theoretical framework, model formulation, estimation procedure and techniques, among others.

3.1 Theoretical Background

In view of the theoretical ideas of Lucas and Stark (1985) and taking notion of mathematical formulation of Rapoport and Docquier (2005), Vargas-Silver and Huang (2006) and Adenutsi (2014) an optimal theoretical framework is designed to determine the macroeconomic determinants of remittances in Nigeria.Within this framework, a representative migrant maximizes his or her life time consumption and transfers remittance to his/her family at home with respect to the income constrainst. The utility function is composed of consumption goods and transfer (remittances).The income constraint reflects the fact that the migrant's total disposable income must be equal to the total expenditure on his or her own consumption of composite goods, remittances and financial asset holdings. Hence, we develop a model that yields testable predictions about the effect that changes in the macroeconomic variables of the host and home country have on remittances and establish explicitly the relationship of remittances with home country and host country macroeconomic conditions. We use a two period model in which remittances are sent in the first period. The model that we present has the same basic implications of most other remittances models (see Rapoport & Docquier, 2005).

Assume that we have an individual (emigrant) living in a foreign (host) country. In the remittances literature it is common to assume that the emigrant's utility depends on his/her consumption and the household consumption (Bougha-Hagbe, 2004; Funkhouser, 1995; Lucas & Stark, 1985). Following the literature we assume that the utility function of the emigrant in the first period depends on two factors his/her consumption in the host country (c^1) and the consumption of the household in the home country (c*). The utility function of the representative individual in the first period can be represented as U (c^1, c*) with $U_1 > 0$, $U_{11} < 0$, $U_2 > 0$ and $U_{22} < 0$. For simplicity we also assume that utility is additively separable.

The consumption of the household depends on income and remittances received *(αr)*. Here the parameter α represents the cost associated with sending remittances *(α ≤ 1)*. This implies that although a migrant remits r dollars back home but the household only gets a fraction *αr*.

Migrant's household income is separated into two components. The first component is the fraction of household income that is not susceptible to changes in the macroeconomic conditions of the home country *(y*)*. The second component is the fraction of household income *(πY*)* that is susceptible to changes in the macroeconomic conditions of the home country *(Y*)*. The parameter π reflects the relationship between the economic conditions in the home country and the household income. In general we assume $\pi > 0$, which indicates an improvement in the economic conditions of the home country is associated with an improvement in household income (though the size of π does not have to be the same across households.The consumption function of the migrant's household is given by c*(y*+πY*),αr).The consumption function of the household is assumed to be additively separable and that $c_1^* > 0, c_2^* > 0, c_{11}^* < 0$ and $c_{22}^* < 0$.

In addition to consuming and sending remittances, the emigrant saves a percentage of his income in the home country *(s)*. The income restriction of the individual in the first period is then given by:

$$y^1 + \upsilon Y^1 = c^1 + r + s \quad \upsilon \geq 0$$

This implies that y^1 is the fraction of emigrant's income in the first period that is not susceptible to changes in the macroeconomic conditions of the host country. Similarly, υY^1 is the fraction of household income that is susceptible to changes in the economic condition of the host country *(Y¹)*. Here υ represents the relationship between the emigrant's income and the economic conditions of the host country.

In the second period, migrant's household migrates to the host country and joins the emigrant. Similar results can be obtained assuming that in the second period the emigrant returns to the home country and joins the household. The emigrant's maximization problem is then:

Max $U(c^1, c^*) + \beta V(c^2)$ 3.1

{c,r,s}

st. $y^1 + \upsilon Y^1 = c^1 + r + s$ 3.2

      and

      $c^2 = y^2 + \upsilon Y^2 + (1+i)s$ 3.3

Where $V(c^2)$ is the utility from second period consumption ($V_1 > 0$, $V_{11} < 0$), i is the interest rate of the(intuitively the deposit rate) home country, β is a discount factor, and y^2 and Y^2 have similar interpretations to y^1 and Y^1 but for the second period. The first order condition of the optimization problem yields:

$$U_1 = \beta V_1 (1+i) \qquad\qquad 3.4$$

$$\alpha U_2 c^*_r = \beta V_1 (1+i) \qquad\qquad 3.5$$

From equations (3.4) and (3.5) we get the derivative of r with respect to Y^1 (host country income):

$$\frac{\partial r}{\partial Y^1} = \frac{v\beta U_{11} V_{11}(1+i)^2}{D} \geq 0$$

$$3.6$$

Where D is the determinant of the matrix of second derivatives. Equation (3.6) implies that an improvement in the economic conditions of the host country positively affects remittance flows from the host country to the migrants home country. Suppose that Y increases, the economic condition of the host country improves. The emigrant sends more money home because his/her economic condition also improves (remember $v \geq 0$). Given that households spend their incomes on normal goods.It can also be shown that an improvement in the economic conditions of the migrant's home country is associated with a decrease in remittances inflows in the home country, that is;

$$\frac{\partial r}{\partial Y^*} = (-)[\frac{\alpha\pi U_{22} c^*_r c^*_{y*}[U_{11} + \beta V_{11}(1+i)^2]}{D}] \leq 0$$

$$3.7$$

Equation (3.7) is non-positive. If the emigrant is remitting for altruistic purposes.Under this assumption, the migrant remits less money home (country) because the target household is better off $(\pi \geq 0)$. Finally we have that:

$$\frac{\partial r}{\partial i} = [\frac{-\beta U_{11}[V_1 + V_{11}(1+i)s]}{D}]$$

$$3.8$$

Therefore, we cannot sign equation (3. 8) because we have two opposite effects. First, as a result of the increase in host country interest rates the migrant can consume more in the second period. This indicates a positive effect on remittances. On the other hand, there is a

higher return to capital in the host country. As a result the migrant may reduce remittances and increase savings in the host country.

The model presented above allows us to hypothesize how remittances respond to changes in the economic conditions of the host and home country.

3.2 Empirical Model Specification

When remittances constitute a significant source of foreign exchange, they may clearly affect the equilibrium level of the gross domestic product and other macroeconomic variables. Macroeconomic studies have emphasized determinants such as the level of economic activity in the host and the home countries, exchange rate, inflation rate, interest rate differentials, population growth (migrant stock), financial development and unemployment rate.

To operationalize the theoretical intuitions reviewed earlier, our empirical model specification follows the theoretical framework discussion in the preceding section and in line with the models adopted by Huang and Vargas- Silver (2005). Accordingly, a migrant remittance model can be specified in the form:

$$REM_t = F(RGDP_t, POP_t, UNR_t, INT_t, EXHR_t, INF_t, FDV_t,) \qquad 3.9$$

where REM is migrant remittances; RGDP is real gross domestic product; POP is population Growth; UNR is unemployment Rate; INT is the domestic interest Rate; EXHR is exchange Rate; INFL is domestic inflation Rate and FDV is financial development.

Following Hasan (2008), the above model is transformed to log- linear forms. The superiority of the Log –Linear model is that the coefficients of the variable measure the elasticity of regressand with respect to regressors.

$$LREM_t = \Pi_0 + \Pi_1 LRGDP_t + \Pi_2 LPOP_t + \Pi_3 LUNR_t + \Pi_4 LINT_t +$$

$$\Pi_5 LEXHR_t + \Pi_6 LINF_t + \Pi_7 LFDV_t + U_t \qquad 3.10$$

On a priori, it is expected that: $\Pi_1 > 0$; $\Pi_2 > 0$; $\Pi_3 > 0$; $\Pi_4 > 0$; $\Pi_5 < 0$; $\Pi_6 < 0$; $\Pi_7 > 0$.

The above static model may be of little relevance in this analysis. In order to characterise the dynamic effects of these determinants, we specify a dynamic model. This is necessary since the response of one variable to another is rarely instantaneous in economics.

$$LREM_t = \Pi_0 + \sum_{i=0}^{n} \Pi1LRGDP_{t-I} + \sum_{i=0}^{n} \Pi2LPOP_{t-I} + \sum_{i=0}^{n} \Pi3LUNR_{t-I} + \sum_{i=0}^{n} \Pi4LINT_{t-i} +$$

$$\sum_{i=0}^{n} \Pi5LEXHR_{t-i} + \sum_{i=0}^{n} \Pi6LINF_{t-i} + \sum_{i=0}^{n} \Pi6LFDV_{t-i} + \mu_t \qquad\qquad 3.12$$

3.3 Definiton of Variables in the Model

1.   **Gross Domestic Product:** This is simply the market value of all final goods and services produced in the domestic economy within a specified period of time with each good or service valued at its market price.It measures economic activities located in the country regardless of their ownership. The prosperity of the domestic economy increases remittances.Remitted money is directed towards additional demand for goods and services. The impact of remittances on human capital formation, on education and health is highly positive. In terms of aggregate supply remittances had a significant and immediate influence on consruction and acquisition of real estate. So remittances in an economy can lead to an increase in domestic investment. Remittances contribute to domestic capital accumulation through effects on domestic macroeconomic stability. As remittances make the domestic economy less volatile, they tend to reduce the risk premium that firms demand in order to undertake investment, and thus they make domestic investment more attractive.This study therefore, proposes a positive impact between migrant remittances and gross domestic product**.**

2.   **Exchange Rate:** The price of one country's currency expressed in terms of another; the doestic price of a foreign currency. Official exchange rate refers to the exchange rate determined by the authority or to the rate determined in the legally sanctioned exchange market. Market prices of foreign exchange are liable to fluctuate between narrow margins in a fixed exchange rate system and much more widely under a floating or flexible rate system. Remittances have contributed a lot to maintain the healthy foreign exchange reserves. Among major sources of foreign exchanges, exports secured the top position followed by remittances. But if we take back-to-back imports into consideration used for exports, remittances emerge as the single largest source of foreign exchanges. The surge in remittances also contributes to reduce the dependency on conditional costly foreign borrowings.

3. Inflation Rate: Inflation is the general and persistent rise in prices that affects the purchasing power of all individuals in the country. Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring goods and services that may be fixed or changed at specified intervals, such as yearly. Remittances can temporarily increase inflation and generate an increase in the

domestic money supply under a fixed regim and decrease inflation and generate no change in the money supply under a flexible regime.

4. Real Interest Rate: The rate of interest is the extra payment per unit of the loan, normally calculated as an annual rate. Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator. The term and condition attached to lending rates differ by country, however limiting their comparability. This study proposes an insignificant relationship for remittances and interest rate differential in all periods.That is the investment motive to remit is weak.Migrants mainly remit for altruistic reasons not for investment purposes.

5. Financial Development: Financial sector development occurs when financial instruments, markets and intermediaries ease the effects of information, enforcement and transactions costs and therefore do a corresponding better job at providing the levy functions of the financial sector in the economy. It is measured as the ratio of broad momey supply to GDP. Financial sector development is being enhanced through increased inflows of remittances. This is reflected in increasing number of clients, expanding base of different products among beneficiary of remittances and adoption of modern technology by the financial institutions. Remitters also create markets in country of destinations for domestic products. This study therefore, proposes a positive relationship between financial development and migrant remittances.

6. Unemployment Rate: Unemployment rate refers to the share of the labour force that is without work but available for and seeking employment.Unemployment is the main cause of migration which has been established to a problem to development in less developed countries like Nigeria because it denied their human resources, causing braia drain.Apart from the fact that brain drain is much more pronounced in developing countries like Nigeria,it has also been regarded as one of the major obstacles to development in Nigeria.The increase in unemployment has a positive relationship with the stock of migrant and this will in turn impact positively on the volume of remittances to the country.This study proposes that domestic labour market situation especially unemployment level has a positive relationship with migrant remittances.

7. Population Growth: Population measure is based on the usual definition of population, which counts all residents regardless of legal status or citizenship.(Note emphasis here is on migrants stock of a nation).Population growth is the average annual growth of midyear

population (World Bank). This study therefore, proposes a positive relationship between the stock of migrant and migrant remittances.

3.4   Model Justification

The study employed the Distributed Lag Model instead of the traditional and the commonly used static model. The choice of Distributed- Lag Models is based on the fact that they portray the time path of the dependent variable in relation to the current and past values of the independent variables. This is necessary since the dependence of one variable on another variable(s) is rarely instantaneous in economics. For psychological, technical and institutional reasons, an explained variable may respond to an independent variable(s) with a time lag (Gujarati, 2009).

3.5   Estimation Technique and Procedure

Before estimation, series will be tested for unit roots and cointegration, since a necessity for calculating means and variances is the data's Stationarity. Some steps will be involved including: eyeball inspection on the plotted graphs, if the series displays non-Gaussian distributions with no real pattern, thus exhibit random walk, suggested the use of unit root test. The unit root test will be conducted using the Zivot-Andrews (1992) unit root approach. Zivot-Andrews (1992) test the null hypothesis that the series has a unit root with structural break in the intercept, or trend or both.

The rationales for conducting unit root test and co-integration analysis are basically affixed into mainly two reasons. Firstly, to avoid the dilemma of spurious correlation in each individual time-series that precludes the long-run relationships among levels of non-stationary variables. Secondly, to avoid possibilities of losing some relevant information if only first differences of variables are used (Hill, Griffiths & Lim, 2008).

Data management and analysis will be done using Excel; and Eviews econometric software package. Prior to the analysis, the collected data will be cleaned, coded and posted into Excel. Excel will be used to gather and organize the required data for analysis and then data will be imported into the EViews package for model estimation purpose.

3.5.1 Unit root test

The Augmented Dickey-Fuller (ADF) and the Philip-Perron (PP) unit root tests are used. While the ADF approach accounts for the autocorrelation of the first differences of a series in a parametric fashion by estimating additional nuisance parameters, the PP unit root test makes use of non-parametric statistical methods to take care of the serial correlation in the error terms without adding lagged difference terms (Gujarati, 2009). The ADF test consists of estimating the following equation:

$$\Delta Y_t = \beta + \beta_1 t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-1} + \varepsilon_t \qquad\qquad 3.13$$

Where ε_t is a pure white noise error term; t is time trend; Y_t is the variable of interest; β_1, β_2, δ and α_i are parameters to be estimated; and Δ is the difference operator. In ADF approach, we test whether $\delta = 0$. On the other hand, the PP test is based on the following statistic:

$$\tilde{\tilde{t}}_\alpha = t_\alpha (\tfrac{\gamma_0}{f_0})^{1/2} - \frac{T(f_o - \gamma_0)(se(\tilde{\tilde{\alpha}}))}{2 f_0^{1/2} s} \qquad\qquad 3.14$$

Where $\hat{\alpha}$ is the estimate; $\tilde{t}_\alpha$ is the t-ratio of α; $se(\hat{\alpha})$ is the coefficient standard error and s is the standard error of the regression. Also, γ_0 is a consistent estimate of the error variance in the standard Dickey-Fuller test equation (calculated as (T-k) s^2/T, where k is the number of regressors). The term f_0 is the estimator of the residual spectrum at zero frequency. In the event that the variables are integrated, the cointegration test is carried out using the ARDL bound testing approach proposed by Pesaran *et al* (2001).

3.5.2 Cointegration test

The Autoregressive Distributed Lag (ARDL) bound testing cointegration approach proposed by Pesaran *et al* (2001) will be adopted in checking if long run relationship exist between the macro-economic variables and migrant remittances in Nigeria. This procedure is adopted because it has numerous advantages over the alternative methods (Engel-Granger, 1987; Johansen and Julius, 1990; and Philip and Hansen, 1990). Among others merits, estimates obtained from the ARDL method of cointegration are unbiased and efficient, since they avoid the problems that may arise in the presence of serial correlation and endogeneity. Pesaran and Shin (1999) contended that, appropriate modification of the orders of ARDL model is sufficient to simultaneously correct for residual serial correlation and problem of endogenous

variables. In addition, ARDL bound test can be used with a mixture of I (0) and I(1) data; it involves just a single-equation set-up, making it simple to implement and interpret; and different variables can be assigned different lag-length as they enter the model. The ARDL bounds testing procedure consists of estimating an unrestricted error correction model with the following generic form:

$\Delta LREM_t = \theta_0 + \sum_{i=1}^{n} \Theta_1 \Delta LREM_{t-1} + \sum_{i=1}^{n} \Theta_2 \Delta LRGDP_{t-1} + \sum_{i=1}^{n} \Theta_3 \Delta LPOP_{t-1} + \sum_{i=1}^{n} \Theta_4 \Delta LUNR_{t-1} + \sum_{i=1}^{n} \Theta_5 \Delta LINT_{t-1} + \sum_{i=1}^{n} \Theta_6 \Delta LEXHR_{t-1} + \sum_{i=1}^{n} \Theta_7 \Delta LINF_{t-1} + \sum_{i=1}^{n} \Theta_8 \Delta LFDV_{t-1} + \Phi_1 LREM_{t-1} + \Phi_2 LRGDP_{t-1} + \Phi_3 LPOP_{t-1} + \Phi_4 LUNR_{t-1} + \Phi_5 LINT_{t-1} + \Phi_6 LEXHR_{t-1} + \Phi_7 LINF_{t-1} + \Phi_8 LFDI_{t-1} + \varepsilon t \qquad 3.15$

However, if a stable long run relationship is confirmed from the ARDL bound test, then the short run dynamic coefficients are estimated through the following error correction model:

$\Delta LREM_t = \theta_0 + \sum_{i=1}^{n} \Theta_1 \Delta LREM_{t-1} + \sum_{i=1}^{n} \Theta_2 \Delta LRGDP_{t-1} + \sum_{i=1}^{n} \Theta_3 \Delta LPOP_{t-1} + \sum_{i=1}^{n} \Theta_4 \Delta LUNR_{t-1} + \sum_{i=1}^{n} \Theta_5 \Delta LINT_{t-1} + \sum_{i=1}^{n} \Theta_6 \Delta LEXHR_{t-1} + \sum_{i=1}^{n} \Theta_7 \Delta LINF_{t-1} + \sum_{i=1}^{n} \Theta_8 \Delta LFDV_{t-1} + Z_t \qquad 3.16$

Where ECM_{t-1} is the error correction term resulting from the verified long-run equilibrium relationship and ζ is a parameter indicating the speed of adjustment to the equilibrium level after a shock. The sign of the error correction mechanism must be negative and significant to ensure convergence of the dynamics to the long run equilibrium. The value of the coefficient, ζ, which signifies the speed of convergence to the equilibrium process, usually ranges from -1 to 0 with -1 signifying perfect and instantaneous convergence while 0 means no convergence. Further, Pesaran and Pesaran (1997) argued that it is imperative to ascertain the constancy of the long-run multipliers by testing the above error-correction model for the stability of its parameters. The commonly used test for stability - the cumulative sum (CUSUM) of Square – is applied in this regard.

3.5.3 Vector Auto-Regressive (VAR) Model

In order to achieve the third research objective, we test for shocks using the impulse-response function (IRF) and variance decomposition of the Vector Auto Regressive (VAR) model. In

applied study of this nature, it is often of interest to know the response of one variable to an impulse in another variable in a system that involves a number of further variables as well.

3.5.4 Impulse Response Function (IRF)

IRF is an essential tool in causal analyses. In order to capture the response of migrant remittances to macroeconomic variables namely: Real Gross Domestic Product (RGDP), population (POP), unemployment rate (UNR), interest rate (INT), exchange rate (EXHR), Inflation (INF) and financial development (FDV) over the period, the IRF is used. The impulse response analysis provides extremely useful information with which to characterize the dynamics of a model by illustrating the evolution over time of the effects of shocks on variables and, importantly, on the persistence of the shocks over a long period. Thus, we would like to investigate the impulse response relationship between the variables in a higher dimensional system. Of course, if there is a reaction of one variable to an impulse in another variable we may call the latter causal for the former. This type of causality will be studied by tracing out the effect of an exogenous shock or innovation in one of the variables on some or all of the other variables.

Recall that $\Phi_1^i = \Psi_i$ just the $i-th$ coefficient matrix of the MA representation of a VAR (1) process. The MA coefficient matrices contain the impulse responses of the system. This result holds more generally for higher order VAR (p) processes as well. VMA (∞) representation:

$$y_t = \sum_{i=0}^{\infty} \Psi_{i\varepsilon t-i} \Psi_0 = I_n \qquad 3.17$$

Impulse-response function is the presented thus;

$$y_t = \sum_{i=0}^{\infty} \Psi_{i\varepsilon t-i} \qquad 3.18$$

$$\{\Psi_n\}_{i,j} = \frac{\partial y_{it+n}}{\partial \varepsilon jt} \qquad 3.19$$

The response of $y_{i,t+n}$ to a one-time impulse in $y_{j,t}$ with all other variables dated t or earlier held constant. The response of variable i to a unit shock in variable j will as well be depicted graphically to get a visual impression of the dynamic interrelationships within the system.

3.6 Evaluation of Estimates

The parameter estimates of the model will be evaluation under three sub-headings:

3.6.1 Economic "A priori" criteria:

This refers to the expected signs and magnitude of the parameters of economic relationships and is determined by the principles of economic theory. It is one of the criteria used in determining whether the estimates are theoretically meaningful and statistically (Koutsoyiannis, 1973).

Therefore based on economic theory, the independent variables are expected to take the signs discussed earlier in relation to the dependent variable (REM).

3.6.2 Statistical criteria: first order test:

The adjusted R-squared (R^{-2}), the coefficient of determination is used to measure the goodness of fit of the regression line. It also measured the variation in the dependent variable that is induced by the explanatory variable. The t-statistic is used to test for individual significance of the parameter estimates and the f-statistic is used to test for the overall significance of the parameter estimates.

3.6.3 Econometric Criterion: 2nd Order Test

This aims at investigating whether the assumptions of the OLS are met. They determine the reliability of the statistical criteria and establish whether the estimates have the desirable properties of unbiasedness and consistency. The econometric criteria are;

Test for stationarity: stationarity is said to exist if the mean and variance of a variable are constant overtime. In short, if a time series is stationary its mean variance and auto covariance (at various lags) remain the same no matter at what point we measure them, that is

they are time invariant (Gujarati, 2009). The stationariy test was conducted using Zivote-Andrew breakpoint test and Ng-Perron modified unit root test.

Test to Autocorrelation: autocorrelation refers to a correlation between members of series of observation ordered in time (as in time series data). The classical linear regression model assumes that such autocorrelation does not exist in the disturbance U_i. Symbolically, $E(U_i, U_j=0_i=J)$ (Gujarati, 2009).The autocorrelation test was conducted using the Breach-Godfrey Serial Correlation LM test. Under the null hypothesis of presence of serial correlation, we reject the null if the probability value of the F-statistic excess the 0.05 significant level.

Test for Heteroscedascity: An important assumption of the classical linear regression model is that the disturbance U_i appearing in the population regression function are homoscedastic, that is they all have the same variance (Gujarati 2009).

The heteroscesdasticity test was conducted using the autoregressive conditional heteroscesdasticity (ARCH) test. Under the null hypothesis of presence of heteroscesdasticity, we reject the null if the probability value of the F-statistic excess the 0.05 significant level.

3.7 Test of Research Hypotheses

The T-test is used to test for the significance of the individual parameter estimate in the model. It involves comparing the estimated T-statistics with its tabulated value at a chosen level of significance under a general hypothesis. The decision rule will be to reject the null hypotheses if t- calculated is greater than the t- critical and/ or if its corresponding probability value is less than or equal to 0.05.

H0: β= 0: the parameter estimate is not statistically significant at 5% significance level.

H1:β≠ 0: the parameter estimate is statistically significant at 5% significance level.

The tabulated (critical) T-value is obtained from the t Distribution table for 0.05 level of significance and (n─ k) degree of freedom.

If tcal. > ttab., reject Ho, otherwise do not reject (the decision is based on absolute value).

Case 1: Reject H_0 if the F-value is greater than the upper bound.

Case 2: Accept H_0 if the F-value is less than the lower bound.

Case 3: Inconclusive if the F-value falls between the lower and upper bounds.

3.8 Nature and Sources of Data

Table 3.1 Variables and Soures of Data

S/N	VARIABLES	DATA	SOURCES OF DATA
1	Inflation	Infaltion Rate	International monetary fund, International financial statistic and data files
2	Unemployment	Unemployment Rate	International labour organization, key indicators of the labour market database (WDI, 2009)
3	Gross Domestic Products	Real Gross Domestic Products	World Bank national account and OECD National Account data files.
4	Financial Development	M2/GDP	CBN statistical Bulletin (2015) M2 / GDP
5	Interest Rate	Real Interest Rate	International monetary fund international financial statistics and data files using world Bank data on the GDP Deflator
6	Exchange Rate	Real Exchange Rate	International monetary fund and international financial statistics
7	Population	Population Growth	Fderal office of statistics and Central bank Nigeria(CBN) statistical Bulletin
8	Migrant Remttances	Migrant Remttances	World Bank staff estimates based on IMF balance of payment data sixth edition.

Source: Researchers' compilation, 2018.

CHAPTER FOUR

ANALYSES OF DATA, PRESENTATION AND DISCUSSION OF RESULTS

The thrust of this chapter is to present and analyse the data using the techniques discussed in chapter three, and then, we test the hypotheses, make inferences and discuss the findings.

4.1. Result Presentation and Analysis

The data used in this study is attached in the appendix section.

Before the estimation, the time series properties of the variables are investigated. First, we employ Zivot-Andrew unit root test that incorporate structural break. In the event that there is structural break in a series, the modified Ng-Perron test statistic is then applied,otherwise any of the conventional unit root test procedures is used. The results are shown below:

4.1.1 Unit Root Test Result

We begin with the Zivot-Andrew unit root test. The null hypothesis is that $\alpha = 1$, i.e. the series has a unit with structural break in constant, trend or both. The result is shown in Table 4.1.

Table 4.1: Summary of Zivot-Andrew unit root test

Variable	t-Statistics	Breakpoint	K
LREM	-5.09**	2003	(0)
LRGDP	-3.52	1999	(1)
LPOP	-5.44**	1982	(2)
LUNR	-4.74	2004	(1)
LINT	-7.89***	1997	(0)
LEXHR	-3.71	1999	(1)
LINF	-6.30***	1997	(1)
LFDV	-4.11	1987	(1)

***, ** and * denote statistical significance at 1%, 5% and 10% level respectively*
Source; Researchers' computation using E- views version 9.5.

The critical values for Zivot and Andrews test are -5.57, -5.08 and -4.82 at 1 %, 5 % and10% levels of significance respectively.

Table 4.1 is the summary of Zivot-Andrews unit root test. The result shows that remittances, population, interest rate and inflation rate are stationary at levels at different lag with breakpoints at 2003, 1982, 1997 and 1997 respectively. On the other hand, real GDP, unemployment, exchange rate and FDV are shown to be nonstationary at level with breakpoints at 1999, 2004, 1999 and 1987 respectively. The implication of the Zivot-Andrews result is that there is presence of structural break in each of the variables of the study. Given this outcome, the application of any conventional unit root approach (such as ADF, PP, ERS or KPSS) may not be appropriate, since these tests have shown to be inefficient in the presence of structural breaks. Hence, the use of Ng-Perron modified approach. The result of modified Ng-Perron unit root test is also shown in table 4.2.

Table 4.2: Summary of Ng-Perron modified unit root test

Variable	@level				@difference				
	MZa	MZt	MSB	MPT	MZa	MZt	MSB	MPT	
LREM	-9.78	-2.20	0.23	9.35	-21.54**	-3.28**	0.15**	4.24**	I(1)
LRGDP	-3.27	-1.22	0.37	26.67	-21.35**	-3.24**	0.15**	4.44**	I(1)
LPOP	-4.38	-1.42	0.32	20.25	-19.97**	-3.16**	0.16**	4.56**	I(1)
LUNR	-4.53	-1.38	0.31	19.17	-21.06**	-3.24**	0.15**	4.35**	I(1)
LINT	-22.25**	-3.34**	0.15**	4.10**	I(0)				
LEXHR	3.16	-1.21	0.38	27.83	-21.17**	-3.25**	0.15**	4.31**	I(1)
LINF	-17.67**	-2.97**	0.17**	5.16**	I(0)				
LFDV	-8.98	-2.20	0.23	10.23	-21.77**	-3.30**	0.15**	4.19**	I(1)
	asymptotic critical value				*asymptotic critical value*				
1%	*-23.80*	*-3.42*	*0.14*	*4.03*	*1%* *-23.80*	*-3.42*	*0.14*	*4.03*	
5%	*-17.30*	*-2.91*	*0.17*	*5.48*	*5%* *-17.30*	*-2.91*	*0.17*	*5.48*	
10%	*-14.20*	*-2.62*	*0.19*	*6.67*	*10%* *-14.20*	*-2.62*	*0.19*	*6.67*	

***, ** and * denote statistical significance at 1%, 5% and 10% level respectively.

Source; Researchers' computation using E- views version 9.5.

The result indicates that all the variables under scrutiny except interest rate (INT) and inflation (INF) are integrated of order one. This implies that remittances, real GDP, population, unemployment rate, exchange rate and financial development are I(1) process, while interest rate and inflation I(0) process. This result contradicts the outcome of the Zivot-Andrews test which shows that remittances and population are also level stationary. To reconcile this discrepancy, we then apply the conventional unit root test (ADF and PP) the results are shown in the appendix. The results are exactly in tandem with that of Ng-Perron. One common ground for all the unit root test is that our data set is a mixture of I(0) and I(1). This is an ideal situation for ARDL Bound Testing approach to cointegration, since the approach is efficient in handling I(1) and I(0) variables at a time.

4.1.2 Cointegration test

Given the results of the various unit root tests conducted, we then proceed to test for the existence of long-run relationship among the variables. The ARDL Bound Testing approach proposed by Pesaran and Shin (1999) and Pesaran et al. (2001) is appropriate since there are mixture of I(0) and I(1) variables.

First, we determine the appropriate lag structure for the ARDL model in equation 3.15, we also make sure that the errors in model are serially independent and that the model is dynamically stable before the Bound Testing.

Lag selection criterion

Endogenous variables: LREM LRGDP LPOP LUNR LINT
LEXHR LINF LFDV
Exogenous variables: C
Sample: 1970 2016
Included observations: 43

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-121.4566	NA	5.69e-08	6.021237	6.348902	6.142069
1	227.4521	551.7625	1.05e-13	-7.230329	-4.281342*	-6.142834*
2	299.1641	86.72148*	1.01e-13*	-7.589026	-2.018719	-5.534869
3	377.4393	65.53275	1.36e-13	-8.252990*	-0.061362	-5.232171

 * indicates lag order selected by the criterion
 LR: sequential modified LR test statistic (each test at 5%
level).
Source; Researchers' computation using E views version9.5.

FPE: Final prediction error
 AIC: Akaike information criterion
 SC: Schwarz information criterion
 HQ: Hannan-Quinn information criterion

The Schwarz Information Criterion (SIC) and the Akaike Information Criterion (AIC) indicates that a one-period and a three-period lag length model are appropriate. The autocorrelation test (see the appendix) shows that the error terms are serially independent. Again the inverse roots of each of the associated characteristic equations (see the inverse roots of AR/MA polynomial(s) below), suggests that the AR (3) model is dynamically stable since these roots are all inside the unit circle.

Model stability test
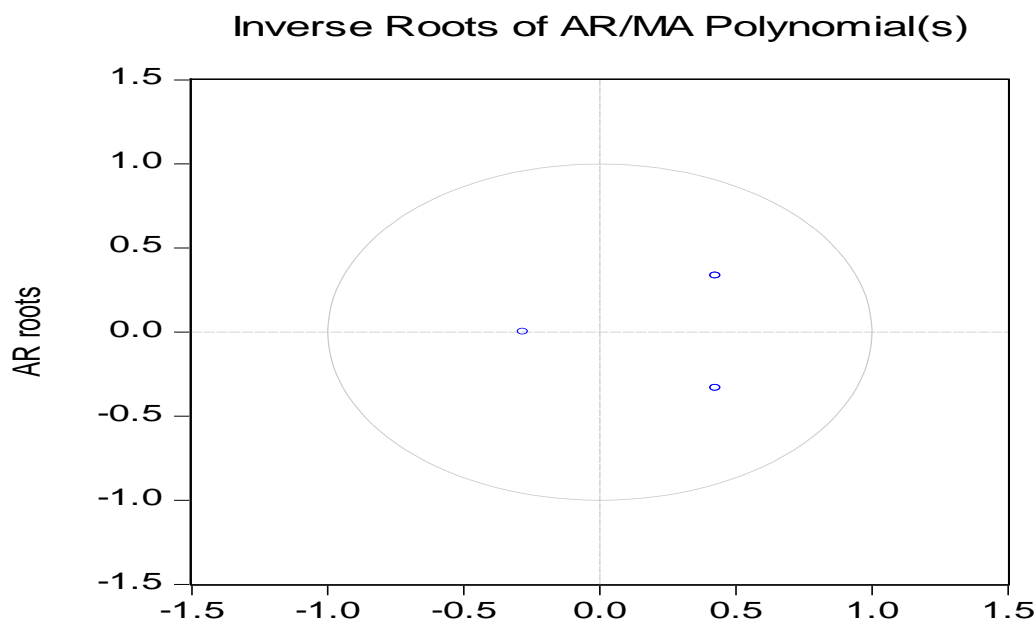
Source; Researchers' computation using E- views version 9.5.

Having established the appropriate lag length(s) and having shown that the AR (3) model is dynamically stable and the errors are serially independent, we then proceed to perform the bound testing.

Table 4.3: Summary of ARDL cointegration test

ARDL Co-Integration Test (1, 1, 1, 1, 1, 1, 1)

AIC	SC	Log Likelihood	F Wald Test	P of Wald Test
2.447	3.136	-36.836	1.982	0.088

ARDL Co-Integration Test (3, 1, 2, 3, 3, 2, 2, 3)

AIC	SC	Log Likelihood	F Wald Test	P of Wald Test
1.197	2.355 2.862	6.451***	0.001300	

*** indicates statistically significant at 1% significance level.

Source: Researher's computation using E views version 9.5

The ARDL Bound Test indicates that the null hypothesis of no cointegration is rejected for ARDL (3, 1, 2, 3, 3, 2, 2, 3). Hence, we conclude that there is a long-run relationship among the variables (remittances, real GDP, population, unemployment, interest rate, exchange rate, inflation rate and financial development) during the period 1970 – 2016 amidst strong evidence of structural changes in Nigerian economy. This result implies that these variables have been moving together over time, despite the structural changes in the system. Hence, they have long-run relationship.

Given the existence of a long run relationship among the variables, two types of models are estimated. First is a static OLS model at level to obtain the long run equilibrating relationship among the variables.Second we estimate an error correction model to account for short run dynamics of the relationship between the variables.

4.1.3 Long-Run Coefficients

Table 4.4: The summary of long run elasticities

Dependent Var: LREM

Variable	Coefficient	Std Error	t-statistics	P-value
LRGDP	4.979***	0.902	5.519	0.0000
LPOP	3.779***	1.277	2.959	0.0042
LUNR	2.989**	1.169	2.555	0.0431
LINT	-0.284	0.287	-0.989	0.3289
LEXHR	-5.202***	0.883	-5.894	0.0000
LINF	-0.133	0.204	-0.649	0.5200
LFDV	1.509**	0.498	3.034	0.0295
Constant	-17.44***	6.512	-2.679	0.0109

R-Square = 0.84 (84%);Adjusted R-Square = 0.81 (81%)

F-statistic= 28.89; Prob. (F-statistic) = 0.0000

Durbin-Watson stat. = 1.54

******, and ** denote statistically significance at 1% and 5%level of significance respectively*.

***Source; Researchers' computation using E- views version 9.5*.

4.1.4 Short-Run Coefficients

Table 4.5: The summary of short-run elasticities (Error correction mechanism)
Dependent Var: Δ(REM)

Variable	Coefficient	Std Error	t-statistics	P-value
C	-0.74	1.83	-0.41	0.6876
ΔLREM(-1)	0.14	0.17	0.87	0.3906
ΔLRGDP(-1)	2.50**	1.12	2.23	0.0431
ΔLRGDP(-2)	0.38	0.50	0.75	0.4567
ΔLPOP(-1)	25.52	20.90	1.22	0.2314
ΔLPOP(-2)	-25.21	20.47	-1.23	0.2376
ΔLUNR(-1)	4.80**	1.88	2.55	0.0161
ΔLUNR(-2)	5.07**	2.09	2.43	0.0212
ΔLINT(-1)	0.24	0.20	1.24	0.2249
ΔLINT(-2)	-0.09	0.21	-0.44	0.6616
ΔLEXHR(-1)	-3.32**	1.05	-3.16	0.0057
ΔLINF(-1)	-0.17	0.17	-0.99	0.3281
ΔLFDV(-1)	0.71	0.75	0.95	0.35
ECT(-1)	-0.25**	0.11	-2.30	0.0441

R-Square = 0.51 (51%)
F-statistic = 2.59 (0.017196)
Durbin-Watson stat. = 1.73

******, and ** denote statistically significance at 1% and 5%level of significance respectively*.
***Source; Researchers' computation using E- views version 9.5*.

4.2   Evaluation of Estimate/ test of Research Hypotheses

The existence of long-run relationship between the dependent variable (migrant remittances) and the independent variables (RGDP, POP, UNR, INT, EXHR, INF and FDV) informs the need to estimate both the long run and short run versions of our model. The long run estimates (see table 4.4 above) are evaluated based on the following criteria:

4.2.1 Economic Criterion

Real GDP (RGDP) has positive and statistically impact on migrant remittances at 1% significant level. The result shows that one percent increase in RGDP will cause remittances to rise by 4.979%. Population (POP), unemployment rate (UNR) and financial development (FDV) also have positive and statistically impact on migrant remittances at 1%,and 5% respectively. Migrant remittances will rise by 3.78%, 2.99% and 1.51% following a one percent increase in population, unemployment rate and financial development respectively. Interest rate, exchange rate and inflation rate have negative effect on migrant remittances. However, it is only the impact of exchange rate on migrant remittances that is statistically significant. One percent fall in interest rate, exchange rate and inflation rate will lead to about 0.28%, 5.20% and 0.13% increase in migrant remittances respectively as indicated in table 4.4.

Table 4.6: Expected and Obtained Signs of the Variables

Variable	expected sign	obtained sign	remark
LRGDP	>0	> 0	conforms
LPOP	>0	>0	conforms
LUNR	> 0	>0	conforms
LINT	>0	< 0	does conform
LEXHR	< 0	< 0	conforms
LINF	< 0	< 0	conforms
LFDV	> 0	> 0	conforms

Source; Researchers' computation using E- views version 9.5.

All the variables, except INT conform to the a priori expectation. Economic criterion implied a positive relationship for remittances and interest rate differential in all periods. This

corroborates with the findings of Mouhoud et al (2008). They opined that the impact of interest rates in determining remittances levels occurs mostly for investment motives. They argued that it is expected to have a positive coefficient for investment motives since it depictsthe deviation of domestic interest from the international interest rate. In our study the non conformation of the interest rate to economic criterion may be attributed to policy induced shocks in the economy. Moreover, an increase in interest has no effect on the amount of remittances sent by migrant. In this case, migrants wouldn't be motivated to send more remittances home for investment. This also corroborate the result found by Bouhga-Hagbe (2006, 2004), Faini (1994) and ElbadawiandRoiha (1992). The non-significance of the real interest rate allows the rejection of the selfish behavior.

4.2.2 Econometric criteria: 1st order test

The adjusted R^2 indicates that the explanatory variables account for about 81% changes in migrant remittances in Nigeria for period 1970-2016. The general F-value suggests that all the partial coefficients are not simultaneously equal to zero and hence statistically significant at 5% critical value

4.2.3 Econometric criteria: 2nd order test

The estimated long – run model is further evaluated in order to substantiate some of the assumptions of CNLRM on which our model is built. The model is evaluated using different econometric criteria namely, stationarity test, LM serial correlation test and Heteroskedasticity test.

Test for serial correlation

The Durbin-Watson statistic (as shown on Table 4.4) for serial correlation shows that the error terms are not serially correlated since the value is approximately equal to 2. The values of the R-Square and Durbin-Watson also indicates that the OLS result is not spurious, since the value of Durbin-Watson is grater that the R-Square.

We also apply the Breusch-Godfrey Serial Correlation LM Test to validate the DW test. The result is shown below:

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.656089	Prob. F(2,36)	0.2051
Obs*R-squared	3.875649	Prob. Chi-Square(1)	0.1440

Source; Researchers' computation using E- views version 9.5.

The Breusch-Godfrey Serial Correlation LM Test indicates that there is no serial correlation in our static OLS model, since the probability of the F-statistic for the test is 0.2051 – greater than the 5 percent significance level. This implies we do not reject the null hypothesis of no serial correlation in the estimated model. This result is in tandem with the Durbin-Watson serial correlation test.

Test for heteroscedasticity

Heteroskedasticity Test: ARCH

F-statistic	5.407965	Prob. F(1,43)	0.1002
Obs*R-squared	5.027239	Prob. Chi-Square(1)	0.0250

Source; Researchers' computation using E- views version 9.5.

The result of the heteroskedasticity test using the Autoregressive Conditional Heteroscedasticity (ARCH) approach suggests that there is no heteroskedasticity in the estimated model. This follows from the fact that the probability value of the F-statistic for the test is 0.1002, being greater than 0.05, we do not reject the null hypothesis leading to the conclusion that the residuals are homoscedastic.

4.2.4 Evaluation of the Vector Error Correction Model

In table 4.5 we report the short run estimates of our model. The result shows that the error correction term is correctly signed with a value of -0.25 and is statistically significant at the 5 percent significance level, this further confirm the existence of long run relationship among the variables of the model. This result indicates that about 25% disequilibrium in the model is corrected within one year.

One period lag of RGDP and unemployment and two-period lag of unemployment have positive and statically significant impact on current migrant remittances while exchange rate in the previous period has negative and statistically significant impact on current migrant

remittances. Migrant remittances will rise by about 2.50%, 4.80% and 5.07% following a unit rise in one period lag of RGDP, employment and two-period lag in unemployment respectively. On the other hand, migrant remittances will fall by about 3.32% following a rise in one period lag in exchange rate.

The R^2 indicates that the explanatory variables account for about 51% changes in migrant remittances in Nigeria in the short run. The general F-value suggests that all the partial coefficients are not simultaneously equal to zero and hence statistically significant at 5% critical value. The Durbin-Watson statistic (as shown on Table 4.5) for serial correlation shows that the error terms are not serially correlated since the value is approximately equal to two.

Next, we test for the dynamic stability of the ECM using the CUSUM of Square, the result is shown below:
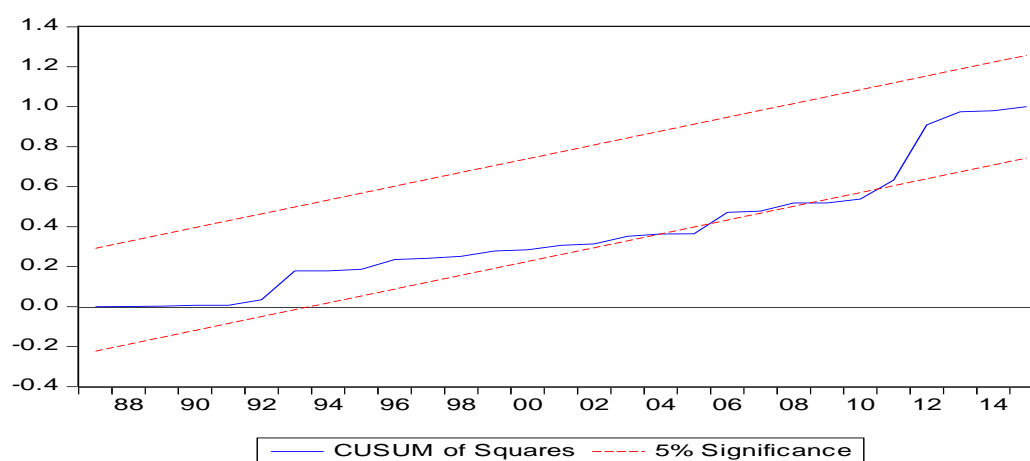
Figure 4.1: Result of CUSUM Test.
Source; Researchers' computation using E- views version 9.5.

The CUSUM Square test for stability shows that the recursive residuals are not completely within the critical 5% significant lines. The results indicate the presence of structural breaks in the variables. This result is in line with Zivot-Andrews breakpoint test conducted earlier which reveal that remittances, population, interest rate and inflation rate are stationary at levels at different lag with breakpoints at 2003, 1982, 1997 and 1997 respectively.

4.2.5 Impulse Response Function

Impulse response functions show the effects of shocks on the adjustment path of the variables. Such shocks might include changes in output, population, nominal exchange rate,

and rise in unemployment etc. Its computation is useful in assessing how shocks to economic variables reverberate through a system.

In this section we present the response of migrant remittance to real GDP, population, unemployment rate, interest rate, exchange rate, inflation rate and financial development.

Figure 4.2: Response of migrant remittances to output shocks
Source; Researchers' computation using E- views version 9.5.

Figure 4.2, shows the response of migrant remittances to a shock in real GDP. The result reveals that migrant remittances respond negatively to output shock from second period to the fifth period. Afterwards, migrant remittances respond positively to output shock and seem to continue indefinitely.

Figure 4.3: Response of migrant remittances to population shock
Source; Researchers' computation using E- views version 9.5.

In figure 4.3, we present the response of migrant remittances to a shock in population. The result indicates that migrant remittances respond negatively to population shock in the second and third period. The response assumed positive in the fourth, fifth and sixth period and then negative again from the seventh period up to the twelfth period. Afterwards, migrant remittances respond positively to population shock and seem to continue indefinitely.

Response of LREM to Cholesky
One S.D. LUNR Innovation
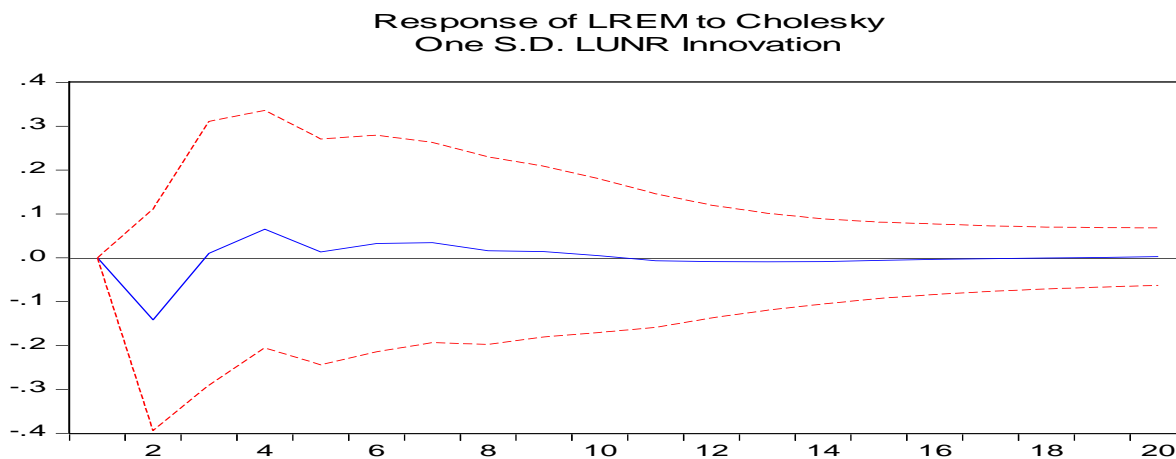
Figure 4.4: Response of migrant remittances to unemployment shocks
Source; Researchers' computation using E- views version 9.5.

Figure 4.4, shows the response of migrant remittances to a shock in unemployment. The result indicates that a one standard deviation shock to unemployment rate decreases migrant remittances in the second period. The response assumed positive from the third period to the tenth period and then changes from negative to positive.

Response of LREM to Cholesky
One S.D. LINT Innovation
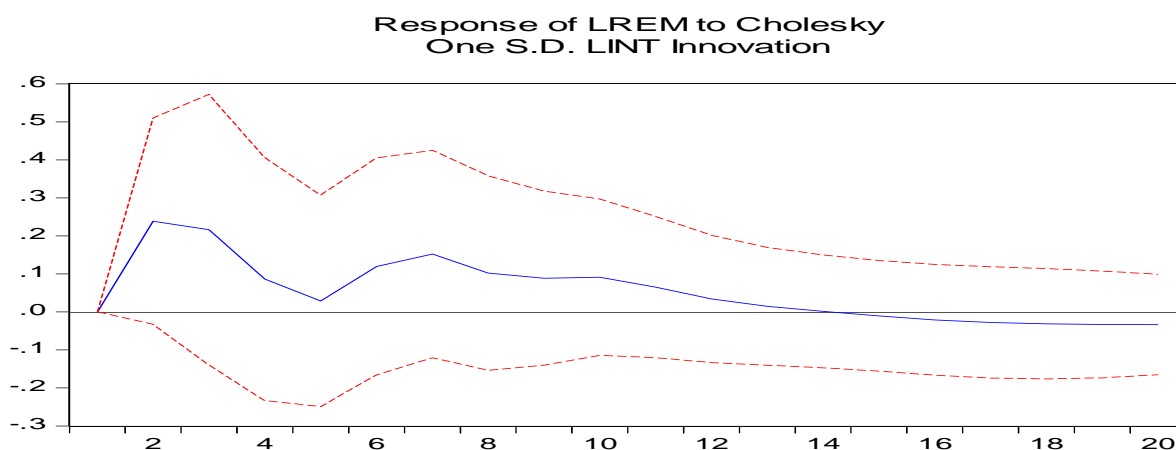
Figure 4.5: Response of migrant remittances to interest Shocks
Source; Researchers' computation using E- views version 9.5.

Figure 4.5 shows the response of migrant remittances to a shock in interest rate over a period of twenty years. The result indicates that a one standard deviation shock to interest rate increases migrant remittances from the second period up to the fourteenth period. Thereafter, the response assumed negative from the fifteenth period to twentieth.
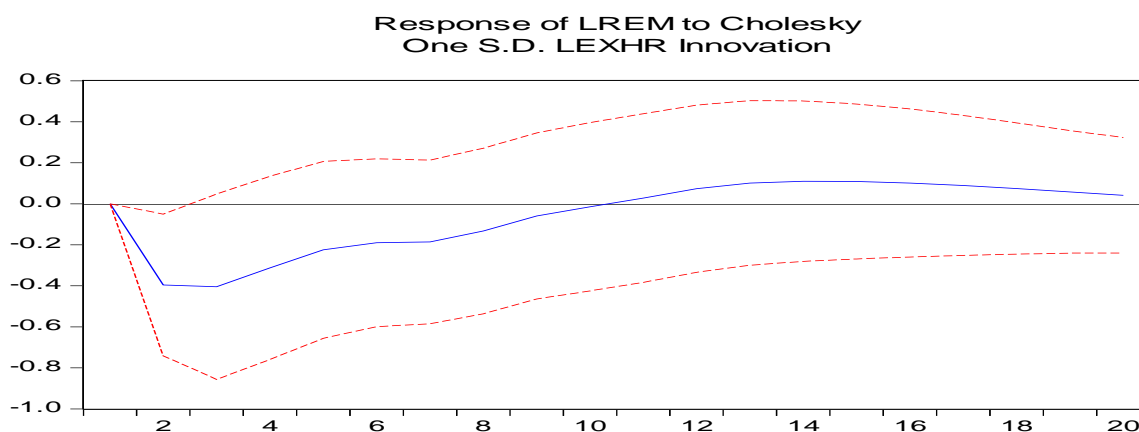
Figure 4.6: Response of migrant remittances to exchange rate shocks
Source; Researchers' computation using E- views version 9.5.

Figure 4.6 shows the response of migrant remittances to a shock in exchange rate over a period of twenty years. The result indicates that a one standard deviation shock to exchange rate decreases migrant remittances from the second period up to the tenth period. Thereafter, the response assumed negative from the eleventh period to twentieth period.
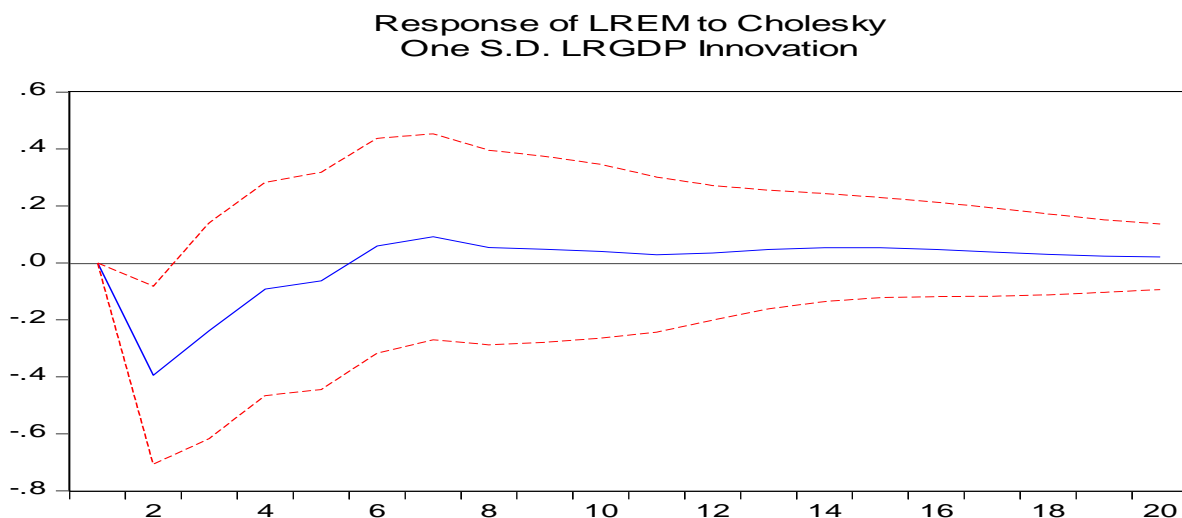

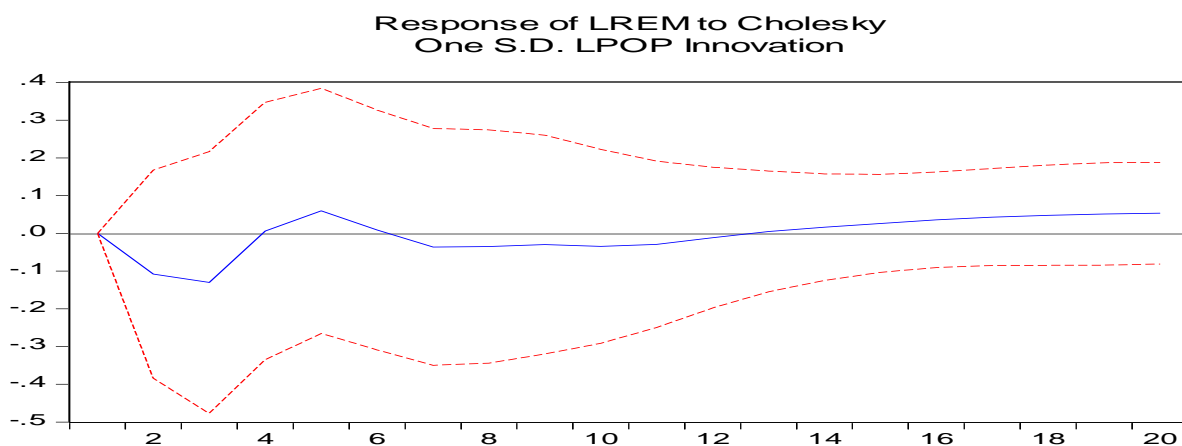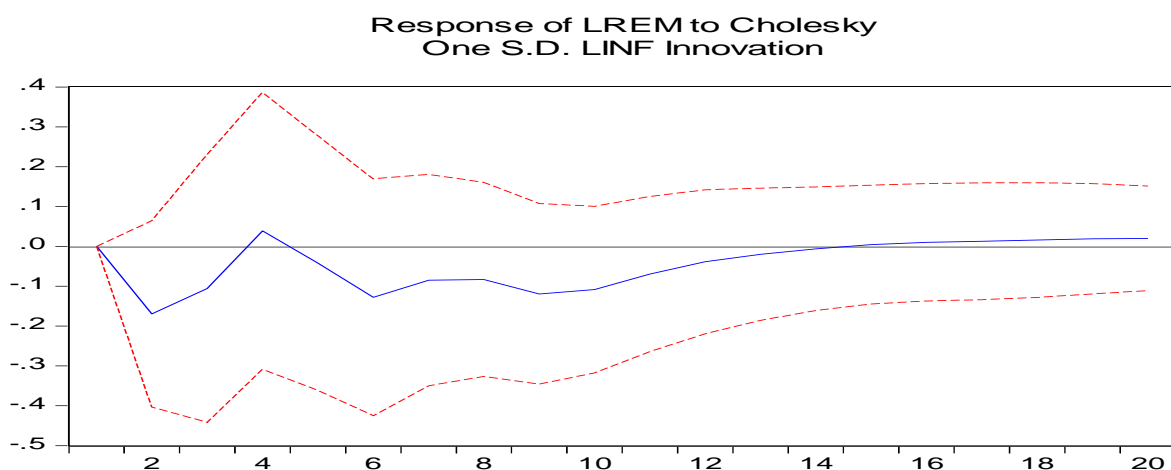**Figure 4.7: Response of migrant remittances to inflation shocks**
Source; Researchers' computation using E- views version 9.5.

Figure 4.7 shows the response of migrant remittances to a shock in inflation rate over a period of twenty years. The result indicates that a one standard deviation shock to inflation rate decreases migrant remittances the second and third period. The responds assumed positive in the fourth period but became negative from the fifth period to the fourteenth period. Thereafter, the response assumed positive from the fifteenth period to twentieth period.
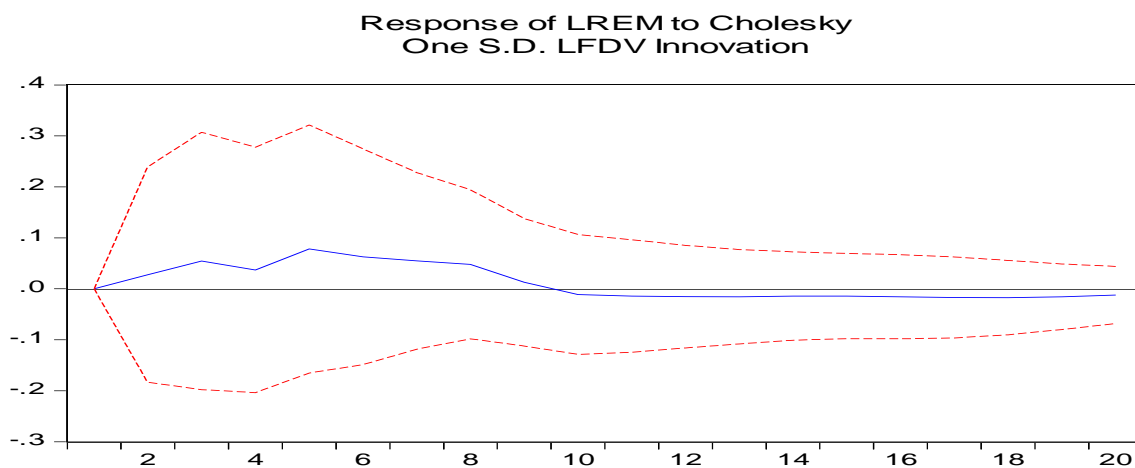
Figure 4.8: Response of migrant remittances to financial development shocks

Source; Researchers' computation using E- views version 9.5.

Figure 4.8 shows the response of migrant remittances to a shock in financial development over a period of twenty years. The result indicates that a one standard deviation shock to financial development increases migrant remittances from the second period up to the tenth period. The responds assumed negative from the eleventh period up to the twentieth period.

4.2.6   Hypotheses Testing

These research hypotheses were tested using the cointegration result, the short and long-run estimates and the impulse response results. We re-state them in their alternative forms as follow:

1. There is a long run relationship between the identified macroeconomic variables (such as real gross domestic product, interest rate, inflation rate, exchange rate, population growth, unemployment rate, and financial development) and size of remittances inflow in Nigeria.

2. The identified macroeconomic variables have significant impacts on migrants' remittances in the long-run.

3. The identified macroeconomic variables have significant impacts on migrants' remittances in the short-run.

4. Migrants' remittances respond to the indentified macroeconomic variables in Nigeria.

Hypothesis one: There is a long run relationship between macroeconomic variables (such as real gross domestic product, interest rate, inflation rate, exchange rate, population growth, unemployment rate, and financial development) and size of remittances inflow in Nigeria.

The results of the countegration analysis show that the null hypothesis of no cointehration cannot be accepted. Thus, we reject the null and accept the alternative hypothesis that there is a long run relationship between macroeconomic variables (such as real gross domestic product, interest rate, inflation rate, exchange rate, population growth, unemployment rate, and financial development) and size of remittances inflow in Nigeria.

Hypotheses two: The identified macroeconomic variables have significant impact on migrant remittances in Nigeria in the long-run.

We begin with the long run estimates. As proposed in Chapter Three, the T-test is used to test for the significance of the individual parameter estimate in the model. It involves comparing the estimated T-statistics with its tabulated value at a chosen level of significance under a general hypothesis.

Table 4.7: Summary of t-test for significance for the long run model

DV: Remittances

Hypothesis	Variable	T-calculated	T-critical	Decision
H_0	LUNR	2.555	2.021	Reject H_0
H_0	LINF	-0.649	2.021	Accept H_0
H_0	LEXHR	-5.894	2.021	Reject H_0
H_0	LFDV	3.034	2.021	Reject H_0
H_0	LINT	-0.989	2.021	Accept H_0
H_0	RGDP	5.519	2.012	Reject H_0
H_0	LPOP	2.959	2.021	Reject H_0

Hypothesis 2 is summarised on Table 4.7. The test reveals that in the long run unemployment rate, exchange rate, financial development, real GDP and population have statistically significant impact on migrant remittance in Nigeria at 5% level of significance while inflation

and interest rate do not have any significant effect on migrant remittances. Thus we conclude that migrant remittances are mostly determined by unemployment rate, exchange rate, financial development, real GDP and population in Nigeria in the long run.

Hypothesis Three: **The identified macroeconomic variables have significant impact on migrant remittances in Nigeria in the short-run.**

We test our hypotheses 3 based on the short run estimates. Using the T-test for significance as discussed in the previous section, the results are summarized on the Table 4.8 below:

Table 4.8: Summary of t-test for significance for the short run model
DV: Remittances

Variable	t-calculated	t-critical	Decision
ΔLREM(-1)	0.87	2.042	Accept H_0
ΔLRGDP(-1)	2.23**	2.042	Reject H_0
ΔLRGDP(-2)	0.75	2.042	Accept H_0
ΔLPOP(-1)	1.22	2.042	Accept H_0
ΔLPOP(-2)	-1.23	2.042	Accept H_0
ΔLUNR(-1)	2.55**	2.042	Reject H_0
ΔLUNR(-2)	2.43**	2.042	Accept H_0
ΔLINT(-1)	1.24	2.042	Accept H_0
ΔLINT(-2)	-0.44	2.042	Accept H_0
ΔLEXHR(-1)	-3.16**	2.042	Reject H_0
ΔLINF(-1)	-0.99	2.042	Accept H_0
ΔLFDV(-1)	0.95	2.042	Accept H_0

Table 4.8 reveals that in the short run only the one period lag of real GDP, one and two period lags of unemployment and one period lag of exchange rate are the statistically significant short run. Thus we conclude that migrant remittances are mostly determined by real GDP, unemployment and exchange rate in Nigeria in the short run.

Hypothesis four: Migrant remittances in Nigeria do not respond to shock in macroeconomic variables.

This hypothesis is tested by making deductions (inferences) from the impulse response functions from Figures 4.2 to 4.7. The impulse response functions indicate that migrant remittances respond to shocks in the macroeconomic drivers of output, population growth,unemployment rate,interest rate, exchange rate, inflation rate and financial development respectively. Thus the null hypothesis is rejected.

4.3 Discussion of Findings

Our research finds heterogeneity among the remittance determinant dynamics in Nigeria. For real GDP, we find a positive relationship for remittance and real GDP levels in the long run. The real gross domestic product passes the positive a prior test and significant test at the 1% level which shows over whelming evidence that the improvement in the gross domestic product is a positive factor in attracting migrant's remittances into Nigeria. The result shows that one percent increase in real GDP will cause migrant remittance to rise by 4.98 percent. (Table 4.4) The positive relationship is consistent with those of Lianos, 1997, El-Shaka and McNabb, 1999. We also find that greater economic activity in the host country encourages migrants to keep their savings in the host country rather than sending them back as remittances—further evidence that portfolio considerations are at play. The latter findings are somewhat unconventional, given that altruism is widely believed to be the dominant motive behind remittances (as pointed out by Lucas and Stark (1985), Rapoport and Docquier (2005)). The findings also call into question the perceived usefulness of remittances in alleviating poverty and buffering against shock (e.g. IMF (2005), World Bank (2006)).

Similarly Omobitan (2012) found a positive relationship for remittance and real GDP (income) level for Nigeria. This suggests deviance from altruistic remittance, and an indication that remittance flow is Procyclical. These benefits in turn increase the supply of investment from both domestic and foreign sources by increasing financial inter mediation (AggarWal, De Mirguc, Kunt & Martinez Peria, 2006; Gupta, Pattilto & Wagh, 2009) evidence from sub-Saharan Africa, which can ultimately contribute to high growth.

Though, Ojapinwa (2012) found a negative relationship between remittance and growth based on two main factors- moral hazard coupled with information asymmetry. The model assumes that recipients receive remittances as an altruistic gesture.

The results reveal an inverse relationship between remittance and inflation in the long run. If remittances generate demand greater than the economy's capacity to meet this demand and this demand falls on non-tradable goods stranbhaar and Vadean (2006) is of the view that remittance can have an inflationary effect on growth. Also given the income effect of remittances, people could afford to work less and diminish labour supply. Though the short run reveals a positive relationship, the short run relationship suggests that remittances received increase as price level in the recipient economy goes up. This is in consonance with

the findings of El- Sakka and McNabb (1999). They opined that remittance increases with a country's price level using the Egyptian example. This suggests that remittance can serve as a response to daily economic activities that effect recipients such as price fluctuation.

In the short-run we find an inverse relationship between remittance and exchange rate implying that as domestic currency appreciate, remittance levels reduce. However, in the long-run we find a positive relationship for exchange rate implying that as domestic currency depreciate, migrants find it as an incentive to remit.

Our findings therefore reflect the possibilities of an investment Portfolio choice in the home country sigh (2010). Mouhoud, Oudinetet and Unan (2008) opined that it is only when motivation to remit is altruistic that migrants will increase remittance in the face of currency depreciation in the country of origin.

However, Ratha (2011) warn policy makers to be particularly alert to Dutch disease in countries in which remittance inflows are large compared with the size of the economy. We opined that countries should adjust to large remittance inflows that are likely to be permanent by maintaining market based exchange rate policies, supporting the production of tradable that might be harmed by over valuation of the exchange rate through infrastructure investments and reducing labour impair competitive.

Financial development has the expected positive sign and is statistically different from zero at 5% level. Thus, this shows that financial development do promote migrant remittances during the period under study. Though Giutiano and Ruiz-Arranz (2005) believe that, in economics in which the financial system is underdeveloped, remittances may alleviate liquidity and credit constraints and help finance small business investments, Thereby effectively acting as a substitute for financial development. Interest rate has no statistically significant impact on migrant remittances. This does not corroborate with the findings of Mouhoud et al (2008). They opined that the impact of interest rates in determining remittance levels occurs mostly on investment motivation. They argued that it is expected to have a positive coefficient for investment motives since it depicts the deviation of domestic interest rate from the international interest rate.

The unemployment rate has the excepted positive sign and statistically different from zero. Thus, from the sign, it can be concluded that domestic labour market situation especially unemployment level is an important determinant of migrants remittance in Nigeria. This

supports Ravetain (1885, 1889), Lee (1966) and Todaro (1969, 1976) laws of migration which states that migrants move from areas of low opportunity to areas of high opportunity. This leads to the conclusion that more jobs in Nigeria would significantly affect remittance and therefore cause migration pressure to decline.The positive sign of population growth is clear evidence that increase in the population growth rate is a positive factors in attracting migrants' remittance into Nigeria. Nigeria has a population of about 173 million (World Bank, 2014), accounting for nearly one-fourth of the total population in sub-Saharan Africa and ranking as the seventh most populous in the world (World Bank, 2014b).

The number of emigrants from Nigeria as a percentage of the population, according to the World Bank (2011), was 0.6% as at 2010. In 2013 Nigeria received remittance inflows of around USS $ 1 billion (World Bank 2014b) representing 0.4% of the nations GDP.

It was found that the man empirical determinants of migrant remittances were real GDP, unemployment, population growth; inflation rate, exchange rate, interest rate and financial development exert a positive effect on migrants' remittance in the long run while inflation and interest rate do not have any significant effect on migrant remittances.

4.4 Policy Implications of findings

The findings are of major significance for policy makers who seek to attract international remittances in order to encourage investment and increase economic growth. In Nigeria, the stability of remittances inflow has become an important policy issue due to its growing impacts on employment generation, development financing, BOP stability and liquidity of the banking system. Following this policy perspective, this study empirically examines the macroeconomic determinants of migrants remittances in Nigeria from 1970-2016. Macroeconomic variables like GDP, exchange rate, financial development, inflation rate, unemployment rate, population growth and interest rate have significantly determined the size of remittances inflow to Nigeria. Based on the findings, we observed that Nigeria as a labour exporting country can influence the size of the inflow of remittances by means of appropriate policies of building hassle free infrastructure, searching new overseas markets, further improvement of formal channel of fund transfer and creating more investment avenues for the migrants.

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The inflow of remittances impedes monetary management and can rekindle inflationary pressures. In a small economy with a shallow foreign exchange market and insufficient

instruments for the conduct of monetary policy, the sheer magnitude of foreign currency inflows and their pronounced seasonal pattern create significant uncertainties for monetary management.In the environment of unstable money demand and a largely impulsive transmission mechanism, the need to sterilize the large inflows of foreign exchange can result in an overshooting of reserve money targets and translate into higher inflation.

Remittances outside the banking system may be a more fertile ground for money laundering than remittances through the banking system. The development of uncontrolled money transmitting arrangements, which are largely outside central bank's supervision and which account for similar amount of transfers as the banking system itself, may suggest the existence of parallel payments system in the economy. However, limiting such informal transfer mechanisms in the name of fighting illegal activities requires careful handling as it can drive mostof such transactions even further underground and lead to more disintermediation.

These findings have important implications. Policy makers who want to generate more remittance receipts through official channels are well advised to tackle financial sector deficiencies, ease current account restrictions, discontinue dual exchange rate practices and convince main sending countries to do the same. Remittances should be encouraged as they can yield important economic benefits to recipient countries. However, they might not play a major role in limiting vulnerability to shocks and they cannot substitute for good policies and structural reforms.

In general remittances complicate the implementation of effective macroeconomic policy and lead to a policy trap. In Nigeria the implementation of monetary policy has faced some difficulties. This is particularly true given the high dollarization partly fueled by remittances and an undeveloped financial system. The capability of monetary policy to influence economic activity and inflation is still limited, as important channels of monetary transmission are not fully functional. In particular, the interest rate channel remains weak, even though it has a positive coefficient for investment motives.

CHAPTER FIVE
SUMMARY, CONCLUSION AND POLICY RECOMMENDATION

This chapter presents the summary of the study, conclusions drawn from the findings of the study, recommendations suggested, contributions of the study to knowledge and agenda for further studies.

5.1 Summary

Migrants' remittances constitute a large source of foreign transfers to the developing world and are stronger than the public aid and private capital transfers (Mouhoud et al, 2008). This account for the reasons, international organizations or home and host country governments consider remittance flows as an engine of development. On the determinants and the impact of remittances, the theoretical literature presents very heterogeneous results both at the micro and at the macroeconomic level. Also, numerous empirical literature on this issue present divergent views.

It is against this background that this study assessed the macroeconomic determinants of migrant remittances inflow in Nigeria. This study adds to the growing body of Literature on the empirical determinant of migrant remittances in Nigeria using annual time series data set spanning from 1970 – 2016. The study combined error correction techniques and vector autoregressive framework.The preliminary test of stationarity was conducted using first, the Zivot-Andrws unit root approach that incorporates structural break in the analysis. The result indicates that the variables are integrated of order zero and one with breakpoints at various periods. As a follow up to Zivot-Andrews unit test, the modified Ng-Perron unit root test is also implemented. The result also corroborates that of Zivot-Andrews that the variables are mixture of I(0) and I(1). However, there is a conflict on which variable is I(0) or I(1). Zivot-Andrews test reveals that migrant remittances, population, interest rate and inflation rate are the I(0) processes. In order to reconcile this seemingly conflict, we tested using the conventional ADF and PP unit root tests. The results are exactly in line with those obtained using the modified Ng-Perron approach. What is clear from the entire tests is that the variables are integrated of order zero and one, and each of them has a breakpoint at different period.

Having established that the variables are mixture of I(0) and I(1) processes, we then move to test for the existence of long-run relationship among the variables. The ARDL Bound Testing

approach proposed by Pesaran and Shin (1999) and Pesaran et al. (2001) is the most appropriate since it is more efficient in handling mixture of I(0) and I(1) variables. To implement this, we first determine the appropriate lag structure for the ARDL model in equation 15, we also make sure that the errors in model are serially independent and that the model is dynamically stable before the Bound Testing.

The Schwarz Information Criterion (SIC) and the Akaike Information Criterion (AIC) indicates that a one-period and a three-period lag length model are appropriate. The autocorrelation test reveals that the error terms are serially independent. Again the inverse roots of each of the associated characteristic equations (see the inverse roots of AR/MA polynomial(s) below), suggests that the AR (3) model is dynamically stable since these roots are all inside the unit circle.

Having established the appropriate lag length(s) and having shown that the AR (3) model is dynamically stable and the errors are serially independent, we then proceed to perform the bound testing. The ARDL Bound Test indicates that the null hypothesis of no cointegration is rejected for ARDL (3, 1, 2, 3, 3, 2, 2, 3). Hence, we conclude that there is a long-run relationship among the variables (remittances, real GDP, population, unemployment, interest rate, exchange rate, inflation rate and financial development) during the period 1970 – 2016 amidst strong evidence of structural changes in Nigerian economy. This result implies that these variables have been moving together over time, despite the structural changes in the system. Hence, they have long-runrelationship.

Given the existence of a long run relationship among the variables, two types of models are estimated. First is a static OLS model at level to obtain the long run equilibrating relationship between migrant remittances and its modeled drivers. Second we estimate a vector error correction model to account for short run dynamics of the relationship between the variables. We further simulate the responses of migrant remittances to shock in real GDP, population, unemployment, interest rate, exchange rate, inflation rate and financial development over a period of twenty years using impulse response function (IRF). The results show that migrant remittances respond differently to these variables over the period.

5.2 Conclusion

Remittances are generally thought to be counter- cyclical, pro-cyclical and ascyclical.The stability of remittance flows amidst financial crises and economic downturns make them a

reliable sourse of foreign exchange earnings for developing countries. Workers' remittances are vital external soures of foreign exchange for Nigeria. On the basis of this, this study concludes that migrants are more willing to send and invest funds in Nigeria if inflation is kept under control and exchange rate is reasonably stable. Remittances positively influence the investment climate and employment, stimulates financial development and alleviates financial constraints in Nigeria.Therefore, remittances contributed to domestic capital accumulation through its effects on macroeconomic stability and makes the economy less volatile.

This study shows a positive relationship between remittances and real gross domestic product. Remittances can boost aggregate demand and thereby spur economic activity. Domestic labour market situation (unemployment) are important determinant of migrant remittances as migrant stock in the host country is a crucial determinant of remittances. The high the number of workers in the host country, the greater the size of remittances.

The interest rate in the country of origin is satisticaly insignificant. An increase in the latter has no effect on the amount of remittances sent by migrants.

Three hypotheses were tested in the course of the study. The main analytical techniques employed in the study are cointegration technique and error correction technique. Building on them, we estimate both the long and short run models to investigate the determinant of migrant remittances in Nigeria. The study also employed the impulse response function to characterize the responses of migrant remittance to real GDP, population growth, unemployment rate, interest rate, exchange rate, inflation rate and financial development in Nigeria over the period.

The empirical evidence shows that migrant remittances are determined by real GDP, population, unemployment rate, exchange rate and financial development in the long run. The short run estimate shows that one period lag of real gross domestic product and unemployment and two-period lag of unemployment have positive and statically significant impact on current migrant remittances while exchange rate in the previous period has negative and statistically significant impact on current migrant remittances. Thus in the short run migrant remittances are mostly determined by real GDP, unemployment rate and exchange rate.

Furthermore, the second order test conducted on the model shows that the estimates are best linear unbiased estimation (BLUE) therefore the estimates are reliable and can be used to make predictions and/or forecasting.

5.3 Recommendations

In view of the positive relationship between GDP and remittances in Nigeria, policy makers and organized private sectors should strive to encourage remittance receiving households to either save larger shares of their remittance income in the formal financial sector or invest it in productive capital.

The result reveals an inverse relationship between remittance and inflation in the long run and positive in the short run respectively. It is recommended that authorities should design appropriate policies like fiscal measures and the sterilization of remittances inflows as a short-term response to deal with such situations.

Similarly, in the short-run, we find an inverse relationship between remittance and exchange rate and in the long-run a positive relationship for exchange rate. We recommend that policy makers should adjust to large remittance inflows that are likely to be permanent by maintaining market based exchange rate policies, supporting the production of tradable that might be harmed by over valuation of the exchange rate through infrastructure investments and reducing labour impair competitive.

Financial development promotes migrant remittances during the period under study and remittances can alleviate liquidity and credit constraints and help finance small business investments. It is recommended that policy makers endeavour to generate more remittance receipts through official channels by tackling financial sector deficiencies, discontinue dual exchange rate practices and convince main sending countries to do the same.

The unemployment rate has the excepted positive sign and statistically different from zero. We strongly recommend that creating more jobs in Nigeria would significantly affect remittance and therefore cause migration pressure to decline.

Regulations affecting remittances should be made to be more transparent and predictable.

In order to create a knowledge base for policies, data should be gathered on Nigerians living abroad as well as the development contributions of migrants' remittances on the state and federal level.

5.4 Contribution of the Study to Knowledge.

This work contributed more broadly to understanding how migrant remittances responds to unexpected transitory changes on macroeconomic variables such as real gross domestic product, exchange rates, inflation rates, interest rates, unemployment rates, population growth and financial development. The work further presented empirical results and conducted a number of analyses to clarify the interpretation of the result.Further,the researcher prescribed policies that would help promote remittances inflows aiming at achieving higher growth, generation of employment and alleviating poverty.

As a final note the research emphasis that migrant remittances flows are countercyclical or procyclical and its nature and size on stabilizing the economy depend on its relationship with these macroeconomic variables.

5.5 Suggestions for Further Studies

Our research does not capture the contributions of remittances to economic development or welfare, as this can be done best using disaggregated data. Furthermore, our data captures largely the formal channel leaving informal channel not captured. According to Ratha (2006), informal channel amount for about 50% of remittances. This data challenge remains a bane of remittance studies at macro level and warrants caution in policy formation. Booth-Royd and Chapman (1988) highlight this as a common issue in the academic and research environment especially in the field of development issues and developing economics perhaps access to more robust data in future will provide better insight into the foregoing phenol

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APPENDIX 1: Individual Unit Root Result

Null Hypothesis: D(LREM) has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=0)
Sample (adjusted): 1971 2016
Included observations: 45 after adjustments

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-21.5397	-3.28068	0.15231	4.23698
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	0.761475

Null Hypothesis: D(LRGDP) has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=9)
Sample (adjusted): 1971 2016
Included observations: 45 after adjustments

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-21.3478	-3.23900	0.15173	4.43827
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	0.069128

Null Hypothesis: D(LPOP) has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=0)
Sample (adjusted): 1971 2016
Included observations: 45 after adjustments

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-19.9738	-3.15976	0.15820	4.56493
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	3.61E-05

Null Hypothesis: D(LUNR) has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=9)
Sample (adjusted): 1971 2016
Included observations: 45 after adjustments

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-21.0564	-3.24161	0.15395	4.34655
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	0.005322

Null Hypothesis: LINT has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=9)
Sample: 1970 2016
Included observations: 46

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-22.2509	-3.33539	0.14990	4.09593
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	0.260496

Null Hypothesis: D(LEXHR) has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=9)
Sample (adjusted): 1971 2016
Included observations: 45 after adjustments

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-21.1681	-3.25232	0.15364	4.31082
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	0.074692

Null Hypothesis:LINF has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=9)
Sample: 1970 2016

Included observations: 46

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-17.6652	-2.97150	0.16821	5.16130
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	0.392661

Null Hypothesis: D(LFDV) has a unit root
Exogenous: Constant, Linear Trend
Lag length: 0 (Spectral GLS-detrended AR based on SIC, maxlag=0)
Sample (adjusted): 1971 2016
Included observations: 45 after adjustments

		MZa	MZt	MSB	MPT
Ng-Perron test statistics		-21.7668	-3.29871	0.15155	4.18816
Asymptotic critical values*:	1%	-23.8000	-3.42000	0.14300	4.03000
	5%	-17.3000	-2.91000	0.16800	5.48000
	10%	-14.2000	-2.62000	0.18500	6.67000

*Ng-Perron (2001, Table 1)

HAC corrected variance (Spectral GLS-detrended AR)	0.044636

THE RESULT OF COMBINED PP UNIT ROOT TEST

At Level

		LREM	LRGDP	LPOP	LUNR	LINT	LEXHR	LINF	LFDV
With Constant	t-Statistic	-1.3521	-0.2554	0.4327	-0.5717	-7.2167	-0.3329	-3.7530	-2.5505
	Prob.	*0.5971*	*0.9233*	*0.9823*	*0.8666*	*0.0000*	*0.9116*	*0.0064*	*0.1108*
		n0	n0	n0	n0	***	n0	***	n0
With Constant & Trend	t-Statistic	-2.4100	-1.9192	-1.9876	-1.5103	-7.3213	-1.8981	-3.7006	-2.5139
	Prob.	*0.3697*	*0.6281*	*0.5921*	*0.8113*	*0.0000*	*0.6390*	*0.0325*	*0.3203*
		n0	n0	n0	n0	***	n0	**	n0
Without Constant & Trend	t-Statistic	1.2862	3.1948	19.4758	0.9848	0.1800	1.2308	-0.6993	-0.1023
	Prob.	*0.9476*	*0.9995*	*1.0000*	*0.9116*	*0.7338*	*0.9420*	*0.4083*	*0.6430*
		n0	n0	n0	n0	n0	n0	n0	n0

		d(LREM)	d(LRGDP)	d(LPOP)	d(LUNR)	d(LINT)	d(LEXHR)	d(LINF)	d(LFDV)
At First Difference									
With Constant	t-Statistic	-7.7843	-5.4919	-4.7627	-5.2490	-42.6177	-5.3906	-17.7900	-6.5505
	Prob.	***0.0000***	***0.0000***	***0.0003***	***0.0001***	***0.0001***	***0.0000***	***0.0000***	***0.0000***
		***	***	***	***	***	***	***	***

With Constant & Trend	t-Statistic	-7.8280	-5.4275	-4.7434	-5.2481	-44.0773	-5.3283	-17.6604	-6.6839
	Prob.	0.0000	0.0003	0.0022	0.0005	0.0000	0.0004	0.0000	0.0000
		***	***	***	***	***	***	***	***
Without Constant & Trend	t-Statistic	-7.5023	-4.5121	-0.4249	-5.1820	-39.1599	-4.7344	-17.7424	-6.6405
	Prob.	0.0000	0.0000	0.5241	0.0000	0.0000	0.0000	0.0000	0.0000
		***	***	n0	***	***	***	***	***

THE RESULT OF COMBINED ADF UNIT ROOT TEST

At Level

		LREM	LRGDP	LPOP	LUNR	LINT	LEXHR	LINF	LFDV
With Constant	t-Statistic	-1.4233	-0.1726	0.6197	-0.5717	-7.0910	-0.2311	-3.9503	-2.4440
	Prob.	0.5626	0.9345	0.9888	0.8666	0.0000	0.9267	0.0037	0.1359
		n0	n0	n0	n0	***	n0	***	n0
With Constant & Trend	t-Statistic	-2.4278	-1.6668	-2.8740	-1.2884	-7.0879	-1.6325	-3.9329	-2.8363
	Prob.	0.3610	0.7495	0.1807	0.8782	0.0000	0.7641	0.0186	0.1927
		n0	n0	n0	n0	***	n0	**	n0
Without Constant & Trend	t-Statistic	0.8432	3.8420	26.2219	1.1003	-0.1104	1.8675	-0.9160	-0.1740
	Prob.	0.8894	0.9999	1.0000	0.9271	0.6399	0.9838	0.3142	0.6179
		n0	n0	n0	n0	n0	n0	n0	n0

At First Difference

		d(LREM)	d(LRGDP)	d(LPOP)	d(LUNR)	d(LINT)	d(LEXHR)	d(LINF)	d(LFDV)
With Constant	t-Statistic	-7.5067	-5.4317	-4.7068	-5.2384	-8.0937	-5.3876	-7.1305	-6.3380
	Prob.	0.0000	0.0000	0.0004	0.0001	0.0000	0.0000	0.0000	0.0000
		***	***	***	***	***	***	***	***
With Constant & Trend	t-Statistic	-7.4216	-5.3632	-4.6837	-5.2764	-8.0031	-5.3244	-7.1188	-6.3461
	Prob.	0.0000	0.0004	0.0026	0.0005	0.0000	0.0004	0.0000	0.0000
		***	***	***	***	***	***	***	***
Without Constant & Trend	t-Statistic	-7.4154	-4.3361	-0.4333	-5.1836	-8.1928	-4.6535	-7.2230	-6.4100
	Prob.	0.0000	0.0001	0.5207	0.0000	0.0000	0.0000	0.0000	0.0000
		***	***	n0	***	***	***	***	***

Notes: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%. and (no) Not Significant
*MacKinnon (1996) one-sided p-values.

Appendix 2: ARDL BOUND TESTING RESULTS

ARDL(3,1,2,3,3,2,2 ,2)	1.722844	2.839917	-9.179720	3.208706	0.024700
ARDL(3,1,2,3,3,2, 2,3)	**1.197032**	**2.355479**	**2.862322**	**6.451339**	**0.001300**
ARDL(3,1,2,3,3,2,3 ,1)	2.057500	3.174573	-16.20750	1.752529	0.166100
ARDL(3,1,2,3,3,2,3 ,2)	1.749749	2.908195	-8.744727	3.078052	0.031700
ARDL(3,1,2,3,3,2,3 ,3)	1.242320	2.442139	2.911289	5.933418	0.002500
ARDL(3,1,2,3,3,3,1 ,1)	2.074023	3.149723	-17.55448	1.569742	0.210500

Appendix 3: STATIC OLS RESULT

Dependent Variable: LREM
Method: Least Squares
Date: 11/17/17   Time: 12:32
Sample: 1970 2016
Included observations: 46

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRGDP	4.979189	0.902126	5.519393	0.0000
LPOP	3.778556	1.276974	2.958992	0.0442
LUNR	2.988851	1.169377	2.555934	0.0431
LINT	-0.283691	0.286852	-0.988982	0.3289
LEXHR	-5.201993	0.882658	-5.893558	0.0000
LINF	-0.132724	0.204409	-0.649307	0.5200
LFDV	1.509464	0.497513	3.034019	0.0295
C	-17.44211	6.511868	-2.678511	0.0109

R-squared	0.841831	Mean dependent var	19.77732
Adjusted R-squared	0.812695	S.D. dependent var	1.971813
S.E. of regression	0.853376	Akaike info criterion	2.677539
Sum squared resid	27.67354	Schwarz criterion	2.995563
Log likelihood	-53.58339	Hannan-Quinn criter.	2.796673
F-statistic	28.89280	Durbin-Watson stat	1.539238
Prob(F-statistic)	0.000000		

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Appendix 4: Data for the Study

Period	LRGDP	LPOP	LUNR	LINT	LEXHR	LINF	LFDV
1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	-0.394362	-0.108105	-0.141395	0.238669	-0.396051	-0.169514	0.027752
	(0.15607)	(0.13787)	(0.12619)	(0.13567)	(0.17284)	(0.11693)	(0.10573)
3	-0.237669	-0.130169	0.010296	0.216463	-0.404258	-0.105845	0.054478
	(0.18936)	(0.17333)	(0.15034)	(0.17794)	(0.22593)	(0.16804)	(0.12622)
4	-0.091636	0.006261	0.065283	0.086202	-0.312532	0.038831	0.036916
	(0.18721)	(0.17049)	(0.13550)	(0.15991)	(0.22338)	(0.17386)	(0.12046)
5	-0.062930	0.059515	0.013330	0.029025	-0.224683	-0.042233	0.078060
	(0.19073)	(0.16237)	(0.12873)	(0.13928)	(0.21561)	(0.15988)	(0.12168)
6	0.059915	0.008752	0.032669	0.119296	-0.190145	-0.127862	0.062776
	(0.18855)	(0.15890)	(0.12339)	(0.14263)	(0.20464)	(0.14868)	(0.10583)
7	0.091806	-0.036081	0.034709	0.152314	-0.186233	-0.084819	0.054680
	(0.18082)	(0.15687)	(0.11413)	(0.13638)	(0.19964)	(0.13252)	(0.08657)
8	0.053806	-0.034929	0.016165	0.102106	-0.132671	-0.083081	0.048072
	(0.17092)	(0.15455)	(0.10700)	(0.12799)	(0.20192)	(0.12176)	(0.07311)
9	0.047582	-0.029820	0.014171	0.088650	-0.059134	-0.119231	0.012753
	(0.16330)	(0.14495)	(0.09735)	(0.11440)	(0.20249)	(0.11340)	(0.06253)
10	0.040380	-0.034462	0.004808	0.091158	-0.014309	-0.108594	-0.011289
	(0.15254)	(0.12846)	(0.08746)	(0.10276)	(0.20508)	(0.10454)	(0.05881)
11	0.028871	-0.029121	-0.006547	0.065153	0.027855	-0.069294	-0.014324
	(0.13612)	(0.11010)	(0.07622)	(0.09288)	(0.20571)	(0.09731)	(0.05523)
12	0.035098	-0.011496	-0.008645	0.034049	0.073488	-0.038718	-0.015409
	(0.11804)	(0.09320)	(0.06421)	(0.08371)	(0.20386)	(0.09027)	(0.05031)
13	0.047050	0.005035	-0.009109	0.014624	0.101223	-0.019876	-0.015734
	(0.10411)	(0.08001)	(0.05518)	(0.07751)	(0.20065)	(0.08292)	(0.04630)
14	0.053726	0.016330	-0.008503	0.001289	0.110081	-0.006068	-0.014291
	(0.09466)	(0.07061)	(0.04848)	(0.07424)	(0.19562)	(0.07745)	(0.04328)
15	0.053747	0.026255	-0.005747	-0.010654	0.108870	0.004452	-0.014214
	(0.08786)	(0.06498)	(0.04347)	(0.07280)	(0.18891)	(0.07453)	(0.04181)
16	0.047279	0.035725	-0.003492	-0.020983	0.101418	0.010142	-0.015606
	(0.08278)	(0.06321)	(0.04022)	(0.07282)	(0.18054)	(0.07372)	(0.04127)
17	0.038143	0.043001	-0.001953	-0.027761	0.089417	0.012725	-0.017142
	(0.07756)	(0.06426)	(0.03740)	(0.07313)	(0.17061)	(0.07330)	(0.03972)
18	0.029825	0.047871	-0.000512	-0.031343	0.074367	0.015755	-0.017370
	(0.07097)	(0.06638)	(0.03526)	(0.07252)	(0.15985)	(0.07194)	(0.03647)
19	0.023879	0.051265	0.000913	-0.033297	0.057988	0.018965	-0.015542
	(0.06378)	(0.06785)	(0.03386)	(0.07017)	(0.14949)	(0.06926)	(0.03217)
20	0.021358	0.053352	0.002721	-0.033325	0.041454	0.020062	-0.012384
	(0.05774)	(0.06739)	(0.03273)	(0.06607)	(0.14061)	(0.06548)	(0.02805)

Cholesky Ordering: LREM LRGDP LPOP LUNR LINT LEXHR LINF LFD LFDV