REMITTANCES, FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN NIGERIA

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CERTIFICATION

The undersigned certify that this thesis was carried out by **KOPLAMMA DAKUP DUBI** and was approved as adequate in scope and content in partial fulfillment of the requirements for the award of Master of Philosophy (M. Phil.) degree in Economics, University of Benin, Benin City.

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DEDICATION

This thesis is dedicated to the Almighty God for his love, mercy and faithfulness towards me.

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ABBREVIATIONS AND ACRONYMS

3SLS	Three-Stage Least Squares
ADF	Augmented Dickey-Fuller
ARDL	Autoregressive Distributed Lags
CBN	Central Bank of Nigeria
ECM	Error Correction Model
ECOWAS	Economic Community of West African States
EU	European Union
FDI	Foreign Direct Investment
GARCH	Generalized Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GMM	Generalized Method of Moments
GNP	Gross National Product
HDI	Human Development Index
IFS	International Financial Statistics
IMF	International Monetary Fund
IMTO	International Money Transfer Operators
IOM	International Organization for Migration
MMO	Mobile Money Operator
MNC	Multinational Corporations
MNE	Multinational Enterprises
MTO	Money Transfer Operators
ODA	Official Development Assistance
OLS	Ordinary Least Squares

PP	Phillips-Perron
PPC	Production Possibility Curve
SSA	Sub-Saharan Africa
SVAR	Structural Vector Autoregression
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
VAR	Vector Autoregression
VECM	Vector Error Correction Model
WAEMU	West African Economic and Monetary Union
WDI	World Development Indicators

ABSTRACT

Remittance inflows and foreign direct investment (FDI) are widely acknowledged as vital external financing sources for developing countries, providing resources that can foster capital formation, employment, and economic transformation. In Nigeria, however, the extent to which these financial inflows contribute to sustained economic growth has been debated, with mixed evidence emerging across different periods and studies. Against this background, the study aimed to assess the short-and long-run effects of remittance inflows and FDI on real gross domestic product in Nigeria from 1981 to 2022.

The research was anchored on growth theories that emphasized the role of capital inflows in augmented domestic savings and investment, particularly the neoclassical growth model. Using time series data spanning 42 years, the study employed correlation analysis, Augmented Dickey Fuller unit root tests, Johansen cointegration test, and the Error Correction model to investigate the stationarity properties of the variables, their long run relationships, and the dynamics of adjustment between the short run and long run.

The findings revealed that FDI exerted a positive significant impact on economic growth in the short but an adverse and insignificant effect in the long run in Nigeria. Conversely, remittances had an insignificant effect in the short run but it contributed positively and significantly to long run growth. Base on these outcomes, the study recommended that policy reforms should prioritize quality over quantity of FDI, strengthen domestic value chains, improve the business environment and channel remittances through innovative mechanisms such as diaspora bonds and matched savings programs to promote sustainable economic growth.

CHAPTER ONE

INTRODUCTION

1.1 Preamble

The importance of capital inflows such as remittances, foreign direct investment, foreign portfolio investment and official development assistance in the recipient countries cannot be over emphasized. Capital inflows play a pivotal role in the economies of both developed and developing countries. In the developing countries, remittances and foreign direct investment have been the most stable sources of capital inflows. However, remittances have been more reliable compared to foreign direct investment over the years especially in the developing countries (Iheke, 2016). They have contributed significantly to the advancement of the host economies by helping to fill the savings-investment gap.

In Nigeria, domestic savings fall short of the required investment level needed to launch the economy to the path of sustainable development. This creates the problem of savings–investment gap. Also, there is the problem of foreign exchange shortage resulting from excessive demand for foreign goods occasioned by the weak productive base in the country. To reduce the gaps, capital inflows become very crucial. According to Obadan (2004) foreign capital inflows provide a greater proportion of the needed finance to boost the use of existing capacity and stimulate new investment in the host countries. Also, remittances have been found to play a key role in bridging the foreign exchange gap thereby helping to facilitate international trade especially importation of capital and intermediate goods required to boost domestic production capacities (Siddique et al. 2017; Obadan, 2012).

Giving the importance of capital inflows in developing countries, there is a growing body of literature that recognizes that remittance and foreign direct investment inflows have significant effect on economic growth in the recipient countries. Iheke (2016) asserted that remittances have not only grown strongly in a positive direction, but they have also

exhibited a much more stability than other private capital inflows. They play an increasingly large role in the economies of many countries, contributing to economic growth and to the livelihoods of people. Other studies such as Falki, (2009); Almfraji & Almsafir, (2014); and Ovat, (2018) revealed that foreign direct investment helps to enhance economic growth in recipient economies. In earlier study by Ayawale (2007), it was maintained that foreign direct investment is seen by developing countries as an important element in strategizing for the achievement of sustained economic growth.

However, more recently literature has emerged that offers contradictory findings about the effects of remittance and foreign direct investment inflows on economic growth. For example, in Nigeria, Adigun and Olugunwa (2017) discovered that remittances play a significant role in economic growth but their impact is negligible. Also, it was found that remittances have a negative and significant effect on economic growth both in the long-run and short-run (Anetor, 2019).

On the other hand, although foreign direct investment is believed to help stimulate economic growth in the long run, it hinders growth in the short run in the developing countries (Bosworth et al. 1999; Schoors & Tol, 2012; Trang, Duc, Anh & Thang, 2019). Thus, while foreign direct investment is seen as a veritable tool for sustainable economic growth of developing countries, it has been contended that it is associated with high incidence of crises, manifesting in the form of increased poverty, isolation and neglect of local capabilities (Aremu, 2003; Oyeranti, 2003). This is because foreign direct investment is often directed to high productivity industries which forces less productive firms to exit (Smarzynska, 2002). Cobham (2001) argued that it crowds out domestic firms, thereby resulting in possible contraction in total industry size and/or employment.

1.2 Statement of the Research Problem

Nigeria is the highest recipient of remittances and one of the leading foreign direct investment destinations in Africa. However, despite the huge remittances received by Nigeria, the problems of unemployment and poor economic growth still persist. This is an indication that Nigeria has not been able to effectively channel remittances inflow into productive activities to achieve sustainable economic growth. In empirical literature, the impact of remittances on economic growth is mixed in Nigeria. Some studies (Iheke, 2016; Adigun & Ologunwa, 2017) showed that remittances play a significant role in economic growth while others (Anetor, 2019) revealed that remittances hamper growth of the economy. Although remittances have proved to be less volatile, less pro-cyclical, and therefore a more reliable source of income than other capital flows to developing countries, such as foreign direct investment, its impact on economic growth remains controversial. Thus, if the remittances received are used for consumption purposes rather than capital investments, the tendency is that there may be very little or inconsequential impact on economic growth for the recipient country. Also, if the remittances received are used by recipients to reduce their labour supply to the economy, it can retard economic growth. Again, where remittances inflows lead to so much appreciation of the local currency, it can also harm the economy of the country as it will discourage exportation by reducing international competition of the recipient country.

On the other hand, though it is widely observed that foreign direct investment mitigates the saving-investment imbalance and provides technology which enhances productivity and growth, the pattern of the foreign direct investment attracted to Nigeria is often skewed towards the extractive industries (Morriset 2000; Asiedu, 2001). Given the natural resource endowment of Nigeria and her market size, it qualifies to be a major recipient of foreign direct investment in Africa and indeed is one of the top three leading African countries that

consistently received foreign direct investment in the past decade. However, the level of foreign direct investment attracted by Nigeria is meagre (Asiedu, 2003) compared with its resource base and potential needs. Furthermore, the empirical linkage between foreign direct investment and economic growth in Nigeria is still unclear. Numerous studies that have examined the effect of foreign direct investment on Nigeria's economic growth came out with varying outcomes (Bosworth et al., 1999; Schoorsr & Tol, 2012; Trang, Duc, Anh & Thang, 2019).

1.3 Research Questions

The research questions are stated as follows:

i. What is the short run effect of remittances on economic growth in Nigeria?
ii. Do remittances have a long run impact on Nigerian economic growth?
iii. How does foreign direct investment affect economic growth in the short run in Nigeria?
iv. Does foreign direct investment have a long run impact on economic growth in Nigeria?

1.4 Objectives of the Study

The broad objective of the study is to examine the effects of remittance and foreign direct investment inflows on economic growth in Nigeria. Thus, the specific objectives are to:

i. Examine the short run effect of remittances on economic growth in Nigeria;
ii. Analyze the long run impact of remittances on economic growth in Nigeria;
iii. Investigate the short run effect of foreign direct investment on economic growth; and
iv. Examine the long run impact of foreign direct investment on economic growth in Nigeria.

1.5 Hypotheses of the Study

The research hypotheses are specified as follows:

i. Remittances do not have any significant short run effect on economic growth in Nigeria.
ii. There is no significant long run relationship between remittances and economic growth in Nigeria.
iii. Foreign direct investment has no significant short run effect on economic growth in Nigeria.
iv. Foreign direct investment does not have a significant long run effect on economic growth in Nigeria.

1.6 Significance of the Study

Sources of capital inflows such as remittances and foreign direct investment are means of foreign finance which enable the recipient country augment its savings-investment gap for sustainable economic development. Nigeria needs substantial capital inflows to boost its economic performance because it lacks enough savings to meet its investment needs. Consequently, this study will be of immense importance to the Nigerian government with respect to sources of capital inflows. The study will provide suggestions for government to formulate new policies and/or amend the existing policies on capital inflows with respect to remittances and foreign direct investment. It will provide insights for government on the short and long run effects of remittances and foreign direct investment in the country. This will enable the government create the enabling environment to attract foreign direct investment into the country as well as encourage Nigerians abroad to repatriate their earnings home for investment and other purposes.

Again, the findings of this study will enrich the existing literature on the effects of remittances and foreign direct investment inflows on economic growth in Nigeria. It will

bridge the gap in literature by providing updated findings on the short and long run effects of remittances and foreign direct investment on economic growth in Nigeria.

Finally, the study will provide academicians, researchers and students with the relevant information concerning the effects of remittances and foreign direct investment on economic growth in Nigeria. The findings will serve as reference points for other researchers.

1.7 Scope of the Study

This study examine the effects of remittances and foreign direct investment on economic growth in Nigeria. The data analysis of the study will cover the period, 1981 to 2022. This period was informed by the availability of data for the selected variables. Also, this period recorded high proportion of migrants from Nigeria and huge increase in remittances inflows compared to previous decades (see United Nations Development Programme [UNDP], 2022; World Bank, 2022).

1.8 Structure of the Study

The study is structured into six (6) chapters. Chapter one contains the introduction. Chapter two presents the background information to set the stage for the study. Chapter three presents the literature review; here, the relevant concepts are clarified; the relevant theoretical and empirical literature is reviewed. Chapter four discusses the theoretical framework and methodology employed in carrying out the study. While, chapter five discusses the empirical results and chapter six contains a summary of the research findings, policy recommendations, and conclusion.

CHAPTER TWO

BACKGROUND OF THE STUDY

2.1 Remittance Inflows in Nigeria

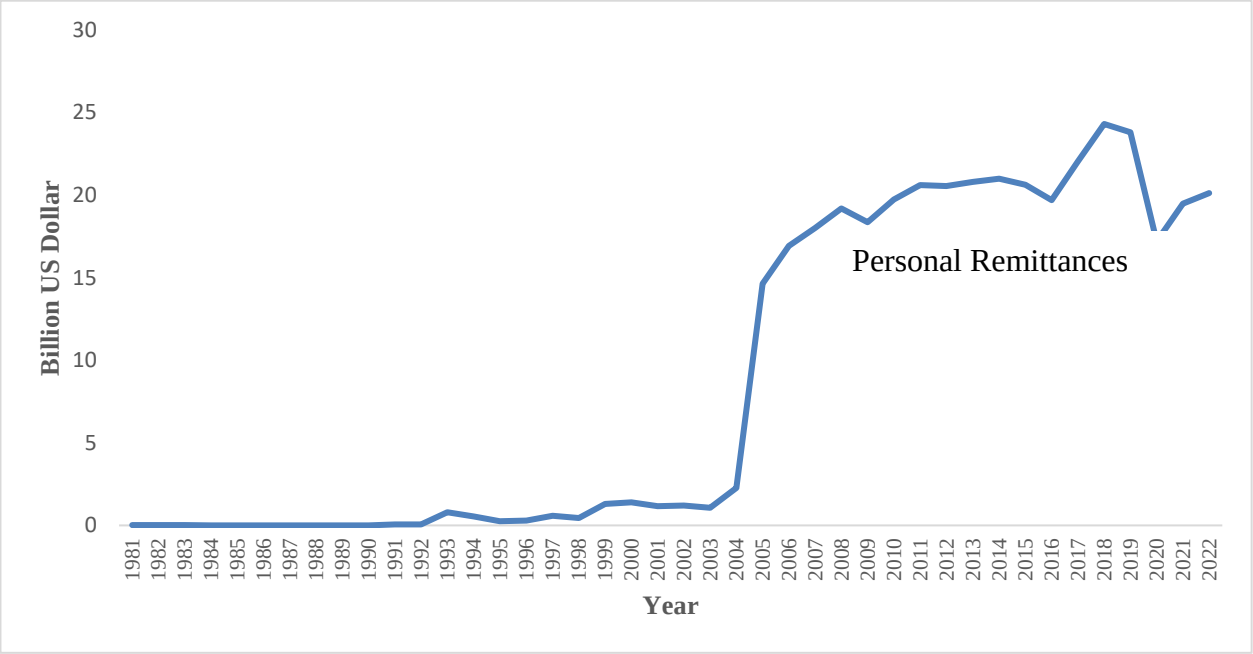
A major source of foreign-exchange earnings for Nigeria is remittances sent home by Nigerians living abroad. Remittance inflows into Nigeria are by far the highest in Africa. According to a World Bank study, Nigeria is by far the top remittance recipient in Africa, accounting for $10 billion in 2010, a slight increase over the previous year ($9.6 billion). Other top recipients include Sudan ($3.2 billion), Kenya ($1.8 billion), Senegal ($1.2 billion), South Africa ($1.0 billion), Uganda ($0.8 billion), Lesotho ($0.5 billion), Ethiopia ($387 million), Mali ($385 million), and Togo ($302 million). As a share of Gross Domestic Product, the top recipients in 2009 were: Lesotho (25%), Togo (10%), Cape Verde (9%), Guinea-Bissau (9%), Senegal (9%), Gambia (8%), Liberia (6%), Sudan (6%), Nigeria (6%), and Kenya (5%). In 2017, Nigeria was the sixth-highest in the world in terms of remittances inflow in the country.

In 2014, 17.5 million Nigerians lived in foreign countries, with the UK and the US having more than 2 million Nigerians each (Nigerian Tribune. 8 September 2014). According to the International Organization for Migration, Nigeria witnessed a dramatic increase in remittances sent home from overseas Nigerians, going from US$2.3 billion in 2004 to 17.9 billion in 2007, representing 6.7% of GDP. In 2016, remittances reached a new record of $35 billion (Agabi, 2016). 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, while China is the biggest remittance-sending country in Asia.

Estimates suggest that currently over 15 million Nigerians live abroad, or over 8% of the total Nigerian population (Vanguard, 2017). The diaspora is widespread but can mostly be found in developed countries in Europe and North America as well as other West African states. Most Nigerian migrants live in the USA, UK and neighbouring Cameroon, collectively making up almost 50% of Nigerians abroad. In line with migration, the diaspora in these three countries also send by far the highest amount of formal remittances back home – close to USD13 billion collectively (World Bank, 2024). Nigerian migrants are often well educated and highly skilled. In the USA, they are the immigrant group with the highest level of education in the country. This profile allows the diaspora to send larger amounts of money back home compared to other sub-Saharan African countries due to higher average earnings. Their close family and cultural ties translate into sustained remittance flows even from second or third generation Nigerians.

In August 2016, the Central Bank of Nigeria decided to suspend the operations of all Money Transfer Operators (MTOs) in the country, except those of Western Union, Money-Gram and Rio, was met with a strong backlash. It was argued that the decision was not appropriately justified, while also standing in contrast to the NCB's previous move to ban all exclusivity agreements with Western Union (Jacopo & Heather, 2016). The decision was considered to disproportionally strengthen the dominant position of Western Union, Money-Gram and Rio. Under pressure, however, the Central Bank reversed the decision and granted new licenses to a number of competing MTOs (Allison, 2016)

Figure 2.1: Personal Remittance Inflows in Nigeria (1981-2022)



Source: World Development Indicators (WDI) Database, 2023

As shown in Figure 2.1, in 2018 USD 24.2 billion was remitted to Nigeria – a 9% increase from 2017. The Central Bank of Nigeria (CBN) attributes this growth to improved global economic conditions (CBN, 2022). These impressive flows constitute just under one third of total formal remittance flows into Africa and are ten times higher than those of Senegal, which is the second highest recipient in SSA. Remittances were worth 5.9% of the Nigerian GDP in 2017 (World Bank, 2024). This is an impressive figure given that Nigeria is Africa's largest economy. Capital flows in general, and remittances in particular, have accelerated rapidly since 2005 due to the opening of the Nigerian capital market, and the country is considered to have joined the ranks of frontier markets (IMF, 2016). Various sources report that the flows are vastly underestimated, however, with as much as 50% of remittances entering the country through informal channels not captured in the official data (Iheke, 2016). Remittance outflows stood at around USD275 million in 2017, making Nigeria a clear net recipient of remittances (World Bank, 2024).

Nigeria's remittances continued its upward trend in the first quarter of the year, 2022, rising by 20.3 per cent, year-on-year, to $5.16 billion from $4.29 billion in the same period of last year, 2021. Data from the Central Bank of Nigeria, (CBN, 2022) show that remittances from Nigerians working abroad have been on the upward trend since the third quarter of 2020. On a quarter-on-quarter basis, remittances rose by 2.6 per cent in first quarter of 2022 from $5.03 billion in last quarter of 2021. This represents the seventh consecutive quarterly increase in diaspora remittances.

Reflecting the impact of the economic lockdown to contain the spread of COVID 19 pandemic, diaspora remittances into the country fell sharply by 32 per cent quarter-on-quarter to $3.84 billion in first quarter of 2020. In a bid to forestall this trend, the CBN in December 2020 introduced measures to encourage Diaspora Nigerians to send their remittances through the banking system. Among other things, the measures allow beneficiaries to have unfettered access and utilization to foreign currency proceeds, either in foreign exchange cash and/or in their domiciliary accounts.

Furthermore, the CBN directed payment switching and processing companies to stop local currency transfer of diaspora remittances received through International Money Transfer Operators (IMTOs). The apex bank also directed Mobile Money Operators (MMO) to disable wallets from receipt of funds from IMTOs. To complement these measures, the CBN in February 2021 introduced the "Naira4Dollar" scheme, which rewards beneficiaries of remittances with N5 for every $1 of remittance sent through the banks. These measures according to the World Bank helped Nigeria achieve 11.4 per cent year-on-year growth to $19.2 billion in 2021. While also projecting 7.0 per cent increase in remittance inflow into Nigeria and other countries in the Sub-Saharan Africa region in 2022, the World Bank, stated: "Remittance inflows to Sub-Saharan Africa soared 14.1 percent to $49 billion in

2021 following an 8.1 percent decline in the prior year. Growth in remittances was supported by strong economic activity in Europe and the United States".

"Recorded inflows to Nigeria, the largest recipient country in the region, gained 11.2 percent, in part due to policies intended to channel inflows through the banking system. "In 2022, remittance inflows were projected to grow by 7.1 percent driven by continued shift to the use of official channels in Nigeria and higher food prices – migrants will likely send more money to home countries that are now suffering extraordinary increases in prices of staples."

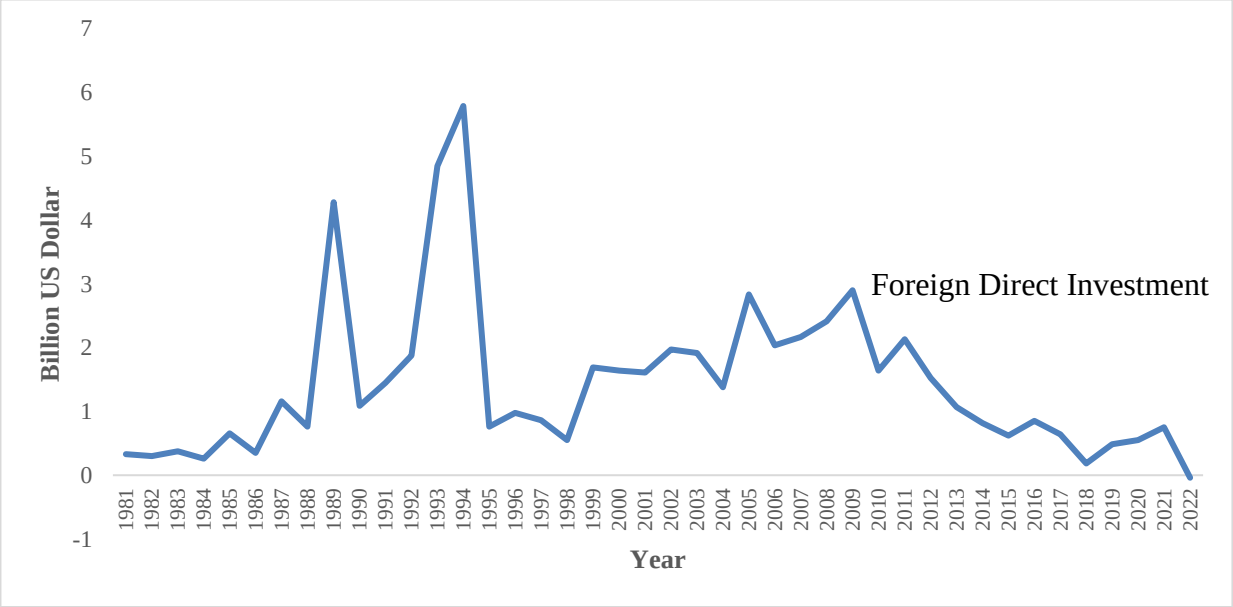
2.2 Foreign Direct Investments in Nigeria

In the first quarter of 2007, the total foreign direct investment (FDI) was US$73,000,121.56 this increase monotonically to US$661,392,757.39 in the second quarters of 2008. FDI inflow started to drop after the second quarter of 2008 and reached a record low level of US$2,892,881.20 in the third quarter of 2009. However, in the first quarter of 2010, there was an upward turn in FDI inflow and reach US$85,954,732.63 in the fourth quarter of 2010. With the exception of the first quarter of 2010, FDI inflow was relatively high. Decline in FDI became noticeable in 2015 when FDI inflow dropped from US$ 258,768,509.42 in the fourth quarter of 2016 to US$70,145,434.41 in the first quarter of 2015. This declined further to US$19,852,049.36 in the first quarter of 2016. This may not be unconnected with the economic recession that hit the economy in this period.

One important feature of the FDI inflow in Nigeria is that a greater proportion of FDI inflow in Nigeria is for equity. On the average for the period under review, about 93% of the total FDI inflow was on equity, while only 0.07% was on other capital. On the whole, it can be seen that FDI inflow was highest in the country in 2008. This could be attributed to the peaceful environment during the period. There was a downward trend in FDI inflow thereafter and even become more critical from 2011. FDI for 2019 was $2.31 billion with a

197.34% increase from 2018. In 2020, FDI stood at $2.39 billion with a 3.48% rise from the previous year, 2019. In 2021, FDI had risen to $3.31 billion with a 38.9% increase from 2020. However, FDI for 2022 was $-0.19 billion, a 105.64% decline from 2021.

Figure 2.2: Foreign Direct Investment Inflows in Nigeria (1981-2022)



Source: World Development Indicators (WDI) Database, (2023)

2.3 Remittances and Economic Growth in Nigeria

Remittances are an important source of funds for many immigrant-sending countries, and are one of the primary motivations for migration. Cash or in-kind transfers sent home or brought back by international migrants may contribute to economic development in the home countries at the national and regional levels. At the household level, remittances may boost consumption and investment. However, remittances also may lead to decreases in labor force participation and increases in inequality. They also may finance additional out-migration (Orozco, Lowell, & Schneider, 2006).

The undocumented remittances are more likely to have characteristics associated with sending remittances, such as being a recent immigrant, leaving dependents behind in the source country, and moving in search for better economic opportunities (Pena, 2013). Undocumented immigrants' earnings are typically more volatile because of less job stability

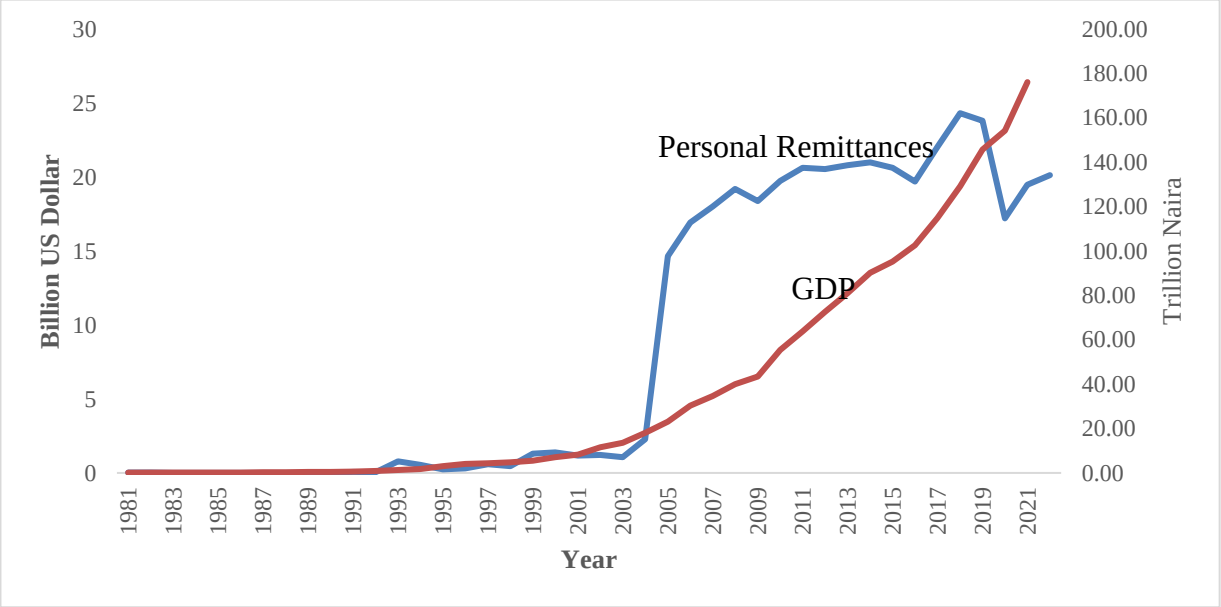
and ineligibility for government transfer programs; remittances can act as a form of insurance against such uncertainty (Dustmann, 1997). Remittances also may ensure a place back home if an undocumented immigrant is deported. Empirical evidence indicates that undocumented immigrants typically send more remittances than legal immigrants (Amuedo-Dorantes & Pozo, 2006).

The relationship between remittances and growth and development of a country lies at a point where the economic activities of migrants intersect in a way that transforms the material base of migrants, their relatives, and their societies (Orozco et al., 2006). Remittance flows have several effects on the economic and financial system of a country. From a macroeconomic standpoint, these aggregate flows influence national reserves, foreign currency exchange, and savings and credit ratios. Remittances are a source of national income and can have a positive impact on a country's economic growth. Remittances also play a role in providing financial access to both migrants and remittance recipients, and thus help lift people off poverty and build financial assets. For example, research shows that remittance recipients are more likely to save and have bank accounts than non-recipients (Orozco et al., 2005). Thus, from a policy perspective, remittance flows have an effect on keeping people out of poverty and offer important ingredients to enhance their well-being .

There has been a dramatic increase in remittance inflow to Nigeria in the past four decades, becoming the 10th largest recipient of remittances in the world in 2022 and receiving about 40% of all remittances to sub-Sahara Africa in 2022 (WDI, 2023) (see Figure 2.3). Remittances to Nigeria increased by over 900-fold from about $22 million in 1980 to more than $20 billion in 2022. Meanwhile, gross domestic product in the country has also increased over the period of review. The United Nations Development Program (UNDP) asserts that remittances increase consumption and investment, which boosts output growth

and impacts the macro economy. Remittances also raise households' purchasing power, enabling them to invest in things like food, housing, and health that will improve their quality of life and productivity in the long run. Historically, economic growth has been primarily influenced by factors like capital (remittances), labor, and technology, according to economists, however, as the recent economic and financial disruptions in the world has shown, the situation in both the home and migrants' countries of residence affects the volume of remittances with serious economic effects on the home country (Konte, 2018; Musa et al., 2022; Clemens & McKenzie, 2018).

Figure 2.3: Remittances Inflow and Gross Domestic Product in Nigeria (1981-2022)



***Source*: World Development Indicators (WDI) Database, (2023)**

2.4 Foreign Direct Investment and Economic Growth in Nigeria

In theory, literature gives the impression that foreign direct investment (FDI) enhances growth of the economy by means of capital accumulation, and the integration of new inputs and foreign technology advancement that enhances production and promotes efficient gain by local companies. Nevertheless, the empirical evidence on this notion is inconsistent (Maskus, 2002; Lall, 2004). The frequently stated advantage from FDI such as the movement of technological advancement and managerial expertise, the birthing of

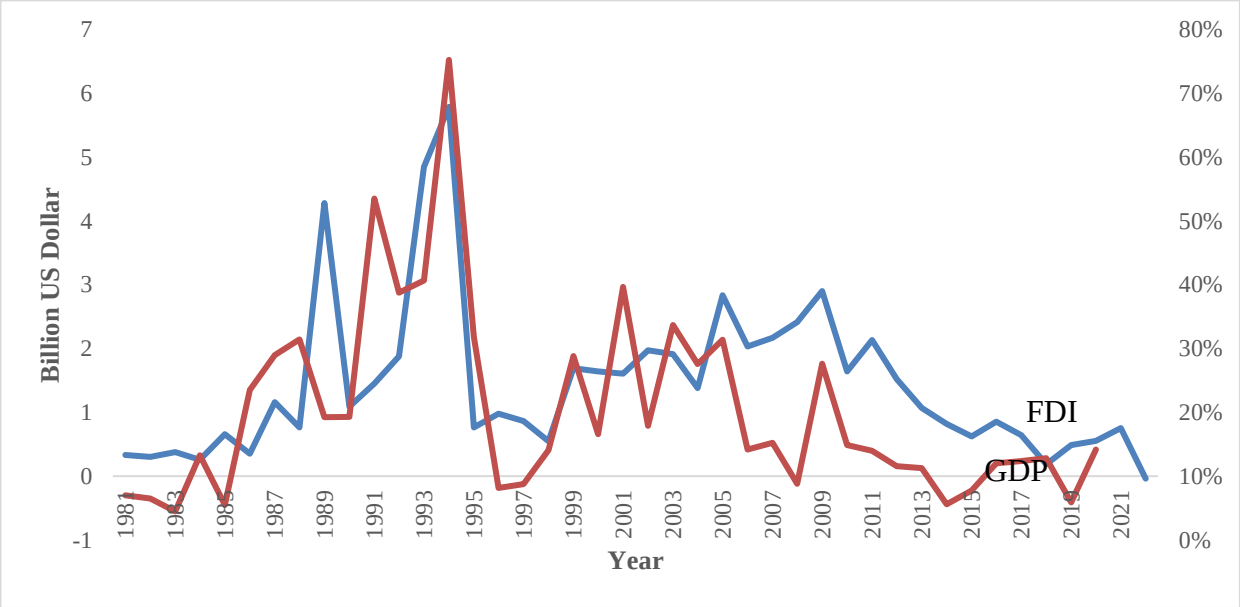
innovative procedures as well as employee training have the tendency of being related to all the area of the economy.

According to Lall (2004), FDI inflow impacts several factors of the economy and these factors in one way or another impacts economic growth. Their analysis displays that the empirical research linking FDI to the growth of the economy is still very distant from arriving at a conclusion. The fact that FDI appears to be tailored to a particular country and can be positive, negative or insignificant, it's dependent on the economy, institutions as well as technology in the beneficiary economies. So therefore, FDI make available a pathway for up-and-coming countries to sell overseas their output so as to raise their export. Several emerging economies such as Nigeria and other African countries chase FDI as a veritable means for promoting export and manufacturing .

Alejandro (2010) opined that FDI portrays an amazing as well as budding role in firm dealings and global economy. It makes available a company with innovative markets as well as marketing innovations, inexpensive manufacturing amenities admittance to innovative technological produce, skills as well as financial support for the host economy or the international companies which their investments can make available a supply of new technological advancement, capital processing products, organizational technological advancement as well as managerial skills and other positive externalities as well as spill over that enhances a study impulsion to economic growth. Zhang (2001) also asserted that FDI has an affirmative growth effect that is comparable to home investment in the midst of partially improving deficient balance of payment in the current account. He however stated that through technological advancement transfer as well as spill over impact, FDI inflow will likely fuel the economic performance of a country. Ewe-Ghee and Lim (2010) did a summary of current debates and findings as regards FDI and its association with the growth of the economy with a strong focus on extant literature on spillover from FDI. They however

revealed that while extensive support exists for a positive spill over from FDI, there is no consensus as regarding the causal relationship that exist between the two variables.

Figure 2.4: Foreign Direct Investment and Gross Domestic Product Growth in Nigeria (1981-2022)



***Source*: World Development Indicators (WDI) Database, (2023)**

By examining the trends of real GDP growth rate and foreign direct investment as depicted in Figure 2.4, there are evidences that while economic growth rates have fluctuated over the years, as well as foreign direct investment. An examination of the trend shows the value of growth rate in 1982 as 7.01%, but eventually began to decrease to about 4.53% in 1984. Meanwhile the value foreign direct investment dropped from $0.33 billion in 1981 to $0.26 billion in 1984. In 1985, the value of foreign direct investment stood at $0.66 billion while economic growth rate was 12.85%. By 1986, foreign direct investment decreased to $0.35 billion and economic growth declined to 5.29%. However, growth rate increased steadily from 23.22% in 1987 to about 30.87% in 1989 while foreign direct investment rose to $4.28 billion in 1989. Even though situation is different in 1991, as the growth rate recorded another decline 19.2%, foreign direct investment decreased to $1.45 billion in 1991. However, economic growth rate later increased to an average of 29.96% in the year 2000

while foreign direct investment stood at $1.64 billion in 2000. While economic growth rate trend fluctuated to 23.32% in 2010, foreign direct investment was $1.64 billion in 2010. However, in 2011 the value of foreign direct investment increased to $2.13 billion but decreased steadily from $0.62 billion in 2015. From 2010 to 2015, the value of economic growth rate shows a declining rate from 15.32% in 2011 to an average of 5.73% in 2015. It stood at 7.8% in 2016. It rose from 12.04% in 2017 to 12.99% in 2019. Meanwhile, foreign direct investment for 2019 was $2.31 billion with a 197.34% increase from 2018. In 2020, foreign direct investment stood at $2.39 billion with a 3.48% rise from the previous year, 2019. In 2021, foreign direct investment had risen to $3.31 billion with a 38.9% increase from 2020. However, foreign direct investment for 2022 was $-0.19 billion, a 105.64% decline from 2021.

CHAPTER THREE

LITERATURE REVIEW

3.1 Conceptual Issues

3.1.1 Remittances

The origin and concept of remittance emerged from the theory of migration, its definition also linked to its impacts, uses, kind of transfer and the channel of financial or funds transfer. According to IMF (1999) remittances are defined as the sum of three items in the IMF's Balance of Payment Statistics year book: workers' remittances, compensation of employees and migrants' transfer.

i. Workers' Remittances (part of current transfer in the current account) are current transfers made by migrants whose are employed and resident in another economy. This typically includes those workers who move to an economy and stay, or are expected to stay a year or longer.

ii. Compensation of employees (part of the income component of the current account) instead comprises wages, salaries and other benefits (cash or in kind) earned by non-residents of another countries. Such workers typically include border and seasonal workers, together with some other categories, e.g. local embassy staff.

iii. Migrant transfer (part of the capital account) include financial items that arise from the migration (change of residence) of individuals from one economy to another (stay less than a year). Ratha (2003) define remittances as migrants' capital transfer, which is assets that a migrant bring into or takes out of the country. According to Kapur (2004), "Remittances are financial resource flows arising from the cross border movement of nationals of a country. The narrowest definition unrequited transfer refers primarily to money sent by migrants to family and friends on whom there are no claims by the sender unlike other financial flows such as debt or equity flows".

A remittance is a payment of money that is transferred to another party. Broadly speaking, any payment of an invoice or a bill can be called a remittance. However, the term is most often used nowadays to describe a sum of money sent by someone working abroad to his or her family back home. Most remittances are made by foreign workers to family members in their home countries. The most common way of making a remittance is by using an electronic payment system through a bank or a money transfer service such as Western Union. People who use these options are generally charged a fee. Transfers can take as little as ten minutes to reach the recipient. Most remittances are sent by foreign workers to their families in their home countries. The most common way to make a transfer is to use an electronic payment system via a bank or a transfer service such as Western Union. People who use these options are usually charged. The transfer may take only 10 minutes to reach the recipient. Remittances are playing an increasingly important role in the economies of small and developing countries. It also plays an important role in disaster relief and often exceeds official development assistance (ODA). They raise the standard of living of people in low-income countries and help fight poverty in the world.

3.1.2 Foreign Direct Investment

Foreign direct investment refers to an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor. Some degree of equity ownership is almost always considered to be associated with a compelling voice in the management of an enterprise; it suggests a threshold of 10 per cent of equity ownership to qualify an investor as a foreign direct investor (IMF, 2009; UNCTAD, 2019). Defining foreign direct investment is crucial to understanding the concept as it plays a significant role in influencing a country's development efforts (Osabutey & Jackson, 2019). Thus, a clear definition helps distinguish it from other types of investments, such as portfolio investment.

There are two types of FDI, namely horizontal and vertical. In horizontal FDI, a foreign firm may choose to locate production in an overseas market, due to cost savings (Cieślik, 2019). In other words, firms set up plants in several markets to exploit firm specific assets and to avoid transport costs and trade barriers. According to Moritz et al. (2019), horizontal FDI is undertaken in order to gain access to new markets. Vertical FDI denotes the international fragmentation of the production process for cost-saving reasons (Moritz, Veronika & Johannes, 2019), and it involves the geographical separation of production and headquarters activities to exploit factor cost differentials caused by different relative factor supplies. According to Kinda (2013), vertical FDI primarily happens when a firm can break down its production processes into different parts and different locations, based on factor costs in these locations.

In addition, modes of entry into overseas markets are another essential factor relating to the study of FDI. Greenfield investments, cross-border mergers and acquisitions and joint ventures are the three main routes through which investors enter a host country (Calvelli & Cannavale, 2019). Greenfield FDI is defined as the establishment of investment projects, and it involves new entities and the setting up of new offices, buildings, plants and factories (UNCTAD, 2009; Calvelli & Cannavale, 2019). It may take the form of a branch, incorporated or unincorporated firms. Mergers and acquisitions FDI is defined as the taking over or merging of the capital, assets and liabilities of existing enterprises (UNCTAD, 2009; Calvelli & Cannavale, 2019). One of its main advantages is gaining knowledge and access to a network of suppliers, raw materials, established channels of distribution, brand names and local and international clientele. Finally, joint venture FDI involves two or more companies aligning together to undertake an investment project.

A major component of capital inflows, foreign exchange, and an important contributor to the GDP of most developing economies is foreign direct investment (FDI) (Insah, 2013).

FDIs not only provide foreign exchange to fill the gap between targeted foreign exchange requirements and net export earnings, but also gaps in management, entrepreneurship, technology, and skill which are partly or wholly filled by the local operations of firms owned by foreign investors (Todaro & Smith, 2011). FDI inflows also encourage local enterprises to invest more in ancillary industries thereby propelling increased productive activities.

3.1.3 Economic Growth

Economic growth represents the expansion of a country's potential gross domestic product (GDP) or national output which is defined by an outward shift in its Production Possibility Curve (PPC). Economic growth is measured by the increase in a country's total output or real Gross Domestic Product (GDP) or Gross National Product (GNP). The Gross Domestic Product (GDP) of a country can also be seen as the total value of all final goods and services produced within a country over a period of time. According to Todaro (1990) economic growth refers to an increase in a country's national output of goods and services or increase in the volume of output of goods and services within a specific period. According to Lewis (1954) it means the increase of output per head of population since the main aim of economic growth is to raise the standard of living of the people.

According to Jhingan (2012) economic growth is related to a quantitative sustained increase in the country's per capita output or income accompanied by expansion in its labour force, consumption, capital and volume of trade. Todaro and Smith (2011) identified three components of economic growth that are of prime importance. They include: capital accumulation (including all new investments in land, physical equipments and human resources through improvements in health, education, and job skills); growth in population and the labour force and technological progress. Therefore, an increase in GDP is the increase in a country's production. Economic growth is one of the most important indicators of a healthy economy. One of the biggest impacts of long-term growth of a country is that

it has a positive impact on national income and the level of employment, which increases the standard of living. As the country's GDP is increasing, it is more productive which leads to more people being employed and in turn increases the wealth of the country and its population. Higher economic growth also leads to extra tax income for government spending, which the government can use to develop the economy. This expansion can also be used to reduce the budget deficit.

GDP growth rate indicates the rate at which a country's GDP changes or grows from one year to another. It also evaluates how quick the economy improves by drawing comparison between one quarter of the country's GDP and the previous quarter (Anidiobu, Paschal, Onyia & Onwumere, 2020). Real GDP, on the other hand, is an inflation-adjusted macroeconomic assessment which reveals the monetary worth of total goods and services produced by an economy at a particular period expressed in base-year prices, usually regarded as "co," "inflation corrected" GDP or "constant naira GDP." Unlike nominal GDP, real GDP or growth rate assesses changes in price level and shows a verifiable growth rate (Anidiobu et al, 2020). The growth rate is governed by four parts of GDP. The first is personal consumption, which involves sales to consumers. The next part is investment, such as construction and inventory levels. Government spending forms the third propeller of growth. This manifests more in defense spending (particularly in Nigeria where the government spends more on insurgence and related criminality and social infrastructures. Governments also increase spending to jump-start the economy during a recession. The fourth propeller of growth is trade (Anidiobu et al, 2020).

3.2 Theoretical Literature Review

Diverse theories have emerged to explain the impact of remittances and foreign direct investment on economic growth and development. Among these are the

Developmentalist/Neo-Classical view, the Structuralist/Dependency view, the Pluralist view and the Portfolio Management Decision Theory.

3.2.1 Developmentalist/Neo-Classical View (Optimists)

This view emerged in the 1950s and 1960s with the assumption that, through capital transfer, industrialization and the adoption of western values, developing countries would be able to accelerate their developmental process. During this period, underdevelopment was attributed to internal factors within developing countries and the notion was that, if developing countries wanted to develop, they needed to abandon their traditions, values and culture and adopt those of the West (Coetzee, 2001).

It was during this period that the developmentalist view emerged. Some prominent scholars who hold this view include: Kindleberger (1965), Todaro (1969), Beijer, (1970) and Massey et al (1998). They argue that migration will result in the transfer of investment capital through remittances and expose traditional/primitive societies to more rational, democratic and liberal ideas that will aid in their development (De Haas, 2010). Labour migration is viewed as a core part of modernization and it is believed that the effects of migration on development can be seen through the inflow of capital (remittances) which could help increase productivity and incomes (Massey et al., 1998). From this perspective, migrants' remittances are deemed important since they bring about change in household incomes, promote investments and innovations, and thereby aid the larger economy of the migrants' country of origin in its economic take-off (De Haas, 2010).

3.2.2 Structural and Dependency Views (Pessimists)

In contrast to the above, the dependency view argues that migration and remittances create underdevelopment in migrants' countries of origin (Oluyemi & Fasanya, 2018). This view emerged in the 1970s and the 1980s; some scholars associated with this theory include Rubenstein (1992) and Binford (2003). They hold that remittances make receiving countries

dependent on the sending countries as well as making receivers of remittances dependent on the senders (Binford, 2003). They argue that migration drains the human capacities of communities and leads to development that is passive as well as making these communities remittance-dependent (De Haas, 2007). Rather than encouraging economic growth, remittances lead to inequalities in areas where there is a large inflow of remittances (Lipton (1980), as cited in Oluyemi & Fasanya, 2018). This is because when the remittances are sent to recipients in the home countries, they tend not to use the money for any productive ventures but rather spend it on conspicuous consumption, such as cars, houses and clothing, which helps to deepen the income inequalities between households receiving remittances and those that do not receive any (De Haas, 2007, 2010; Oluyemi & Fasanya, 2018). This can lead to inflation and the rise of prices in basic commodities in remittance receiving countries. For scholars of this tradition, remittances have a negative impact on the economies of receiving countries; they view remittances as indicators of developing countries relying on developed countries for their development (De Haas, 2010). Remittances lead to the "development of underdevelopment" (De Haas, 2007).

3.2.3 Pluralist View (The New Economics of Labour Migration)

This view emerged in the 1980s and 1990s in the context of American research in reaction to the neo-classical and the structuralist views (Oluyemi & Fasanya, 2018). This view tries to link the two theories above and argues that remittances and migration have both positive and negative impacts (De Haas, 2010). In this view, migration is seen as "a household response to income risk since migrants' remittances serve as insurance for households of origin" (De Haas, 2007). This can be seen as explaining why people migrate despite not knowing about prospects of income in host countries. This view sees remittances as having the tendency to produce both positive and negative impacts on development depending on what recipients and home countries do with the remitted money.

According to the pluralist view, migration plays a key role in the economy by providing capital through remittances which can be used for investments in developing countries that are mostly characterized by poor credit and high market risk such as fluctuating exchange rates that deters financial institutions from giving out credit frequently (Taylor & Wyatt, 1996). It also stresses the importance of human "agency" if remittances are to contribute significantly to the economies of migrants' home countries (De Haas, 2007; 2010). Accordingly, remittances will impact economic growth positively if recipients of these remittances use them for productive purposes and negatively if recipients use them for unproductive purposes.

3.2.4 Portfolio Management Decision Theory

In this theory, an emigrant worker to diversify his or her savings views remittances as a strategy. Accordingly, the decision to remits is based on the risk return differential of assets in to the host and recipient country. As such, the main determinants of the decision to remit include interest rate differential on deposit accounts in the host and recipient country. Real estate return, inflation rate, and black exchange rate premium among others. Apart from these economic determinants, the desire to invest may also be driven by the desire of the emigrant worker to return home with dignity in the event that emigrant worker chooses to return back home (Anidiobu et al, 2020). Since the desire to remit is purely motivate by investment opportunities, the correlation between remittances, GDP tends to be positive, and the correlation between remittances and private investment is positive since remittances is principally spend on investment activities.

3.2.5 Internalization Theory

This theory describes the growth of transnational firms and their motivations for undertaking foreign direct investment (Buckley, 2009). Buckley and Casson (2016) advanced the internalization theory in 1976, followed by the parallel pioneering work of Hennart in 1982 and Casson in 1983. The theory states that FDI occurs due to firms' efforts to substitute markets transactions with internal transactions (Buckley & Casson, 2016). Buckley (2009) postulated that multinationals engage in foreign direct investment by internalizing overseas markets because of imperfections in vital intermediate products (knowledge, human capital, marketing expertise, and technology). For instance, a steel company experiencing challenges in the market when seeking to buy iron ore may decide to buy a foreign firm producing the iron ore. The advantages of internalization include buyer uncertainty, removing bargaining and the avoidance of business time lag (Buckley & Casson, 2016; Agrawal, 2015). On the other hand, the cost of internalization is high when a single foreign market becomes pluralistic in domestic markets (Buckley & Casson, 2016).

The theory increases understanding of why firms reject export and licensing in favour of foreign direct investment, due to high transaction costs (Moosa, 2002). However, it is contended that the internalization theory is too general compared to other theories representing a subcategory of the general theory (Nayak & Choudhury, 2014; Moosa, 2002). Rugman (2010), for instance, claims that the theory lacks empirical content, as it is too general and attempts to reconcile the internalization theory with the Dunning eclectic theory.

However, the author notes that the fit is imperfect, and the main reason behind this misalignment is that Dunning focuses on outward foreign direct foreign investment in host countries, while the Rugman matrix considers the company-wide strategy for MNEs in both the domestic country and the host country.

3.2.6 Location Theory

This theory assumes that foreign direct investment exists due to production factors (labour and natural resources) being affected by international immobility, which causes variances in the costs involved in production and is linked to location advantage (Moosa, 2002). Such an example is low wages. Hence, the wage gap in home and home nations is pivotal to FDI. Location theory arguably is the reason why nations such as China and India continue to attract more labour-intensive MNCs (for example clothing and footwear) from high-wage nations (Demirbag et al., 2007).

However, it should be noted that high-quality labour attracts higher wages, which does not support the cheap labour and foreign direct investment hypothesis. For example, banking and research & development work is never relocated to other countries because of cheap labour (Wheeler & Mody, 1992). Studies supporting the theory that low- wages lure FDI are mixed (Moosa, 2002), in that some see positive effects and others find no connection (Kravis & Lipsey, 1982).

It is also vital to note that apart from the wage rate as a foreign direct investment determinant, cross-country labour productivity differences are also a crucial factor (Moosa, 2002). The location advantage theory's applicability is not primarily limited to low wages but also to the other production factors. A firm, for instance, may decide to locate its factory overseas in a nation where it is cheap to generate hydroelectric power. Equally, a copper firm could build its factory overseas closer to the limestone mine, because of the pivotal nature of the copper. This represents a significant location advantage in terms of cost savings, shipment delays and other constraints related to trade barriers (Moosa, 2002). Lastly, capital is another important production factor, as it will flow into low-capital nations. The above factors illustrate the reasons why multinationals get involved in foreign direct investment irrespective of the risks related to setting up industrial activities overseas (Moosa, 2002).

3.2.7 Market Size Theory

This theory states that the size of the market determines the host nation's quantity of inward foreign direct investment. This is calculated according to the GDP of the nation or a firm's sales in the host economy. The theoretical model that establishes output and domestic investment association is founded on the neoclassical domestic investment theory in which business investment soars, based on sales (Moosa, 2002). When the size of the host nation market becomes more prominent, and the economies of scale attract firms, foreign direct investment inflow aims at a rise in the economy (Shatz & Venables, 2000).

One drawback of this theory relates to the importance of GDP calculation to determine market size from a theoretical perspective. This theory does not have the foundation to support it even though foreign direct investment empirical researches used it, because of the lack of an overseas firm's sales data in the host nation (Moosa, 2002). Hence, several researches represent the market size measure as a macro-level variable. Key to this notion is that foreign direct investment seeks to aid domestic markets and not export. Hence, market size leans towards foreign direct investment (Moosa, 2002). Several studies supporting this theory reveal that market size plays a pivotal role in explaining a host nation's inward foreign direct investment location (Nayak & Choudhury, 2014; Asiedu, 2003). However, other researchers find a negative relationship between market size and inward FDI flow (Lipsey, 2000). Monopolistic Advantage Theory

This theory seeks to explain why MNCs decide to internalize their activities. The monopolistic advantage theory suggests that the presence of "monopolistic" advantages is an indispensable condition for a company to produce in another country (Lall & Siddharthan, 2004). Multinational companies are often at a disadvantage compared to domestic corporations, because they must deal with external obligations, lack of local knowledge and the high cost of obtaining this information in other countries; however, the

presence of a "monopolistic" advantage offsets some of the costs multinational companies incur. Therefore, a monopolistic advantage helps multinationals make profits that are not easily accessible to local businesses and are successful in the international arena (Moosa, 2002). Some criticism of this theory relates to its failure to explain how monopolistic advantages occur, that it is static and that it assumes a large firm is going international for the first time. Another criticism relates to the suitability of the theory to explain the activities of firms in emerging markets engaging in foreign direct investment that do not have monopolistic advantages that permit them to succeed in overseas markets.

3.2.8 Eclectic Theory

The eclectic paradigm is a general guide with regards to the extent and pattern of determining production abroad by the host nation's enterprise, and that of local production owned or controlled by overseas enterprises (Dunning & Lundan, 2008). In the last three decades, the eclectic paradigm has been the fundamental theory adopted to explain the activities of MNEs, and it has been widely applied in many social science fields (Nayak & Choudhury, 2014). The theory integrates the three conditions of international production: ownership (O), location (L) and internalization (I) to provide the most detailed explanations of firms' foreign production. A firm should fulfill all three of these conditions to undertake a foreign direct investment (Nayak & Choudhury, 2014; Moosa, 2002). First, it must have ownership of intangible assets which give it a comparative advantage over other enterprises. Second, the ownership advantage must be more beneficial for the enterprise to use instead of selling or leasing to other enterprises. And third, the enterprise must benefit from the use of these advantages simultaneously with at least some factor inputs located overseas.

Dunning and Lundan (2008) explains the advantages of all three conditions. Ownership advantage includes property rights and intangible asset advantages, the ability to reduce the cost of inter-firm transactions and advantages seen with collective governance, i.e.

organizing with complementary assets. Location advantage includes natural and created resource endowments and markets, international transport and communication costs and investment incentives and disincentives, artificial barriers (e.g. import controls) to trading in goods and services, societal and infrastructure provisions (commercial, legal, educational, transport and communication) and cross-country ideological, language, cultural, business and political differences. Internalization advantages include avoiding search and negotiating costs, costs of moral hazard and adverse.

3.2.9 Pure Altruism

Under the pure altruistic model, the migrant derives satisfaction from the welfare of his/her relatives (Stark, 1991; Funkhouser, 1995; Brown, 1997; Poirine 1997; Rapoport & Docquier, 2005; OECD, 2006). This suggests that migrants remit to improve the welfare of their households. The probability of receiving remittances is hypothesized to be higher for households that are originally more deprived with lower income or the resources used to generate income prior to migration (see Hillel & Docquier, 2005; VanWey, 2004; Lucas & Stark, 1985).

Essentially, in the pure altruism model, the utility of the household depends on its per capita consumption. The migrant's utility function depends on his own consumption and on the weighted utility of the rest of the household in the country of origin. The migrant chooses the level of remittances that maximizes his utility function. This model is based on a number of hypotheses. First, the amount of remittances should increase with an increase in the migrant's income. Second, the amount of remittances should decrease as the migrant's family incomes increases domestically. Third, remittances should decline as the attachment to the family weakens overtime and the same should happen when the migrant permanently settles in the host country and family members follow (Stark, 1991).

The empirical investigation by Lucas and Stark (1985) in the case of Botswana give support to the first hypothesis. They found that a 1 percent increase in the migrant's wage, ceteris paribus, induced increases in remittances ranging from 0.25 percent at low wage levels to 0.73 percent at high wage levels. The correlation between remittance levels and home incomes was found to be insignificant thus altruism was found to be insufficient for explaining the motivations to remit in the case of Botswana. In studies on United States immigrants it was found that households with children at home are approximately 25 percent less likely to remit than households without children present (OECD, 2006). The impact of household size on the level of remittances can be either positive or negative depending on presence of economies or diseconomies of scale in consumption, the rate of decline in marginal utility of home consumption and whether the migrant has a preference for a subset of the household in the home country (Lucas & Stark, 1985).

3.2.10 Pure Self Interest Theory of Remittances

Opposite to the altruistic motivation theory, the self-interest motive seeks to explain that a migrant may remit money to his/her parents driven by the aspiration to inherit assets. It generates three motives for remittances. The first arises from the belief that if the migrant takes care of the family a larger portion of the family wealth would be bequeathed to him. According to the existing theory on inheritance motive, households with higher level of inheritable assets prior to receiving remittances will be more likely to attract remittances because migrants will view remitting as an investment to increase their future likelihood of inheriting household assets. This motive predicts that the larger remittances the larger the potential inheritance. Furthermore, the presence of siblings is hypothesized to positively influence remittance behavior among migrants.

The second motive is to build up assets at home such as land, houses and livestock, which would necessitate that family member act as an agent to purchase the assets and

maintain them in good condition. Thus, the ownership of assets in the home area may also motivate the migrants to remit money to those left behind, in order to make sure that the asset is taken care of. The third motive may arise from intent to return home at a later stage which would require investment in fixed assets, in a business or in community projects if the migrant has political aspirations. The last objective illustrates the difficulty of separating altruistic and self-interest motives (Stark, 1991; Brown, 1997; Poirine, 1997; Rapoport & Docquier, 2005; OECD, 2006).

Lucas and Stark (1985) noted in the case of Botswana that wealthier parents received a larger share of remittances. Similarly, Brown (1997) explained that migrants are motivated to remit for reasons of self-interest, particularly with a view to asset accumulation and investment in home countries. The intention to return home may also promote remittances for investment in real estate, in financial assets, in public assets to enhance prestige and political influence in the local community (OECD, 2006). Glytsos (1997) found that remittance flows from Greek migrants in Germany were much higher experiencing a "return illusion" than from Australia and the United States experiencing a permanent settlement syndrome.

3.2.11 Contractual Agreement Theory of Remittances

Lucas and Stark (1985) explained the motivations to remit by a more eclectic model labeled "tempered altruism" or "semi-altruism" and "enlightened self-interest". In the model, remittance determination is placed in a family framework of decision-making, with remittances being endogenous to the migration process. As such, for the household as a whole, there may be a superior strategy to allocate certain members as migrants and remittances should be the mechanism for redistributing the gains – risk spreading and investment in the education of young family members.

The theory views remittances as part of an inter-temporal, mutually beneficial contractual arrangement between the migrant and the household in the country of origin. The implicit contract between migrant and family is safeguarded against being breached by the family specific assets, that is credit and loyalty, but also by self-seeking motives of the migrant, that is aspiration to inherit, investment in assets in the home area and maintenance by family, and the intention to return home with dignity. The loan agreement model was theorised as displaying a "three waves" shape as follows: first, remittances are assumed to be the repayment of an informal and implicit loan contracted by the migrant for investment in education and migration costs; second, they are loans made by migrants to young relatives to finance their education until they are themselves ready to migrate; and the third stage, before returning to their original country, migrants invest accumulated capital at home, therefore the amount of remittances increases (Lucas & Stark, 1985).

Semi-altruism also reflects an exchange motive where migrants can remit in return for services from household members. Under the assumption that migrants are remitting to support their dependent relatives, the probability of remitting can be expected to be proportional to the number of dependents in the household. Again, under the semi-altruistic implicit lending repayment motivation, households that are either in debt or have invested more on a migrant's trip are more likely to receive remittances (Stark & Bloom, 1985; Stark, 1991).

Therefore, under the contractual agreement theory, securing capital for household investment is a semi-altruistic motivation and one would hypothesize a negative association between the level of underdevelopment in the sending community and the desire to remit. This relationship should hold because more developed neighborhoods have greater investment opportunities and thus, more reasons for migrants to send money for investment purposes and vice versa. Poirine (1997) found support for this model in the case of Tonga

and Samoa while Brown (1997) found no evidence to this effect for Tongan and Western Samoan migrants in Sydney.

3.3 Empirical Literature Review

This section presents a review of extant studies on the relationship between remittances, foreign direct investment and economic growth.

3.3.1 Remittances and Economic Growth

Adeseye (2021) examined migrants' remittance and economic growth in Nigeria. Remittance inflow was used as dependent variable and gross domestic products, inflation, imports and exports were independent variables. The study used annual data obtained from World Development and International Financial Statistics which covering the period 1990-2018. The data were evaluated through descriptive statistics; and the hypotheses formulated were tested with the use of multiple linear regression technique. The findings reveled that significant relationship exists between remittance and gross domestic product, exports and imports in Nigeria while inflation has no significant relationship with remittance.

Abdirisak (2023) investigated the impact of remittance on economic growth and unemployment in Nigeria. This study used data collected from World Bank for the period 1991 to 2020. The data was analyzed using the Autoregressive Distributed Lag (ARDL) technique. It was found that unemployment has a negative and significant impact on economic growth in the long run. In comparison, the interaction effect of the remittance and unemployment has a positive and insignificant influence on economic growth in the long run. Also, government expenditure was found to have an insignificant negative effect on the economic growth in Nigeria. In contrast, the labor force has a negative and significant impact on economic growth.

Okorie, Nwabufo, and Oriaku (2023) investigated the impact of remittances on the Nigerian economic growth. They used multiple regression model using ordinary least squares

technique analyzing. The unit root tests using the ADF revealed that all the variables are integrated of order one, I(1) and co-integrated. Other diagnostics tests such as heteroscedasticity, autocorrelation and normality revealed that the results are robust and hence remittances positively and significantly contribute in economic growth of Nigeria.

Abdulai (2023) analyzed the impact of remittances on GDP growth in Ghana from 1990 to 2020. The ARDL estimation technique was used to test the long-run association between the selected variables. The results showed that GDP growth rate has a long-run relationship with remittance inflows, foreign direct investment, unemployment rate, inflation, trade, population growth rate and official development assistance. Lastly, the mediating effect of unemployment on remittance inflows negatively affects GDP growth rate in both runs.

Eri, Prosper and Thomas (2020) examined the effect of inward remittances on economic growth in Ghana. The ARDL estimation technique is used to test for the relationship between remittances and economic growth, using annual data from 1970 to 2016. The traditional Granger causality test was also applied to explore the direction of causality between remittances and economic growth. The results revealed that remittances had a negative long-run effect on growth and a positive effect on economic growth in the short-run. The study found no granger causality between economic growth and remittances in Ghana for the period of the study.

Nahla (2015) examined the effect of international remittances on economic growth in Kenya. The study also investigated the causality between international remittances and economic growth. The data used was sourced from World Bank's Development Indicators for the period 1993 to 2014. The study used Granger Causality to investigate the causality between international remittances on economic growth in Kenya. The (ARDL) estimation method was used to determine this effect. The results show that the international remittances indicators are significant factors influencing the economic growth in Kenya. Thus it can be

concluded that economic growth in the Kenya is largely driven by international remittances.

Ughulu and Agbonkhese (2019) examined the effect of remittances inflows on economic growth in ECOWAS sub-region using the fifteen member-countries for the period 2000 to 2016. The study utilized secondary data which were obtained from the World Bank. Diagnostic tests were carried out to ascertain the reliability and validity of the data set. This was followed by stationarity test which indicated that the variables were non-stationary at level; but became stationary at first difference. With the exception of panel ADF statistic, Pedroni's and Kao panel co-integration tests of within-group test and the between-group test revealed that the null hypothesis of no co-integration should be rejected. The results that emanated from System Generalized Method of Moment estimation revealed that foreign aid inflows exerted a positive and significant effect on economic growth in the ECOWAS sub-region.

John, Clement and Esosa (2020) examined the comparative effect of remittances and foreign aid inflows on economic growth in ECOWAS sub-region for the period spanning 2005 and 2017. GMM estimation technique was employed for the analysis. The result shows that the effect of remittances on economic growth outweighs foreign aid inflow in ECOWAS sub region for the period.

Gninigue and Ali (2022) analyzed the effects of migrant remittances on economic growth in ECOWAS countries with a special emphasis on the role of digitalization. The simultaneous equations and the seemingly unrelated regression method were used with data spanning from 1980 to 2017. Findings show that digitization is not a channel for transmitting the effects of migrant remittances on economic growth in ECOWAS countries. However, digitalization constitutes a catalyst of the effects of migrant remittances on economic growth in non-WAEMU countries, while it does not in WAEMU (a sub-regional block of

ECOWAS). Nevertheless, remittances contribute to human capital accumulation, investment, and consumption in WAEMU countries. Thus, policies aiming at strengthening digitization are desirable to foster the effect of migrant remittances on countries' economies in ECOWAS, in general, and WAEMU in particular.

Adarkwa (2015) examined the impact of remittances on economic growth in four selected West African countries: Cameroon, Cape Verde, Nigeria and Senegal. Using a linear regression on time series data from the World Bank database for the period 2000–2010, it was found that inflow of remittances to Senegal and Nigeria has a positive effect on these countries' gross domestic product whereas for Cape Verde and Cameroon it had a negative effect. Cameroon benefitted the least from remittances and Nigeria benefitted the most within the period.

Mavis, Yu, Emmanuel, Gibbson, and Bright (2020) examines the effect of remittances on economic growth in West Africa. The study uses panel data for the West Africa countries during the period 2003-2018 and advanced panel econometric methodology such as dynamic Panel data techniques was used to estimate the data. The results suggest that remittances on economic growth in West Africa exert a positive and significant impact.

Ishaq and Ali (2020) examined the long run relationship of remittances and economic growth in some selected SSA countries, namely, Nigeria, Ghana, Kenya and Senegal, using annual panel data for the period of 1980-2018. From the long run co-integrating parameter estimates, the results suggest that an increase in remittances, foreign direct investment, trade openness and domestic investment, increases economic growth of SSA countries.

Matuzeviciute and Butkus (2016) examined the interaction between remittance and the level of economic development as well as its impact on long run economic growth using unbalanced panel data for 116 countries over the period 1990 to2014. The study employed OLS, fixed effect model and found that, in generally remittance have a positive impact on

long run economic growth, but the impact differs based on the country's economic development level and the abundance of remittance in the economy.

The literature on remittances is filled with conflicting views when it comes to the question of how remittances indirectly impact economic growth of developing economies. A lot has been said and argued about the contribution of remittances to economic growth of developing countries but to date there isn't any consensus in the literature regarding this discussion. The main channels under which remittances affect economic growth are reviewed in the following sub sections.

3.3.2 Foreign Direct Investment and Economic Growth

Ihum et al, (2018) scrutinized the impact of FDI on the growth of the Nigerian economy. They employed the Vector Auto Regression (VAR) as well as granger causality test on quarterly time series data covering a timeframe ranging from 1986 to 2016. Findings from their analysis of the sampled data did not show any existence of causal connection moving from FDI to the growth of the economy. Nevertheless, the study revealed that causal connection moves from the real GDP to FDI. Their results led to the conclusion that FDI have no significant impact on the growth of the Nigerian economy. Alternatively, growth of the economy in Nigeria is seen to lure and or deter FDI in Nigeria.

Emmanuel (2016) examines then effect of FDI on the growth of an economy for a timeframe ranging from 1981 to 2015. He utilized the multiple regression analysis technique as well as the Gretl 1.9.8 econometric software to analyze the data. He observed that FDI has an affirmative and noteworthy effect on GDP (proxy for measuring growth of the economy) and also revealed that the rate of exchange has an affirmative although not a noteworthy impact on GDP. He however conclusively stated that FDI has an affirmative impact on the economic growth of Nigeria. The empirical paper made recommendations to promote

governmental enhancement in the conditions of infrastructures in Nigeria so as to persuade momentous investment into the economy of Nigeria.

Uwubanmwen and Ogiemudia (2016) analyze the effect of FDI on the growth of the economy by utilizing yearly time series data for a timeframe ranging from 1979-2013. Error Correction Model (ECM) was utilized in the analysis of data. Findings from the study revealed that FDI has both instantaneous as well as time lag effect on the Nigeria economy during the short run although a not so significant negative effect in the Nigerian economy during the long run. Otepola (2002) inspect the significance of FDI within Nigeria. In other to carry out the aforementioned objective, the study carried out an analysis of the effect of FDI on the growth of the economy. Subsequent to the empirical analysis, the study however concludes that FDI add immensely to economic development particularly via exports

Adaramola and Obiesan (2015) analyze the role of FDI on the capital market expansion of Nigeria by utilizing the ordinary least square, Johansen co-integration, as well as ADF unit root test reached a conclusion that FDI has an affirmative and significant effect on market capitalization. Danja (2012) utilized ordinary least square regression in his study on FDI showed that FDI has an affirmative correlation with GFCF (Gross Fixed Capital Formation) as well the index of industrial production although FDI hasn't made much input to the expansion and improvement of Nigeria.

Adeleke, Olowe and Faesin (2014) examine the effect of FDI on the growth of Nigeria economy for a timeframe ranging from 1999 to 2013. They utilized the ordinary least square (OLS) procedure for the analysis of their data. They observed that the inflow of FDI is directly linked with the growth of the economy at a statistical significance level of 5%. This however means that in performing excellently well, the economy is an affirmative indication of FDI flowing into the economy. They made recommendations for government to ease up the foreign sector in the Nigerian economy by reducing every one of the obstacles

to trade in the form of arbitrary levies, import and export duties in order to persuade investors to invest in Nigeria.

Otto and Ukpere (2014) examine FDI and growth in the Nigerian economy for a timeframe of 41 years. Findings from the study revealed the presence of an affirmative association amid FDI and growth of the Nigerian economy. The study however made certain suggestions, one of such suggestions is that in other to promote FDI in the Nigerian economy, strategies and policies must be put in place .

Ugochukwu, Okore and Anoh (2013) assess the effect of FDI on the development in Nigeria economy for a timeframe ranging from 1981 to 2009. The data utilized by the study were gotten from the CBN statistical report. They used the ordinary least square procedure to analyze the correlation linking FDI to the growth of the Nigeria economy. Granger causality test was used to ascertain the movement of causality among FDI and growth of the Nigeria economy. They observed that FDI showed an affirmative but not so significant impact on the growth of the economy. GFCF was utilized to measure domestic investment which showed evidence of an affirmative and significant impact on growth of the economy. The rate of exchange also portrayed an affirmative and significant relationship whereas interest rate showed a positive and insignificant result as relating to the economic growth of Nigeria. They however made recommendation for government to make available an environment that will enable and give confidence to potential investors to invest in Nigeria .

Uwubanmwen and Ajao (2012) investigate the effect of FDI and its determinants in the economy of Nigeria for a period ranging from 1970 to 2009. They in other to carry out the analysis they used the VECM (Vector Error Correction Model) to analyze the subject matter. The Granger causality methodology was engaged to ascertain the nature of correlation that exists amongst FDI and its determinants on one hand as well as economic growth alternatively. Findings from their study showed that the macroeconomic items (Interest rate,

exchange rate, and inflation) as well as trade openness are some of the essential factors that determine FDI flowing into Nigeria when considering the period of their study. They went further to show that a longer-run stable connection exists among FDI and GDP, although FDI did not have in the least a noteworthy effect on the expansion and improvement of Nigeria. They recommended that governing administrations should drive stable macroeconomic policies (so as to attract FDI into Nigeria) as well as increasing its spending on the development of its infrastructure in other to enhance the growth of the economy of Nigeria which will help lessen the extreme reliance of the economy on FDI.

Umoh, Jacob and Chukwu (2012) examine the association between FDI and the growth of the Nigeria economy for a timeframe ranging from 1970 to 2008. The scholars made proposition that there is endogeniety, which means that a bi-directional affiliation exist in connecting FDI and the growth of the economy. A distinct and simultaneous equations method was utilized to ascertain if any type of feedback correlation among FDI and growth of the Nigerian economy. They observed that FDI as well as growth of the economy are equally determined in Nigeria as an affirmative feedback from FDI to economic growth as well as flowing from economic growth to FDI. In general, their policy implication arising from the study is that there is need to drive and strengthen policies in the form of greater trade openness and enhanced private participation so as to lure more FDI to the economy and achieve higher growth in the economy .

Solomon and Eka (2013) investigate the correlation among FDI and the growth in Nigeria economy for a timeframe ranging from 1981-2009. The yearly data utilized by the study was gotten from the CBN statistical report. They used the OLS method to analyze the correlation linking FDI to the growth of Nigeria economy. Granger causality assessment was used to ascertain the movement of causality among FDI and growth in the economy.

They observed that FDI showed an affirmative but not so significant impact on the growth of the Nigeria economy.

Obida and Abu (2010) examine what determines FDI in Nigeria. The study utilized the error correction technique to assess the correlation amid FDI and its determinants. Results from the study portrayed the magnitude of the hosting country's market, political insecurity, deregulation as well as the depreciation of exchange rate as what primarily determines FDI in Nigeria. They went further to recommend that the development of an economy's GDP through manufacturing innovations; promoting deregulation of the country by means of privatization as well as lessening of government intrusion in the activities of the economy; reinforcement of the political organizations to uphold the progressive democratic procedure; steady depreciation in rate of exchange; as well as amplified investment in the country's infrastructural expansion.

Onakoya (2012) analyze the effect of FDI on the growth of Nigerian economy. His econometric model comprising of four factions consisted of supply, private demand, government and other external sectors. His model was used to set up 18 simultaneous equations as well as 100 variables to take into cognizance the measures required. He utilized a three-stage least squares (3SLS) method for data analysis as well as a general econometric modelling of simultaneous equations to take into consideration the disaggregated effect on the various segments of the country as well as the interaction between the segments so as to provide superior insights into their inbuilt variations. He observed that FDI shows a noteworthy impact on the economy's production although the impact of the growth of FDI is at variance across sectors. He however recommended that sector related policies, promoted trade openness, import exchange enhancement strategy inducements to already existing investors and potential foreign shareholders in other to promote the economy's development .

Agbadudu and Obayagbona (2013) examines the impact of foreign direct investment on economic growth in Nigeria for the period 1980 to 2012. The study regressed FDI, human capital, trade openness and labour force participation against RGDP (proxied for economic growth). The results from the empirical analysis showed that foreign direct investment (FDI) significantly influenced economic growth in Nigeria. Trade openness, labour force participation and human capital do not have any impact on the growth of the Nigerian economy.

Alabi (2019) examined the impact of foreign direct investment on economic growth in Nigeria for the period 1986 to 2017. Employing the multiple regression, the findings indicate that the LFDI, exchange rate and RINTR significantly and positively impact economic growth in Nigeria. However, LDI does not have significant impact on economic growth in Nigeria.

Madojemu (2020) investigates the impact of foreign direct investment (FDI) on economic growth in Nigeria for the period 1981 to 2017. The ADF test, Dickey and Fuller test (1979), PP test (Phillips and Perron, 1988) are used for the unit root test, and the Shahbaz and Rahman (2010) method was used for the long-run relationship between the foreign direct investment and economic growth. The findings indicate that FDI significantly impact economic growth in Nigeria overtime.

Onayemi, Olomola, Alege and Onayemi (2020) empirically examined the stimulation of foreign direct investment (FDI) inflows through constant electricity power supply for economic growth in Nigeria for the period 1986 to 2017. They employed Autoregressive distribution lag econometric approach to co-integration. The gross domestic product growth rate per capita was the proxy for economic growth and the dependent variable, while the independent variables include foreign direct investment, labour force participation rate, gross fixed capital formation and electricity power supply. The result from the analysis

revealed that, in the long-run, increased FDI inflows, gross fixed capital formation, electricity power supply significantly impact economic growth.

Awa (2021) investigated the influence of foreign direct investment in economic growth and deployment of Nigeria. The study employed Ordinary Least Square (OLS) method of estimation using multiple regression analysis. The data for this study comprises of Foreign Direct Investment (FDI), Real Gross Domestic Product (RGDP) and Exchange Rate (EXR). The data was sourced from Central Bank of Nigeria statistical bulletin spanning the period of 1989-2019. It was found that FDI has positive and significant influence on real economic growth. EXR also has positive and significant impact on economic growth in Nigeria.

Oyegoke and Aras (2021) reviewed the empirical literature on foreign direct investment and economic growth. Their findings showed that FDI is designed to improve the recipient economies thereby enhancing economic growth and development. It is in this view that many developing countries attract foreign investors with the hope of strengthening their economy by increasing the foreign investment portfolio. However, most empirical analysis of the impact of FDI on economic growth advises otherwise, hence, a controversy. According to the existing literature, some empirical results found a negative relationship between FDI and economic growth, while others opined that as FDI increases, it results in a boost of output productivity, hence a positive relationship between the variables.

Murtala (2022) examined the impact of foreign direct investment on macroeconomic variables (exchange rate, and inflation rate) in Nigeria for the period 2017-2021. The study employed is the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model. Augmented Dickey-Fuller (ADF) unit root test was used to study and test properties of the time series variables. The results revealed that the variables: foreign direct investment, exchange rate and inflation rate were first difference I(I) or stationary at either level I(0).

The GARCH model discovered that foreign direct investment (FDI) has positive impact on exchange rate while the inflation rate has negative impact.

Ofierohor and Ihejirika (2022) examined the role of foreign direct investment in the economic development process of Nigeria. Specifically, they focused on the impact of foreign direct investment on economic development, proxy by human development index (HDI). The constructed model included other factors that affect economic development such as trade openness, government expenditure and inflation. Annual data from 1990 to 2020 was used for the study and sourced from the United Nation Development Report (UNDR), United Nations Conference on Trade and Development (UNCTAD), World Development Indicator (WDI) and Central Bank of Nigeria (CBN) Statistical Bulletin. In estimating the economic development model, unit root, autoregressive distributed lag (ARDL) and Toda and Yamamoto methods were employed. The result indicated that foreign direct investment had negative and significant impact on economic development. Similar relationship was established between trade openness and economic development. These results were supported by the Toda and Yamamoto result as there was no evidence of causality relationship between foreign direct investment and economic development.

Olasehinde and Ajayi (2022) examined the relationship between foreign direct investment (FDI) and economic growth in Nigeria between 1981 and 2020, using Autoregressive Distributed Lag Bound technique (ARDL). From the findings, there existed a long-run significant relationship among the variables employed. Foreign direct investment (FDI) and real exchange rate showed positive significant short, and long-run impacts on economic growth. While interest rates and trade openness have insignificant short and long-run impacts on the economic growth. The pairwise Granger causality exhibited bidirectional causality between foreign direct investment (FDI) and economic growth (GDP), demonstrating the influence of these two variables on each other.

Eniekezimene, Wodu, and Anda-Owei (2024) examined the impact of foreign direct investment (FDI) on economic growth in Nigeria from 1981 to 2022. Real gross domestic product growth rate was used as proxy for economic growth while foreign direct investment (FDI), gross fixed capital formation (GFCF), per capita income (PCI) and exchange rate (EXR) were the explanatory variables. They employed the autoregressive distributed lag (ARDL) technique to estimate the model, while the eclectic paradigm and endogenous growth theory served as the theoretical framework for the study. The results revealed that in the long run, foreign direct investment, per capita income and exchange rate were positive but statistically insignificant to economic growth in Nigeria, while gross fixed capital formation was insignificant. However, in the short, GFCF had significant negative impact on economic growth in the second lagged year showing that a unit increase in GFCF decreased real gross domestic growth rate by approximately 10.21% while per capita income impacted positively on the growth of the Nigerian economy.

Siddique, Ansar, Naeem, and Yaqoob (2017) investigate the association between FDI and the growth of the Pakistani economy for a period ranging from 1980-2016. Utilizing the autoregressive distributed lag (ADRL) alongside the co-integration in addition to granger causality test. Findings from the ARDL revealed that co-integration exist amongst the variables representing growth of the economy, FDI, trade, physical capita as well as human capital. The study revealed that the findings specify the unidirectional causality that arises from the growth of the economy with FDI, to trade as well as to physical capital. The study went further to convey that a one-way causality exists amongst human capital to labour force and physical capital. However, the bidirectional relationship exists amongst physical capital and FDI, and amid physical capital and human capital. The study also suggested that guiding principles should be adopted to promote human skills to lure more FDI for economic growth .

Zafar, Siddique, Ahmad and Khan (2016) examine the wallop of remittances on GDP in Pakistan for a period of 30 years (1985 to 2014). Overall domestic product is versatile dependent. Remittances, foreign aid and investments are independent variables. The Ordinary Least Square (OLS) method was employed in the empirical analysis. The results show that foreigners play important role in enhancing economy of Pakistan. There is positive relation between remittances and economy growth in Pakistan.

Sohail and Mirza (2020) examined the impact of foreign direct investment on economic growth in Pakistan for period 1996 to 2015. Employing the multiple regression analysis technique, on variables such as FDI, exports, domestic capital, index of human capital and terrorist attacks, the result shows that there is a significant relationship between foreign direct investment and gross domestic product of the country. Other independent variables like exports, domestic capital, Index of human capital and No. of terrorist attacks also affects the economic development of the country.

Pulstova (2016) study the effect of FDI and firm export on the growth of the economy in Uzberkistan. A period of 1990 to 2014 formed the timeframe of the study and a descriptive analysis of data was carried out by the study. Findings from the study revealed that a rise in an economy FDI will possibly lead to companies increasing their exports of products. In Pakistan, Muntah, Khan, Haider and Ahmad (2015) examine the effect of FDI on the growth of Pakistan economy for a timeframe ranging from 1995 to 2011. Data utilized by the study was gotten from the World Bank Index Model and Economic Survey of Pakistan. In other to analyze the data, a regression analysis was utilized by the study. Findings from their regression analysis revealed that FDI affect the growth of Pakistani economy positively.

Sunde (2017) employed ARDL bound testing approach to co-integration to investigate the long run relationship between economic growth, FDI and exports in South Africa. Also, error correction model was used to examine the short run dynamics, while the VECM

Granger causality approach was used to investigate the direction of causality. The result showed that both FDI and exports spur economic growth. The granger causality showed a unidirectional causality between economic growth and FDI, running from FDI to economic growth .

Long, Ngoc and My (2018) examined the causal relationship between electricity consumption, FDI and economic growth in Vietnam for the period 1990 to 2015. They employed the Toda Yamamoto approach to causality and autoregressive distributive lag approach, and the empirical analysis indicates that, both in the short and long run, electricity consumption and FDI have positive impacts on economic growth in Vietnam .

In Malaysia, Mohammed and Mahmoud (2012) examine the FDI and economic growth extant literature from a timeframe of 1994 to 2012. They analyzed several studies examining the association amongst FDI and economic growth. From their observations, it was revealed the FDI-economic growth relationship is positively significant, although in a few instances, it was negative or even null. The relationship is however affected by several factors such as the sufficiency in the intensity of human capital, the overly enhanced financial markets, the complementarity amongst domestic economies and FDI as well as the openness of trade. Roman and Padureanu (2012) in their study revealed that capital endowment and FDI are absolutely related with the GDP of Romania. The study also showed that human capital is negatively related to GDP evolution. This result was on account of the reduction in the population of Romania from the timeframe ranging from 1995 to 2004 .

Koojaroenprasit (2012) examine the impact of FDI on the growth of the South Korea economy for a timeframe of 1980 to 2009. In other to analyze the secondary data sourced, the ordinary least square analysis was utilized by the study. Findings from the study revealed that FDI affects growth of the economy positively and significantly. In addition, the study also revealed that human capital, employment as well as export affect economic growth

significantly and positively too, while home investment confirmed that there is no significant relationship with growth of the economy of South Korea. The study however concluded that the correlation between FDI-human capital as well as FDI to export shows that the movement of technological advancement and know how has an unfavourable effect on the growth of the South Korean economy.

Younsi, Bechtini and Khemili (2021) examined the relationship between foreign aid (AID), foreign direct investment (FDI) and domestic investment (DI) and its effects on economic growth in 41 African countries for the period 1990 to 2016. The panel data analysis technique was employed and the empirical results showed confirm the existence of a nonlinear relationship between AID, FDI, DI, and economic growth. Besides, the results show that AID and FDI have a significant positive complementing effect on economic growth. It is shown also that FDI complements DI, while the coupled effect of AID and DI remains weak in catalyzing growth.

Alvarado, Iñiguez, and Ponce (2017) empirically examined the effect of FDI on economic growth in 19 Latin American countries. The study employed panel data analysis, and the results showed that FDI has an insignificant impact on economic growth. However, when the levels of development reached by the countries in the region were incorporated, a positive and significant relationship was observed between FDI and economic growth in high-income countries but uneven and non-significant result was obtained in upper-middle-income countries. With respect to lower-middle income countries, there was significant positive relationship between FDI and economic growth .

Agrawal (2015) considered the correlation between FDI and the growth of economy in Russia, Brazil, China, South Africa and India over a period ranging from 1989 to 2012. Co-integration as well as causality analysis was applied to the variables involved. Findings from the analysis divulge that FDI and growth of the economy are co integrated by the side of the

panel level, results also shows the presence of a long run equilibrium association amid the two variables. He also found evidence from the causality tests to illustrate a long run causality driving FDI and growth of the economy of the countries under study.

Melnyk, Kubatko and Pysarenko (2014) examine the effect of FDI on the growth of the economy in post-communalism changeover countries. The theoretical model adopted by the study was the neoclassical growth theory. Findings from their study however revealed that FDI have an effect on the growth of the economy of post-communalism changeover countries significantly. They however stated conclusively that adding to the direct capital backing it provides, FDI is capable of being an important means of getting technological advancement as well as know-how at the same time as promoting links with domestic companies, which know how to facilitate setting a country in motion. They however recommend that transitioning as well as emerging economies must give detailed consideration to their company's environment as well as any affirmative institutional alterations.

Makiela and Quattara (2018) explored the transmission channels from FDI to growth on a sample of developed and developing countries from 1970 to 2007. The result showed that FDI affects growth through inputs accumulation and not through total factor productivity. This implies that factors other than FDI may cause increase in productivity in developing countries .

Moudatsou (2003) examine the FDI and the growth of the economy relationship in the European Union (EU), while taking into consideration other determinants of growth for a timeframe ranging from 1980 to 1996. They acquired estimations relating to the growth impacts of FDI for a particular country in isolation as well as sourcing data for the whole European Union. Estimations relating specifically to countries showed that the determinants of growth differ across EU member countries and it is only earlier period FDI inflows that

revealed a significant impact on growth. An interesting fact from the study is that, the findings revealed that FDI has an affirmative impact on the growth level of EU countries in an equal direct or indirect (via trade reinforcement) manner. In addition, with difference from prior empirical results relating to developing economies, they acquired further empirical evidence that the growth impact of FDI is not restricted to the intensity of human capital in a better develop hosting economies .

Chami, Fullenkamp, and Jahjah, (2003) investigate that transfers may not affect human capital investment and a growth factor for the period 1993 to 2003.Their empirical analysis showed that a significant negative impact on growth and on remittances, so that human capital is an important factor affecting growth, noting that growth translates the negative impact of lower remittances and more the positive impact on the increase in some other countries.

The study of Woodruff and Zenteno (2004) on whether human capital and investment does not only affect health transfers. They have the effect of short transfers investigated for long-term economic growth and found significant relationship between careers and growth. Spatafore (2005) examines the impact of remittances on economic growth for 101 countries for the period 1970 to 2003. The result showed that capita remittances and growth statistically significantly related.

3.4 Gaps in the Empirical Literature Review

From the above empirical review, it was observed that most of the studies reviewed, were carried out in other parts of the world (Muntah, Khan, Haider & Ahmad, 2015; Mohammad & Mahmoud, 2012; Roman & Padureanu, 2012; Woodruff & Zenteno, 2004) among others. To the best of our knowledge, only those of Agbadudu and Obayagbona (2013), Uwubanmwen and Ogiemudia (2016), Emmanuel (2016), Otto and Ukpere (2014), Awe (2013) among others, were done in Nigeria. In addition, most of these studies were either conducted between 1979 and 2013 or between 1994 to 2012 and 2015 respectively. The only recent ones are those of Uwubanmwen and Ogiemudia (2016) and Emmanuel (2016);

even at that, between 2016 and 2019 a lot must have taken place in Nigeria which invariably created a gap in knowledge. Thus, this study effectively closed this gap by using up to 2022 Nigeria specific data.

Furthermore, in terms of method of data analysis, most of the reviewed empirical studies employed Error Correction Model, Multiple regression, OLS, three-stage least squares technique, and ARDL. To the best of the researcher's knowledge, only the studies of Osisanwo, Ajike, Egwuonwu and Emmanuel (2015), Awe (2013) and Agrawal (2015) employed the cointegration technique in their works. However, this study goes beyond this by employing the error correction model (ECM), cointegration and the Granger causality test techniques. The beauty of these techniques is that while the ECM and cointegration enable us to examine the short run and long relationship overtime, the Granger causality test helps us to ascertain the direction of causality.

CHAPTER FOUR

THEORETICAL FRAMEWORK AND EMPIRICAL METHODOLOGY

4.1 Theoretical Framework

This study adopted the neoclassical growth model as a framework on which the related empirical model was developed. Solow (1956) presented a model of economic growth that breaks the rigidity of Harrod-Domar model by replacing the fixed coefficient production function with a neoclassical production function. This model permits substitution between the factors of production so that the relative endowments of capital and labour could be reflected rather than the fixed ratios required by Harrod-Domar model.

According to Boianovsky and Hoover (2009), the Solow growth model assumes a production function with the property of diminishing returns where each additional increment in capital per worker results in less output. Specifically, the model concludes that if the returns that the capital commands in the market are a rough guide to its contribution to output, then the variation in the accumulation of physical capital does not account for a significant part of either worldwide economic growth or cross country income differences. As a result, only differences in the effectiveness of labour have any reasonable hope of accounting for the vast differences in wealth across time and space and technology or effective labour is exogenous in the model."

The neoclassical growth model, therefore, is expressed as follows:

$$Y = f(K, AL) \tag{4.1}$$

Where:

Y = Growth

K = capital stock

L = labour

A = technological progress

AL = labour augmented with technology which implies effective labour

Divide equation (4.1) by labour augmented with technology, AL to have

$$y = f(\kappa) \tag{4.2}$$

Where:

$y = \frac{Y}{AL}$ = output per effective labour

$\kappa = \frac{K}{AL}$ = capital per effective labour

"Thus, equation (4.2) is an intensive form of the simple production function showing that output per effective labour, y is a function of capital per effective labour κ. The intensive form equation satisfies the assumptions of diminishing marginal product and constant returns to scale, that is $f'(\kappa) > 0 \; and \; f''(\kappa) < 0$

To illustrate how the economy behaves in this model, let us analyze the dynamics of capital per effective labour κ.

Recall that $\kappa = \frac{K}{AL}$ (4.3)

Differentiate equation (4.3) with respect to time

$$\Delta\kappa = \frac{\Delta K}{AL} - \frac{AK\Delta L + KL\,\Delta A}{(AL)^2} \tag{4.4}$$

Expression (4.4) simplifies to:

$$\Delta\kappa = \frac{\Delta K}{AL} - (\frac{K\Delta L}{AL^2} + \frac{\Delta AK}{A^2L}) \tag{4.5}$$

Given that change in capital stock (investment) is: $\Delta K = sY - \delta K$. Where s = savings rate and δ = depreciation rate. And the growth rate of labour is expressed as $\frac{\Delta L}{L} = n$ and the growth rate of technological progress is $\frac{\Delta A}{A} = g$. It follows that the growth rate of labour is constant and equal to n and that of technological progress is a constant and is equal to g.

By substitution and rearrangement, equation (4.5) can be rewritten as:

$$\Delta\kappa = sy - (\delta - n - g)\kappa \tag{4.6}$$

This is the fundamental equation of the Solow growth model. It shows that the rate of change of capital per effective labour is the difference between actual investment per effective labour, sy and break-even investment $(\delta - n - g)\kappa$. According to the model, when the actual investment per effective labour exceeds the investment needed to break-even, capital per effective labour will rise. On the other hand, Solow argued that when the actual investment per effective labour falls short of the investment needed to break-even, capital per effective labour will fall. Thus, equilibrium (steady state) is attained when the actual investment per effective labour equals the investment needed to break-even, that is"

$$sy = (\delta - n - g)\kappa \quad (4.7)$$

From equation (4.7), the income per effective labour equation can be stated as:

$$y = (\delta - n - g)\frac{\kappa}{s} \quad (4.8)$$

Thus, the basic Solow model gives output or income per effective labour depending on growth rate of technical progress, capital stock and population growth (Solow, 1956). Equation (4.8) will, therefore, serve as the fundamental equation on which the empirical model of this study is built.

4.2 Model Specification

The theoretical framework, equation (4.8), shows that output depends on growth rate of technical progress, capital stock and population growth. However, to estimate the empirical growth model, the equation (4.8) was modified following the empirical works of other authors such as Adeseye, 2021; Ofierohor & Ihejirika, 2022; Olasehinde & Ajayi, 2022; Okorie, Nwabufo, & Oriaku, 2023; and Eniekezimene, Wodu, & Anda-Owei, 2024. Therefore, augmented model for estimating economic growth in Nigeria is specified in its functional form as follows:

$$RGDP = f(FDI, REM, EXR, INT, GEXP, GFCF, MS) \quad (4.9)$$

Where:

RGDP = Real gross domestic product growth rate

FDI = Foreign direct investment

REM = Remittances

EXR = Exchange rate

INT = Interest rate

GEXP = Government expenditure

GFCF = Gross fixed capital formation

MS = Broad money supply

Thus, we can specify our empirical models in econometric form as follows:

$$RGDP_t = \alpha_0 + \alpha_1 FDI_t + \alpha_2 REM_t + \alpha_3 EXR_t + \alpha_4 INT_t + \alpha_5 GEXP_t + \alpha_6 GFCF_t + \alpha_7 MS_t + \varepsilon_t$$

(4.10)

Where:

t stands for time in years

ε_t is the error term

All the other variables are as already defined.

From a priori considerations, it is expected that foreign direct investment, remittances, government expenditure, gross fixed capital formation, and broad money supply are positively related to real gross domestic product growth while exchange rate, and interest rate are negatively related to real gross domestic product growth, i.e., α_1,α_2, α_5, α_6, $\alpha_7 > 0$; α_3, α_4, < 0.

The error correction model is specified as:

$$\mathrm{D}(RGDP)_t = \beta_0 + \beta_1 D(FDI_t) + \beta_2 D(REM_t) + \beta_3 D(EXR_t) + \beta_4 D(INT_t) + \beta_5 D(GEXP_t) + \beta_6 D(GFCF_t) + \beta_7 D(MS_t) + \beta_8 ecm(-1) + \mu_t$$

(4.11)

Here, $\beta_1, \ldots, \beta_6$ are the short run dynamic coefficients of the economic growth model's convergence to its long run equilibrium; D denotes differencing, β_8 is the coefficient of adjustment expected to be negative.

4.3 Methods of Data Analysis

In econometric analysis, most time series variables are typically non-stationary in their levels and using such variables in regression may lead to spurious results (Granger & Newbold, 1977). To prevent this issue, the time series properties of each variable were examined to determine their order of integration. Specifically, the Augmented Dickey-Fuller (ADF) developed by Dickey and Fuller (1979) was employed to test for the presents of unit roots in the data series. The ADF test compares the computed test statistics with its critical values to determine whether a variable is stationary. If the absolute value of the ADF statistic exceeds the critical value, the null hypotheses of a unit root are rejected, indicating stationarity.

Once the stationarity properties of the individual series were established, the study proceeded to examine the existence of the long run equilibrium relationship among the variables using the Johansen Co-integration test (Johansen, 1988). This technique allows for the identification of one or more co-integrating relationships in a multivariate system. If a stationary linear combination of non-stationary variables exists, the variables are said to be co-integrated implying a long run association among them.

After confirming co-integration, the long run coefficients were estimated using the Ordinary Least Squares (OLS) method which minimizes the sum of squared residuals to obtain efficient parameter estimates under the classical assumptions (Gujarati & Porter, 2009). To capture the short run dynamics and the speed of adjustment towards long run equilibrium the Error Correction Model (ECM) developed by Engel and Granger (1987) was then estimated. The ECM incorporates both the short run fluctuations and long run equilibrium

adjustments, thereby providing a more comprehensive understanding of dynamic relationship among the variables.

4.4 Data Sources

The study use secondary time series data covering the period 1981 to 2022. Secondary data will be used as the main method of data collection. The relevant data for this study will be obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin 2022, World Development indicators (2022), United Nations Conference on Trade and Development (2022), and International Monetary Fund (2022).

CHAPTER FIVE

PRESENTATION OF RESULT AND INTERPRETATION

5.1 Result of Descriptive Statistics

The results of the descriptive statistics are reported in Table 5.1.

Table 5.1: Descriptive Statistics

	RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
Mean	38996.98	1925767.	2.671002	116.2719	17.22167	3657.579	8683.403	9088.029
Maximum	74752.42	40572837	8.333830	448.5500	29.80000	24431.21	15789.67	48462.07
Minimum	16211.49	0.264300	0.004883	0.610000	7.750000	9.600000	5668.870	14.47000
Std. Dev.	21073.79	8470438.	2.483199	120.5999	4.575326	5900.240	1977.154	13281.91
Skewness	0.524425	4.252289	0.444205	1.068965	0.328698	2.142496	1.191739	1.423131
Kurtosis	1.632519	19.11664	1.896051	3.400840	3.644044	6.760855	5.389237	3.900206
Jarque-Bera	5.197657	581.1296	3.513957	8.279983	1.482184	56.88408	19.93149	15.59526
Probability	0.074361	0.000000	0.172565	0.015923	0.476593	0.000000	0.000047	0.000411

Source: **Author's computation (2025) using E-Views 8.0**

In Table 5.1, real gross domestic product (RGDP) has a mean of 38, 996.98 billion over the period 1981 to 2022 with a standard deviation of 21073.79. The maximum and minimum amounts of real gross domestic product for the period are ₦74.752.42 and ₦16, 211.49 billion respectively. The value of skewness for real gross domestic product is 0.52. This means that the distribution of real gross domestic product is skewed slightly to the right. Its kurtosis value of 1.63 indicates that the distribution of real gross domestic product is flat. The Jarque-Bera value is 5.2 with probability value of 0.07 indicates that real gross domestic product is normally distributed at the 5% significance level.

For foreign direct investment (FDI), the mean value for the period under review I,₦1,925,867 billion with a standard deviation of 8,470,438. Its maximum and minimum values for the period are ₦40, 572,837 and ₦0.26 billion respectively. Its skewness (4.25) shows that the distribution of FDI is positively skewed. Its Kurtosis (19.12) indicates that the distribution of FDI is peak. The Jarque-Bera statistic (581.13) with a p-value (0.01) indicates that the variable is not normally distributed.

Remittance as a percentage of GDP(REM) has a mean of 2.67% over the period of review. The maximum and minimum values of export are 8.33% and 0.005%respectively. Its skewness value is 0.44 indicating that the distribution of remittances is slightly skewed to the right about its mean. Its Kurtosis (1.90) shows that the distribution is flat. The Jarque-Bera value of 3.51 with probability value of 0.17 suggests that remittances are normally distributed about its mean at the 5 percent level of significance.

The average value of exchange rate (EXR) for the period under review is ₦116.27 to $1. The maximum and minimum values are ₦448.55 and ₦0.61 to $1 respectively. The skewness value (1.07) shows that EXR is positively skewed. Its Kurtosis (3.40) indicates that the distribution is flat. The Jarque-Bera value of 8.28 with probability value of 0.02 suggests that the variable is not normally distributed.

Government expenditure (GEXP) has a mean of ₦3,657.58 billion over the period 1981 to 2022. The maximum and minimum values of GEXP are ₦2,443,121 billion and N9.6 billion respectively. Its skewness value is 2.14 indicating that the distribution of GEXP is skewed to the right about its mean. Its Kurtosis (6.76) shows that the distribution is relatively peaked. The Jarque-Bera value of 56.88 with probability value of 0.01 suggests that government expenditure is not normally distributed about its mean at the 5% level of significance.

The mean value of interest rate (INT) is 17.22%. The maximum and minimum values are 29.8% and 7.75% respectively. The skewness value (0.33) shows that interest rate is positively skewed. Its Kurtosis (3.64) indicates that the distribution is peaked. The Jarque-Bera value of 1.48 with probability value of 0.48 suggests that the variable is normally distributed.

Gross fixed capital formation (GFCF) has a mean of ₦8683.40 billion. The maximum and minimum values of GFCF for the period are ₦15,789.67 and N5,668.87billion respectively.

Its skewness value is 1.19 and it indicates that the distribution of GFCF is skewed to the right slightly. Its Kurtosis (5.39) indicates that the distribution is peaked. The Jarque-Bera value of 19.93, with probability value of 0.001 suggests that the variable is not normally distributed.

For broad money supply (MS), the mean value for the period under review is ₦9, 088.03 billion with a standard deviation of 8103.1. Its maximum and minimum values for the period are ₦48, 462.07 and ₦14.47 billion respectively. Its skewness (1.42) shows that the distribution of MS is positively skewed. Its Kurtosis (3.9) indicates that the distribution is relatively peaked. The Jarque-Bera statistic (15.6) with a p-value of 0.01 indicates that the variable is not normally distributed.

5.2 Pair-wise Correlation

The correlation matrix for all the variables in the study is reported in Table 5.2.

Table 5.2: Pair-wise Correlation Matrix

Correlation Probability	RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
RGDP	1.000000							

FDI	0.386889	1.000000						
	0.0114	-----						
REM	0.766711	0.155419	1.000000					
	0.0000	0.3257	-----					
EXR	0.914281	0.591014	0.080327	1.000000				
	0.0000	0.0000	0.0000	-----				
INT	-0.122781	-0.158213	-0.061464	-0.121624	1.000000			
	0.4386	0.3170	0.6990	0.4429	-----			
GEXP	0.804466	0.727592	0.495689	0.023423	0.221163	1.000000		
	0.0000	0.0000	0.0008	0.0000	0.1593	-----		
GFCF	0.436956	0.201651	0.288556	0.403914	0.431971	0.400096	1.000000	
	0.0038	0.2003	0.0638	0.0080	0.0043	0.0087	-----	
MS	0.914444	0.616439	0.569656	0.047702	0.217196	0.054188	0.443731	1.000000
	0.0000	0.0000	0.0001	0.0000	0.1671	0.0000	0.0032	-----

Source: **Author's computation (2025) using E-Views 8.0**

From Table 5.2, the correlation statistic between real gross domestic product (RGDP) and foreign direct investment (FDI) is positive ($r = 0.39, p = 0.01$) and significant at the 5% level. This suggests that the correlation between real gross domestic product and foreign

direct investment is direct. Similarly, the correlation coefficient between real gross domestic product (RGDP) and remittances (REM) is positive and significant at the 5% level ($r = 0.77, p < 0.01$). The coefficient indicates that real gross domestic product has a positive significant relationship with remittances. Also, the correlation coefficient between real gross domestic product (RGDP) and exchange rate (EXR) is positive and significant at the 5% level ($r = 0.91, p < 0.01$). The coefficient indicates that real gross domestic product has a positive significant relationship with exchange rate. However, the correlation coefficient real gross domestic product (RGDP) and interest rate (INT) is negative though insignificant at the 5% level ($r = -0.12, p = 0.44$). On the other hand, the correlation statistic between real gross domestic product (RGDP) and government expenditure (GEXP) ($r = 0.80, p < 0.01$); gross fixed capital formation (GFCF) ($r = 0.43\, p = 0.004$); and money supply (MS) ($r = 0.91, p < 0.01$)is positive and significant at the 5% level. The results reveal that there is a positive significant relationship between real gross domestic product and government expenditure, gross fixed capital formation and money supply. As shown in the table, the correlation coefficients between the explanatory variables are very low indicating the absence of muliticollinearity problem among the variables.

5.3 Unit Root Tests

The results of the Augmented Dickey-Fuller (ADF) unit root tests of the variables at levels and first differences are presented in Table 5.4 and Table 5.4 respectively. The ADF regressions included an intercept but not a trend.

Table 5.3: Results of Augmented Dickey-Fuller Unit Root Tests at Levels
(Augmented Dickey-Fuller Least Squares Regressions include an intercept but not a trend)

Variable	*Lag*	*ADF Test Statistic*	*5% Critical Value*	*Remarks*
RGDP	1	0.456169	-2.936942	Non-Stationary
FDI	0	-0.851685	-2.981038	Non-Stationary
REM	7	-2.017798	-2.960411	Non-Stationary
EXR	0	1.344276	-2.941145	Non-Stationary
INT	2	-2.431764	-2.945842	Non-Stationary
GEXP	8	0.869004	-2.971853	Non-Stationary
GFCF	1	2.266903	-2.943427	Non-Stationary
MS	9	0.826342	-2.971853	Non-Stationary

Source: **Author's computation (2025) using E-Views 8.0**

Table 5.4: Results of Augmented Dickey-Fuller Unit Root Tests at First Difference

Variable	*Lag*	*ADF Test Statistic*	*5% Critical Value*	*Order of Integration*	*Remarks*
D(RGDP)	0	-3.430262	-2.936942	I(1)	Stationary
D(FDI)	0	-3.637922	-2.981038	I(1)	Stationary
D(REM)	3	-4.995057	-2.951125	I(1)	Stationary
D(EXR)	0	-4.250145	-2.943427	I(1)	Stationary
D(INT)	6	-3.870602	-2.960411	I(1)	Stationary
D(GEXP)	7	-4.892472	-2.971853	I(1)	Stationary
D(GFCF)	0	-4.180344	-2.945842	I(1)	Stationary
D(MS)	8	-3.465287	-2.971853	I(1)	Stationary

Source: **Author's computation (2025) using E-Views 8.0**
Note: "D" denotes first difference.

From Table 5.3, it was found that real gross domestic product (RGDP), foreign direct investment (FDI), remittances (REM), exchange rate (EXR), interest rate (INT), government expenditure (GEXP), gross fixed capital formation (GFCF), and broad money supply (MS)are all non-stationary at the 5 percent significance level. That is, all the variables are not stable at their levels. This is because the ADF statistics for these variables are greater than their critical values in absolute terms at 5 percent level of significance. Thus, they are all non-stationary at levels. From Table 5.4, the unit root tests of the variables at their first differences show that they are all stationary after their first differencing. In other words, all the variables are stable at their first differences. Thus, all the variables are difference stationary, that is integrated of order one, symbolically denoted as: I(1).

5.4 Co-integration Tests

Having established the time series are stationary at the same order of integration, the study proceeded to conduct the co-integration tests using the Johansen multivariate co-integration test. The results of the Johansen co-integration test are presented in Tables 5.5 and 5.6 below.

Table 5.5: Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	T race Statistic	0.05 Critical Value	Probability**
None *	0.878021	280.6928	159.5297	0.0000
At most 1 *	0.777899	196.5365	125.6154	0.0000
At most 2 *	0.705333	136.3516	95.75366	0.0000
At most 3 *	0.588095	87.47511	69.81889	0.0010
At most 4 *	0.450369	51.99663	47.85613	0.0194
At most 5	0.309563	28.05632	29.79707	0.0783
At most 6	0.266518	13.23909	15.49471	0.1063
At most 7	0.020806	0.841024	3.841466	0.3591

Trace test indicates 5 co-integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: **Author's computation (2025) using E-Views 8.0**

Table 5.6: Unrestricted Co-integration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Probability**
None *	0.878021	84.15632	52.36261	0.0000
At most 1 *	0.777899	60.18491	46.23142	0.0009
At most 2 *	0.705333	48.87644	40.07757	0.0040
At most 3 *	0.588095	35.47848	33.87687	0.0320
At most 4	0.450369	23.94031	27.58434	0.1368
At most 5	0.309563	14.81723	21.13162	0.3019
At most 6	0.266518	12.39807	14.26460	0.0966
At most 7	0.020806	0.841024	3.841466	0.3591

Max-Eigen value test indicates 4 co-integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: **Author's computation (2025) using E-Views 8.0**

The co-integration test based on the trace test indicates that there are five co-integrating equations at the 5 percent level. However, the maximum Eigen value test indicates our co-integrating equations at the 5 percent level. These results show that a long run relationship

exists among real gross domestic product and its set of explanatory variables in the models. Hence, we can proceed with the estimation of the error correction model.

5.5 Results of the Estimated Long Run Model

Since long run relationships have been established among the variables using the co-integration result, the long run model as well as the Error Correction Model (ECM) was estimated using the Ordinary Least Squares regression method. The results of the estimated long run model are presented in Table 5.7.

Table 5.7: Estimated Coefficients of the Long Run Model

Dependent Variable: RGDP				
Regressor	**Coefficient**	**Standard Error**	**T-Ratio**	**Probability**
FDI	-0.159358	0.191504	-0.832142	0.4124
REM	2211.902	737.4285	2.999480	0.0050
EXR	-7.065807	5.569512	-1.268658	0.2150
INT	53.53686	28.50551	1.878123	0.0708
GEXP	1.304034	0.405141	3.218717	0.0032
GFCF	3.13E-10	1.07E-10	2.935731	0.0066
MS	0.366731	0.152861	2.399113	0.0233
C	-4668.149	1856.369	-2.514666	0.0179
R-Squared 0.9678			*R-Bar-Squared* 0.9575	
F-Statistic 93.6192[0.000]			*DW-Statistic* 1.4962	
Post Estimation Tests				
Breusch-Godfrey Serial Correlation LM Test				
Obs*R-squared 1.54 [0.46]				
Heteroskedasticity Test: Breusch-Pagan-Godfrey				
Obs*R-squared 7.30 [0.70]			Scaled explained sum of squares 1.51 [0.99]	

Note. P-values are reported in square brackets; LM = Lagrange multiplier
Source: **Author's computation (2025) using E-Views 8.0**

The overall goodness of fit for the long run model is very impressive compared to its short run model. The R-squared (R^2) and the adjusted R-squared ($\bar{R}^2$) are approximately 0.97.and 0.96 respectively. The R^2 indicates that about 97 percent of the systematic variations in real gross domestic product are accounted for by the independent variables in the long run equation while, the $\bar{R}^2$ shows about 96 percent of the systematic variations in the dependent

variable are attributable to the independent variables. The unexplained variations in the dependent variable are about 4 percent based on the adjusted R-squared coefficient. The F-statistic indicates that the model is highly significant as a whole passing the test of significance at the 1 percent level($F(9, 28) = 93.62,\ p < 0.01$). This indicates that there is a linear relationship between the dependent and each independent variable in the model. The Durbin Watson statistic of approximately 1.50 indicates absence of serial correction in the long run model though it could be misleading. However, using the Breusch-Godfrey serial correlation test, the results revealed that the residuals are not serially correlated up to order two. The heteroskedasticity test using the Breusch-Pagan-Godfrey technique indicates that the residuals are homoskedastic. Therefore, the long run model is adequate.

The signs of all the estimated coefficients of the explanatory variables in the long run model conformed to their a priori expectations except foreign direct investment and interest rate. The coefficient of foreign direct investment (FDI) is negative but insignificant. The t-statistic failed the significance test at the 10 percent level($t = -0.83, p = 0.41$). Thus, foreign direct investment does not have any significant effect on real gross domestic product in the long run in Nigeria. The coefficient of remittances (REM) is positive and significant at 10 percent level of significance. Its coefficient is 2211.9 ($t = 3.0, p = 0.01$). Thet-statistic passed the significance test at the 1 percent level. Therefore, personal remittance as a percentage of GDP has a positive significant impact on real gross domestic product in the long run in Nigeria. However, the coefficient of exchange rate (EXR) is negative but insignificant at 1 percent level of significance ($t = -1.27, p = 0.22$). Therefore, exchange rate has a negative insignificant impact on real gross domestic product in the long run in Nigeria.

The coefficient of government expenditure (GEXP) is positive and significant at 1 percent level of significance ($t = 3.38, p < 0.01$). Hence, the implication is that government spending has a positive significant effect on real gross domestic product in the long run in Nigeria. The coefficient of gross fixed capital formation (GFCF) is positive and significant

at 1 percent level of significance ($t = 2.94, p = 0.01$). Therefore, gross fixed capital formation has a positive significant effect on real gross domestic product in the long run in Nigeria.

The coefficient of interest rate (INT) is positively signed. Its coefficient is 53.54 with a t-value of 1.88. It passed the test of statistical significance at the 10 percent level. Thus, interest rate has a positive significant effect on real gross domestic product in the long run. The coefficient of money supply is positive. Its coefficient is 0.37 and it has a t-value of 2.40 with a p-value of 0.02. This magnitude of t-statistic passed the significance test at the 5 percent level of significance. Hence, money supply has a positive significant impact on real gross domestic product in the long run in Nigeria.

5.6 Results of the Estimated Short Run (Error Correction) Model

Having analyzed the long run model, the results of short-run dynamics of the Error Correction Model are presented in Table 5.8.

Table 5.8: Estimated Coefficients of the Short Run Dynamic Error Correction Model

Dependent Variable: D(RGDP)				
Regressor	Coefficient	Standard Error	T-Ratio	Probability
D(FDI)	4.25E-05	1.38E-05	3.084796	0.0042
D(REM)	0.070358	0.059847	1.175621	0.2518
D(EXR)	-12.37109	3.300760	-3.747950	0.0010
D(INT(-1))	-10.74269	17.52258	-0.613077	0.5458
D(GEXP)	-0.662794	0.196256	-3.377188	0.0026
D(GFCF(-1))	0.498055	0.198272	2.511983	0.0172
D(MS(-1))	-0.157536	0.090855	-1.733928	0.0963
ECM(-1)	-0.180509	0.162863	-6.192375	0.0000
C	1497.687	375.6805	3.986599	0.0004
R-Squared 0.6147			*R-Bar-Squared*	
0.4304 *F-Statistic* 3.3355(0.007)			*DW-Statistic*	
1.9557				

Post Estimation Tests	
Breusch-Godfrey Serial Correlation LM Test	
Obs*R-squared 4.37 [0.11]	
Heteroskedasticity Test: Breusch-Pagan-Godfrey	
Obs*R-squared 3.30 [0.91]	Scaled explained sum of squares 1.64 [0.99]

Note. P-values are reported in square brackets; LM = Lagrange multiplier

Source: **Author's computation (2025) using E-Views 8.0**

The coefficient of determination of the Error Correction Model, R-squared (R^2) is about 0.61 and the adjusted R-squared ($\bar{R}^2$) is 0.43. The R-squared implies that about 61 percent of the systematic variations in first difference of real gross domestic product are explained by the regressors in the short run equation. The adjusted R-squared indicates that about 43 percent of the systematic changes in the dependent variable are attributable to the explanatory variables. The F-statistic ($F(10, 26) = 3.34, p = 0.01$) implies that the overall goodness of fit of the model is significant at the 1 percent level. Thus, all the independent variables do collectively account for variations in the dependent variable in the short run. The Durbin-Watson statistic ($d = 1.96$) reveals that the short run model is free from the problem of autocorrelation. However, using the Breusch-Godfrey serial correlation test, the results revealed that the residuals are not serially correlated up to order two. The heteroskedasticity test using the Breusch-Pagan-Godfrey technique indicates that the residuals are homoskedastic. Therefore, the short run model is adequate.

The signs of the estimated coefficients of foreign direct investment, remittances, exchange rate, gross fixed capital formation, and interest rate in the short run model conform to their theoretical expectations except government expenditure, and money supply. The coefficient of first difference of foreign direct investment D(FDI) is positive and significant at the 1 percent level of significance. Its coefficient is 4.25E-05 with a t-value of 3.08. The t-statistic passed the significance test at the 1 percent level. Therefore, foreign direct investment has a positive significant impact on real gross domestic product in the short run.

The coefficient of first difference of export D(REM) is positive but insignificant even at 10 percent level of significance. Its coefficient is 0.07 with a t-value of 1.18. The t-statistic failed the significance test at the 10 percent level. Therefore, remittances have an insignificant impact on real gross domestic product in the short run in Nigeria. However, the coefficient of first difference of exchange rate D(EXR) is negative and significant at 1

percent level of significance ($t = -3.75, p < 0.01$). The coefficient passed the statistical test of significance at the 1 percent level. Therefore, exchange rate has a negative significant impact on real gross domestic product in the short run in Nigeria.

The coefficient of first difference of government expenditure D(GEXP) is negative but significant at 1 percent level of significance ($t = -3.38, p < 0.01$). Hence, the implication is that government spending has an adverse significant effect on real gross domestic product in the short run in Nigeria. The coefficient of one year lagged value of first difference of gross fixed capital formation D(GFCF(-1)) is positive and significant at the 5 percent level of significance ($t = 2.51, p = 0.02$). Therefore, gross fixed capital formation has a significant effect on real gross domestic product in the short run in Nigeria.

The coefficient of one year lagged value of first difference of interest rate D(INT(-1)) is negatively signed. Its coefficient is -10.74 with a t-value of -0.61. It failed the test of statistical significance at the 10 percent level. Thus, lending rate has a negative insignificant effect on real gross domestic product in the short run. The coefficient of one year lagged value of first difference of money supply D(MS(-1))is negative and significant. Its coefficient is -0.16 and it has a t-value of -1.73 with a p-value of 0.096. This magnitude of t-statistic failed the significance test at the 5 percent level of significance. Hence, money supply has no significant impact on real gross domestic product in the short run in Nigeria.

The coefficient of adjustment of the ECM is correctly signed. That is, it is negative and significant at the 1 percent level. Thus, it will rightly act to correct any deviation of real gross domestic product from its long-run equilibrium value. Its coefficient is -0.18. This implies that the coefficient of adjustment will correct the previous disequilibrium of real gross domestic product at the rate of 18 percent annually. This shows a rather slow adjustment process to the long run equilibrium.

5.7 Test of Hypotheses

On the basis of the long run and short run regression results, we have tested the validity of the hypotheses presented in chapter one of this research.

Hypothesis 1: Remittances do not have any significant short run effect on economic growth in Nigeria. From the regression results, the coefficient of remittances is not significant at the 5% level $(t = 1.18, p = 0.25)$. Accordingly, we accept the null hypothesis that remittances do not have any significant short run effect on economic growth in Nigeria.

Hypothesis 2: Remittances do not have any significant long run effect on economic growth in Nigeria. From the regression results, the coefficient of remittances is significant at the 5% level $(t = 3.0, p = 0.01)$. Accordingly, we reject the null hypothesis that remittances do not have any significant long run effect on economic growth in Nigeria.

Hypothesis 3: Foreign direct investment does not have a significant short run effect on economic growth in Nigeria. As shown in the regression results, the coefficient of foreign direct investment is positive. It is significant at the 5% level $(t = 3.08, p = 0.004)$. Thus, we reject the null hypothesis that foreign direct investment does not have any significant impact on real gross domestic product in the short run in Nigeria. This indicates that foreign direct investment plays a significant role in determining real gross domestic product in the short run in Nigeria.

Hypothesis 4: Foreign direct investment does not have a significant long run effect on economic growth in Nigeria. From the estimated long run model, the coefficient of foreign direct investment is negative but insignificant at the 5% level $(t = -0.83,\ p = 0.41)$. Accordingly, we accept the null hypothesis that foreign direct investment has no impact on real gross domestic product in Nigeria.

5.8 Discussion of Findings

The study examined the dynamic relationship between foreign direct investment (FDI), remittances, and real gross domestic product (RGDP) in Nigeria over the short and long run. The results offer insights into how these financial inflows contribute to economic growth across different time horizons. The findings reveal that FDI has a positive and significant impact on RGDP in the short run, suggesting that foreign capital inflows may initially stimulate economic activity through investment in infrastructure, industry, and services. This short-term growth may be driven by increased employment opportunities, technology transfer, and capital accumulation following foreign investment. This finding is supported by works of Lall (2004); Alejandro (2010); and Ughulu and Agbonkhese (2019) who discovered that FDI inflow impacts several factors of the economy and these factors in one way or another impacts economic growth.

However, in the long run, FDI was found to have an adverse but insignificant impact on real gross domestic product. This result may reflect the challenges Nigeria faces in translating foreign investment into sustainable economic development. Factors such as profit repatriation, lack of linkages between foreign firms and local industries, regulatory inefficiencies, and political instability may reduce the long-term developmental benefits of FDI. Additionally, if FDI is concentrated in extractive sectors like oil and gas, it may not generate broad-based economic growth over time, thereby diluting its long-term impact.

The study also found that remittances have an insignificant effect on real gross domestic product in the short run. This could be attributed to the fact that remittances are often used for consumption rather than productive investment. In the immediate term, such consumption might not significantly influence GDP growth, particularly if it does not stimulate domestic production or investment. This finding is in line with the work of

Adarkwa (2015) who discovered that remittances may not impact significantly on economic growth.

Conversely, the long-run effect of remittances on real gross domestic product was found to be positive and significant**.** Over time, remittances can contribute to human capital development (through spending on education and health), increase household savings, and support small-scale investments. These factors can cumulatively enhance productivity and contribute to sustained economic growth. The long-term significance may also be due to the stabilizing effect remittances have on household income, which can improve macroeconomic resilience and domestic demand. This finding is supported by the works of Mavis, Emmanuel, Gibbson and Bright (2020); Eri, Prosper and Thomas (2020); Adeseye (2021) and Okorie, Nwabufo, and Oriaku (2023) whose findings show that significant relationship exists between remittance and gross domestic product.

Therefore, these findings suggest that while FDI can be a catalyst for short-term economic growth**,** its long-term effectiveness in driving GDP growth requires improvements in Nigeria's institutional environment, infrastructure, and policy consistency. For remittances, enhancing the financial infrastructure to channel them toward productive uses could maximize their developmental impact over time.

5.9 Policy Implications

The policy implications of the findings are highlighted as follows:

i. The finding shows that FDI has a positive significant impact on economic growth in the short run but an adverse insignificant effect in the long run implies that Nigeria's FDI inflows are not yet translating into sustainable growth. This suggests the dominance of short-term, non-productive, or extractive investments with limited domestic linkages. Policymakers should therefore focus on attracting productive and technology-driven FDI through improved investment climate, infrastructure, and

policy consistency, as well as strengthening local content policies that promote technology transfer and domestic value addition.

ii. Since remittances show long-run positive significance but short-run insignificance, their growth impact accumulates over time as households invest remittance inflows in education, housing, and small-scale enterprises. Policies should thus encourage formal remittance channels and create investment incentives for diaspora funds, such as diaspora bonds or targeted investment schemes, to enhance the long-run developmental impact.

iii. The negative short-run impact of exchange rate fluctuations indicates that volatility harms productive activities and investor confidence. However, the long-run insignificance suggests some level of adjustment over time. Policymakers should therefore adopt a stable and market-reflective exchange rate policy, reduce speculative pressures, and promote export diversification to mitigate short-term shocks and strengthen external competitiveness.

iv. The adverse short-run but positive long-run impact of government expenditure implies initial inefficiencies in fiscal management and delayed effects of capital spending. This calls for improved public financial management, monitoring of capital projects, and prioritization of productive and growth-inducing expenditures (such as infrastructure, education, and health) to ensure long-term benefits.

v. The consistent positive and significant effect of capital formation in both the short and long run underscores the importance of investment in physical infrastructure and productive assets. Government policies should therefore stimulate domestic investment, enhance access to finance for private investors, and ensure policy continuity to maintain investor confidence and accelerate capital accumulation.

vi. The negative short-run but positive long-run relationship between interest rate and growth suggests that while high rates may initially constrain borrowing and investment, financial reforms eventually yield efficiency gains. Policymakers should pursue monetary policies that balance inflation control with investment promotion, and deepen financial intermediation to enhance access to affordable credit, especially for SMEs and productive sectors.

vii. The insignificant short-run but positive long-run impact of money supply indicates that monetary expansion supports economic growth over time once the economy absorbs liquidity effectively. This implies that monetary authorities should maintain moderate and well-targeted expansionary policies, ensuring that credit flows to productive sectors rather than speculative activities.

CHAPTER SIX

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

6.1 Summary of Findings

The major findings of this study are stated as follows:

i. It was found that foreign direct investment has a positive significant impact on real gross domestic product in the short but it was found to have an adverse insignificant impact on real gross domestic product in the long run in Nigeria.

ii. It was discovered that remittances have an insignificant impact on real gross domestic product in the short run but it was found to have a positive significant impact on real gross domestic product in the long run in Nigeria.

iii. It was revealed that exchange rate has a negative significant impact on real gross domestic product in the short run though insignificant in the long run in Nigeria.

iv. The study found that government spending has an adverse significant effect on real gross domestic product in the short but it was found to have a positive significant impact on real gross domestic product in the long run in Nigeria.

v. It was found that gross fixed capital formation has a positive significant effect on real gross domestic product in the short and long run in Nigeria.

vi. It was discovered that interest rate has a negative insignificant effect on real gross domestic product in the short run but it was found to have a positive significant effect on real gross domestic product in the long run in Nigeria.

vii. It was established that money supply has an insignificant negative impact on real gross domestic product in the short run but it was found to have a positive significant impact on real gross domestic product in the long run in Nigeria.

6.2 Policy Recommendations

Based on the empirical findings of this research, the following recommendations have been proffered:

i. While FDI shows a positive impact on real GDP in the short run, its adverse and insignificant effect in the long run implies that Nigeria may not be fully capitalizing on the developmental benefits of foreign investment. This suggests the need for the government to enact policy reforms that prioritize quality over quantity of FDI, especially investments that build strong linkages with domestic industries.

ii. Also, the government should strengthen local value chains to ensure FDI contributes to long-term productivity and knowledge transfer. This can be achieved by improving the regulatory and business environment to retain and maximize FDI's developmental benefits over time, including reducing bureaucratic bottlenecks and ensuring policy consistency.

iii. The positive long-term impact of remittances on real GDP highlights their potential as a sustainable development tool. However, their short-run insignificance suggests that much of the remittance income is currently channeled toward consumption. To improve the effectiveness of remittances, government should initiate policies to facilitate the financial inclusion of remittance-receiving households, encouraging savings and investment rather than just consumption.

iv. Also, Nigerian monetary authority should develop formal financial instruments and investment platforms specifically designed to attract diaspora contributions to productive sectors, such as agriculture, housing, and small businesses.

v. Furthermore, the government should promote diaspora bonds or matched savings programs that incentivize the use of remittances for infrastructure or entrepreneurial ventures.

6.3 Conclusion

This study sought to examine the impacts of remittances and foreign direct investment on economic growth in Nigeria. The findings of this study showed that foreign direct investment has a positive significant impact on real gross domestic product in the short but it was found to have an adverse insignificant impact on real gross domestic product in the long run in Nigeria. Also, it was discovered that remittances have an insignificant impact on real gross domestic product in the short run but it was found to have a positive significant impact on real gross domestic product in the long run in Nigeria. Both findings underscore the need for Nigeria to diversify its economy. Relying heavily on external financial inflows without complementary domestic policy support will limit long-term growth prospects in the country. The implication is that there is the need for government to invest in education, infrastructure, and innovation to make the economy more attractive to both investors and return-oriented diaspora flows. There should be a focus on institutional reforms that foster transparency, reduce corruption, and build investor confidence. There is a clear need for a coordinated policy approach that integrates FDI promotion strategies with diaspora engagement frameworks. This could involve: establishing a national investment and remittance utilization policy, with clear guidelines for aligning these inflows with national development priorities and encouraging public-private partnerships to mobilize foreign and diaspora capital into priority sectors.

6.4 Contribution to Knowledge

i. The study contributes to the literature by providing empirical evidence that Foreign Direct Investment (FDI) has a positive and significant impact on real GDP in the short run**,** but an adverse and insignificant impact in the long run in Nigeria. This insight challenges the common assumption that FDI is universally beneficial over

time and highlights the need to assess not just the quantity, but also the quality and sustainability of FDI.

ii. By showing that remittances have an insignificant short-run impact but a positive and significant effect on real GDP in the long run**,** this study adds to existing knowledge by emphasizing the delayed but sustainable economic benefits of remittance flows. This finding supports the argument for policies that channel remittances into long-term development initiatives rather than immediate consumption.

iii. The research provides contextualized insights specific to Nigeria's economic structure, offering policymakers and scholars a clearer understanding of how external financial flows interact with domestic economic dynamics. This localized analysis helps fill the gap in country-specific studies that distinguish between short- and long-term impacts.

6.5 Recommendations for Further Studies

i. Further research could disaggregate the impact of FDI and remittances across different sectors (e.g., agriculture, manufacturing, services) to better understand where these financial inflows are most effective. A sector-specific analysis would help policymakers design targeted strategies to maximize growth in key areas of the economy.

ii. Conducting comparative studies between Nigeria and other Sub-Saharan African or developing countries could help contextualize the findings and identify best practices. Such research would enhance generalizability and provide insights into the role of institutional and structural differences in shaping the effectiveness of FDI and remittances.

iii. Given the unexpected long-term negative effect of FDI and control of corruption on growth, future studies should explore the mediating role of institutional quality—such as governance, legal systems, and political stability—in shaping the economic impact of external financial flows.

iv. Future research could employ household-level or firm-level data to better understand how remittances and FDI affect income, productivity, and investment behavior at the microeconomic level. This bottom-up approach can complement macroeconomic findings and provide deeper policy insight.

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APPENDICES

Data

	RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1981	19748.53	0.334700	0.009843	0.610000	7.750000	11.40000	15789.67	14.47000
1982	18404.96	0.290000	0.012481	0.670000	10.25000	11.90000	12893.80	15.79000
1983	16394.39	0.264300	0.014217	0.720000	10.00000	9.600000	10198.26	17.69000
1984	16211.49	0.360400	0.015978	0.760000	12.50000	9.900000	7121.280	20.11000
1985	17170.08	0.434100	0.013655	0.890000	9.250000	13.00000	6032.260	22.30000
1986	17180.55	0.735800	0.007280	2.020000	10.50000	16.20000	6045.460	23.81000
1987	17730.34	2.452800	0.005200	4.020000	17.50000	22.00000	5668.870	27.57000
1988	19030.69	1.718200	0.004883	4.540000	16.50000	27.70000	6047.750	38.36000
1989	19395.96	13.87740	0.023143	7.390000	26.80000	41.00000	6441.900	45.90000
1990	21680.20	4.686000	0.018522	8.040000	25.50000	60.30000	7331.160	47.42000
1991	21757.90	6.916100	0.133442	9.910000	20.01000	66.60000	7240.290	75.40000
1992	22765.55	14.46310	0.118105	17.30000	29.80000	92.80000	7277.430	111.1100
1993	22302.24	29.66030	2.857986	22.05000	18.32000	191.2000	7825.690	165.3400
1994	21897.47	22.20000	1.625253	21.89000	21.00000	160.9000	7633.270	230.2900
1995	21881.56	75.90000	0.567474	21.89000	20.18000	248.8000	7126.180	289.0900
1996	22799.69	111.3000	0.580681	21.89000	19.74000	337.2000	7610.320	345.8500
1997	23469.34	110.5000	1.075582	21.89000	13.54000	428.2000	8055.210	413.2800
1998	24075.15	80.70000	0.821453	21.89000	18.29000	487.1000	8167.450	488.1500
1999	24215.78	92.80000	2.191337	92.69000	21.32000	947.7000	8385.960	628.9500
2000	25430.42	116.0000	2.004099	102.1100	17.98000	701.1000	8996.910	878.4600
2001	26935.32	132.4000	1.575855	111.9400	18.29000	1018.000	6860.440	1269.320
2002	31064.27	225.2000	1.271864	120.9700	24.85000	1018.200	7559.730	1505.960
2003	33346.62	258.4000	1.014733	129.3600	20.71000	1226.000	9178.170	1952.920
2004	36431.37	248.2000	1.674024	133.5000	19.18000	1504.200	7348.340	2131.820
2005	38777.01	654.2000	8.333830	132.1500	17.95000	1919.700	7520.470	2637.910
2006	41126.68	624.5000	7.100773	128.6500	17.26000	2038.000	10557.89	3797.910
2007	43837.39	759.4000	6.473937	125.8300	16.94000	2450.900	8246.210	5127.400
2008	46802.76	971.5000	5.655764	118.5700	15.14000	3240.800	8031.720	8643.430
2009	50564.26	1273.800	6.227204	148.8800	18.99000	3453.000	8828.810	9687.510
2010	55469.35	905.7000	5.380181	150.3000	17.59000	4194.600	9183.060	11101.46
2011	58180.35	1360.300	4.974291	153.8600	16.02000	4712.100	8425.760	12628.32
2012	60670.05	1113.500	4.427623	157.5000	16.79000	4605.300	8640.770	15503.41
2013	63942.85	875.1000	3.998536	157.3100	16.72000	5185.300	9320.350	18743.07
2014	67977.46	738.2000	3.657206	158.5500	16.55000	4587.400	10570.47	20415.61
2015	69780.69	602.1000	4.183555	193.2800	16.85000	4988.900	10432.23	20885.52
2016	68652.43	1124.100	4.867907	253.4900	16.87000	5858.600	9927.260	24259.00
2017	69205.69	1069.400	5.864875	305.7900	17.58000	6456.700	9631.700	28604.47
2018	70536.35	610381.7	5.764468	306.0800	16.72000	13786.90	10569.60	29774.43
2019	72094.09	703055.4	5.017577	306.9200	15.21000	15535.50	11445.86	34257.90
2020	70800.54	908790.8	3.981395	358.8100	12.32000	17557.40	9761.500	36038.01
2021	73382.77	38073531	4.419673	399.9600	11.55000	19965.00	10216.82	40370.41
2022	74752.42	40572837	4.216213	448.5500	16.50000	24431.21	10556.64	48462.07

Descriptive Statistics

	RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
Mean	38996.98	1925767.	2.671002	116.2719	17.22167	3657.579	8683.403	9088.029
Median	28999.80	178.8000	1.839062	115.2550	17.10000	1018.100	8316.085	1387.640
Maximum	74752.42	40572837	8.333830	448.5500	29.80000	24431.21	15789.67	48462.07
Minimum	16211.49	0.264300	0.004883	0.610000	7.750000	9.600000	5668.870	14.47000
Std. Dev.	21073.79	8470438.	2.483199	120.5999	4.575326	5900.240	1977.154	13281.91
Skewness	0.524425	4.252289	0.444205	1.068965	0.328698	2.142496	1.191739	1.423131
Kurtosis	1.632519	19.11664	1.896051	3.400840	3.644044	6.760855	5.389237	3.900206
Jarque-Bera	5.197657	581.1296	3.513957	8.279983	1.482184	56.88408	19.93149	15.59526
Probability	0.074361	0.000000	0.172565	0.015923	0.476593	0.000000	0.000047	0.000411
Sum	1637873.	80882218	112.1821	4883.420	723.3100	153618.3	364702.9	381697.2
Sum Sq. Dev.	1.82E+10	2.94E+15	252.8173	596318.2	858.2780	1.43E+09	1.60E+08	7.23E+09
Observations	42	42	42	42	42	42	42	42

Correlation Analysis

Covariance Analysis: Ordinary
Date: 05/17/25 Time: 14:08
Sample: 1981 2022
Included observations: 42

Correlation Probability	RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
RGDP	1.000000 -----							
FDI	0.386889 0.0114	1.000000 -----						
REM	0.766711 0.0000	0.155419 0.3257	1.000000 -----					
EXR	0.914281 0.0000	0.591014 0.0000	0.080327 0.0000	1.000000 -----				
INT	-0.122781 0.4386	-0.158213 0.3170	-0.061464 0.6990	-0.121624 0.4429	1.000000 -----			
GEXP	0.804466 0.0000	0.727592 0.0000	0.495689 0.0008	0.023423 0.0000	-0.221163 0.1593	1.000000 -----		
GFCF	0.436956 0.0038	0.201651 0.2003	0.288556 0.0638	0.403914 0.0080	-0.431971 0.0043	0.400096 0.0087	1.000000 -----	
MS	0.914444 0.0000	0.616439 0.0000	0.569656 0.0001	0.047702 0.0000	-0.217196 0.1671	0.054188 0.0000	0.443731 0.0032	1.000000 -----

Unit Root Tests

Null Hypothesis: RGDP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.456169	0.9829
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Null Hypothesis: D(RGDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.430262	0.0156
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

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

Null Hypothesis: FDI has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.851685	0.7871
Test critical values:	1% level	-3.711457	
	5% level	-2.981038	
	10% level	-2.629906	

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

Null Hypothesis: D(FDI) has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.637922	0.0119
Test critical values:	1% level	-3.711457	
	5% level	-2.981038	
	10% level	-2.629906	

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

Null Hypothesis: REM has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.017798	0.2781
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

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

Null Hypothesis: D(REM) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.995057	0.0003
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

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

Null Hypothesis: EXR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.344276	0.9984
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

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

Null Hypothesis: D(EXR) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.250145	0.0019
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

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

Null Hypothesis: GEXP has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.869004	0.9935
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

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

Null Hypothesis: D(GEXP) has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.892472	0.0005
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

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

Null Hypothesis: GFCF has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.266903	0.9999
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

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

Null Hypothesis: D(GFCF) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.180344	0.0023
Test critical values:	1% level	-3.626784	
	5% level	-2.945842	
	10% level	-2.611531	

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

Null Hypothesis: INT has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-2.431764	0.1405
Test critical values:	1% level	-3.626784	
	5% level	-2.945842	
	10% level	-2.611531	

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

Null Hypothesis: D(INT) has a unit root
Exogenous: Constant
Lag Length: 6 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.870602	0.0104
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

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

Null Hypothesis: MS has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.826342	0.9927
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

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

Null Hypothesis: D(MS) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.465287	0.0143
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

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

Co-integration Test

Date: 05/17/25 Time: 14:02
Sample (adjusted): 1983 2022
Included observations: 40 after adjustments
Trend assumption: Linear deterministic trend
Series: RGDP FDI REM EXR INT GEXP GFCF MS
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.878021	280.6928	159.5297	0.0000
At most 1 *	0.777899	196.5365	125.6154	0.0000
At most 2 *	0.705333	136.3516	95.75366	0.0000
At most 3 *	0.588095	87.47511	69.81889	0.0010
At most 4 *	0.450369	51.99663	47.85613	0.0194
At most 5	0.309563	28.05632	29.79707	0.0783
At most 6	0.266518	13.23909	15.49471	0.1063
At most 7	0.020806	0.841024	3.841466	0.3591

Trace test indicates 5 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.878021	84.15632	52.36261	0.0000
At most 1 *	0.777899	60.18491	46.23142	0.0009
At most 2 *	0.705333	48.87644	40.07757	0.0040
At most 3 *	0.588095	35.47848	33.87687	0.0320
At most 4	0.450369	23.94031	27.58434	0.1368
At most 5	0.309563	14.81723	21.13162	0.3019
At most 6	0.266518	12.39807	14.26460	0.0966
At most 7	0.020806	0.841024	3.841466	0.3591

Max-eigenvalue test indicates 4 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
0.000221	-3.54E-06	-0.279121	0.002384	0.006332	0.000179	-0.000516	-0.000411
0.000254	5.55E-06	-0.068273	-0.000963	-0.056384	0.000146	-0.000250	-0.000363
0.000323	2.69E-05	-0.703258	-0.020642	-0.074100	-0.001454	7.09E-05	-0.000247
0.000152	1.29E-05	-0.145576	0.007164	-0.133243	-0.001162	0.000523	-0.000136
-5.99E-05	-2.88E-05	-0.087125	-0.012621	-0.033660	0.003051	7.40E-05	-0.000659
6.11E-05	1.79E-06	-0.519341	0.031271	0.089390	-9.85E-06	8.17E-05	-0.000298
6.88E-05	8.43E-06	-0.395569	0.023336	-0.323690	-0.000783	-0.000407	-6.23E-05
-0.000155	-4.77E-05	-0.564150	-0.003992	0.064550	0.003753	0.000209	-0.000348

Unrestricted Adjustment Coefficients (alpha):

D(RGDP)	439.5746	104.3217	-423.0970	-190.2246	548.7578	157.4195	161.1230	-29.51884
D(FDI)	-1897098.	2668049.	-364216.6	-2090937.	703126.7	640173.5	341389.3	50394.78
D(REM)	0.244640	0.061444	0.416071	0.052914	-0.281318	0.474009	0.124510	0.050956
D(EXR)	-2.770882	6.857429	6.244439	1.652515	-5.004484	0.216202	1.549330	-1.361061
D(INT)	0.844912	-0.001105	-0.087453	0.045144	0.043475	-0.783214	1.505289	-0.078473
D(GEXP)	-256.2356	-236.5243	-481.8795	-155.3739	-337.9893	102.1974	66.83948	16.98774
D(GFCF)	371.7245	-1.870838	85.24265	-613.0091	-11.59927	-54.51671	44.31003	-13.22570
D(MS)	219.2609	632.7200	-137.4489	84.51416	-44.06619	-121.6016	-99.71022	14.61469

1 Cointegrating Equation(s): Log likelihood -2269.120

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1.000000	-0.016028	-1263.362	10.79274	28.66194	0.810114	-2.336834	-1.861073
	(0.01541)	(313.625)	(14.3846)	(106.832)	(1.39643)	(0.26912)	(0.28657)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	0.097118
	(0.04499)
D(FDI)	-419.1361
	(181.536)
D(REM)	5.40E-05
	(4.7E-05)
D(EXR)	-0.000612
	(0.00067)
D(INT)	0.000187
	(0.00013)
D(GEXP)	-0.056612
	(0.03538)
D(GFCF)	0.082127
	(0.03361)
D(MS)	0.048442
	(0.03277)

2 Cointegrating Equation(s): Log likelihood -2239.027

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1.000000	0.000000	-842.8247	4.623474	-77.44810	0.710985	-1.765749	-1.679116
		(206.809)	(11.1166)	(82.6973)	(0.23628)	(0.20961)	(0.09919)
0.000000	1.000000	26238.33	-384.9153	-6620.456	-6.184855	35.63136	11.35271
		(11160.4)	(599.904)	(4462.75)	(12.7507)	(11.3115)	(5.35296)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	0.123588	-0.000978
	(0.06821)	(0.00133)
D(FDI)	257.8392	21.52111
	(222.626)	(4.35540)
D(REM)	6.96E-05	-5.25E-07
	(7.1E-05)	(1.4E-06)
D(EXR)	0.001128	4.79E-05
	(0.00093)	(1.8E-05)

D(INT)	0.000186	-3.00E-06
	(0.00020)	(4.0E-06)
D(GEXP)	-0.116626	-0.000405
	(0.05188)	(0.00101)
D(GFCF)	0.081652	-0.001327
	(0.05118)	(0.00100)
D(MS)	0.208985	0.002734
	(0.03129)	(0.00061)

3 Cointegrating Equation(s): Log likelihood -2214.589

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1.000000	0.000000	0.000000	13.34428	-173.2301	1.835227	-1.530268	-1.671606
			(18.0908)	(140.139)	(0.40946)	(0.35507)	(0.16702)
0.000000	1.000000	0.000000	-656.4063	-3638.628	-41.18411	28.30052	11.11891
			(251.604)	(1949.02)	(5.69467)	(4.93825)	(2.32295)
0.000000	0.000000	1.000000	0.010347	-0.113644	0.001334	0.000279	8.91E-06
			(0.01457)	(0.11283)	(0.00033)	(0.00029)	(0.00013)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.013227	-0.012374	167.7291
	(0.08748)	(0.00520)	(142.414)
D(FDI)	140.0645	11.71110	603502.9
	(307.219)	(18.2544)	(500152.)
D(REM)	0.000204	1.07E-05	-0.365085
	(9.2E-05)	(5.5E-06)	(0.15009)
D(EXR)	0.003147	0.000216	-4.086214
	(0.00117)	(7.0E-05)	(1.90798)
D(INT)	0.000158	-5.35E-06	-0.174256
	(0.00028)	(1.7E-05)	(0.45770)
D(GEXP)	-0.272449	-0.013384	426.5546
	(0.05910)	(0.00351)	(96.2127)
D(GFCF)	0.109217	0.000969	-163.5761
	(0.07061)	(0.00420)	(114.954)
D(MS)	0.164539	-0.000968	-7.736167
	(0.04180)	(0.00248)	(68.0437)

4 Cointegrating Equation(s): Log likelihood -2196.850

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1.000000	0.000000	0.000000	0.000000	-105.3687	2.470744	-1.913280	-1.650549
				(157.157)	(0.41050)	(0.38577)	(0.18856)
0.000000	1.000000	0.000000	0.000000	-6976.733	-72.44527	47.14092	10.08310
				(2472.04)	(6.45713)	(6.06815)	(2.96606)
0.000000	0.000000	1.000000	0.000000	-0.061025	0.001827	-1.76E-05	2.52E-05
				(0.12684)	(0.00033)	(0.00031)	(0.00015)
0.000000	0.000000	0.000000	1.000000	-5.085425	-0.047625	0.028702	-0.001578
				(3.68620)	(0.00963)	(0.00905)	(0.00442)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.042155	-0.014819	195.4212	8.318398
	(0.09041)	(0.00563)	(142.494)	(4.05279)
D(FDI)	-177.9091	-15.16333	907892.4	-14553.17

	(263.253)	(16.3923)	(414898.)	(11800.4)
D(REM)	0.000212	1.14E-05	-0.372788	-0.007685
	(9.7E-05)	(6.0E-06)	(0.15264)	(0.00434)
D(EXR)	0.003398	0.000237	-4.326780	-0.130264
	(0.00122)	(7.6E-05)	(1.92863)	(0.05485)
D(INT)	0.000165	-4.77E-06	-0.180827	0.004144
	(0.00030)	(1.8E-05)	(0.46599)	(0.01325)
D(GEXP)	-0.296077	-0.015381	449.1732	8.450350
	(0.06058)	(0.00377)	(95.4741)	(2.71545)
D(GFCF)	0.015995	-0.006910	-74.33691	-5.262977
	(0.04998)	(0.00311)	(78.7707)	(2.24038)
D(MS)	0.177391	0.000118	-20.03937	3.356451
	(0.04330)	(0.00270)	(68.2459)	(1.94103)

5 Cointegrating Equation(s): Log likelihood -2184.880

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1.000000	0.000000	0.000000	0.000000	0.000000	2.242163	-2.482701	-1.485655
					(0.44459)	(0.41139)	(0.20288)
0.000000	1.000000	0.000000	0.000000	0.000000	-87.58024	9.438116	21.00114
					(4.24640)	(3.92939)	(1.93774)
0.000000	0.000000	1.000000	0.000000	0.000000	0.001694	-0.000347	0.000121
					(0.00034)	(0.00032)	(0.00016)
0.000000	0.000000	0.000000	1.000000	0.000000	-0.058657	0.001220	0.006380
					(0.00710)	(0.00657)	(0.00324)
0.000000	0.000000	0.000000	0.000000	1.000000	-0.002169	-0.005404	0.001565
					(0.00104)	(0.00096)	(0.00047)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.075028	-0.030605	147.6106	1.392299	35.12774
	(0.07643)	(0.00649)	(120.333)	(3.92091)	(25.6806)
D(FDI)	-220.0302	-35.39107	846632.4	-23427.62	119474.4
	(257.499)	(21.8582)	(405387.)	(13209.1)	(86514.7)
D(REM)	0.000229	1.95E-05	-0.348278	-0.004134	-0.030327
	(9.4E-05)	(8.0E-06)	(0.14831)	(0.00483)	(0.03165)
D(EXR)	0.003698	0.000381	-3.890763	-0.067101	-0.918644
	(0.00115)	(9.7E-05)	(1.80581)	(0.05884)	(0.38538)
D(INT)	0.000162	-6.02E-06	-0.184615	0.003596	0.004414
	(0.00030)	(2.5E-05)	(0.46889)	(0.01528)	(0.10007)
D(GEXP)	-0.275829	-0.005658	478.6206	12.71625	79.50031
	(0.05285)	(0.00449)	(83.2085)	(2.71125)	(17.7577)
D(GFCF)	0.016690	-0.006576	-73.32632	-5.116578	78.21232
	(0.05034)	(0.00427)	(79.2517)	(2.58232)	(16.9133)
D(MS)	0.180031	0.001386	-16.20009	3.912628	-33.87948
	(0.04344)	(0.00369)	(68.3913)	(2.22845)	(14.5956)

6 Cointegrating Equation(s): Log likelihood -2177.471

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-2.852394	-1.084879
						(0.35965)	(0.10554)
0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	23.87852	5.346590
						(11.4596)	(3.36301)

0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	-0.000627	0.000424
						(0.00023)	(6.8E-05)
0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.010892	-0.004104
						(0.00509)	(0.00149)
0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	-0.005046	0.001177
						(0.00099)	(0.00029)
0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.164882	-0.178745
						(0.13068)	(0.03835)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.065409	-0.030324	65.85619	6.314913	49.19947	2.602876	
	(0.07567)	(0.00638)	(142.135)	(6.11578)	(28.6540)	(0.54400)	
D(FDI)	-180.9118	-34.24826	514164.1	-3408.972	176699.4	5149.357	
	(252.840)	(21.3199)	(474899.)	(20434.0)	(95738.4)	(1817.61)	
D(REM)	0.000258	2.03E-05	-0.594450	0.010688	0.012044	-0.001477	
	(8.5E-05)	(7.1E-06)	(0.15884)	(0.00683)	(0.03202)	(0.00061)	
D(EXR)	0.003711	0.000382	-4.003046	-0.060340	-0.899317	-0.025765	
	(0.00116)	(9.7E-05)	(2.17052)	(0.09339)	(0.43757)	(0.00831)	
D(INT)	0.000115	-7.42E-06	0.222140	-0.020896	-0.065597	0.000366	
	(0.00029)	(2.5E-05)	(0.54756)	(0.02356)	(0.11039)	(0.00210)	
D(GEXP)	-0.269584	-0.005475	425.5453	15.91203	88.63573	-0.231383	
	(0.05244)	(0.00442)	(98.4923)	(4.23793)	(19.8558)	(0.37697)	
D(GFCF)	0.013359	-0.006673	-45.01357	-6.821352	73.33907	0.620094	
	(0.05048)	(0.00426)	(94.8149)	(4.07970)	(19.1144)	(0.36289)	
D(MS)	0.172601	0.001169	46.95260	0.110064	-44.74945	0.100019	
	(0.04235)	(0.00357)	(79.5475)	(3.42277)	(16.0366)	(0.30446)	

7 Cointegrating Equation(s): Log likelihood -2171.272

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	FDI	REM	EXR	INT	GEXP	GFCF	MS
1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.641215
							(0.12887)
0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.00390
							(3.58373)
0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000301
							(5.6E-05)
0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	-0.001980
							(0.00129)
0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000193
							(0.00018)
0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	-0.146586
							(0.03774)
0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-0.195042
							(0.05150)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.054332	-0.028967	2.120977	10.07492	-2.954417	2.476755	-0.394674
	(0.07494)	(0.00638)	(151.391)	(6.93490)	(55.8292)	(0.54630)	(0.13207)
D(FDI)	-157.4410	-31.37179	379121.2	4557.785	66195.19	4882.130	-842.6624
	(253.304)	(21.5799)	(511684.)	(23439.2)	(188696.)	(1846.43)	(446.391)
D(REM)	0.000267	2.13E-05	-0.643702	0.013594	-0.028258	-0.001574	-0.000117
	(8.5E-05)	(7.2E-06)	(0.17089)	(0.00783)	(0.06302)	(0.00062)	(0.00015)
D(EXR)	0.003818	0.000395	-4.615912	-0.024184	-1.400820	-0.026977	3.86E-05
	(0.00116)	(9.9E-05)	(2.33889)	(0.10714)	(0.86253)	(0.00844)	(0.00204)
D(INT)	0.000218	5.26E-06	-0.373305	0.014232	-0.552844	-0.000812	-0.001092
	(0.00026)	(2.2E-05)	(0.52483)	(0.02404)	(0.19354)	(0.00189)	(0.00046)

D(GEXP)	-0.264989	-0.004912	399.1057	17.47182	67.00047	-0.283702	0.032194
	(0.05258)	(0.00448)	(106.210)	(4.86525)	(39.1676)	(0.38326)	(0.09266)
D(GFCF)	0.016405	-0.006300	-62.54123	-5.787321	58.99636	0.585410	-0.529415
	(0.05080)	(0.00433)	(102.610)	(4.70034)	(37.8400)	(0.37027)	(0.08952)
D(MS)	0.165745	0.000329	86.39484	-2.216802	-12.47426	0.178069	-0.209768
	(0.04176)	(0.00356)	(84.3595)	(3.86433)	(31.1097)	(0.30441)	(0.07359)

Long Run Estimates

Dependent Variable: RGDP
Method: Least Squares
Date: 05/17/25 Time: 13:37
Sample (adjusted): 1981 2018
Included observations: 38 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	-0.159358	0.191504	-0.832142	0.4124
REM	2211.902	737.4285	2.999480	0.0050
EXR	-7.065807	5.569512	-1.268658	0.2150
GEXP	1.304034	0.405141	3.218717	0.0032
GFCF	3.13E-10	1.07E-10	2.935731	0.0066
INT	53.53686	28.50551	1.878123	0.0708
MS	0.366731	0.152861	2.399113	0.0233
C	-4668.149	1856.369	-2.514666	0.0179

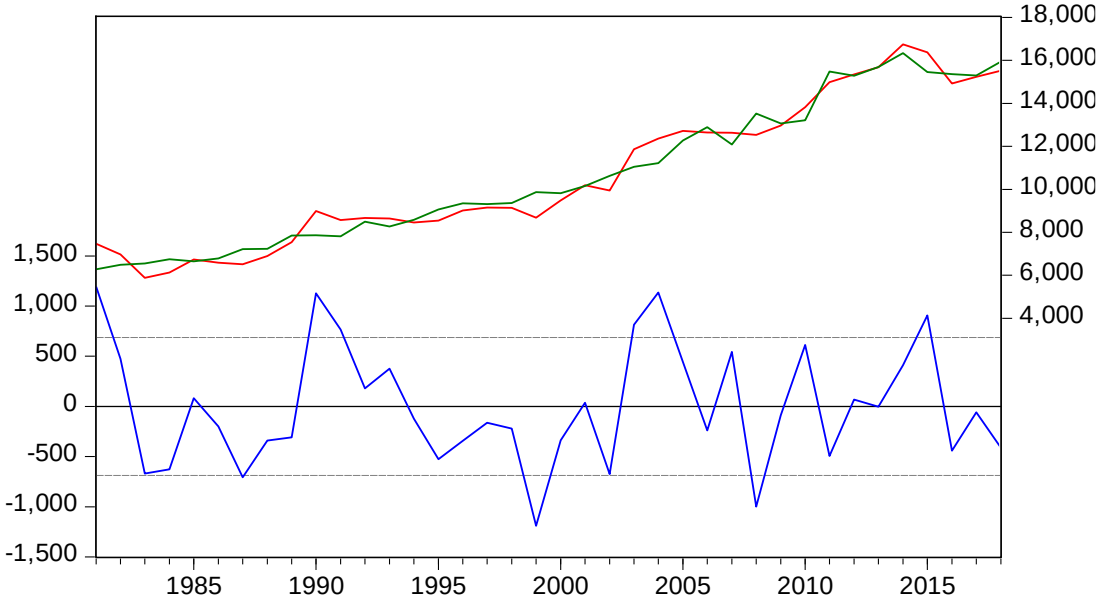
R-squared	0.967837	Mean dependent var	10647.18
Adjusted R-squared	0.957499	S.D. dependent var	3334.977
S.E. of regression	687.5292	Akaike info criterion	16.12502
Sum squared resid	13235499	Schwarz criterion	16.55596
Log likelihood	-296.3754	Hannan-Quinn criter.	16.27835
F-statistic	93.61922	Durbin-Watson stat	1.496172
Prob(F-statistic)	0.000000	Wald F-statistic	199.8074
Prob(Wald F-statistic)	0.000000		

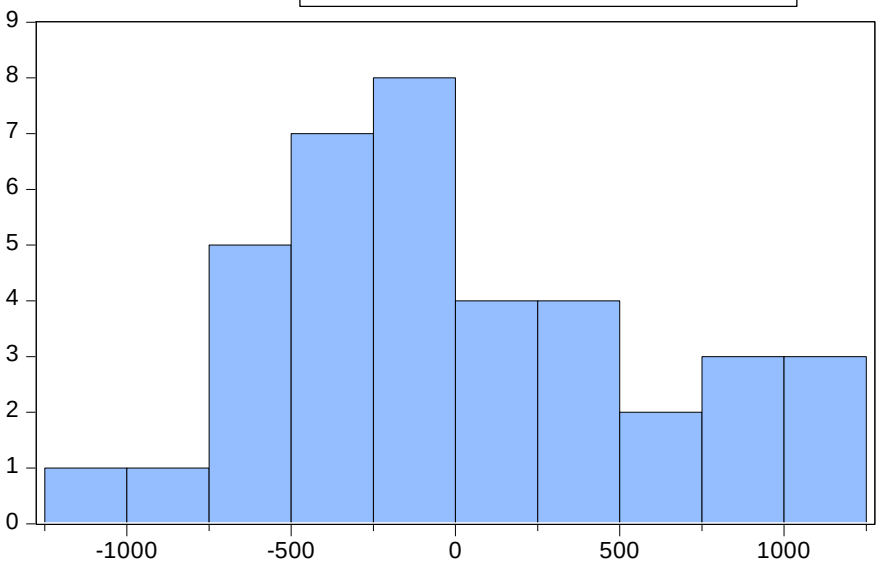
Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.408652	Prob. F(2,13)	0.6728
Obs*R-squared	1.537919	Prob. Chi-Square(2)	0.4635

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

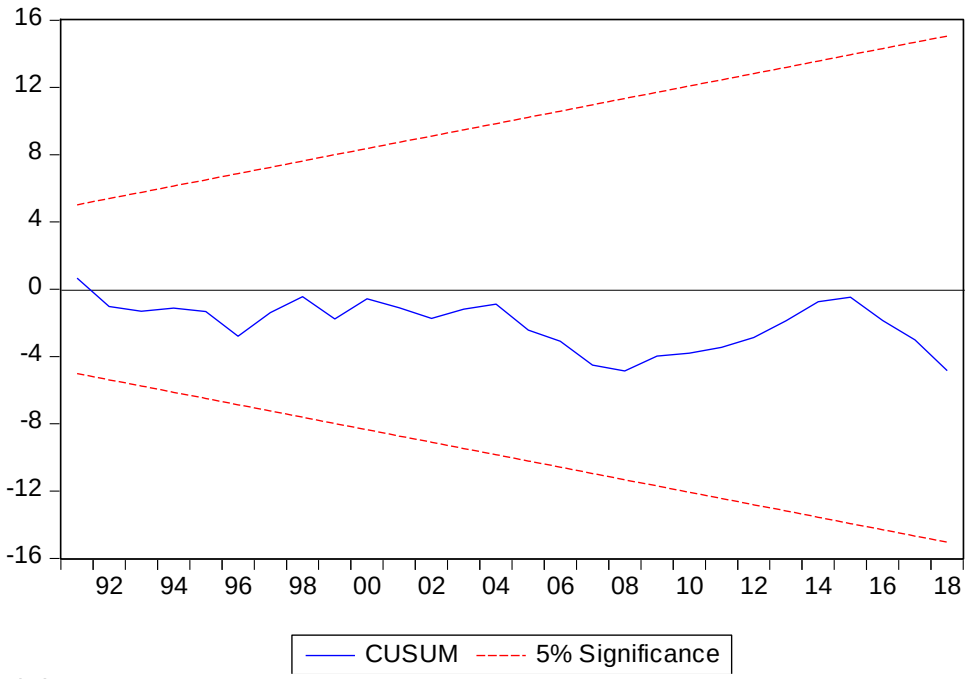
F-statistic	0.585176	Prob. F(10,15)	0.8023
Obs*R-squared	7.296547	Prob. Chi-Square(10)	0.6972
Scaled explained SS	1.508510	Prob. Chi-Square(10)	0.9989





Series: Residuals
Sample 1981 2018
Observations 38

Mean	6.87e-12
Median	-105.7518
Maximum	1193.043
Minimum	-1189.221
Std. Dev.	598.0938
Skewness	0.325557
Kurtosis	2.428721
Jarque-Bera	1.187987
Probability	0.552118


16
12
8
4
0
-4
-8
-12
-16
92
94
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98
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16
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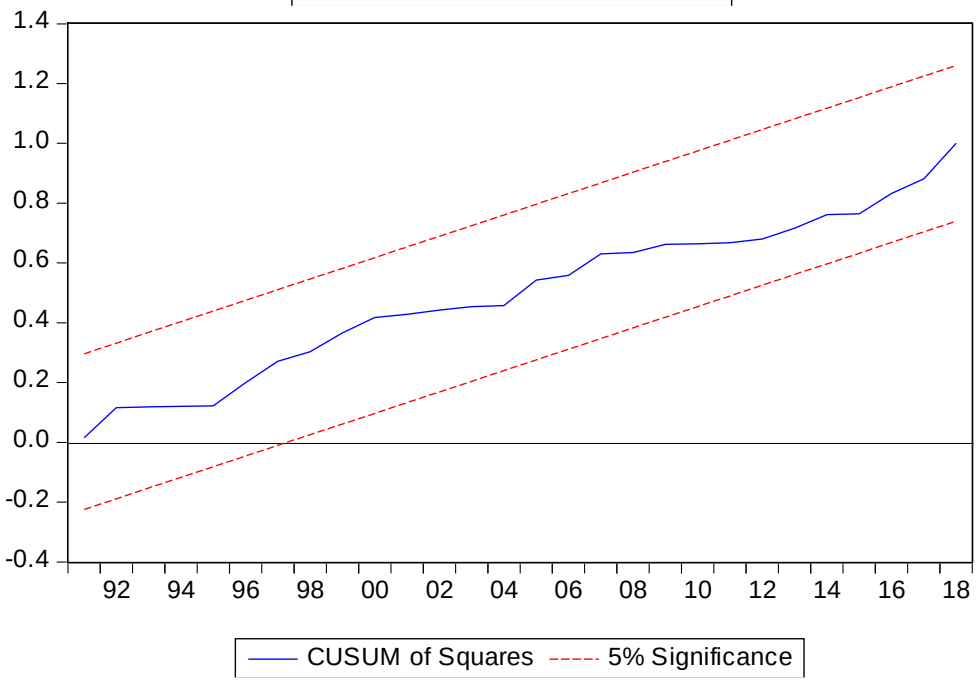
CUSUM
5% Significance


1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
92
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16
18
CUSUM of Squares
5% Significance

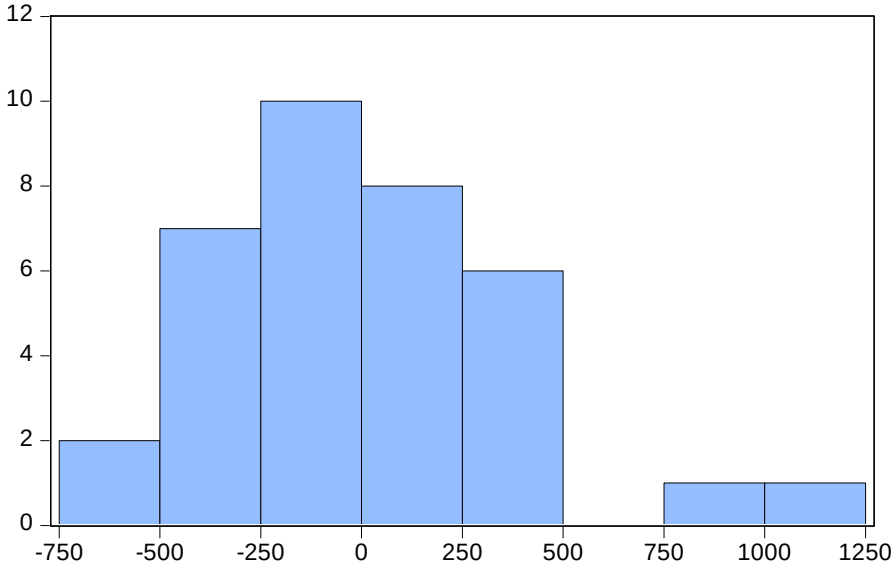
Short Run Estimates

Dependent Variable: D(RGDP)
Method: Least Squares
Date: 05/17/25 Time: 12:40
Sample (adjusted): 1984 2018
Included observations: 35 after adjustments
Convergence achieved after 29 iterations
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI)	4.25E-05	1.38E-05	3.084796	0.0042
D(EXPT)	0.070358	0.059847	1.175621	0.2518
D(EXR)	-12.37109	3.300760	-3.747950	0.0010
D(GEXP)	-0.662794	0.196256	-3.377188	0.0026
D(GFCF(-1))	0.498055	0.198272	2.511983	0.0172
D(INT(-1))	-10.74269	17.52258	-0.613077	0.5458
D(MS(-1))	-0.157536	0.090855	-1.733928	0.0963
ECM(-1)	-0.180509	0.162863	-6.192375	0.0000
C	380.6680	409.7074	0.929122	0.3625
AR(1)	0.747854	0.157566	4.746300	0.0001

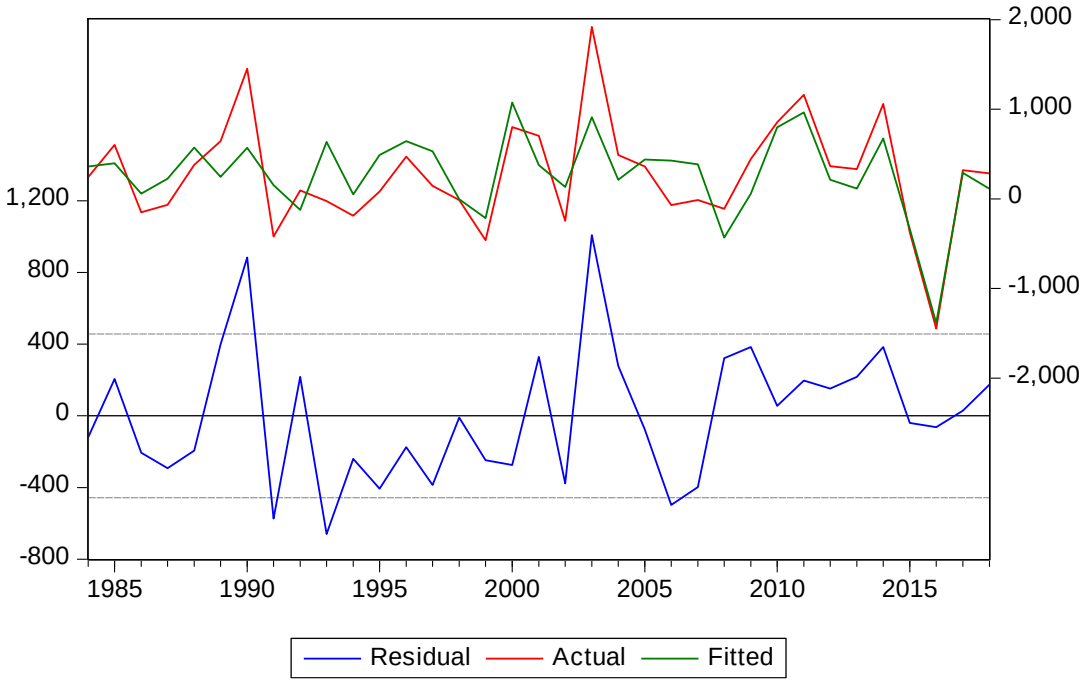
R-squared	0.614681	Mean dependent var	275.3571
Adjusted R-squared	0.430398	S.D. dependent var	605.8989
S.E. of regression	457.2839	Akaike info criterion	15.35435
Sum squared resid	4809498.	Schwarz criterion	15.88761
Log likelihood	-256.7011	Hannan-Quinn criter.	15.53843
F-statistic	3.335527	Durbin-Watson stat	1.955700
Prob(F-statistic)	0.007145	Wald F-statistic	17.32254
Prob(Wald F-statistic)	0.000000		

Inverted AR Roots	.75



Series: Residuals
Sample 1984 2018
Observations 35

Mean	2.66e-07
Median	-39.88229
Maximum	1007.678
Minimum	-659.4176
Std. Dev.	376.1061
Skewness	0.609711
Kurtosis	3.360848
Jarque-Bera	2.358421
Probability	0.307521



Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.787517	Prob. F(2,30)	0.1847
Obs*R-squared	4.365637	Prob. Chi-Square(2)	0.1127

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.349733	Prob. F(8,32)	0.9389
Obs*R-squared	3.296534	Prob. Chi-Square(8)	0.9144
Scaled explained SS	1.641617	Prob. Chi-Square(8)	0.9901