Impact of Migration and Remittances on Economic Growth in Nigeria

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DOI: https://dx.doi.org/10.47772/IJRISS.2023.7841

Received: 26 July 2023; Accepted: 08 August 2023; Published: 06 September 2023

ABSTRACT

Remittance flows have the potential to greatly improve the livelihoods of receiving households by smoothing their consumption and enabling investments back home. They can facilitate economic stability, improve creditworthiness, and attract investments to promote economic growth and reduce poverty rates for recipient nations. From World Bank Statistics, Nigeria was 8th on the list of top remittances from low and middle-income countries. The study has undertaken the investigation of a relationship between economic growth and remittance. The economic growth variable used in this study is proxy by GDP while explanatory variables are remittance, trade openness, foreign direct investment, government expenditure, capital formation. The study also investigated the causality among the variables used in the study. Using The ARDL estimation technique owing to the stationarity of all the variables at both level, first differencing and void of second difference series, the result of this analysis confirmed the presence of long run convergence among the variables under consideration. The short run result was presented was evident that remittance has a positive and statistically impact on economic growth under the period of study. However the result shows that there is presence of a long run convergence among the selected variables and the respective dependent variables. This suggests that there is a presence of long run relationship among the variables in consideration. Having confirmed the presence of long run convergence among the variables under consideration, the short run result was presented above which is evident that remittance have a positive and statistically impact on economic growth under the period of study. The long run estimates reveal that government spending has a positive and significant impact on economic growth. Moreover, it was deduced from the regression result conducted that trade openness and foreign direct investment has a positive impact on economic growth under the period of study. There was found a uni direction between the two variables. It is revealed that remittances does not cause changes in economic growth under the period of study. This was further supported by the regression result of positive relationship between government spending and economic growth under the period of study. It was therefore recommended that the Nigerian government should budget and expend more resources on productive sector of the economy especially on infrastructure which would attract the right Foreign Direct Investment (FDI) into the country and boost more growth. Also, the Nigerian government should set up a body to review the spending and allocation of remittances into the country and an independent commission be set up by the federal government to be saddled with the responsibility of coordinating and harnessing remittance flows into the country.

Key Words: Migration, Remittance, Growth Nigeria, Growth, Movement

INTRODUCTION

- **Background to the Study**

Migration is defined as the movement of people from one location to another in a country or from one country to another for the purpose of establishing a new residence (IOM, 2011; ACP Observatory on Migration, 2011). According to (Iheanacho & Ughaerumba, 2015) migration can be traced to the existence

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue VIII August 2023

of the first set of humans on earth. Migration has taken various patterns in the course of slave trade, colonization, urbanization, industrialization and globalization. Movement of persons (migrants) from one place to another has been a trend adopted by various individuals. Although the definition of migration varies from different perspectives, there is a consensus that it involves the movement of people across a recognized political boundary to establish permanent or semi-permanent residence. The period of residence also varies, but most experts believe that six months of residence in a new location is enough to categorize one as a migrant.

The number of migrants from sub-Saharan Africa, mainly from Nigeria, has increased over time. In addition to being a significant potential economic force through remittances, Nigerians living abroad play a significant role in the economy as skilled repatriates (Elebiju & Fatokunbo, 2020).

Remittances on the other hand are defined by the United Nations Development Program (UNDP) as discrete transfers from migrant workers (workers who have lived abroad for at least a year) to a recipient in that recipient's home country or place of origin (UNDP, 2020). Remittances may be kept and invested in cases when they are not needed for urgent consumption demands, which eventually benefits the economies of the worker's home country.

Article 41 of the Nigerian Constitution recognises freedom of movement as a fundamental right. Thus, except in instances where an individual has or is reasonably suspected to have committed a criminal offence and where a court with the appropriate jurisdiction orders that they should be prevented from leaving the country, all Nigerian citizens are free to emigrate from the country..

Some studies indicate positive impacts of remittances, including on the economy (Iheke, 2012), on unemployment (Okeke, 2021), and on household welfare (Ajaero et al., 2018), amongst other outcomes. Other studies highlight barriers to positive impacts on development, for instance, political instability, ineffectiveness of the financial sector, bureaucracy, and corruption (Oluwafemi and Ayandibu, 2014).

Notably, a large proportion of migrants relocate to high-income countries. While it is expected that the policymakers and other stakeholders will rise to the occasion to formulate and execute policies that will improve the economy and cut down the rate of migration out of the country, the reverse is the case. The net migration rate in Nigeria has maintained a negative figure over the past 30 years implying that the emigration rate is more than the immigration rate. More worrisome is the fact that the negative value has continued to increase over the years. This reveals the desperation in Nigerians to leave their country. A major argument for migration is remittances from abroad. (World Bank, 2016) further revealed that Nigeria is the top remittance-receiving country in Africa and fifth in the world.

In 2022, international remittances to low- and middle-income countries (LMICs) amounted to US$647 billion. Such average monthly transfers of US$200-US$300 sent by migrant workers support many basic households and prove transformational for both households and local communities, enabling many families to achieve their 'own' Sustainable Development Goals (SDGs).

Furthermore, migrant remittances represent the most important contribution of the diaspora to the development of the countries of departure (Romano and Traverso 2020; Zimmermann 2017)

Referring to the traditional sources of finance, the migrant remittances represent about 7.79% of GDP in 2016, while official development assistance and foreign direct investment were estimated only at US$768 million and US$822 million, respectively, for all ECOWAS countries (WDI 2020).

Remittance flows have the potential to greatly improve the livelihoods of receiving households by smoothing their consumption and enabling investments back home. They can facilitate economic stability, improve creditworthiness, and attract investments to promote economic growth and reduce poverty rates for recipient nations.

Remittances are becoming increasingly important sources of income and, potentially, investment capital for households, as well as a stable source of external finance for governments in these countries. This inflow is the second largest source of foreign capital after exports and is quite large compared to foreign aid and FDI. (Samuel.O.G , 2023)

Remittances can also aid the enhancement of financial sector growth on the notion that some of these remittances are converted and deposited with banks thus making the funds available for lending to the private sector and this, in turn; facilitate economic growth (Bashir, 2020).

In Sub-Saharan Africa, the remittance inflows constitute 2.5% of GDP in 2020, amounting to $37 billion in the year under review. Remittance inflows to Sub-Saharan Africa soared from 14.1 percent to $49 billion in 2021 following an 8.1 percent decline in the prior year. Around 60 percent of total inflows originate from advanced economies such as France, Italy, the United Kingdom, and the United States. In West Africa, the country that received the largest remittance inflows was Nigeria amounting to $17.21 billion in 2020, depicting a 6.6% decline before the COVID-19 pandemic. According to the World Bank, Nigeria accounts for 50% of remittances to sub-Saharan Africa, with an increase in its remittances to $17.6 billion, which increases SSA remittance inflows to $45 billion by 2021.

Researchers have found both positive and negative impacts of remittances on economic growth (Ari, 2020; Buhari, Muhils and Osman, 2018; Chowdhury, 2015).

There is no convergence to the impact of remittances on economic growth given the various findings that have emanated. This is because contributory and causal factors have ranged from Demography, geography and timezone. (Ari, 2020) and (Olayungbo and Quadri, 2019) stated that. “the impact of remittances depends on a country’s socioeconomic conditions.”

Earlier debates on the migration-growth nexus argued that remittances are used mainly for subsistence consumption and other non-productive spending. In contrast, (Quartey et al, Citation 2018) confirmed that remittances are invested in productive investments, such as purchasing land, establishing small enterprises, and farm investments. This finding indicates that the inflow of remittance can positively impact investment via savings.

According to the IMF, Remittances are becoming increasingly important sources of income and, potentially, investment capital for households, as well as a stable source of external finance for governments in these countries. This inflow is the second largest source of foreign capital after exports and is quite large compared to foreign aid and FDI.”

Dimensioning the gains of migration, the World Bank says that, “Global welfare gains from increased cross-border labor mobility could be several times larger than those from full trade liberalization. Migrants and their families tend to gain the most in terms of increases in income and better access to education and health services. However, these gains are hindered by discrimination and difficult working conditions that immigrants from low and middle-income countries face in host countries.”

Migrant workers make an invaluable contribution to SDGs through remittances and investments. In particular, they contribute to ending poverty and hunger; promoting good health, quality education, clean water and sanitation, decent work and economic growth; and reducing inequalities.

Strategic partnerships and progress on remittances go hand in hand. Partnerships among public and private sector stakeholders have paved the way for lowering the cost of remittance transfers and provided financial services for migrants and their families.

Digital remittances have the power to help transform rural economies while also reducing costs for remitters and enabling beneficiaries in rural areas to track and access funds quickly without having to travel long distances.”

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue VIII August 2023

The (World Bank migration and remittances brief, 2023) says that "In the post-COVID period, remittances have become even more important as a source of external financing. They have proved to be resilient. In 2022, remittance flows to low- and middle-income countries increased by 8 percent, to reach $647 billion, registering higher growth than our expectations six months ago. This increase is remarkable, given that it followed a 10.6 percent growth rate in 2021 and the economic environment seemed difficult due to slowing economies around the world, inflation, and the war in Ukraine.

In 2023, however, the growth of remittances is expected to moderate to 1.4 percent, to a level of $656 billion due to slowing economic growth in major source countries. Slower growth in remittances is expected in all regions, notably in Europe and Central Asia (1 percent) and South Asia (0.3 percent). In Europe and Central Asia, the growth in remittances is slowing down because of a high base effect, lingering weakness in flows to Ukraine and Russia, and the weakening of the ruble against the US dollar.

From the World Bank Statistics, Nigeria was 8th on the list of top remittances from low and middle-income countries. The top five recipient countries for remittances in 2022 were India, which received a total of $111 billion in the year, followed by Mexico with inflows of $61 billion, then China ($51 billion), the Philippines ($38 billion), and Pakistan ($30 billion) (figure 1.2a).

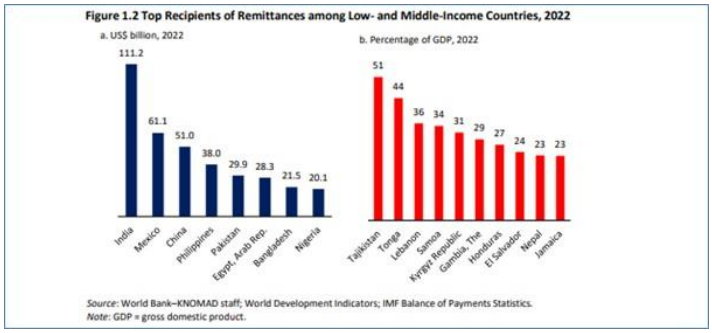

Table 1.1 Estimates and Projections of Remittance Flows to Low- and Middle-Income Regions

($ billions)	2016	2017	2018	2019	2020	2021	2022e	2023f	2024f
Low- and middle-income countries	435	475	522	548	542	599	647	656	666
East Asia and Pacific	122	128	137	143	131	129	130	131	132
excluding China	61	65	70	74	72	76	79	81	83
Europe and Central Asia	43	52	59	62	58	66	79	80	80
Latin America and the Caribbean	73	81	89	96	103	130	145	150	154
Middle East and North Africa	48	54	55	57	60	67	64	65	67
South Asia	111	117	132	140	147	157	176	177	178
Sub-Saharan Africa	39	42	49	49	43	50	53	54	56
World	590	640	695	727	717	791	831	840	858
Growth rate (percent)									
Low- and middle-income countries	-1.5	9.3	9.8	5.0	-1.1	10.6	8.0	1.4	1.5
East Asia and Pacific	-0.9	5.3	7.0	4.0	-8.0	-2.0	0.7	1.0	1.0
excluding China	3.0	5.8	8.4	6.4	-3.4	5.5	3.8	3.0	2.9
Europe and Central Asia	2.2	21.1	12.9	4.7	-6.9	15.3	19.0	1.0	-0.2
Latin America and the Caribbean	7.2	11.0	9.9	8.3	7.1	26.5	11.3	3.3	2.7
Middle East and North Africa	-1.2	13.4	2.2	4.1	3.7	12.2	-3.8	1.7	1.8
South Asia	-5.9	6.0	12.3	6.1	5.2	6.7	12.2	0.3	0.8
Sub-Saharan Africa	-8.6	9.6	16.9	0.0	-13.0	16.3	6.1	1.3	3.7
World	-1.0	8.4	8.6	4.5	-1.4	10.4	5.1	1.1	2.0
Memo items: Remittances to LMICs according to the 2021 country classification used in MD Brief 36									
($ billion)	442	482	529	556	550	609	656	666	677
(% growth)	-1.3	9.2	9.7	5.1	-1.2	10.8	7.8	1.5	1.5

Source: World Bank–KNOMAD staff estimates. See the appendix to *Migration and Development Brief 32* for forecasting methods (World Bank/KNOMAD 2020).
Note: e = estimate; f = forecast; LMICs = low- and middle-income countries.
* In the 2022 country classification of Brief 37, Panama and Romania moved to the high-income group from the upper-middle-income group. While Palau moved to the upper-middle-income group from the high-income group, Venezuela has been unclassified due to a lack of available data.

In Africa, remittance flows to Sub-Saharan Africa grew by 6.1 percent in 2022, to $52.9 billion. Regional growth in remittances in 2022 was largely driven by strong remittance growth in Ghana (11.9 percent), Kenya (8.5 percent), Tanzania (25 percent), Uganda (17.3 percent), and Rwanda (21.2 percent). Remittances to Nigeria, accounting for about 38 percent of total remittance inflows to the region, increased by 3.3 percent to $20.1 billion.

Preliminary studies indicate that remittances contribute to the economy of nations worldwide, especially low and middle-income countries (LMICs). They have been shown to help alleviate poverty, improve nutrition, and even increase school enrollment rates in these nations. Research has also found that these inflows of income can help recipient households become resilient, especially in the face of disasters.

At the same time, it's worth noting that these transfers aren't a silver bullet for recipient nations. In fact, some research shows that overreliance on remittances can cause a vicious cycle that doesn't translate to consistent economic growth over time. (Richie, 2023)

- **Statement of the Problem**

Nigeria is the sixth-biggest beneficiary of diaspora remittances among low- and middle-income countries (LMICs) and the largest recipient in sub-Saharan Africa (SSA). This implies that there are more Nigerians who are resident outside the country compared to other African countries. This is an indication of the underdeveloped state of the economy, the prevalent lack of opportunities, and underemployment (Adeagbo & Ayansola, 2014). This is a situation known as brain drain, involving the exodus of skilled/trained/professional manpower in search of greener pastures. Could there be any appreciable gain from this phenomenon called brain drain? This can be asserted by examining the impact of remittance inflows on the Nigerian economy. Despite huge remittances received by the country, the problems of poverty, unemployment, and inequality still persist, and indication that Nigeria may not have efficiently utilized the gain from brain drain in terms of remittances (Adeagbo & Ayansola, 2014) hence, the need to examine the impacts of remittance inflows on economic growth in Nigeria.

It is also possible that the increases in remittances is an illusion resulting from changes in measurements and may not reflect the real financial inflow. Even if the increases are accurately measured cross country regression would not be able to detect the true effects of remittances on economic growth, hence a country specific study is appropriate (Clemens & McKenzie, 2014).

The impact could be negative or positive; and varied from country to country. The direct and indirect impact of remittances on economic growth needs to be properly flogged. Although, the direct and indirect impacts have been investigated to a reasonable extent; but, remittances have their component parts too. They need to be disaggregated into their component parts in order to know the component that contributes effectively to economic growth. Whereas the overall performance of remittances and economic growth is crucial, there are lots of consequences that affect the sending countries, such as brain-drain, income inequality, low returns on human capital accumulation and development due to inflation, poor labour productivity etc

For instance, The World Bank says that the cost of transferring US$200 across international boundaries to LMICs is still high —averaging 6.2% in the fourth quarter of 2022.

While remittances are on track to overtake flows of foreign direct investment to developing countries, on the negative side, emigration of skilled workers can affect the delivery of health and education services in small economies.

Whatever the causes of migration (climate change, poverty, food insecurity, labor market failure, politics or conflicts, wage inequality, level of countries development, etc.), the contribution of migrant remittances to the economic development of countries of origin continues to be the subject of debates within political and various scholars (Benhamou and Cassin 2021; Abduvaliev and Bustillo 2020; Melvin 2019; Warner and Afifi 2014; Arestoff et al. 2012; Djajic 1986).

This is still a gap in the literature that is yet to be properly identified, most especially as it affects developing countries and Nigeria as a country. The direct impact of migration on economic growth is an area not very much studied in the literature. This present study is to investigate this gap for the Nigerian economy

Also, the huge remittance receipt have not translated into growth and development in the country. Therefore, it is an empirical question as to whether remittances from the diaspora can close this gap and promote economic growth.

- **Objective of the study**

Generally, this study set out to establish and analyze the empirical relationship between migration and remittances, and overall economic growth in Nigeria in the years 1985-2021. Specifically, the study is set to;

1. To study the relative importance of the factors influencing the incidence of migration.
2. To examine the relative importance of the factors influencing the size of remittances to Nigeria and its trend.
3. To investigate the relationship amongst migration, remittances and economic growth in Nigeria.

- **Research Questions**

This thesis is set out to provide answers to the research questions below:

1. What are the factors affecting the incidence of migration in Nigeria?
2. What contributes to the size of remittances in Nigeria?
3. Is there any relationship amongst migration, remittances and economic growth in Nigeria?

- **Research hypothesis**

This thesis tests the following null hypotheses

H Migration and remittances does not have a positive effect on Economic Growth in Nigeria

H There is no link between migration, remittances, and economic growth in Nigeria

- **Justification for the Study**

The findings of this study would be beneficial to migrants, social workers, families, and non-governmental organizations with an interest in migrant remittances. They will receive crucial information on how the funds supplied may be applied to more pressing needs and investments, which could produce more significant growth outcomes in the home and economic realms. The study's findings would also provide helpful information for various government ministries and organizations tasked with overseeing the nation's development requirements as well as its migration policies. This will assist in resolving the existing issue where data on foreign migration and the effects of remittances on migrant families cannot be easily recognized and measured in the nation.

The study will also be helpful for policymakers since it will provide them with knowledge on how to pick growth plans carefully. The data would particularly affect the creation and execution of programs and policies connected to remittances and their direct and indirect support of economic growth. Finally, the study would contribute to the body of knowledge already available on migration, remittances, and economic growth. It would also act as a starting point for latter researchers and students. This would contribute to the corpus of already available information and encourage additional investigation on the study's topic.

- **Scope of this study**

The study focuses on the impact of migration and remittances on economic growth in Nigeria. For the purpose of this study, the years considered span a period of thirty-nine years from 1985 to 2021.The main justifications for this period to get accurate regression result on the effect of remittances on growth in Nigeria. A time series samples of thirty years is needed for accurate regression result.

- **Organization of study**

This thesis is divided into five chapters. The first chapter presents the introduction, statement of the problem, research objectives, and research questions, justification for the study and organization of study. Chapter Two presents the Conceptual Review, Theoretical Review and Empirical Review, as well as the implications of the review on the current study. Chapter three shows the research methodology, theoretical framework including the source of data, model specification, and estimation techniques. Chapter four shows the presentation of results, discussion of results as well as the comparison of results with previous findings. Chapter five contains the summary, conclusion, recommendations, and suggestions for future studies.

LITERATURE REVIEW

Conceptual Review

Remittance has been defined by many scholars from different disciplines and organizations. According to (Kihangire and Katarikawe, 2008), remittance is defined as money sent home by migrants working abroad to their home countries. Similarly, remittance has been defined as a portion of migrant workers' earnings sent to their countries of origin and this could be in cash or gifts (Odozi et al. 2010; Chukwuone 2007; Quartey 2006). Moreover, (IMF, 1999) maintains that remittance is limited to money sent by migrant workers who have been staying in a foreign country for more than a year to his/her household in his/her country of origin and this does not include migrants that are self-employed.

Similarly, (Tewolde, 2005) argues that remittances are financial and non-financial materials that migrants receive while working overseas and sent back to their households in their countries of origin. (Ratha, 2003) also defines remittances as migrants' funds' transfers, which are resources that a migrant conveys into or takes out of a country. Consequently, International Organization for Migration (2006) largely defines remittances as the monetary flows connected to migration, that is, cash transfers by migrants or immigrants living abroad to a relation in their home countries. (International Labour Organization, 2000) also defines remittance as part of migrant workers' income remitted back from their employment countries to their countries of origin.

Some of the recent literature on migration, remittance, and development often see migration and remittance as an alternative for economic growth in developing countries. These debates have created two major opposing schools of thought- migration optimists and pessimists. The first view is developmental optimism. This ideology was developed and popular in the 1950s and 1960s. Development optimists' views are dated back to the period of massive labor migration from developing countries to developed ones. This period was termed the "dawning of a new era" (Papademetriou 1985). Governments of some developing countries encouraged emigration during this period because they believed in its contribution to the development of their countries (Penninx 1982; Beijer 1970; Kindleberger 1965). These theorists hold that migrants' are agents of 'change, innovators, and investors because their remittances and acquired wealth of knowledge and skills often aid development in their countries of origin (Odozi et al. 2010).

In contrast to the development optimists' view, the pessimist views of the 1970s and 1980s, shaped by dependency theory, argue that remittances create dependency between the sending and receiving countries as well as senders and recipients (Binford 2003; Rubenstein 1992). In other words, structuralist/dependency theorists hold that migration is the cause of underdevelopment due to the massive movement of people(labour) out of their traditional communities.

Migration and remittances are believed to be the cause inequalities among households (Bin ford 2003; Rubenstein 1992; Reichart 1981; Lipton 1980; Rhooades 1979; Ameida 1973). For example, a poor society will reveal inequality among remittance receiving and non-receiving households. This is because some migrants abroad often send money home to equip their families while non-receiving households continue to

wallow in poverty (Odozi et al. 2010; Dercon 2009).

Theoretical Review

Structuralist theorists argue that most remittances are spent on noticeable consumption and nonproductive projects (Lewis 1986; Entzinger 1985; Lipton 1980). Migration is also believed to have negative effects on sending countries/communities harmony and economies by uprooting its members (Haas, 2007). Similarly, it has been observed that migration and remittance often cause Dutch Disease and Ghost Town Effect (Carrasco and Rio 2007). An example that readily comes to mind is how the discovery of gold and diamond in South Africa led to the flight of men from home leaving most households to be headed by women (Adeagbo 2011). Remittance is considered to be a temporary source of income which could be detrimental to the households that receive it because it is artificial and uncertain. Migration from South to North is bad according to these theorists because it makes developing countries depend on high-income countries (Dercon 2009; Zoch 2007). The New Economics of Labour Migration (NELM- Pluralist Perspectives) emerged in the 1980s and 1990s as a response to developmental (migration optimists) and structuralist (migration pessimists) views of remittances and development. This approach seems to be more encompassing because it merged both migration optimists and pessimists views on development. Migration in this sense is professed as a household retort to income peril since migrants remittances serve as insurance for their families (Piot-Lepetit and Nzongang 2014; World Bank 2013; Odozi et al. 2010; Lucas and Stark 1985). It has been argued that households are able to expand resources such as labour in order to reduce income risks (World Bank 2013; Odozi et al. 2010; Stark and Levhari 1982).

Neoclassical Theory of Migration

The neoclassical theory was the first theoretical basis formulated to describe labor migration. Several researchers have contributed to creating the neoclassical theory of migration (Todaro, 1969; Harris & Todaro, 1970; Massey, 1993; Arango, 2000; Faist, 2004). Neoclassical theory observes migration as the end result of geographic differences between the supply and demand of labor. These differences exist globally. Neoclassical theory expressed that international migration arises due to variances in wage levels between countries and labor markets. According to this theory, labor migration would stop if wage discrepancies were eliminated. The principle suggests that wage variations between regions are the foremost cause of labor migration. Neoclassical theory proposes that global migration was tied to the demand and supply of labor in the world. Nations with labor shortages and excessive demand will have high wages that will attract immigrants from countries with excess workforce. The main premise of the neoclassical theory of migration is directed by the push factors that push the person to leave their place of origin and by the pull factors that lead them to move to destination country. Neoclassical theory concluded that the main causes of migration are different wages and access to work (Sjaastad, 1962; Todaro, 1976).

The neoclassical theory of migration was divided into two main classes, such as macroeconomic and microeconomic aspects. At the macro level, neoclassical economic theory states that the sole purpose of migration is the exceptional imbalance in the supply of labor, and the demand for labor, which leads to wage discrepancies in different countries. The macro level principle suggests that labor changes are due to differentials of wages, from low-wage regions to regions with excessive wages, and that capital will go in the opposite direction. Migration will progressively decrease the workforce at the destination of the sending end. Countries with low wages have a much wider range of people, and as a result, the large labor supply results in low wages. High-wage nations have surprisingly greater capital, which is often the reason why capital will shift to high-wage nations with low wages and manpower. When this movement occurs, wages go to a shared level. In the long term, based on neoclassical theory, migration flow will be minimized due to the fact that income convergences will decrease inducements to migrate (De Haas, 2008; Fagerheim, 2015). At the micro level, the neoclassical principle of migration considers migrants as a person with coherent actions, with the purpose of going deep into the thought of cost-benefit migration. When there is free choice and full access to information, they move to the areas where they can be most creative, that is, the region where they can earn the highest wages. This significant mobility is based on the precise abilities a man or

woman possesses and, moreover, on the unique structure of the labor markets. The micro point of view of neoclassical explains migration through a cost-benefit exploration, as human beings desire to maximize their non-public income. People think about their net return on migration before making a choice. If the threat of getting a job and expected income in remote places extends beyond the rate of migration and the acceptance of opportunities, the individual may also find it extremely good to migrate. But because of the desire of individuals at the micro level, different individuals have clear expectations of migration (Massey, 1993; de Haas, 2008). According to the neoclassical view of migration, the workforce is moving from places with low global wages to countries with especially excessive wages due to wage variation between countries. Remittances provide a means of poverty reduction and development of the economy when immigrants send remittances to their homeland. On the other hand, this type of migration to distant places could damage the development and growth when the homeland loses relatively skilled workers, known as Brain Drain. Therefore, human capital losses can adversely affect the growth of the economy, as indicated in the principles of neoclassical (Fagerheim, 2015).

Empirical Review

Over the years, there have been rational arguments on the grounds of economic growth in developing economies and also why some nations have robust economic growth compared to others.

(Loto, and Abiola, 2016) investigated the contributions of foreign remittances on economic growth in Nigeria from 1980 to 2016, using the Vector error correction modelling (VECM) technique to analyze the long run and short run impact of disaggregated remittances that is Migrants' Remittances and Workers' Remittances to find out whether they will perform differently in relation to economic growth in Nigeria. The two components of remittances performed differently. While the Migrants remittance component exhibited a long run positive, statistically significant relationship with economic growth, the other component i.e Workers Remittance had a negative statistically significant impact in the long run, short run relationship was also established among the variables as the ECM term was negative and statistically significant. The results showed a unidirectional causality from GDP per capita to Migrants remittances while no causality was found between workers' remittances and gross domestic product per capita.

(Fagerheim, 2015) investigated the impact of remittances on economic growth in the association of south East Asian nations (ASEAN) from 1980 to 2012 using ordinary least square regression (OLS) and instrumental variable two stage least square (IV 2SLS) method. In the presence of no endogeneity, the OLS result was upheld. The study revealed that remittances have mixed impacts on economic growth.

(Adeyi, 2015) examined remittances and economic growth in Nigeria and Sri Lanka from 1985 to 2014 using granger causality under the vector autoregressive (VAR) framework. The study found a uni-directional link in Nigeria from remittance inflows to economic growth while a bi-directional causality was found for Sri Lanka between remittances and economic growth.

The study therefore recommended the need to employ remittances for small and medium scale enterprise development coupled with the creation of enabling macroeconomic environment. (Adarkwa, 2015) examined the impact of remittances on economic growth among selected West African countries from 2000 to 2010 in a linear regression model. The study found that remittance inflow was positively related to economic growth for Nigeria and Senegal while a negative impact was observed for Cameroun and Cape Verde. The study concluded that remittance inflows must be invested in the productive sector before it can positively impact economic growth.

(Kunofiwa, 2015) investigated the causal relationship between personal remittances and economic growth in Israel from 1975 to 2011 in a tri-variate causality framework with banking sector development as the third variable. The study employed Johansen co-integration test and the vector error correction model. The results showed that a significant long run relationship exists from economic growth and banking sector development to remittances while the long run causality from personal remittances to economic growth and

banking sector development was found to be insignificant. Also no short run causal relationship exists among the variables.

(Fayomi, Azuh and Ajayi, 2015) investigated the impact of remittances on the Nigeria's economic growth with a case study of Nigerian Diasporas in Ghana using primary data obtained through a questionnaire designed for 326 respondents living in Ghana. The study employed non-parametric tests as well as linear regression for the analysis. Findings revealed that remittances from the Nigerian Diasporas living in Ghana had significant impact on economic growth.

The study therefore recommended the installation of adequate infrastructure that could attract more remittances for the country.(Okoduwa, Ewetan and Urhie, 2015) in an examination of remittance expenditure pattern and human development outcomes, using household survey data on migration and remittances in the sub Saharan Africa 2009/2010, found that negligible portions of the remittances were actually committed to investment purposes, hence, the insignificant impact on human development outcomes.

(Akinpelu. Ogunbi, Bada and Omojola, 2013) explored the effects of remittance inflows on economic growth in Nigeria from 1991 to 2011. The study found a unidirectional causality from GDP to remittance inflows.

(Iheke, 2012) examined the effect of remittances on the Nigerian economy from 1980 to 2008 using regression analysis. The study found a positive statistically significant relationship between remittances and economic growth for the periods covered.

(Adenike Adeseye, 2021) carried out an empirical study on the Effect of Migrants Remittance on Economy Growth in Nigeria. In her paper, "Remittance inflow was used as dependent variable and gross domestic products, inflation, imports and exports were independent variables. In this study, secondary data were utilized. The study employs annual data obtained from world development and international financial statistics which covers the period of 29 years (1990-2018). Quantitative data collected were evaluated through descriptive statistics; and the hypotheses formulated were tested with the use of multiple linear regressions which includes ANOVA, Correlation, and Coefficient. And this was done with the aid of SPSS version 21. From the findings of the study and the tested hypotheses, it was discovered that significant relationship exists between remittance and gross domestic product, exports and imports in Nigeria while inflation has no significant relationship with remittance." (Joseph and Oswald, 2014) while examining the relationship between remittances and economic growth in Ghana. In this study, they use Granger's causality test and cointegration under the auto-regression vector (VAR). The results revealed that remittances were significantly associated with economic growth in Ghana. They observed that remittances caused marginal economic growth, but economic growth did not result to remittances. They also recognized that remittances have been of great help in supporting the well-being of migrant families. (Danmola and Abba, 2013) examine remittances and economic growth in Nigeria. In the study, they adopted the error correction model. The result revealed that remittances were significantly linked with economic growth in Nigeria. They concluded that funds should be transferred through the official channels and used for investment purposes to stimulate the growth and development of the country(Muhammad et al., 2019) studied the effect of migrant remittances on economic growth in Pakistan between 1976 and 2016 using the autoregressive distributed delay (ARDL). The ARDL method was used to analyze the effect of workers' remittances on the Pakistani economy. The survey results revealed that foreign direct investment, remittance inflow, and gross domestic products have a significant effect on Pakistan's long-term economic growth, while consumption and inflation have a negative effect on the economic growth of Pakistan in the long term. They recommended that policymakers should motivate migrants to transfer funds through appropriate networks and engage in profitable investments that will stimulate economic growth. (Adigun and (Ologunwa, 2017) examined the effect of remittances on economic growth in Nigeria duringthe period 1980-2015. The result reveals that remittance is correlated with economic growth as it helps individual finances consumption,

spending, and investments. Their study suggested that receivers of remittances should spend more on investment than consumption to impact the home economy. (Sebil and Abdulazeez, 2018) investigated the impact of remittances on Nigeria's economic growth during the period 1981-2011. The influx of remittances was used as an indicator of dependent variables, while trade openness, foreign aid, foreign direct investment, and were economic growth indicators. The outcome stressed that remittance absolutely affect Nigeria's economic growth. They stressed that the government should engage more effective policies that improve the remittance transfer channel, aid flows, and foreign direct investment as a growth strategy.

(Adeseye, 2021) studied the effect of migrant remittances on economic growth in Nigeria. The study employs annual data obtained from world development and international financial statistics which cover the period of 29 years (1990-2018). Quantitative data collected were evaluated through descriptive statistics and the hypothesis was tested with the use of multiple linear regressions which include ANOVA, correlation, and coefficient. It was discovered that a significant relationship exists between remittance and gross domestic product, exports, and imports in Nigeria while inflation has no significant relationship with remittance. (Ahmed et al.,2011) studied the impact of remittances, exports, and money supply (a broad measure for financial development) on economic growth in the context of Pakistan using bounds testing approach, the result revealed that remittance inflows and the lag effect of real output(yt-1) are significant in the short run and long run. Remittances have a positive impact on the economic growth of Pakistan in both the long and short run.

The study of (Kanu and Ozurumba, 2013) provided empirical support on the subject of remittances and economic growth. Focusing on the sub-Saharan African countries with an emphasis on Nigeria, South Africa, and Ghana. Their result showed that migrant remittances have a positive impact on the economic growth of the aforementioned economies. Also considering the casual relationship between remittances and economic growth, remittances were found to granger cause economic growth in Ghana and South Africa, but the report shows that the impact were felt more in South Africa than Ghana. The opposite was the case for Nigeria where remittances were not found to granger cause GDP, rather economic growth was seen to granger causes remittances.

(Oluyemi, Oluwaseun, 2022) say that continuous migration of skilled labor out of Nigeria is especially worrisome. This is because unemployment, rising poverty, inequality among other socio-economic challenges characterize the Nigerian economy. In fact, Nigerians have been recognized as one of the most mobile populations in Africa with Nigerian citizens found in almost all continents (Adeagbo and Ayandibu, 2014).

(Daniel, 2023) says that, "The history of transferring money by foreign workers to their home is very significant and cannot be overlooked as these remittances have impact on economic growth." "Remittances provide support for the welfare of the relatives left behind thus contributing to the eradication of poverty in the recipient country."

"It is not surprising that human mobility becomes more and more important and inevitable, because it affects the socio-economic life of the sending and receiving nations." (Adenike, 2021)

(Samuel. O, 2023) says that the "The inflow of capital through international remittances in emerging economies has received widespread attention from the media, governments, development agencies, and the private sector because of its rising volume and dynamic economic impact on remittance-receiving countries. remittances represent household income from foreign economies arising mainly from the temporary or permanent movement of people to those economies.

More positive pronouncements on the impact of remittances on households' investments which have their roots in the 1950s and 1960s ideas about migration as a major engine of development (through the diffusion of ideas, technology, skills, and so on) have been more recently given by the New Economics of Labour Migration (NELM) approach in the 1980s and 1990s (Bracking, 2003; Carling, 2004; Stark and Bloom, 1985; Robinson, 2004; Taylor, 1999).

In turn, remittances loosen the constraints facing poor households (Taylor, 1999). Thus, they are seen as being beneficial at a range of scales from the household to the national level as they increase disposable incomes while also stimulating demand for local goods and services (Ratha, 2003; Skeldon, 2002). Furthermore, they can also lead to the production of local capital markets as well as productive infrastructure (Ballard, 2003). Even more recently, the transnational migration school had sought to bring these divergent perspectives together, building upon the notion of transnational communities (Levitt, 2001) and viewing remittances as one component of the economic and non-economic flows linking sending and receiving countries.

THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

Theoretical Framework

The most famous theory of international migration – The neoclassical theory is to be adopted in this study. This theory argues that labor emigration results from labor market imbalances and differences between labor supply and demand (Lewis, 1954) The theory stresses that people migrate from low-wage regions to other regions with higher income, better infrastructure, and other socioeconomic benefits. People migrate for incentives which are mainly in the form of remittances and other income from abroad. This is a motivation for labor, especially in those in developing countries with zero marginal product of labor and excess population. These remittances are useful alternative sources of income for participating households, the inflow fosters productivity in the emigrants' country of origin. The immediate household of the emigrants is the direct beneficiary of remittance at the micro-level and the economy at large also stands to benefit from investments made by the remittance-receiving households (Wickramasinghe & Wijitapure, 2016; Flahaux & De Haas, 2016; Prakash, 2009).

The neoclassical theory is adopted because it explains the trend of migration and remittances in in Nigeria over the years as with the reasons and motives for the movement of labour in the country.

Model Specification

The main aim of this study is to examine the impact of migration and remittances on Economic growth in Nigeria. The model to be adopted in this study was adapted from (Loto, Abiola, 2016) with some modifications and is specified of the functional form:

GDP = f(REM, FDI, KAP, TRO, GE)…..... (3.1)

$$GDP = \beta_0 + \beta_1 REM + \beta_2 FDIo + \beta_3 KAP + \beta_4 TRO + \beta_5 GE + \mu_t \quad \text{… (3.2)}$$

Where:

GDP= Gross Domestic Product

REM= Diaspora Remittance

FDI= Foreign Direct Investment

KAP= Capital Formation

TRO = Trade Openness

GE= Government expenditure

Method of Analysis

The Auto-regressive Distributed Lag (ARDL) method, proposed by (Pesaran, Shin, and Smith, 2001), was used to achieve the objectives of the study in determining the impact of diaspora remittance inflows on economic growth in Nigeria. It is autoregressive in the sense that the prediction is explained by its lag, as well as a distributive lag component in the form of sequence lag exogenous variables, according to (Giles, 2013), it has many merits, including being superior to traditional co-integration techniques when used with a small sample size, allowing short-run and long-run relationships to be tested jointly, providing fair estimates for long-run and valid t tests when some independent variables are endogenous, according to (Srinivasan & Kalaivani, 2012), the variables are tested without consideration of the order of difference.

The ARDL estimation technique was also adopted owing to the stationarity of all the variables at both level, first differencing and void of second difference series.

Source of Data

Data source involves a range of activities from the research person in libraries extracting information from volumes of materials available as regards the research work. Secondary data was used in this research work and information was obtained from Central Bank of Nigeria (CBN) statistical bulletin and all other various sources. In order to fulfill the objectives of this study, this study utilized annual time series data for the period 1985-2021 obtained from Central Bank of Nigeria (CBN) statistical bulletin.

PRESENTATION AND ANALYSIS OF RESULT

Presentation of Results

This section presents the findings of this study alongside the respective interpretations ranging from the basic preliminary tests that covers the descriptive statistics, and stationary tests to more robust analysis of autoregressive distributed lag distribution model bound testing and likewise, the granger test of causality.

Table 4.1 Descriptive Statistics

	LRGDP	LREM	LTRAO	LFDI	LGE	LKAP
Mean	10.46565	21.01712	2.570485	0.271921	6.002046	29.73829
Median	10.40441	21.05388	2.578400	0.371783	6.825633	29.73118
Maximum	11.18987	23.91420	3.127254	1.756279	8.557643	30.06865
Minimum	9.740823	14.70115	1.192453	-1.633819	1.753486	29.36601
Std. Dev.	0.516289	3.047395	0.443934	0.736922	2.328116	0.184440
Skewness	0.139250	-0.772282	-1.423547	-0.195396	-0.494514	-0.119423
Kurtosis	1.439445	2.323877	5.079918	2.959687	1.743740	2.227129
Jarque-Bera	3.874043	4.382681	19.16599	0.237946	3.941060	1.008830
Probability	0.144133	0.111767	0.000069	0.887832	0.139383	0.603859
Sum	387.2291	777.6335	95.10796	10.06106	222.0757	1100.317
Sum Sq. Dev.	9.595945	334.3181	7.094797	19.54995	195.1245	1.224652
Observations	37	37	37	37	37	37

Source: Author, 2023

Table 1 above summarizes the basic statistical features of the data under consideration including the mean, the minimum and maximum values, standard deviation, skewness, kurtosis and the Jarque – Bera test for the data. These descriptive statistics provide a historical background for the behavior of our data. It gives

explanation into the nature of the data of the empirical analysis of selected variables used for the analysis. There seems to be evidence of significant variations as shown by the difference between the minimum and maximum values for the variables under consideration. The mean and median value of all the selected variables falls between the minimum and maximum values and they are of positive values. The maximum and minimum values indicate the highest points and lowest points of the variables captured in this study. The standard deviation measures the dispersion of our variables from their mean values. Further, the variables are all negatively skewed except RGDP while the peakedness of the series are composed of both platykurtic and leptokurtic series.

Unit Root Test

It is believed that many economic variables are volatile in nature and possess unit root properties which if used for estimation may likely lead to spurious results. Hence, the need to ascertain the stationarity of the variable to ensure reliable estimation. This study employed the Augmented dickie fuller (ADF) and to unravel the stationarity status of the variables.

The Augmented Dickey-Fuller (ADF) test is used in this study to determine if proxies of the selected variables are stationary or not. The variable is considered stationary if the absolute value that is obtained from the ADF test is greater than the absolute MacKinnon values. However, the variables are considered non-stationary if the absolute value of the ADF test is less than the MacKinnon values in absolute terms. The null hypothesis for this test is that both variables possess unit root. On the other hand, the alternative hypothesis connotes the absence of unit root for both variables.

Table 4.2 Augmented Dickey Fuller Unit Root Test

ADF Unit Root Test			
Variables	***Levels***	***1st Difference***	**Order**
RGDP	**-2.0482**	**-3.8819****	I1
REM	**-0.1994**	**-3.4571***	I1
GE	**0.2978**	**-5.5445*****	I1
TRAO	**-3.3714***	**-7.4398*****	I0
FDI	**-3.4881***	**-7.7524*****	I0
KAP	**-2.7289**	**-10.1657*****	I1
Critical Values	*ADF z(t)*		
	-4.356	-3.595	-3.233
	1%	5%	10%

Author's computation, 2023

The ARDL method of estimation relies on the time series properties of the data. This is to ensure the integration order of stationary is free from I(2) series so as to avoid spurious result which is unreliable and inconsistent. From the table above, it is clear that our variables of interest stationary order combined both the levels I (0) and 1st difference I (1) order for the ADF test. The abstruseness in the integration order of the series gives support to the use of ARDL bound test above other alternate co-integrating techniques. Hence this study adopts the Autoregressive distributed lag (ARDL) estimation method. The result of the unit root signifies a stationary at levels for TRAO and FDI while all other variables became stationary after first differencing at 5% significance level.

Table 4.3 Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-97.27561	NA	1.47e-05	5.901464	6.168095	5.993505
1	98.05109	312.5227*	1.69e-09*	-3.202920	-1.336502*	-2.558632*
2	134.2008	45.44539	2.03e-09	-3.211476*	0.254728	-2.014943

Author's computation, 2023

This study performs prior analysis of the lag length selection using the lag length criteria of the unrestricted VAR model. The consistency of the sequential modified LR test statistic, Final prediction error, and the Hannan-Quinn information criterion suggests this study adopts a lag of 1 for its estimation.

Table 4.4 ARDL Bound test

Test Statistic	Value	k
F-statistic	7.107055	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

This study performs the ARDL bound testing to investigate if there is any long run convergence among the variables being investigated. This result is presented in table 4.4 above. It shows the long run result of the ARDL bound test statistics. Bound test cointegration method was estimated for each of the model. The result shows that there is presence of a long run convergence among the selected variables and the respective dependent variables. The bound testing the f-statistics is greater than I0 and I1 at other critical bounds. This suggests that there is a presence of long run relationship among the variables in consideration.

Regression Result

Table 4.5

Short Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LREM)	0.023948	0.005655	-4.234491	0.0002
D(LGE)	0.055872	0.008685	6.432967	0.0000
D(LFDI)	0.002051	0.006242	0.328625	0.7450
D(LTRAO)	0.004830	0.015054	0.320852	0.7508
D(LKAP)	0.017992	0.046978	0.382977	0.7047
CointEq(-1)	-0.073418	0.030444	-2.411607	0.0230

R-squared	0.998543	Mean dependent var	10.48578
Adjusted R-squared	0.998111	S.D. dependent var	0.508667

S.E. of regression	0.022110	Akaike info criterion	-4.573252
Sum squared resid	0.013199	Schwarz criterion	-4.177372
Log likelihood	91.31853	Hannan-Quinn criter.	-4.435079
F-statistic	2312.239	Durbin-Watson stat	2.532409
Prob(F-statistic)	0.000000		

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LREM	0.326184	0.150211	-2.171503	0.0388
LGE	0.761012	0.254502	2.990197	0.0059
LFDI	0.156113	0.137997	1.131280	0.2679
LTRAO	0.065789	0.221705	0.296741	0.7689
LKAP	-1.479962	1.291193	-1.146197	0.2618
C	57.022388	38.848810	1.467803	0.1537

Granger Causality Test

Table 4.6

Null Hypothesis:	Obs	F-Statistic	Prob.
LREM does not Granger Cause LRGDP	35	0.71410	0.4978
LRGDP does not Granger Cause LREM		3.65566	0.0379
LTRAO does not Granger Cause LRGDP	35	1.55361	0.2280
LRGDP does not Granger Cause LTRAO		0.16742	0.8466
LFDI does not Granger Cause LRGDP	35	1.57685	0.2233
LRGDP does not Granger Cause LFDI		1.40996	0.2599
LGE does not Granger Cause LRGDP	35	3.69465	0.0368
LRGDP does not Granger Cause LGE		3.34546	0.0488
LKAP does not Granger Cause LRGDP	35	1.53816	0.2312
LRGDP does not Granger Cause LKAP		5.98256	0.0065
LTRAO does not Granger Cause LREM	35	3.31907	0.0499
LREM does not Granger Cause LTRAO		0.62869	0.5402
LFDI does not Granger Cause LREM	35	1.14978	0.3303
LREM does not Granger Cause LFDI		0.94256	0.4009

Post estimation

Table 4.7

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.482754	Prob. F(2,25)	0.2463
Obs*R-squared	3.817498	Prob. Chi-Square(2)	0.1483

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue VIII August 2023

The result of the serial correlation test between the variables using the Breusch-Godfrey Lm test is in the Table above. The absence of serial correlation is confirmed since the chi-square probability value of 0.14 is greater than the 5% significance level

Table 4.8

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.423805	Prob. F(14,20)	0.2346
Obs*R-squared	22.02100	Prob. Chi-Square(14)	0.0782
Scaled explained SS	5.892376	Prob. Chi-Square(14)	0.9691

The absence of heteroscedasticity is one of the basic assumptions of OLS. The result of the heteroscedasticity is presented in Table 4.6 above. After estimation, result shows that the Probability or p-value of the Obs* Rsquared is 0.07 which is greater than 5% significance level. In effect, this is the absence of heteroscedasticity.

Normality Test

Discussion of Results

This study was undertaken to assess the impact of migration and remittance on economic growth in Nigeria. The economic growth variable used in study is proxy by GDP while explanatory variables are remittance, trade openness, foreign direct investment, government expenditure, capital formation. Similarly, this study also investigated the causality among the variables used in the study. The data used for this study was obtained from the CBN Statistical Bulletin (2022) and the World Development Index (WDI). Finally, the period under review is from 1985 to 2021.

The ARDL estimation technique is adopted owing to the stationarity of all the variables at both level, first differencing and void of second difference series. The result of this analysis is presented in table 4.2 above. Having confirmed the presence of long run convergence among the variables under consideration from table4.4, Thus short run result was presented above which is evident that remittance have a positive and statistically impact on economic growth under the period of study. This finding is in support apriori expectation of positive relationship between remittance and economic growth. It means that remittance received from outside the country has been channel properly to productive venture and industrial sector which has production, consumption and investment.

From the table 4.5 above, it can be deduced from the table that government spending on both current and capital has a positive impact on economic growth both in the short run and long run. The long run estimates reveal that government spending has a positive and significant impact on economic growth. Statisitically, a unit change in government spending will bring about 55% increases in economic growth in the short run and 76% increase in the long run.

Moreover, it can be deduced from the regression table that trade openness and foreign direct investment has a positive impact on economic growth under the period of study. Statistically, a unit in change in trade openness and will bring about 4% increases in short run and 76% increase in long run on economic growth. While a unit change in foreign direct investment will bring about 2% increase in the short run and 15% increase in long run on economic growth. In addition, capital formation has positive on economic growth in the short run while negative impact on economic growth in the long run has revealed by the regression results.

The causality test was conducted in this study to show the nature of relationship among the variables used in the study. From the table 4.6 GDP causes changes in remittance meaning that there is a uni direction

between the two variables. It is revealed that remittances does not cause changes in economic growth under the period of study. It is further support by the regression result of negative relationship between remittance and economic growth. Similarly, there is bi-direction between GDP and GE. GE causes changes in GDP while GDP also causes changes in GE. This is further supported by the regression result of positive relationship between government spending and economic growth under the period of study.

The post-estimation of the study which test serial correlation and hetetroscadacity among the variables. It can be deduced from the table 4.7 and 4.8 that there is no autocorrelation and hetetroscadacity among the variables under investigation.

The f-statictic shows the overall effect of the variables on dependent variable which significant all confident level. The R-square is also high which is 99% meaning any variation economic growth are explain by the explanatory variables while the remaining 1% are explain by other factors that are not capture by the model.

4.3 Comparison of Result with Previous Study

The thesis set out to investigate the impact of migration and remittance on economic growth in Nigeria. The thesis has found out that remittance has a positive and significant impact on economic growth in Nigeria under the period of study. This implies that rise in these variables will stimulate better performance of the dependent variables while a fall worsen their performance. The results is said to be conformity with the findings of the previous studies like the work of Muhammad et al., (2019), Ologunwa, (2017), Adeseye, (2021), Sebil and Abdulazeez, (2018).

SUMMARY, CONCLUSION AND RECOMMENDATION

Summary

The study has undertaken the investigation of a relationship between economic growth and remittance. Using The ARDL estimation technique owing to the stationarity of all the variables at both level, first differencing and void of second difference series, the result of this analysis is presented confirmed the presence of long run convergence among the variables under consideration. The short run result was presented above which is evident that remittance has a positive and statistically impact on economic growth under the period of study. However the result shows that there is presence of a long run convergence among the selected variables and the respective dependent variables. The bound testing the f-statistics is greater than I0 and I1 at other critical bounds. This suggests that there is a presence of long run relationship among the variables in consideration.

Thus short run result was presented above which is evident that remittance have a positive and statistically impact on economic growth under the period of study. It was found that GDP causes changes in remittance meaning that there is a uni direction between the two variables. It is revealed that remittances does not cause changes in economic growth under the period of study. It is further supported by the regression result of negative relationship between remittance and economic growth.

Conclusion

The reliable secondary sources of data interrogated in this study provide the basis for conclusion that Nigeria is one of the highest receivers of remittances across the world. Also, remittances constitute a veritable source of income for multitude of families and communities of the international migrants. Remittance flows to Nigeria has had a positive impact on the social and economic growth of the country in the short run while economic growth impacts remittances severely. Thus, economic policies should be implemented to spur growth with proper coordination and effective utilization of remittances in the productive sector of the economy, a pre-requisite for furthergrowth in the Nigerian economy. It is only when the economy grows that the effect of the large remittances received in the country will be felt.

Also investigations will need to be carried out by anti-graft agencies on the use of remittances received from abroad and possible diversion and hoarding of currency especially in view of the exchange rate devaluation and the rising inflationary pressure.

Recommendation

The following recommendations are therefore proposed following the findings from this study.

- Given a statistically and positively correlated impact of government spending on economic growth, and the impact of trade openness and foreign direct investment on economic growth in the long run, the Nigerian government should budget and expend more resources on productive sector of the economy especially on infrastructure which would attract the right Foreign Direct Investment (FDI) into the country and boost more growth.
- The Nigerian government should set up a body to review the spending and allocation of remittances into the country especially in view of current Forex policies inconsistencies.
- An independent commission be set up by the federal government to be saddled with the responsibility of coordinating and harnessing remittance flows into the country. If established, the body will compliment and consolidate the efforts of the CBN in ensuring adequate flow and judicious utilization of remittances in the country.
- The Economic and Financial Crimes Commission (EFCC) should beam their search light on the corrupt practices inherent in the financial institutions through which formal remittances flow. This will go a long way in harnessing these resources to productive areas of the economy and build confidence among the international migrants in sending remittance via formal channels.

JULY, 2023

CERTIFICATION

This is to certify that this research work titled 'Impact of Migration and Remittances on Economic Growth in Nigeria' was carried out by Imouokhome, Peter Afen-Okhai, Matric number 189081031, of the Department of Economics, Faculty of Social Sciences, University of Lagos, under the supervision of Professor Risikat Dauda.

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DEDICATION

God – my help in ages past, my hope today and forever.

ACKNOWLEDGMENTS

I am immensely grateful to my project supervisor – Professor Risikat Dauda for her motherly corrections and guidance during the course of supervision of this project. Her insights and contributions helped in instilling a self-discipline, hard work and belief that culminated in a successful project. I also thank the department of Economics at the University of Lagos for the opportunity to study under her tutelage.

Thank you.

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APPENDIX

Appendix 1 -Unit root test (level)

Null Hypothesis: LRGDP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 4 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-2.048255	0.5537
Test critical values:	1% level		-4.273277	
	5% level		-3.557759	
	10% level		-3.212361	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LRGDP)				
Method: Least Squares				
Date: 07/17/23 Time: 09:13				
Sample (adjusted): 1990 2021				
Included observations: 32 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRGDP(-1)	-0.145023	0.070803	-2.048255	0.0512
D(LRGDP(-1))	0.363694	0.181386	2.005082	0.0559
D(LRGDP(-2))	0.460357	0.187851	2.450650	0.0216
D(LRGDP(-3))	-0.145901	0.203296	-0.717676	0.4796
D(LRGDP(-4))	0.163277	0.188032	0.868345	0.3935
C	1.392387	0.669040	2.081170	0.0478
@TREND(“1985”)	0.006844	0.003514	1.947753	0.0628
R-squared	0.440050	Mean dependent var		0.041473
Adjusted R-squared	0.305663	S.D. dependent var		0.038480
S.E. of regression	0.032064	Akaike info criterion		-3.851497
Sum squared resid	0.025703	Schwarz criterion		-3.530867
Log likelihood	68.62395	Hannan-Quinn criter.		-3.745217
F-statistic	3.274480	Durbin-Watson stat		1.736810
Prob(F-statistic)	0.016238			
Null Hypothesis: LREM has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 9 (Automatic – based on SIC, maxlag=9)				

			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-0.199411	0.9896
Test critical values:	1% level		-4.339330	
	5% level		-3.587527	
	10% level		-3.229230	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LREM)				
Method: Least Squares				
Date: 07/17/23 Time: 09:20				
Sample (adjusted): 1995 2021				
Included observations: 27 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LREM(-1)	-0.030445	0.152676	-0.199411	0.8446
D(LREM(-1))	0.480857	0.256225	1.876698	0.0802
D(LREM(-2))	-0.443409	0.169974	-2.608680	0.0198
D(LREM(-3))	0.093860	0.171298	0.547936	0.5918
D(LREM(-4))	-0.308571	0.148864	-2.072839	0.0558
D(LREM(-5))	-0.073042	0.143317	-0.509652	0.6177
D(LREM(-6))	0.126713	0.127466	0.994090	0.3359
D(LREM(-7))	-0.279873	0.120479	-2.323000	0.0346
D(LREM(-8))	0.117728	0.111774	1.053264	0.3089
D(LREM(-9))	-0.245508	0.110838	-2.215011	0.0427
C	1.514841	2.357301	0.642617	0.5302
@TREND(“1985”)	-0.021152	0.044172	-0.478868	0.6389
R-squared	0.701911	Mean dependent var		0.132134
Adjusted R-squared	0.483312	S.D. dependent var		0.485667
S.E. of regression	0.349102	Akaike info criterion		1.034200
Sum squared resid	1.828088	Schwarz criterion		1.610127
Log likelihood	-1.961694	Hannan-Quinn criter.		1.205453
F-statistic	3.210951	Durbin-Watson stat		2.321686
Prob(F-statistic)	0.019135			

Null Hypothesis: LGE has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			0.297823	0.9979
Test critical values:	1% level		-4.234972	

	5% level		-3.540328	
	10% level		-3.202445	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LGE)				
Method: Least Squares				
Date: 07/17/23 Time: 09:33				
Sample (adjusted): 1986 2021				
Included observations: 36 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGE(-1)	0.014066	0.047228	0.297823	0.7677
C	0.308475	0.109774	2.810097	0.0083
@TREND(“1985”)	-0.010989	0.010401	-1.056530	0.2984
R-squared	0.216151	Mean dependent var		0.188611
Adjusted R-squared	0.168645	S.D. dependent var		0.182049
S.E. of regression	0.165990	Akaike info criterion		-0.674126
Sum squared resid	0.909236	Schwarz criterion		-0.542166
Log likelihood	15.13426	Hannan-Quinn criter.		-0.628068
F-statistic	4.549970	Durbin-Watson stat		1.702187
Prob(F-statistic)	0.017982			

Null Hypothesis: LTRAO has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.371431	0.0713
Test critical values:	1% level		-4.234972	
	5% level		-3.540328	
	10% level		-3.202445	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LTRAO)				
Method: Least Squares				
Date: 07/17/23 Time: 09:36				
Sample (adjusted): 1986 2021				
Included observations: 36 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTRAO(-1)	-0.365436	0.108392	-3.371431	0.0019
C	0.925991	0.246193	3.761236	0.0007
@TREND(“1985”)	0.003040	0.004609	0.659686	0.5140
R-squared	0.286303	Mean dependent var		0.045548
Adjusted R-squared	0.243048	S.D. dependent var		0.278382

S.E. of regression	0.242201	Akaike info criterion		0.081557
Sum squared resid	1.935823	Schwarz criterion		0.213517
Log likelihood	1.531966	Hannan-Quinn criter.		0.127615
F-statistic	6.619045	Durbin-Watson stat		2.347275
Prob(F-statistic)	0.003828			
Null Hypothesis: LFDI has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.488148	0.0559
Test critical values:	1% level		-4.234972	
	5% level		-3.540328	
	10% level		-3.202445	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LFDI)				
Method: Least Squares				
Date: 07/17/23 Time: 09:40				
Sample (adjusted): 1986 2021				
Included observations: 36 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFDI(-1)	-0.556178	0.159448	-3.488148	0.0014
C	0.305554	0.242848	1.258212	0.2171
@TREND(“1985”)	-0.006655	0.011023	-0.603682	0.5502
R-squared	0.269642	Mean dependent var		0.046306
Adjusted R-squared	0.225377	S.D. dependent var		0.763475
S.E. of regression	0.671955	Akaike info criterion		2.122404
Sum squared resid	14.90026	Schwarz criterion		2.254364
Log likelihood	-35.20327	Hannan-Quinn criter.		2.168461
F-statistic	6.091648	Durbin-Watson stat		1.968428
Prob(F-statistic)	0.005602			

Null Hypothesis: LKAP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 2 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-2.728973	0.2321
Test critical values:	1% level		-4.252879	
	5% level		-3.548490	
	10% level		-3.207094	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				

Dependent Variable: D(LKAP)				
Method: Least Squares				
Date: 07/17/23 Time: 09:44				
Sample (adjusted): 1988 2021				
Included observations: 34 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LKAP(-1)	-0.760640	0.278727	-2.728973	0.0107
D(LKAP(-1))	-0.049457	0.209580	-0.235981	0.8151
D(LKAP(-2))	-0.383835	0.162622	-2.360286	0.0252
C	22.44973	8.206257	2.735684	0.0105
@TREND(“1985”)	0.010514	0.004358	2.412695	0.0224
R-squared	0.614234	Mean dependent var		0.018505
Adjusted R-squared	0.561025	S.D. dependent var		0.116734
S.E. of regression	0.077343	Akaike info criterion		-2.146093
Sum squared resid	0.173474	Schwarz criterion		-1.921628
Log likelihood	41.48358	Hannan-Quinn criter.		-2.069544
F-statistic	11.54379	Durbin-Watson stat		1.957116
Prob(F-statistic)	0.000010			

Appendix 2 -Unit root test (first difference)

Null Hypothesis: D(LRGDP) has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.881907	0.0236
Test critical values:	1% level		-4.243644	
	5% level		-3.544284	
	10% level		-3.204699	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LRGDP,2)				
Method: Least Squares				
Date: 07/17/23 Time: 09:17				
Sample (adjusted): 1987 2021				
Included observations: 35 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LRGDP(-1))	-0.622294	0.160306	-3.881907	0.0005
C	0.030190	0.014279	2.114270	0.0424
@TREND(“1985”)	-0.000215	0.000594	-0.362028	0.7197
R-squared	0.322395	Mean dependent var		0.000938
Adjusted R-squared	0.280044	S.D. dependent var		0.041792
S.E. of regression	0.035460	Akaike info criterion		-3.758991
Sum squared resid	0.040238	Schwarz criterion		-3.625675

Log likelihood	68.78233	Hannan-Quinn criter.		-3.712970
F-statistic	7.612568	Durbin-Watson stat		2.251779
Prob(F-statistic)	0.001975			

Null Hypothesis: D(LREM) has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 9 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.457158	0.0656
Test critical values:	1% level		-4.356068	
	5% level		-3.595026	
	10% level		-3.233456	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LREM,2)				
Method: Least Squares				
Date: 07/17/23 Time: 09:24				
Sample (adjusted): 1996 2021				
Included observations: 26 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LREM(-1))	-2.464579	0.712892	-3.457158	0.0038
D(LREM(-1),2)	1.714578	0.612271	2.800358	0.0142
D(LREM(-2),2)	1.374382	0.594070	2.313501	0.0364
D(LREM(-3),2)	1.281166	0.490212	2.613494	0.0204
D(LREM(-4),2)	0.958178	0.440313	2.176129	0.0472
D(LREM(-5),2)	0.733021	0.345011	2.124634	0.0519
D(LREM(-6),2)	0.782018	0.280951	2.783470	0.0146
D(LREM(-7),2)	0.460131	0.234099	1.965543	0.0695
D(LREM(-8),2)	0.481311	0.150425	3.199664	0.0064
D(LREM(-9),2)	0.220419	0.114372	1.927212	0.0745
C	1.600755	0.553388	2.892646	0.0118
@TREND(“1985”)	-0.043451	0.016335	-2.659974	0.0187
R-squared	0.861249	Mean dependent var		0.035087
Adjusted R-squared	0.752231	S.D. dependent var		0.640952
S.E. of regression	0.319043	Akaike info criterion		0.857054
Sum squared resid	1.425036	Schwarz criterion		1.437714
Log likelihood	0.858293	Hannan-Quinn criter.		1.024263
F-statistic	7.900035	Durbin-Watson stat		2.082620
Prob(F-statistic)	0.000288			

Null Hypothesis: D(LGE) has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.544565	0.0003
Test critical values:	1% level		-4.243644	
	5% level		-3.544284	
	10% level		-3.204699	
*MacKinnon (1996) one-sided p-values.				
Dependent Variable: D(LGE,2)				
Method: Least Squares				
Date: 07/17/23 Time: 09:34				
Sample (adjusted): 1987 2021				
Included observations: 35 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGE(-1))	-0.902617	0.162793	-5.544565	0.0000
C	0.345311	0.079511	4.342912	0.0001
@TREND(“1985”)	-0.008924	0.002921	-3.054524	0.0045
R-squared	0.492759	Mean dependent var		0.002947
Adjusted R-squared	0.461056	S.D. dependent var		0.211520
S.E. of regression	0.155283	Akaike info criterion		-0.805318
Sum squared resid	0.771610	Schwarz criterion		-0.672003
Log likelihood	17.09307	Hannan-Quinn criter.		-0.759298
F-statistic	15.54319	Durbin-Watson stat		1.973077
Prob(F-statistic)	0.000019			

Null Hypothesis: D(LTRAO) has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-7.439815	0.0000
Test critical values:	1% level		-4.243644	
	5% level		-3.544284	
	10% level		-3.204699	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LTRAO,2)				
Method: Least Squares				
Date: 07/17/23 Time: 09:38				
Sample (adjusted): 1987 2021				
Included observations: 35 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue VIII August 2023

D(LTRAO(-1))	-1.268288	0.170473	-7.439815	0.0000
C	0.181922	0.102357	1.777325	0.0850
@TREND("1985")	-0.006706	0.004699	-1.427207	0.1632
R-squared	0.633710	Mean dependent var		-0.004016
Adjusted R-squared	0.610817	S.D. dependent var		0.440349
S.E. of regression	0.274710	Akaike info criterion		0.335614
Sum squared resid	2.414897	Schwarz criterion		0.468930
Log likelihood	-2.873252	Hannan-Quinn criter.		0.381635
F-statistic	27.68127	Durbin-Watson stat		1.939645
Prob(F-statistic)	0.000000			

Null Hypothesis: D(LFDI) has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic – based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-7.752496	0.0000
Test critical values:	1% level		-4.243644	
	5% level		-3.544284	
	10% level		-3.204699	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LFDI,2)				
Method: Least Squares				
Date: 07/17/23 Time: 09:41				
Sample (adjusted): 1987 2021				
Included observations: 35 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFDI(-1))	-1.366796	0.176304	-7.752496	0.0000
C	0.147294	0.267617	0.550392	0.5859
@TREND("1985")	-0.004290	0.012448	-0.344600	0.7326
R-squared	0.653083	Mean dependent var		0.064627
Adjusted R-squared	0.631401	S.D. dependent var		1.219841
S.E. of regression	0.740594	Akaike info criterion		2.319088
Sum squared resid	17.55134	Schwarz criterion		2.452404
Log likelihood	-37.58404	Hannan-Quinn criter.		2.365108
F-statistic	30.12061	Durbin-Watson stat		1.724867
Prob(F-statistic)	0.000000			

Appendix 3- Lag Criteria

VAR Lag Order Selection Criteria				
Endogenous variables: LRGDP LREM LFDI LTRAO LKAP LGE				

Exogenous variables: C						
Date: 07/17/23 Time: 12:19						
Sample: 1985 2021						
Included observations: 35						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-97.27561	NA	1.47e-05	5.901464	6.168095	5.993505
1	98.05109	312.5227*	1.69e-09*	-3.202920	-1.336502*	-2.558632*
2	134.2008	45.44539	2.03e-09	-3.211476*	0.254728	-2.014943
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Appendix 4-Bound Test

ARDL Bounds Test				
Date: 07/17/23 Time: 12:12				
Sample: 1986 2021				
Included observations: 36				
Null Hypothesis: No long-run relationships exist				
Test Statistic	Value	k		
F-statistic	7.107055	5		
Critical Value Bounds				
Significance	I0 Bound	I1 Bound		
10%	2.26	3.35		
5%	2.62	3.79		
2.5%	2.96	4.18		
1%	3.41	4.68		
Test Equation:				
Dependent Variable: D(LRGDP)				
Method: Least Squares				
Date: 07/17/23 Time: 12:12				
Sample: 1986 2021				
Included observations: 36				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFDI)	-0.011448	0.007052	-1.623373	0.1161
D(LKAP)	-0.010160	0.054374	-0.186845	0.8532
C	4.233966	2.065928	2.049426	0.0503
LREM(-1)	-0.019927	0.006948	-2.867842	0.0079
LFDI(-1)	0.005802	0.008531	0.680154	0.5022
LTRAO(-1)	-0.000739	0.016643	-0.044421	0.9649
LKAP(-1)	-0.102789	0.078767	-1.304964	0.2029

LGE(-1)	0.055276	0.012053	4.586202	0.0001
LRGDP(-1)	-0.100238	0.040629	-2.467168	0.0203
R-squared	0.634934	Mean dependent var		0.040251
Adjusted R-squared	0.526766	S.D. dependent var		0.037410
S.E. of regression	0.025735	Akaike info criterion		-4.269613
Sum squared resid	0.017882	Schwarz criterion		-3.873733
Log likelihood	85.85303	Hannan-Quinn criter.		-4.131440
F-statistic	5.869907	Durbin-Watson stat		2.740597
Prob(F-statistic)	0.000221			

Appendix 5-Regression Result

ARDL Cointegrating And Long Run Form				
Dependent Variable: LRGDP				
Selected Model: ARDL(1, 0, 0, 1, 0, 1)				
Date: 07/17/23 Time: 10:10				
Sample: 1985 2021				
Included observations: 36				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LREM)	0.023948	0.005655	-4.234491	0.0002
D(LGE)	0.055872	0.008685	6.432967	0.0000
D(LFDI)	0.002051	0.006242	0.328625	0.7450
D(LTRAO)	0.004830	0.015054	0.320852	0.7508
D(LKAP)	0.017992	0.046978	0.382977	0.7047
CointEq(-1)	-0.073418	0.030444	-2.411607	0.0230
Cointeq = LRGDP – (-0.3262*LREM + 0.7610*LGE + 0.1561*LFDI + 0.0658 *LTRAO -1.4800*LKAP + 57.0224)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LREM	0.326184	0.150211	-2.171503	0.0388
LGE	0.761012	0.254502	2.990197	0.0059
LFDI	0.156113	0.137997	1.131280	0.2679
LTRAO	0.065789	0.221705	0.296741	0.7689
LKAP	-1.479962	1.291193	-1.146197	0.2618
C	57.022388	38.848810	1.467803	0.1537

Appendix 6-Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.482754	Prob. F(2,25)	0.2463
Obs*R-squared	3.817498	Prob. Chi-Square(2)	0.1483
Test Equation:			
Dependent Variable: RESID			

Method: ARDL				
Date: 07/17/23 Time: 12:22				
Sample: 1986 2021				
Included observations: 36				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRGDP(-1)	0.013112	0.030896	0.424382	0.6749
LREM	0.001106	0.005701	0.194019	0.8477
LFDI	0.002139	0.006423	0.333012	0.7419
LFDI(-1)	0.001162	0.006458	0.179928	0.8587
LTRAO	0.001776	0.015054	0.117952	0.9070
LKAP	-0.000337	0.046197	-0.007302	0.9942
LKAP(-1)	0.001561	0.046376	0.033664	0.9734
LGE	-0.004298	0.008902	-0.482837	0.6334
C	-0.175816	1.752371	-0.100330	0.9209
RESID(-1)	-0.353948	0.209731	-1.687629	0.1039
RESID(-2)	-0.199009	0.233224	-0.853295	0.4016
R-squared	0.106042	Mean dependent var		-6.66E-16
Adjusted R-squared	-0.251542	S.D. dependent var		0.019419
S.E. of regression	0.021725	Akaike info criterion		-4.574237
Sum squared resid	0.011799	Schwarz criterion		-4.090384
Log likelihood	93.33626	Hannan-Quinn criter.		-4.405359
F-statistic	0.296551	Durbin-Watson stat		2.009464
Prob(F-statistic)	0.975452			

Appendix 7-Causality Test

Pairwise Granger Causality Tests			
Date: 07/17/23 Time: 16:06			
Sample: 1985 2021			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
LREM does not Granger Cause LRGDP	35	0.71410	0.4978
LRGDP does not Granger Cause LREM		3.65566	0.0379
LTRAO does not Granger Cause LRGDP	35	1.55361	0.2280
LRGDP does not Granger Cause LTRAO		0.16742	0.8466
LFDI does not Granger Cause LRGDP	35	1.57685	0.2233
LRGDP does not Granger Cause LFDI		1.40996	0.2599
LGE does not Granger Cause LRGDP	35	3.69465	0.0368
LRGDP does not Granger Cause LGE		3.34546	0.0488
LKAP does not Granger Cause LRGDP	35	1.53816	0.2312
LRGDP does not Granger Cause LKAP		5.98256	0.0065
LTRAO does not Granger Cause LREM	35	3.31907	0.0499
LREM does not Granger Cause LTRAO		0.62869	0.5402

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue VIII August 2023

LFDI does not Granger Cause LREM	35	1.14978	0.3303
LREM does not Granger Cause LFDI		0.94256	0.4009
LGE does not Granger Cause LREM	35	2.70581	0.0831
LREM does not Granger Cause LGE		1.45487	0.2494
LKAP does not Granger Cause LREM	35	0.15907	0.8537
LREM does not Granger Cause LKAP		4.47478	0.0199
LFDI does not Granger Cause LTRAO	35	1.72259	0.1958
LTRAO does not Granger Cause LFDI		0.68805	0.5103
LGE does not Granger Cause LTRAO	35	0.48906	0.6180
LTRAO does not Granger Cause LGE		0.90505	0.4153
LKAP does not Granger Cause LTRAO	35	0.49089	0.6169
LTRAO does not Granger Cause LKAP		0.57046	0.5713
LGE does not Granger Cause LFDI	35	0.91162	0.4127
LFDI does not Granger Cause LGE		2.04204	0.1474
LKAP does not Granger Cause LFDI	35	0.72375	0.4932
LFDI does not Granger Cause LKAP		0.47403	0.6271
LKAP does not Granger Cause LGE	35	0.63985	0.5344
LGE does not Granger Cause LKAP		5.01771	0.0132