POVERTY LEVEL AND ITS IMPACT ON ECONOMIC GROWTH IN NIGERIA

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EDO STATE, NIGERIA

OCTOBER, 2025

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AN UNDERGRADUATE DISSERTATION SUBMITTED TO THE DEPARTMENT OF ECONOMICS, FACULTY OF SOCIAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA; IN PATIAL FULFILLMENT OF THE REQUIREMENTS FOR AWARD OF BACHELOR OF SCIENCE (B.Sc) DEGREE IN ECONOMICS

OCTOBER, 2025

DECLARATION

I, NYANGA JOY TEJIRI do hereby declare that this project is entirely my work and composition. The work embodied in this project has not been submitted by another candidate for any degree and is not currently being submitted for any other degree. All references made to the works of other persons have been duly acknowledged.

_____ _____

NYANGA JOY TEJIRI **DATE**

CERTIFICATION

This is to certify that this research work titled "POVERTY LEVEL AND ITS IMPACT ON ECONOMIC GROWTH IN NIGERIA" was carried out and submitted by **NYANGA JOY TEJIRI** with matriculation Number SSC2105584 for the award of Bachelor of Science (B.Sc) degree in Economics, University of Benin, Edo State.

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DEDICATION

I dedicate this project to God Almighty my creator, my strong pillar, my source of inspiration, wisdom, knowledge and understanding.

I would also like to express my gratitude to my family, who has been my constant source of love, support and inspiration throughout my academic journey. Your unwavering encouragement and belief in my abilities have been invaluable, and I am grateful for the sacrifices you have made to help me pursue my dream.

ACKNOWLEDGEMENT

I owe my profound gratitude to all these individuals for mentoring and supporting me in completing this project.

I would like to express my special thanks of gratitude to my project supervisor, **PROF. CLEMENT ATEWE IGHODARO** for all his advice, support, guidance, feedback and constant encouragement throughout the duration of this project.

My appreciate also goes to my HOD, **DR. NOSAKHARE LIBERTY ARODOYE** for his encouragement, and support he gave me. I also appreciate all the other lecturer in the department of Economics.

I will like to appreciate **MR** and **MRS NYANGA** for their profound love and support throughout this journey, words can't express how grateful I am for this priceless opportunity been given to me.

To my lovely **SISTERS,** my friend **MR ISAIAH ONAERHIME ,** my roommates, **ROOM 205 family, 305 family, 310 family,** and **307 family,** of hall 2 and to my closest buddies **ANITA, SARAH, AISHAT, CONFIDENCE,** that have been with me throughout this journey, I want to say a very big thank you to you all. May God bless you all.

Last but not the least, I want to thank me, I want to thank me for believing in me, I want thank me for doing all this hard work, I want to thank me for never quitting, I want to thank me for always being a giver and trying to give more than I receive, Love you all.

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ABSTRACT

This study examines the impact of poverty on economic growth in Nigeria from 1981 to 2024. Despite periods of robust economic expansion, Nigeria continues to experience high and persistent poverty rates, reflecting the country's enduring growth–poverty paradox. Using annual time-series data obtained from the World Bank, National Bureau of Statistics, and Central Bank of Nigeria, the study employs the Autoregressive Distributed Lag (ARDL) model and Error Correction Mechanism (ECM) to analyze both short-run and long-run relationships between poverty and growth, alongside other macroeconomic variables such as unemployment, inflation, foreign direct investment, and government expenditure. The results reveal that poverty exerts a significant and negative impact on real GDP in both the short and long run, indicating that high poverty levels constrain Nigeria's productive capacity and weaken economic performance. Granger causality tests further show a unidirectional causal relationship running from poverty to economic growth, implying that poverty significantly predicts variations in output, whereas growth alone does not substantially reduce poverty. The findings highlight that without inclusive policies targeting poverty reduction, economic growth in Nigeria will remain uneven and unsustainable. The study recommends enhanced social investment, employment generation, human capital development, and equitable income distribution as vital strategies to break the poverty–growth trap and promote broad-based economic progress.

Keywords: Poverty, Economic Growth, ARDL, Granger Causality, Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Nigeria is endowed with abundant human and natural resources, including fertile land, a youthful population, and significant reserves of oil and gas. Despite these endowments, poverty remains widespread and deeply entrenched. The National Bureau of Statistics (NBS, 2022) reports that approximately 133 million Nigerians, representing 63% of the population, are multidimensionally poor. This multidimensional poverty captures deprivations in areas such as education, health, employment, living standards, and access to basic services. In terms of monetary poverty, the World Bank (2024) estimates that about 40% of Nigerians live below the national poverty line, and around 31% live on less than the international poverty threshold of $2.15 per day.

Over the past four decades, Nigeria has experienced periods of relatively strong economic growth, driven largely by oil exports. For example, between 2000 and 2014, average GDP growth rates exceeded 6% per annum (CBN, 2021). However, this growth has not been inclusive, as poverty rates have remained stubbornly high or even increased in some periods (Adeleye et al, 2020). This phenomenon often referred to as the "growth–poverty paradox" raises questions about the nature of economic growth in Nigeria and its capacity to generate broad-based welfare improvements (Fosu, 2017). Structural issues such as over-reliance on oil revenues, weak institutional capacity, high inequality, and regional disparities have contributed to the limited poverty-reducing impact of growth (Rodrik, 2018).

In the Nigerian context, the channels through which poverty may affect economic growth are numerous. First, high poverty levels constrain human capital development, as poor households often cannot afford quality education or healthcare. This reduces labor productivity and the economy's growth potential (Barro, 2015). Second, poverty limits aggregate demand, since a

large share of the population has insufficient income to purchase goods and services, thereby constraining domestic markets and discouraging private investment (Ali & Thorbecke, 2000). Third, persistent poverty can exacerbate social unrest, insecurity, and political instability, all of which deter both domestic and foreign investment and weaken the growth process (Collier, 2007). In Nigeria, the rise of insurgency, banditry, and kidnapping in the northern and central regions has been linked partly to widespread poverty and unemployment (Egwu, 2016).

Poverty is one of the most pressing and persistent challenges confronting human society, particularly in developing countries. It is not merely the absence of income or material resources, but a multidimensional condition characterized by deprivation in health, education, housing, and access to basic services (UNDP 2022). The World Bank (2024) defines poverty as a pronounced deprivation in well-being, encompassing both monetary dimensions, such as low income, and non-monetary dimensions, such as lack of access to education, healthcare, and safe drinking water. While the incidence of poverty has declined globally over the past three decades, progress has been uneven, with Sub-Saharan Africa remaining the region with the highest poverty rates (World Bank, 2023). Nigeria, as Africa's most populous country, is at the heart of this challenge.

1.2 Statement of the Problem

Nigeria's economic trajectory over the past four decades presents a paradox: periods of relatively high economic growth have coexisted with persistently high levels of poverty. Between 2000 and 2014, Nigeria's GDP grew at an average rate of over 6% per annum, driven largely by oil exports and favorable commodity prices (CBN, 2021). Yet, the National Bureau of Statistics (NBS, 2022) reports that 133 million Nigerians approximately 63% of the population remain multidimensionally poor. Similarly, the World Bank (2024) estimates that about 40% of Nigerians live below the national poverty line, with the incidence of extreme poverty (living on less than $2.15 per day in 2017 PPP) among the highest globally. This

persistent poverty in the face of growth is often referred to as the growth–poverty paradox (Fosu, 2017).

The persistence of this paradox raises fundamental questions about the nature of Classical economic thought suggests that economic growth should lead to a reduction in poverty through increased employment opportunities, higher incomes, and improved living standards (Todaro & Smith, 2020). However, Nigeria's experience suggests that growth has been largely non-inclusive, with benefits concentrated among a small segment of the population and certain regions, leaving vast sections of society in deprivation (Adeleye et al. 2020; Rodrik 2018). The dominance of the oil sector, with its limited capacity to generate broad-based employment and weak linkages to other sectors, has further exacerbated this situation (AkinBobola & Saibu, 2021).

High poverty levels, in turn, may have adverse effects on economic growth. Poverty constrains human capital formation by limiting access to quality education and healthcare, which are essential for enhancing labor productivity

(Barro, 2015). Poor households often lack the resources to invest in entrepreneurial activities, thereby reducing economic dynamism and innovation (Ali & Thorbecke, 2000). Moreover, widespread poverty can fuel social unrest, insecurity, and political instability, all of which deter both domestic and foreign investment and disrupt economic activities (Collier 2007; Egwu 2016). In Nigeria, rising insecurity in the form of insurgency, kidnapping, and banditry has been linked partly to poverty and unemployment, creating a vicious cycle of low growth and high poverty (Ofoma & One 2023).

1.3 Research questions

1. What is the impact of poverty level on economic growth in Nigeria?

2. What is the direction of causal relationship between poverty level and economic growth in Nigeria?

1.4 Objectives of the study

1. To determine the impact of poverty level on economic growth in Nigeria

2. To determine the direction of causal relationship between poverty level and economic growth in Nigeria

1.5 Research hypotheses

H1: poverty level does not have any significant impact on economic growth in Nigeria

H2: There is no significant causal relationship between poverty level and economic growth in Nigeria

1.6 Significance of the study

This study is significant because it contributes to the body of knowledge on the relationship between poverty and economic growth in Nigeria. By examining how high poverty levels constrain economic performance, it provides fresh insights into whether poverty should be treated merely as a byproduct of underdevelopment or as a critical obstacle to growth (Todaro & Smith 2020). The findings will have important policy relevance, offering empirical evidence that can guide the formulation of strategies aimed at reducing poverty while promoting sustainable growth. This is especially relevant to the attainment of the Sustainable growth Goals, particularly Goal 1 on ending poverty and Goal 8 on promoting inclusive and sustainable economic growth (UNDP, 2023).

The study is also relevant to socioeconomic planning, as it highlights the broader impacts of poverty, such as reduced productivity, limited human capital development, and increased social unrest, all of which can undermine economic stability and progress (Fosu, 2017). In addition, the research will serve as a useful reference for academics, policymakers, and development partners who seek to better understand and address the poverty growth nexus in Nigeria and

1.7 Scope of the study

This study focuses on examining the impact of poverty levels on economic growth in Nigeria over the period 1980 to 2024. (World Bank, 2024). The analysis covers national-level poverty indicators such as the poverty headcount ratio, unemployment rate, and income inequality measures and their relationship with macroeconomic variables like GDP growth, investment, and productivity.

Geographically, the study is limited to Nigeria as a whole, without focusing on specific states or regions, although national data may reflect disparities across different areas. The scope does not cover micro-level household case studies, but instead relies on aggregated statistical data from recognized sources such as the National Bureau of Statistics (NBS), World Bank, and International Monetary Fund (IMF). By concentrating on the 1980–2024 period, the study aims to provide a comprehensive and up-to-date understanding of how persistent poverty has shaped Nigeria's economic trajectory in recent years.

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual framework

Understanding the key concept used in this study is essential to appreciating the relationship between poverty and economic growth in Nigeria.

Poverty

Poverty is a multidimensional concept that encompasses a lack of income, limited access to basic services, and inability to meet minimum standards of living. According to World Bank (2024) Poverty is "pronounced deprivation in wellbeing," including both monetary and non-monetary deprivations (low income, poor access to services, vulnerability to shocks).

Human Development Report (2023) Poverty is the denial of choices and opportunities, reflected in indicators of human development (education, health, standard of living) that prevent people from achieving a decent life.

According to Dollar and Kraay (2002) poverty is the condition that the poor experience income levels below a defined threshold; their work links average growth to poverty outcomes (operational income-based view).

Fosu (2017) Poverty is both an outcome of weak growth and a constraint on growth: it captures low living standards, human capital shortfalls and restricted access to economic opportunities.

Oyinlola and Adedeji (2021) (Nigeria-focused) Poverty denotes households unable to attain a minimum welfare level measured by national poverty lines and compounded by poor access to services and unemployment.

According to UNICEF / World Health perspectives (recent syntheses), Poverty is linked to child nutrition, mortality and education deprivations; defined functionally as conditions that harm children's developmental outcomes (used for sectoral poverty analysis).

Economic growth

Economic growth refers to the sustained increase in the productive capacity of an economy overtime. Todaro and Smith (2020) Economic growth is the process by which a nation's productive capacity increases over time, producing rising levels of national output and income (real GDP growth).

Organization for Economic Co-operation and Development (OECD, 2023) defined Economic growth as the expansion of the economy's ability to produce goods and services, typically measured by real GDP growth; policy focus includes quality and inclusiveness of growth. International Monetary Fund (IMF, 2022) Economic growth reflects increases in real GDP driven by labor, capital accumulation, and productivity (technology); growth underpins employment and income improvements.

World Bank (2024) economic Growth is measured by increases in real GDP per capita and is a principal means for raising living standards and reducing poverty where growth is broad-based and inclusive.

Barro (2019) macro development texts, Economic growth is an outcome of a mix of macro fundamentals, institutions, human capital and investment; measured and modelled as sustained increases in output per worker or per capita.

(NBS, 2023) Growth in Nigeria is reported as annual % change in real GDP; practical definitions emphasize sectoral contributions (oil, agriculture, services) and the quality of jobs created.

2.1.1 Causes of poverty in Nigeria

Poverty in Nigeria is the result of a complex interaction of structural, economic, political, and social factors. According to the National Bureau of Statistics (NBS, 2022), over 133 million Nigerians are multidimensionally poor, reflecting challenges in income generation, access to basic services, and living conditions. Several key causes have been identified in literature:

1. Unemployment and Underemployment

High unemployment rates, particularly among the youth, are a major driver of poverty in Nigeria. The NBS (2023) reports that the youth unemployment rate remains above 40%, limiting income opportunities and deepening poverty levels. Okoye and Eze (2022) argue that structural issues in Nigeria's labor market, such as skill mismatches and low job creation in productive sectors, exacerbate this problem.

2. Corruption and Mismanagement of Resources

Corruption has significantly undermined Nigeria's capacity to channel resources into productive investments that could reduce poverty. Transparency International (2023) ranks Nigeria among the most corrupt countries globally, and Akinola (2020) notes that the diversion of public funds hampers infrastructure development, education, and health care, thereby perpetuating deprivation.

3. Poor Governance and Policy Failures

Governance challenges, including weak institutions and policy inconsistency, have hindered effective poverty reduction programs. As Olaniyan and Bankole (2019) highlight, the absence of continuity in government policies often results in the abandonment of anti-poverty projects before they achieve tangible results.

4.Inadequate Infrastructure

The lack of reliable infrastructure particularly in rural areas reduces productivity and limits access to markets. World Bank (2021) observes that poor road networks, unstable electricity supply, and inadequate water systems constrain economic opportunities, keeping communities trapped in poverty.

4. Educational Deficits

Low levels of education and skill acquisition limit the earning capacity of individuals. UNESCO (2022) notes that millions of Nigerian children are out of school, with the majority

concentrated in the northern regions. Odu and Ayodele (2020) link low literacy and vocational training rates to persistent income poverty and low human capital development.

5. **Regional Inequality and Conflict**

Conflict and insecurity, especially in the North-East and North-West due to insurgency and banditry, have displaced communities and destroyed livelihoods. UNDP (2023) reports that internally displaced persons (IDPs) often lack access to jobs, land, and social services, pushing them into extreme poverty.

6. Dependence on Oil and Economic Vulnerability

Nigeria's overdependence on oil revenues makes the economy vulnerable to global oil price fluctuations. This volatility affects government revenues and limits funding for poverty-alleviation programs (Adeniran, 2021). Diversification into manufacturing and agriculture remains limited.

7. Inflation and Rising Cost of Living

Persistent inflation erodes purchasing power, especially among low-income households. The Central Bank of Nigeria (CBN, 2024) notes that rising food prices and fuel costs disproportionately affect the poor, increasing the incidence of multidimensional poverty.

2.1.2 Effect of poverty in Nigeria

1. Low Economic Growth

Poverty reduces the productive capacity of the economy by limiting access to education, health, and capital. According to the World Bank (2024), high poverty rates hinder Nigeria's ability to achieve sustainable growth targets, as a large proportion of the population cannot participate effectively in productive economic activities.

2. Reduced Human Capital Development

A key impact of poverty is the deterioration of human capital. Low household incomes often mean inadequate nutrition, poor health outcomes, and limited access to quality education

(UNDP, 2023). This reduces the skills base of the labor force, leading to lower productivity and innovation (Okonkwo & Ijaiya, 2021).

3. **Increased Crime and Insecurity**

High poverty levels are correlated with rising crime and insecurity. Akinyemi and Usman (2022) link widespread unemployment and deprivation to the growth of kidnapping, armed robbery, and insurgency in Nigeria. These security issues in turn deter investment and economic expansion.

4. Social Inequality and Exclusion

Poverty deepens inequality between regions and social groups. NBS (2022) data show significant disparities between urban and rural poverty rates, as well as between the northern and southern regions. Such inequality fuels social unrest and weakens social cohesion (Olawale, 2020).

5. **Poor Health Outcomes**

Poverty contributes to high mortality and morbidity rates. The WHO (2023) observes that poor households have limited access to healthcare, resulting in higher incidences of preventable diseases such as malaria, cholera, and maternal mortality. This further reduces labor productivity.

6. Political Instability

Persistent poverty can lead to political discontent and instability. Adeniran (2021) notes that marginalized populations often feel excluded from governance processes, which can fuel protests, riots, and resistance against the state.

8. Brain Drain

Poverty-driven lack of opportunities pushes skilled Nigerians to emigrate in search of better livelihoods. This "brain drain" deprives the country of the human resources needed for development (Ibrahim & Musa, 2020).

2.1.3 Review of measures employed to tackle poverty to improve economic growth in Nigeria

Over the years, Nigeria has implemented various policies, programs, and reforms aimed at reducing poverty. These measures have been carried out by the federal and state governments, in collaboration with development partners, civil society organizations, and the private sector. The effectiveness of these measures has varied due to factors such as corruption, inadequate funding, and weak institutional capacity.

1. National Social Investment Programmes (NSIP)

Launched in 2016, the NSIP aims to reduce poverty and improve livelihoods through initiatives like the N-Power programme, Government Enterprise and Empowerment Programme (GEEP), Home-Grown School Feeding Programme (HGSFP), and Conditional Cash Transfer (CCT). According to the Federal Ministry of Humanitarian Affairs (2022), these programmes have reached millions of Nigerians, particularly in rural and underserved communities.

2. Economic Recovery and Growth Plan (ERGP)

Implemented between 2017 and 2020, the ERGP sought to stimulate economic growth, diversify the economy, and reduce unemployment and poverty. The plan emphasized agriculture, manufacturing, and infrastructure investment (National Planning Commission, 2017). Although it achieved some macroeconomic stability, its impact on poverty reduction was limited by inflation and insecurity.

3. Agricultural Empowerment Initiatives

Agriculture has been a central focus of poverty alleviation due to its potential to create jobs and improve food security. Programmed like the Anchor Borrowers' Programmed (ABP) introduced in 2015 by the Central Bank of Nigeria provided credit to smallholder farmers, leading to increased agricultural output (CBN, 2023).

4. Poverty Alleviation and Youth Employment Schemes

Various youth-focused schemes, such as the Youth Enterprise with Innovation in Nigeria (YouWiN!) and the National Directorate of Employment (NDE) initiatives, have sought to tackle unemployment a major driver of poverty. According to Okon and Bala (2021), these programs have had localized successes but require stronger monitoring and evaluation.

5. International Development Assistance

Nigeria has benefited from numerous poverty-reduction programs supported by organizations such as the World Bank, African Development Bank, and UNDP. The World Bank's 2020–2024 Country Partnership Framework focuses on human capital development, job creation, and social protection (World Bank, 2024).

6.Educational and Health Interventions

Free or subsidized education, Universal Basic Education (UBE), and improved access to primary healthcare services have been implemented to tackle the multidimensional nature of poverty. WHO (2023) reports that these interventions have contributed to improved health and literacy outcomes, though gaps remain.

2.2 Theoretical Framework

The relationship between poverty and economic growth can be understood through several complementary economic theories. These theories explain both how growth can reduce poverty and how entrenched poverty can, in turn, inhibit growth. This framework draws on classical growth models, human-capital and endogenous growth theories, the poverty-trap literature, and structural/institutional perspectives.

1. Culture of Poverty Theory

The Culture of Poverty Theory was developed by Oscar Lewis in 1959 from his anthropological research in Mexico and Puerto Rico. He argued that poverty is not only a condition of economic deprivation but also a subculture with its own values, beliefs, and

attitudes that hinder upward mobility. People in poverty may develop fatalism, dependency, and a present-time orientation, which can be transmitted across generations (Lewis 1966). In Nigeria, this theory helps explain how certain disadvantaged communities may remain in poverty despite development programs, due to ingrained socio-cultural practices.

2. Poverty Trap (Vicious Cycle) Theory

The Poverty Trap Theory, popularized by Ragnar Nurkse in 1953 and later expanded by Joseph Stiglitz in 1998, states that low income leads to low savings, which leads to low investment, resulting in low productivity and, in turn, continued low income. This circular problem traps individuals and nations in poverty. In Nigeria, poor rural farmers often cannot save enough to invest in better farming tools, which perpetuates low yields and income (Nurkse 1953; Stiglitz 1998).

3. Individual Deficiency Theory

This theory, associated with William Graham Sumner (1906), argues that poverty stems from personal failings such as laziness, lack of skills, or poor decision making. Although widely criticized for ignoring structural factors, it still influences certain policy approaches that focus on skill acquisition and entrepreneurship training in Nigeria. The theory, however, risks "blaming the victim" rather than addressing systemic causes (Sumner, 1906).

4. Structural Theory

First articulated in modern form by Herbert J. Gans (1972, expanded in 1995), the Structural Theory argues that poverty results from the way societies are organized including inequality in the labor market, discrimination, and unequal access to education, healthcare, and resources. In Nigeria, structural poverty is evident in regional disparities, where the northern regions face higher poverty due to inadequate infrastructure and weaker institutional capacity (Gans 1995).

5. Marxist Theory

Karl Marx (1867) in Das Kapital argued that poverty is a necessary outcome of capitalism, where the ruling bourgeoisie controls the means of production and exploits workers. Poverty, therefore, is structurally embedded in capitalist economies, ensuring a reserve army of labor that keeps wages low. In Nigeria, Marxist perspectives can be used to analyze the growing wealth gap between political elites and the working poor (Marx 1867).

6. Social Exclusion Theory

Popularized by Amartya Sen in 2000, this theory views poverty not only as low income but also as the inability to participate in economic, social, and political life. Social exclusion manifests in Nigeria through marginalization of rural communities, ethnic minorities, and people living with disabilities, preventing them from accessing opportunities and resources (Sen, 2000).

7. Capability Approach theory

Developed by Amartya Sen in 1985 and further elaborated in his 1999 book Development as Freedom, the Capability Approach defines poverty as the deprivation of basic capabilities such as the ability to be educated, live a healthy life, and participate in community activities. It shifts the focus from income to human development indicators. In Nigeria, this approach underlies the design of multi-dimensional poverty indexes (Sen 1985, 1999).

8. Human Capital Theory

Proposed by Theodore W. Schultz (1961) and later expanded by Gary Becker (1964), this theory suggests that poverty results from low levels of education, training, and health, which reduce productivity and earnings potential. Investment in human capital through education, vocational training, and healthcare is seen as essential to breaking the cycle of poverty. In Nigeria, weak public education and health systems contribute significantly to persistent poverty (Schultz 1961; Becker 1964).

2.3 Literature review

Aigbokhan (2000) carried out a comprehensive empirical investigation titled Growth, Inequality and Poverty in Nigeria using national accounts, multiple household surveys and decomposition techniques across several decades the result shows that periods of GDP expansion especially during oil booms were accompanied by rising income inequality and only limited poverty reduction, leading him to argue that growth in Nigeria has historically been non-inclusive and requires explicit redistributive policies to reduce poverty.

Alkire and Foster (2011) developed and formalized the Alkire–Foster (AF) multidimensional poverty measurement methodology using quantitative method by combining axiomatic foundations with empirical validation using microdata from multiple countries, the result shows that multidimensional indicators (incidence × intensity) reveal overlapping deprivations in health, education and living standards that monetary measures often miss and providing the operational framework now used in national MPIs, including Nigeria's 2022 MPI.

Fosu (2017) performed a rigorous cross-country econometric study on Growth, Inequality, and Poverty Reduction in Developing Countries using panel regressions and decomposition methods on World Bank Covalent data and demonstrated that while aggregate growth typically reduces poverty. using quantitative econometric method The result shows that the magnitude of poverty reduction is substantially attenuated in countries with high initial inequality, implying that growth in unequal economies like Nigeria will be less effective at cutting poverty unless distributional factors are addressed.

Ogunleye and Adepoju (2019) used Johansen cointegration and VECM on Nigerian macro and household series to decompose short-run and long-run dynamics and reported that shocks to poverty measures have persistent negative effects on real GDP while growth shocks only intermittently reduce poverty, emphasizing that temporary growth spurts are insufficient for sustained poverty reduction.

Obi and Umeh (2019) applied cointegration analysis and Granger causality tests on Nigerian time-series data to investigate linkages between poverty indicators, investment and GDP and reported bidirectional causality poverty both responds to and constrains growth highlighting the dynamic feedback mechanisms policymakers must consider.

Adeleye et al. (2020) conducted a panel econometric study across African countries using fixed-effects and instrumental variables to test how infrastructure, governance and sectoral composition mediate the growth-poverty relationship and found that infrastructure provision and improved governance significantly increase the poverty-reducing power of growth, suggesting that Nigeria's infrastructural deficits and governance weaknesses help explain its weak pro-poor growth record.

Isiwu (2021) carried out a Nigeria-focused time-series analysis using ARDL bounds testing and error-correction modeling on macro and poverty series and found evidence that persistent poverty depresses long-run GDP growth unless human capital investments are scaled up, implying that poverty is not merely an outcome but a potential constraint on aggregate growth.

National Bureau of Statistics (NBS 2022) implemented the Nigeria

Multidimensional Poverty Index survey using over 50,000 household records and the AF methodology across 15 indicators and reported that approximately 63% of Nigerians (about 133 million people) are multidimensionally poor findings that highlight severe non-monetary deprivations concentrated in the North and in rural areas, and which underscore the limits of income-only poverty measures.

Ravallion (2022) synthesized the literature on growth elasticities of poverty reduction by applying growth-poverty decomposition methods and growthincidence curve analysis to global household survey panels and the result shows that the poverty impact of growth critically depends on initial poverty, distributional change during growth spells, and sectoral

patterns insights that caution against assuming growth automatically benefits the poorest in countries with pronounced inequality.

Nwosu and Ogu (2023) examined the impact of rural poverty on agricultural productivity and overall GDP using panel regressions on state-level data and agricultural output series and concluded that high rural poverty significantly lowers agricultural yields and investment, thereby slowing aggregate growth evidence that rural-focused interventions in Nigeria could deliver both poverty reduction and growth gains.

The World Bank (2024) in its Nigeria Poverty & Equity analyses used household survey microdata and projection models that incorporate shocks (COVID-19, oil price swings, inflation and subsidy reforms) to show that since 2018/19 tens of millions more Nigerians have fallen into poverty and that recent reforms and macro shocks have materially worsened both monetary and multidimensional poverty, stressing the urgency of policies combining social protection with inclusive growth.

CHAPTER THREE

THEORETICAL FRAMEWORK AND MODEL SPECIFICATION

3.0 Theoretical framework

3.1 Culture of Poverty Theory

The Culture of Poverty Theory was developed by Oscar Lewis in 1959 from his anthropological research in Mexico and Puerto Rico. He argued that poverty is not only a condition of economic deprivation but also a subculture with its own values, beliefs, and attitudes that hinder upward mobility. People in poverty may develop fatalism, dependency, and a present-time orientation, which can be transmitted across generations (Lewis 1966). In Nigeria, this theory helps explain how certain disadvantaged communities may remain in poverty despite development programs, due to ingrained socio-cultural practices

3.2 MODEL SPECIFICATION

The multiple linear regression model is specified below

RGDP = F (POV, UNEM, INFL, FDI, GOVTEX) 3.1

Where RGDP is the dependent variable and POV, UNEM, INFL, FDI, GOVT, are the independent variables.

The above model can be stated in an econometric form below;

$$RGDP = \beta_0 + \beta_1 POV + \beta_2 UNEM + \beta_3 INFL + \beta_4 FDI + \beta_5 GOVTEX + U$$

Where RGDP = Real gross domestic product

POV = Poverty Rate

UNEM = unemployment

INFL = Inflation

FDI = Foreign direct investment

GOVTEX= Government Expenditure

Where $\beta_0,\beta_1,\beta_2,\beta_3,\beta_4,\beta_5$ are parameters

$\cup$ = Error term

A prior expectation

$\beta_4, \beta_5 > 1$

$\beta_1, \beta_2, \beta_3, \quad < 0$

This study employs a variety of analytical method which include descriptive statistics, correlation analysis, unit root testing for stationarity of variables, cointegration test for long run relationship and the ARDL-ECM approach.

3.3 Descriptive statistics

This study employs the use of descriptive statistics to analyze the variables central tendency (mean and median), dispersion (standard deviation) and shape (skewness and kurtosis). The mean provides a measure of the average value while standard deviation quantifies the variability around the mean. Skewness indicates the symmetry of the data distribution with positive values suggesting a right skewed distribution and negative values indicating a left skewed distribution. Kurtosis measures the peaked Ness of the distribution with higher values indicating a more peaked distribution. The Jarque-Bera test assessed the normality of the data determining whether the skewness and kurtosis were consistent with a normal distribution. A probability value greater than 5% indicates that variables were normally distributed.

3.4 Unit root test

This study employs the Augmented Dickey Fuller test (Dickey & Fuller) currently the gold standard. ADF is predicted on rejecting the unit root null hypothesis (that series are not stable) in favor of the alternative hypothesis of no unit root (that series are stationary). Each series is analyzed in both presence and absence of a deterministic trend.

The Augmented Dickey fuller model (for each variable under this study) for intercept without trend is specified as;

H^0: There is a unit root (that time series data is non stationary)

H^1: There is no unit root (that time series data is stationary).

3.5 Cointegration test

Cointegration is a statistical concept suggesting a long-term relationship between non stationary variables that become stationary when differenced once. This means that though the variables may fluctuate independently in the short term, they tend to move together in the long run. Cointegration analysis is typically applied to time series data. If a linear combination of two or more non stationary time series is stationary, then the series is said to be cointegrated. The Bounds test was used to examine the long run relationship of the variables.

3.6 Autoregressive Distributed Lag (ARDL)

This study utilizes ARDL Bounds testing framework to estimate the long run equilibrium relationship. ARDL model is a model that includes lagged values of the dependent variables (Autoregressive) and lagged values of the independent variables (distributed lag) as one of the explanatory variables. The ARDL cointegration is used to establish whether there is a long run equilibrium relationship among the variables, when the variables are integrated of both order zero I(0) and order one I(1). In addition, the ARDL model avoids configuring a large number of specifications in the standard cointegration test. These include decisions regarding the number of endogenous and exogenous variables to be included. The ARDL approach allows the use of different optimal Lags for the different variables which is not possible in the standard cointegration test. Since time series data could be vulnerable to the unit root problems, Augmented Dickey fuller (ADF) unit test is implemented on the series to avoid spurious

regressions. Unit root test are first conducted to determine the stationarity of the variables which must be a combination of I(0) and I(1) series.

3.7 Error Correction Mechanism (ECM)

The ECM is a statistical technique used to correct deviations from the long run equilibrium relationships between economic variables. It is based on the idea that economic variables tend to return to their equilibrium values over time.

In ECM, the error term represents the deviation from the long run equilibrium relationship. The ECM model estimate the speed at which the variables return to their equilibrium value known as the error correction term. The ECM model consists of two parts; the short run dynamic captures the temporary deviations from the equilibrium relationship while the long run equilibrium relationship represents the underlying structural relationship between the variables. The ECM can be specified below;

$\Delta\gamma_t = \gamma$ +/ = 1 $\sum P\beta_j \Delta X_{t-j}$ + a (γ_{t-1} - β_0 - $\beta_1 X_{t-1}$) + V_t

Where:

$\Delta\gamma_t$ and ΔX_t are the first differences of variables.

a is the error term correction coefficient.

V_t is the white noise error term.

It can further be specified as;

$\Delta GDP_t = \theta_o + \theta_1 \sum \Delta POV_t + \theta_2 \sum \Delta UNEM_t + \theta_3 \sum \Delta INFL_t + \theta_4 \sum \Delta FDI_t + \theta_5 \sum \Delta GOVTEX_t + \partial$ ecm(-1) + V_t

3.8 Result valuation

This study aims to know whether the variables are significant or otherwise the result of the model will be evaluated on the basis of three criteria namely; Econometric a priori expectation, statistical test of significance and econometric test.

A prior expectations

$\beta 1, \beta 2, \beta 3 > 0$

$\beta 4 < 0$

3.9 The statistical criteria

Statistical test is done to evaluate reliability of the estimated parameter in accordance with statistical theory and expectation. The statistical test to be carried out include;

The T-test: This is used to test the significance of individual parameters of the regression model. The decision to accept the null hypothesis is based on the test statistics from the data.

F-test: It is carried out to ascertain the overall significance of the model.

Coefficient of determination (R^2): It explains the percentage (%) in the total variation of the dependent variable being explained by the independent variables. It measures the extent to which the explanatory variables are responsive for judging the explanatory power of the regression.

3.10 Econometric criteria

This test will be performed on the regression results in order to evaluate the model. These tests are discussed briefly below;

Test for multi-collinearity

This will be used to test the linear collinearity among the explanatory variables. When two or more explanatory variables in a regression model are highly correlated, it distorts the

estimation of coefficient. Multi-collinearity undermines the reliability of the regression coefficient making it difficult to identify the true effect of each variance. The variable inflation factor (VIF) is used to detect multicollinearity. If the VIF exceed 10, then multi-collinearity exists within the model. This study will use a simple correlation matrix for this test.

Autocorrelation test

This is used to test if the errors corresponding to different observations are correlated, testing for randomness of error term. The Durbin Watson statistic would be employed for this test The close DW statistic is to 2 indicated the absence of autocorrelation.

Heteroskedasticity test

This is used to ascertain if the error term of the explanatory variable of the estimated model have equal variance m

Normality test

This will be used to show whether the error term of the estimated model is normally distributed.

3.11. Method of data collection

This study relies on secondary data from world development indicators (world bank), national bureau of statistics. The data collected was used to analyze poverty Level and its impact on economic growth in Nigeria

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF RESULTS

4.1 Descriptive Statistics

Descriptive statistics provide valuable insights into the characteristics of the variables being analyzed and include the mean (average), median (middle value), maximum (highest value), minimum (lowest value), standard deviation (variation from the mean), skewness (symmetry or asymmetry), kurtosis (peakedness or flatness), and the Jarque-Bera statistic.

The mean gives us the typical value of the data, while the median represents the middle value in the dataset. The maximum shows the highest data point, and the standard deviation indicates the amount of variation in the data around the mean. Skewness measures how symmetrical or asymmetrical the distribution is, with positively skewed distributions having longer tails on the right, and negatively skewed distributions having longer tails on the left. Kurtosis assesses the shape of the distribution, where a value of 3 indicates a standard shape, higher values indicate a more peaked distribution, and lower values indicate a flatter distribution.

Table 4.1 Descriptive Statistics

	FDI	GOVTEX	INFL	POV	RGDP	UNEM
Mean	1.206539	4068.901	19.40136	55.79727	40813.85	10.54386
Median	0.961468	1122.083	13.12650	54.45000	32205.45	7.600000
Maximum	4.282088	24431.21	72.83550	88.00000	80606.53	33.30000
Minimum	-0.039127	9.636500	5.388008	32.00000	16048.31	1.800000
Std. Dev.	0.939830	6258.993	16.23182	14.51817	22336.14	7.677518

Skewness	0.982213	1.915562	1.795631	0.275696	0.452921	1.014155
Kurtosis	3.831958	5.604474	5.275433	2.016084	1.573126	3.307971
Jarque-Bera	8.343732	39.34478	33.13706	2.332229	5.236957	7.716289
Probability	0.015423	0.000000	0.000000	0.311575	0.072914	0.021107
Sum	53.08771	179031.6	853.6598	2455.080	1795809.	463.9300
Sum Sq. Dev.	37.98105	1.68E+09	11329.30	9063.420	2.15E+10	2534.604
Observations	44	44	44	44	44	44

Source: Author's Computation using Eviews 10

The descriptive statistics provide a detailed summary of the dataset, highlighting key variables such as Foreign Direct Investment (FDI), Government Expenditure (GOVTEX), Inflation (INFL), Poverty (POV), Real Gross Domestic Product (RGDP), and Unemployment (UNEM) over the 1981–2024 study period. The mean values reveal the central tendencies of the variables. FDI averaged 1.21, indicating modest inflows during the period. GOVTEX stood at ₦4,068.90 billion on average, reflecting government fiscal commitments. Inflation had a mean of 19.40%, pointing to episodes of price instability, while POV averaged 55.80%, underscoring persistently high poverty levels in Nigeria. RGDP recorded an average of ₦40,813.85 billion, reflecting overall economic performance, while UNEM had a mean of 10.54%, showing notable labor market challenges.

Examining the median values gives further insight into central tendencies. FDI had a median of 0.96, close to the mean, indicating relative balance in inflows. GOVTEX had a median of ₦1,122.08 billion, which is substantially lower than the mean, suggesting that high expenditure in recent years skewed the average upward. Inflation's median stood at 13.13%, lower than the mean, indicating that extreme inflationary episodes influenced the average.

POV had a median of 54.45%, close to its mean, showing stability in poverty levels. RGDP's median of ₦32,205.45 billion was slightly lower than the mean, suggesting economic growth was skewed upward by higher recent values. UNEM had a median of 7.6%, below the mean, which reflects a surge in unemployment in the latter part of the study period.

The range of observations is evident in the maximum and minimum values. FDI ranged from -0.04 (negative inflows) to 4.28, indicating fluctuations between periods of near-zero inflows and significant investment. GOVTEX spanned from ₦9.64 billion to ₦24,431.21 billion, illustrating Nigeria's fiscal expansion over the decades. Inflation exhibited wide variation, with a maximum of 72.83% and a minimum of 5.39%, confirming episodes of hyperinflation alongside more moderate periods. POV ranged from 32% to 88%, showing persistent yet varying poverty incidence. RGDP displayed substantial growth, increasing from ₦16,048.31 billion at the minimum to ₦80,606.53 billion at the maximum, while UNEM ranged widely from 1.8% to 33.3%, capturing structural unemployment shifts over time.

The standard deviation measures dispersion around the mean. FDI had a deviation of 0.94, indicating modest variability in inflows. GOVTEX exhibited a high deviation of 6,259.0, consistent with the wide fiscal fluctuations across years. Inflation showed a deviation of 16.23, reflecting strong volatility in consumer prices. POV had a standard deviation of 14.52, suggesting notable variation in poverty incidence across time. RGDP recorded a substantial deviation of 22,336.14, in line with its wide range and the growth trajectory of the Nigerian economy. UNEM had a deviation of 7.68, indicating considerable variability in employment conditions.

Skewness and kurtosis reveal insights into distributional properties. FDI had a positive skewness (0.98), suggesting a concentration of lower inflows with occasional high spikes. GOVTEX and INFL had higher skewness values (1.92 and 1.80, respectively), showing

strong rightward distributions dominated by extreme values in recent years. POV was more balanced with a skewness of 0.28. RGDP showed mild skewness (0.45), while UNEM was positively skewed (1.01). In terms of kurtosis, FDI (3.83), GOVTEX (5.60), and INFL (5.28) all exceeded 3, indicating leptokurtic distributions with sharper peaks and heavy tails. POV (2.02) and RGDP (1.57) had flatter platykurtic distributions, while UNEM (3.31) was close to normal.

The Jarque-Bera statistic tests normality of residuals. POV ($p = 0.31$) and RGDP ($p = 0.07$) were not significantly different from normality, suggesting approximate normal distributions. Conversely, FDI ($p = 0.015$), GOVTEX ($p = 0.000$), INFL ($p = 0.000$), and UNEM ($p = 0.021$) were all statistically non-normal, reflecting the influence of extreme values in these series.

4.2 Correlation analysis

Table 4.2 Correlation Matrix

	RGDP	FDI	GOVTEX	INFL	POV	UNEM
RGDP	1					
FDI	-0.156210	1				
GOVTEX	0.79933	-0.30821	1			
INFL	-0.24819	0.17035	-0.14624	1		
POV	0.00577	0.37366	-0.11062	-0.17639	1	
UNEM	0.552321	0.13198	0.28927	-0.42849	0.14777	1

Source: Author's Computation using Eviews 10

Table 4.2 presents the correlation coefficients among the study variables. From the table, RGDP exhibits a strong and positive correlation with government expenditure (0.7993), indicating that higher fiscal spending is closely associated with economic growth in Nigeria. This aligns with the Keynesian perspective that government expenditure stimulates aggregate demand and output. Similarly, RGDP correlates positively with unemployment (0.5523), a somewhat paradoxical finding that may reflect Nigeria's jobless growth phenomenon, where expansions in GDP are not accompanied by proportional improvements in labor absorption.

In contrast, RGDP is negatively correlated with FDI (-0.1562) and inflation (-0.2482). The weak negative relationship with FDI suggests that foreign investment has not consistently translated into growth during the study period, possibly due to repatriation of profits, sectoral concentration in extractive industries, or weak linkages with the domestic economy. The negative association with inflation highlights the adverse effects of price instability on growth, as persistent inflation erodes purchasing power, distorts investment decisions, and undermines macroeconomic stability.

The correlation between RGDP and poverty is almost zero (0.0058), suggesting that growth has had a very limited direct impact on poverty reduction. This finding resonates with the "growth poverty paradox" in Nigeria, where high growth episodes have coexisted with persistently high poverty rates due to inequality, structural unemployment, and weak inclusiveness of growth.

Beyond RGDP, the inter-correlations among the explanatory variables also reveal important insights. FDI correlates positively with poverty (0.3737), suggesting that external investment inflows have not alleviated poverty, possibly because they are concentrated in capital-intensive sectors with limited job creation. Inflation is negatively related to unemployment (-s0.4285), reflecting stagflationary tendencies in the economy, while

government expenditure shows a weak negative correlation with both inflation (-0.1462) and poverty (-0.1106), indicating that fiscal policies have not been fully effective in addressing these issues.

4.3 Preliminary Tests

4.3.1 Unit Root Test

The decision rule according to the ADF is that the ADF test statistic must be greater than the critical value at 5%.

Table 4.3: Unit Root Test result

LEVEL			**FIRST DIFFERENCE**		
Variable	**ADF stat.**	**Prob. Values (at 5% critical value)**	**ADF stat.**	**Prob. Values (at 5% critical value)**	**Conclusion**
lnFDI	-3.258259	-2.931404	__	__	I(0)
lnGOVTEX	-1.739038	-2.931404	-4.256451	-2.933158	I(1)
lnINFL	-3.443043	-2.931404	__	__	I(0)
lnPOV	-2.962394	-2.931404	__	__	I(0)
lnRGDP	0.964247	-2.935001	-4.208554	-2.933158	I(1)
lnUNEM	-2.065886	-2.931404	-9.074241	-2.933158	I(1)

Source: computation from e-views 10

Table 4.3 presents the Augmented Dickey-Fuller (ADF) unit root test results for the study variables over the period. The test was conducted at both levels and first differences, with the 5% critical value serving as the decision benchmark. The objective is to determine the

stationarity properties of the variables and their respective orders of integration, which are critical for the application of the ARDL estimation technique.

The results indicate that some variables were stationary at level, while others achieved stationarity after first differencing. Specifically, foreign direct investment (lnFDI) was stationary at level, with an ADF statistic of -3.2583, which is more negative than the 5% critical value of -2.9314. Similarly, inflation (lnINFL) and poverty (lnPOV) were stationary at level, with ADF statistics of -3.4430 and -2.9624, respectively, both exceeding the 5% critical thresholds. This implies that these variables are integrated of order zero, I(0).

Conversely, government expenditure (lnGOVTEX), real gross domestic product (lnRGDP), and unemployment (lnUNEM) were found to be non-stationary at level but became stationary after first differencing. For example, lnGOVTEX had an ADF statistic of -1.7390 at level, which is higher than the 5% critical value (-2.9314), but at first difference, the statistic improved to -4.2565, well below the 5% threshold of -2.9332. Similarly, lnRGDP, with an ADF statistic of 0.9642 at level, achieved stationarity at first difference with a value of -4.2086. Unemployment (lnUNEM) followed the same pattern, with a non-stationary level value of -2.0659 but a highly significant first difference statistic of -9.0742. These results confirm that lnGOVTEX, lnRGDP, and lnUNEM are integrated of order one, I(1).

Overall, the unit root results reveal a mix of I(0) and I(1) variables in the dataset. None of the variables are integrated of order two, I(2), which validates the use of the Autoregressive Distributed Lag (ARDL) framework for this study. The ARDL model is particularly appropriate in this case, as it allows for the inclusion of variables with mixed orders of integration (I(0) and I(1)) while ensuring consistent and unbiased estimation of both short-run dynamics and long-run relationships.

4.3.2 Cointegration Test

It is crucial that we examine the possibility of having a cointegration in our regression results because there are different levels of stationarity, some at level and some at the first difference. To do this, we use the Johannsen Cointegration technique

Table 4.4a Johansen co-integration test (Trace)

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.800849	145.3407	95.75366	0.0000
At most 1 *	0.572970	77.56569	69.81889	0.0106
At most 2	0.360510	41.82781	47.85613	0.1636
At most 3	0.283559	23.05026	29.79707	0.2436
At most 4	0.118518	9.044943	15.49471	0.3612
At most 5	0.085342	3.746603	3.841466	0.0529

Trace test indicates 2 cointegrating 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 using Eviews 10

Table 4.4a reports the Johansen cointegration test based on the trace statistic. The results show that the null hypothesis of no cointegration is rejected, as the trace statistic of 145.34 exceeds the 5% critical value of 95.75. Similarly, the hypothesis of at most one cointegrating equation is also rejected, with a trace statistic of 77.57 greater than the 5% critical value of

69.82. However, from the third equation onwards, the null hypotheses are not rejected, as the trace statistics fall below their corresponding critical values.

The trace test indicates the presence of two cointegrating equations at the 5% level of significance. This suggests that the variables real GDP, foreign direct investment, government expenditure, inflation, poverty, and unemployment share at least two long-run equilibrium relationships, meaning that they move together over time despite short-run fluctuations.

Table 4.4b: Johansen co-integration test (Maximum Eigenvalue)

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.800849	67.77503	40.07757	0.0000
At most 1 *	0.572970	35.73788	33.87687	0.0297
At most 2	0.360510	18.77756	27.58434	0.4319
At most 3	0.283559	14.00531	21.13162	0.3646
At most 4	0.118518	5.298341	14.26460	0.7038
At most 5	0.085342	3.746603	3.841466	0.0529

Max-eigenvalue test indicates 2 cointegrating 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 using Eviews 10

Table 4.4b presents the Johansen cointegration test results using the maximum eigenvalue statistic. The null hypothesis of no cointegration is strongly rejected, as the maximum eigenvalue statistic of 67.78 exceeds the 5% critical value of 40.08. Similarly, the hypothesis of at most one cointegrating equation is also rejected, with a test statistic of 35.74 greater than the critical value of 33.88. However, from the second equation onwards, the maximum eigenvalue statistics are lower than their respective critical values, indicating no further evidence of cointegration.

Thus, the maximum eigenvalue test also confirms the existence of two cointegrating equations among the variables. This reinforces the conclusion from the trace test that there are stable long-run relationships among RGDP, FDI, government expenditure, inflation, poverty, and unemployment.

4.4 Estimation Results

Table 4.5: ARDL Bounds Test for Cointegration

Test Statistic	Value	Significance Level	I(0) Bound	I(1) Bound
F-statistic	5.3118	10%	2.08	3
		5%	2.39	3.38
		2.50%	2.7	3.73
		1%	3.06	4.15
Sample size	42			

Source: Author's computation using EViews 10

Table 4.5 presents the results of the ARDL bounds test for cointegration. The computed F-statistic is 5.3118, which is higher than the upper critical bounds at the 1%, 2.5%, 5%, and 10% significance levels. Specifically, at the 5% level, the critical bounds are 2.39 (I(0)) and

3.38 (I(1)), and since the calculated F-statistic exceeds the upper bound (5.3118 > 3.38), the null hypothesis of no long-run relationship is rejected.

This result confirms the existence of a long-run cointegrating relationship among the variables in the model; real GDP, foreign direct investment, government expenditure, inflation, poverty, and unemployment during the study period. In other words, despite short-term fluctuations, these macroeconomic variables tend to move together over time, supporting the use of the ARDL–ECM framework for estimating both short-run and long-run dynamics.

Table 4.6a: ARDL Long-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRGDP(-1)	0.8335	0.1389	6.0021	0.0001
LNRGDP(-2)	0.1384	0.1807	0.7658	0.4586
LNRGDP(-3)	-0.1728	0.1403	-1.2319	0.2416
LNFDI	-0.0239	0.008	-2.971	0.0117
LNFDI(-1)	-0.0142	0.0074	-1.9282	0.0778
LNFDI(-2)	0.014	0.0071	1.972	0.0721
LNFDI(-3)	0.035	0.0069	5.086	0.0003
LNFDI(-4)	-0.0072	0.0057	-1.2573	0.2326
LNGOVTEX	-0.0256	0.0134	-1.9164	0.0794
LNGOVTEX(-1)	0.0321	0.0241	1.3328	0.2073
LNGOVTEX(-2)	0.0959	0.0263	3.643	0.0034
LNGOVTEX(-3)	0.0185	0.0256	0.7201	0.4853
LNGOVTEX(-4)	-0.0909	0.0227	-4.0014	0.0018
LNINFL	-0.0491	0.0109	-4.5149	0.0007

LNINFL(-1)	0.0014	0.0122	0.1151	0.9103
LNINFL(-2)	-0.0219	0.0145	-1.5166	0.1553
LNINFL(-3)	-0.056	0.0147	-3.7953	0.0026
LNPOV	-0.0255	0.025	-1.0216	0.0011
LNPOV(-1)	-0.0075	0.0262	-0.285	0.7805
LNPOV(-2)	0.0541	0.0292	1.852	0.0888
LNPOV(-3)	-0.0079	0.0314	-0.2521	0.8053
LNPOV(-4)	-0.0469	0.0296	-1.5837	0.1393
LNUNEM	-0.031	0.0114	-2.7177	0.0187
LNUNEM(-1)	0.0092	0.0113	0.8203	0.4281
LNUNEM(-2)	0.013	0.0106	1.23	0.2423
LNUNEM(-3)	0.001	0.0102	0.0953	0.9257
LNUNEM(-4)	0.0254	0.0116	2.1891	0.0491
C	2.3506	0.8216	2.861	0.0143
R-squared	0.9497			
Adj. R^2	0.899			
Durbin-Watson	2.22			
F-statistic	1490.65			

Source: Author's computation using EViews 10

From Table 4.6a, which presents the ARDL long-run estimates with real GDP (LNRGDP) as the dependent variable, it can be observed that the model demonstrates strong explanatory power. The R-squared of 0.9497 and adjusted R-squared of 0.8990 indicate that nearly 90% of the variation in economic growth is explained by the regressors. The F-statistic is highly

significant ($p < 0.01$), and the Durbin-Watson statistic of 2.22 further suggests the absence of serial correlation, confirming the robustness of the model.

Looking at the coefficients of the explanatory variables, foreign direct investment (FDI) reveals a rather complex dynamic. The contemporaneous coefficient is negative and significant (-0.0239, $p < 0.05$), suggesting that FDI inflows reduce growth in the long-run equilibrium, most likely due to profit repatriation, weak domestic linkages, or crowding out of local firms. However, by the third lag, FDI turns positive and highly significant (0.0350, $p < 0.01$), implying that the benefits of FDI materialize after some delay, once foreign capital is absorbed into productive sectors of the economy.

Government expenditure (GOVTEX) also presents mixed outcomes. The current coefficient is negative (-0.0256, $p \approx 0.08$), pointing to short-term inefficiencies or leakages in fiscal spending. Yet, at the second lag, government expenditure exerts a positive and significant effect on growth (0.0959, $p < 0.01$), reflecting the delayed but growth-enhancing impact of public spending, especially on capital projects. Interestingly, the fourth lag turns negative (-0.0909, $p < 0.01$), suggesting that prolonged or excessive government spending may lead to inefficiencies, macroeconomic imbalances, or the crowding out of private investment.

Inflation (INFL), on the other hand, consistently exerts a negative influence on growth. The contemporaneous coefficient is strongly negative (-0.0491, $p < 0.01$), while its lagged terms particularly the third lag (-0.0560, $p < 0.01$) further confirm that sustained inflation undermines economic performance. This result highlights how rising prices erode purchasing power, distort investment decisions, and create macroeconomic instability.

Turning to poverty (POV), the results show that higher poverty rates constrain economic growth. The immediate effect is negative and significant (-0.0255, $p \approx 0.0011$), supporting the view that poverty acts as a drag on output by limiting human capital development and reducing domestic demand. Interestingly, the second lag of poverty is positive and weakly

significant (0.0541, p ≈ 0.089), which may suggest that delayed poverty responses can generate temporary adjustments in growth through structural shifts in labor supply or expansion of the informal sector. Nevertheless, the overall picture indicates that poverty is predominantly growth-retarding.

Finally, unemployment (UNEM) demonstrates a negative and significant contemporaneous effect (-0.0310, p < 0.05), consistent with expectations that rising unemployment lowers output and weakens economic productivity. However, the fourth lag turns positive (0.0254, p < 0.05), suggesting that, over time, labor market adjustments may support recovery in output, possibly through reallocation of resources and improved labor efficiency.

Table 4.6b: ARDL Short-Run and Error Correction Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNRGDP(-1))	0.0345	0.0861	0.4002	0.696
D(LNRGDP(-2))	0.1728	0.0753	2.2966	0.0404
D(LNFDI)	-0.0239	0.0049	-4.8551	0.0004
D(LNFDI(-1))	-0.0418	0.007	-5.9403	0.0001
D(LNFDI(-2))	-0.0278	0.0054	-5.1897	0.0002
D(LNFDI(-3))	0.0072	0.0038	1.8909	0.083
D(LNGOVTEX)	-0.0256	0.0095	-2.7019	0.0192
D(LNGOVTEX(-1))	-0.0234	0.0123	-1.907	0.0807
D(LNGOVTEX(-2))	0.0725	0.0142	5.1151	0.0003
D(LNGOVTEX(-3))	0.0909	0.0129	7.0416	0
D(LNINFL)	-0.0491	0.007	-6.9666	0
D(LNINFL(-1))	0.0779	0.0106	7.3293	0

D(LNINFL(-2))	0.056	0.0089	6.2859	0
D(LNPOV)	-0.0255	0.0146	-1.7443	0.1066
D(LNPOV(-1))	0.0007	0.0147	0.0473	0.0031
D(LNPOV(-2))	0.0548	0.0158	3.4584	0.0047
D(LNPOV(-3))	0.0469	0.0172	2.732	0.0182
D(LNUNEM)	-0.031	0.0069	-4.5066	0.0007
D(LNUNEM(-1))	-0.0394	0.0096	-4.09	0.0015
D(LNUNEM(-2))	-0.0264	0.0083	-3.1962	0.0077
D(LNUNEM(-3))	-0.0254	0.0071	-3.5922	0.0037
ECM(-1)	-0.201	0.023	-8.7468	0.001
R-squared	0.9338			
Adj. R^2	0.8566			
Durbin-Watson	2.22			

Source: Author' Computation using Eviews

From Table 4.6b, which presents the short-run ARDL error correction results, the model demonstrates a strong explanatory power with an R-squared of 0.9338 and an adjusted R-squared of 0.8566. This indicates that about 86% of short-run variations in real GDP are accounted for by the explanatory variables. The Durbin-Watson statistic of 2.22 also suggests the absence of autocorrelation, confirming the reliability of the short-run estimates.

Examining the coefficients, foreign direct investment (FDI) exhibits a predominantly negative and highly significant impact in the short run. The contemporaneous coefficient is negative (-0.0239, $p < 0.01$), and both the first and second lags also remain negative and significant, indicating that FDI inflows initially depress growth. This outcome may reflect short-term structural adjustment costs, profit outflows, or limited absorptive capacity of the

domestic economy. Only by the third lag does FDI show a weakly positive effect, hinting that its benefits require time before materializing.

Government expenditure (GOVTEX) also shows a mixed pattern. The contemporaneous effect is negative (-0.0256, $p < 0.05$), and the first lag remains weakly negative, suggesting short-run inefficiencies in fiscal allocations. However, by the second and third lags, government expenditure becomes positive and highly significant (0.0725 and 0.0909, respectively), highlighting that the growth-enhancing effects of public spending particularly on infrastructure and development projects emerge only after some delay.

Inflation (INFL) exerts a sharp and immediate negative influence on growth, as indicated by the contemporaneous coefficient (-0.0491, $p < 0.01$). Yet, subsequent lags are positive and highly significant, suggesting that while inflation initially destabilizes output, adjustments in prices and production may create short-lived compensating effects. Nevertheless, the overall evidence confirms that inflation remains a destabilizing factor in the short run.

Poverty (POV) also features prominently. The contemporaneous coefficient is negative (-0.0255) though only weakly significant, indicating that poverty undermines output by constraining labor productivity and domestic demand. Interestingly, the second and third lags of poverty turn positive and significant, implying that delayed poverty responses may temporarily stimulate growth through structural adjustments in labor markets or informal sector activity.

Unemployment (UNEM) demonstrates a consistent negative impact on economic growth. The contemporaneous effect is strongly negative (-0.0310, $p < 0.01$), with subsequent lags also maintaining negative significance. This result highlights that rising unemployment reduces economic output and productivity in the short run, leaving little room for recovery.

The error correction term, ECM(-1), is negative and highly significant (-0.2010, $p < 0.01$). The magnitude implies that about 20% of short-run deviations from the long-run equilibrium

are corrected annually, suggesting a relatively slow speed of adjustment in the Nigerian economy. This indicates that when growth diverges from its long-run path due to shocks, it takes several periods for equilibrium to be fully restored.

4.5 Diagnostic Tests

Table 4.7 Presentation of diagnostic tests

Variable	Test Results
Ramsey RESET Prob.	0.1348
Breusch-Pagan-Godfrey Prob.	0.1672
Breusch-Godfrey Prob.	0.0700
Jarque-Bera Prob.	0.6696

Source: Author's Computation using Eviews

Table 4.7 presents the results of diagnostic tests conducted to evaluate the reliability and robustness of the ARDL–ECM model. These tests check for specification errors, heteroskedasticity, serial correlation, and normality of residuals.

The Ramsey RESET test reports a probability value of 0.1348, which is greater than the 5% significance level. This indicates that the null hypothesis of correct model specification cannot be rejected, suggesting that the functional form of the ARDL model is well specified.

The Breusch-Pagan-Godfrey heteroskedasticity test yields a probability value of 0.1672, also above the 5% threshold. This result implies that the null hypothesis of homoskedasticity cannot be rejected, confirming that the residuals are free from heteroskedasticity problems and the model maintains constant variance across observations.

The Breusch-Godfrey serial correlation LM test gives a probability value of 0.0700, which is slightly above the 5% level, indicating that the null hypothesis of no serial correlation cannot be rejected. This suggests that the residuals are free from significant autocorrelation, further supporting the validity of the model estimates.

Finally, the Jarque-Bera normality test shows a probability value of 0.6696, far above the 5% significance level. This means the null hypothesis of normally distributed residuals cannot be rejected, confirming that the model residuals follow a normal distribution.

4.6 Granger Causality Tests

Table 4.8 Granger causality tests

Null Hypothesis	Obs	F-Statistic	Prob.
LNPOV does not Granger Cause LNRGDP	42	4.8412	0.0136
LNRGDP does not Granger Cause LNPOV	42	0.2787	0.7583

Source: Author's Computation using Eviews 10

Table 4.8 shows the results of the pairwise Granger causality test between poverty (LNPOV) and economic growth (LNRGDP). The null hypothesis that poverty does not Granger-cause economic growth is rejected at the 5% significance level ($F = 4.84$, $p = 0.0136$). This indicates a unidirectional causality from poverty to economic growth, meaning that past values of poverty significantly help to predict changes in economic growth.

On the other hand, the null hypothesis that economic growth does not Granger-cause poverty cannot be rejected ($p = 0.7583$), implying that growth does not significantly predict changes in poverty levels during the study period.

Overall, the result suggests that poverty exerts predictive power over economic growth in Nigeria, while economic growth alone has not been sufficient to drive significant reductions in poverty between 1981 and 2024.

4.7 Test of Research Hypotheses

Hypothesis One (H_1): Poverty level does not have any significant impact on economic growth in Nigeria.

From the ARDL long-run estimates (Table 4.6a), poverty (LNPOV) exerts a negative and significant effect on real GDP (-0.0255, $p \approx 0.0011$). This indicates that higher poverty rates constrain economic growth by limiting human capital development and reducing aggregate demand. Although the second lag of poverty is weakly positive, the overall impact remains predominantly negative.

Similarly, in the short-run ECM estimates (Table 4.6b), the coefficient of poverty is negative, and while the second and third lags turn positive and significant, the results still highlight the constraining role of poverty in the Nigerian growth process. The significant and negative error correction term (-0.2010, $p < 0.01$) further confirms a stable long-run relationship, reinforcing the importance of poverty in explaining fluctuations in growth.

Given these findings, the null hypothesis is rejected. It is therefore concluded that poverty has a statistically significant impact on economic growth in Nigeria during the period under study (1981–2024).

Hypothesis Two: There is no significant causal relationship between poverty level and economic growth in Nigeria.

The results of the Granger causality test (Table 4.8) reveal a unidirectional causal relationship from poverty to economic growth. The null hypothesis that poverty does not Granger-cause economic growth is rejected at the 5% level ($F = 4.8412$, $p = 0.0136$). Conversely, the null hypothesis that economic growth does not Granger-cause poverty cannot be rejected ($p = 0.7583$).

This implies that past values of poverty significantly help to predict economic growth in Nigeria, whereas economic growth alone does not significantly predict changes in poverty.

The result underscores the dominant role of poverty in shaping Nigeria's growth trajectory. Accordingly, the null hypothesis is rejected, and it is concluded that there exists a significant, unidirectional causal relationship running from poverty to economic growth in Nigeria.

4.8 Policy Implications of Findings

The findings of this study have far-reaching policy implications for Nigeria's growth trajectory. The ARDL results reveal that poverty exerts a significant and predominantly negative effect on economic growth, both in the short run and long run. This implies that reducing poverty must remain central to Nigeria's development strategy. Policies such as conditional cash transfers, investment in rural infrastructure, expansion of social safety nets, and improvements in education and healthcare will not only improve household welfare but also enhance human capital, raise productivity, and stimulate domestic demand, thereby creating a more inclusive growth process.

Unemployment also emerged as a major constraint on growth, with its effects being consistently negative across models. This underscores the urgent need for employment-generating policies. Greater emphasis should be placed on investments in labor-intensive sectors such as agriculture, manufacturing, and ICT-driven services. At the same time, vocational training, entrepreneurship support, and skill-acquisition programs must be scaled up to align the labor force with evolving market demands. Reducing unemployment will have a double dividend of directly boosting productivity while also reducing poverty, reinforcing the growth process.

Another key implication relates to inflation, which was found to undermine growth both contemporaneously and over time. This finding calls for stronger coordination between monetary and fiscal authorities to ensure macroeconomic stability. The Central Bank of Nigeria should maintain a credible inflation-targeting framework, while fiscal authorities should avoid excessive deficit financing that fuels inflationary pressures. Stable prices will

not only preserve household purchasing power but also strengthen investor confidence and encourage long-term investment.

The study also found that government expenditure has mixed effects on growth, being negative in the short run but positive in some lagged periods, before turning negative again with prolonged spending. This suggests that the quality and efficiency of expenditure, rather than its magnitude, is what matters for growth. Fiscal policy should therefore be reoriented toward productive investments in infrastructure, health, and education while reducing wasteful recurrent expenditures. Strengthening budget monitoring, fiscal transparency, and accountability mechanisms will help ensure that public spending yields sustainable growth outcomes.

With respect to foreign direct investment (FDI), the results reveal a negative effect in the short run but a positive and significant contribution to growth in the long run. This indicates that while FDI inflows may initially disrupt the domestic economy, their benefits materialize once they are absorbed into productive sectors. The implication is that Nigeria must focus on attracting quality, productivity-enhancing investments, especially in manufacturing, renewable energy, and technology. Policies such as local content requirements, joint ventures with domestic firms, and measures to ensure technology transfer will maximize the long-term benefits of FDI for the economy.

Finally, the fact that both poverty and unemployment were found to Granger-cause economic growth highlights the structural weaknesses in Nigeria's economy. It suggests that growth is highly sensitive to social and labor-market conditions, which must be addressed through institutional strengthening and structural reforms. Reforms aimed at reducing dependence on oil revenues, improving governance, and diversifying the economy through agriculture, manufacturing, and services are essential for sustainable long-term growth.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study examined the impact of poverty on economic growth in Nigeria using the ARDL bounds testing approach, covering the period 1981 to 2024. The analysis incorporated key macroeconomic variables such as foreign direct investment (FDI), government expenditure, inflation, and unemployment alongside poverty, with real GDP serving as the dependent variable.

The descriptive analysis revealed wide fluctuations across the variables, particularly in government expenditure, inflation, and real GDP, reflecting Nigeria's volatile economic environment. Correlation results showed that poverty is weakly but positively associated with growth, while unemployment displayed a stronger negative relationship.

The unit root tests confirmed that the variables were a mix of I(0) and I(1), making the ARDL framework appropriate. Both Johansen cointegration and bounds tests established the presence of a long-run equilibrium relationship among the variables.

The ARDL long-run estimates indicated that poverty exerts a predominantly negative and significant effect on economic growth, confirming that high poverty levels hinder productive capacity and reduce domestic demand. Similarly, unemployment and inflation were found to significantly retard growth, consistent with theoretical expectations. FDI and government expenditure, however, displayed mixed dynamics: their short-run effects were often negative but turned positive after a lag, suggesting delayed benefits when absorbed into the productive economy.

The short-run ECM results reinforced these findings, with poverty, unemployment, and inflation exerting adverse effects on growth, while government expenditure and FDI

contributed positively only after some delay. The error correction term was negative and significant, confirming a stable adjustment back to long-run equilibrium.

Finally, the Granger causality test revealed a unidirectional causality running from poverty to economic growth, but not vice versa. This highlights the dominant role of poverty in shaping Nigeria's growth trajectory, implying that without addressing poverty, growth gains remain fragile and unsustainable.

5.2 Policy Recommendations

Based on the empirical analysis of the relationship between poverty and economic growth in Nigeria, as well as the influence of other macroeconomic variables, the following policy recommendations are proposed:

- Prioritize Poverty Reduction as a Growth Strategy: Since poverty was found to significantly constrain economic growth, Nigeria should strengthen social protection programs such as conditional cash transfers, youth empowerment schemes, and rural development initiatives. Investment in education, healthcare, and infrastructure will enhance human capital, reduce poverty levels, and promote inclusive growth.
- Tackle Unemployment through Job-Creation Policies: Given the consistently negative impact of unemployment on growth, policies should target labor-intensive sectors like agriculture, manufacturing, and ICT. Vocational training and entrepreneurship programs should be expanded to equip young people with marketable skills and encourage self-employment, thereby reducing unemployment and boosting productivity.
- Strengthen Inflation Management for Macroeconomic Stability: The results showed that inflation undermines economic growth. To address this, monetary authorities should adopt credible inflation-targeting frameworks, while fiscal authorities should avoid excessive deficit financing. Stabilizing prices will protect household incomes, improve investment decisions, and support long-term growth.

- Reorient Government Expenditure toward Productive Sectors: Since government spending showed mixed effects, greater attention must be paid to the quality rather than the quantity of spending. Expenditure should be directed towards infrastructure, education, and healthcare, with strict monitoring to reduce leakages and corruption. Improving the efficiency of fiscal spending will enhance its long-run positive contribution to growth.
- Promote Growth-Enhancing Foreign Direct Investment (FDI): FDI was found to have negative short-run effects but positive long-run effects. Policies should therefore aim at attracting quality investment in sectors with high productivity potential such as technology, renewable energy, and manufacturing. Strengthening local content requirements, encouraging joint ventures, and ensuring technology transfer will help maximize the long-term benefits of FDI.
- Undertake Structural Reforms for Sustainable Growth: The evidence that poverty and unemployment Granger-cause growth highlights structural weaknesses in the Nigerian economy. Diversification beyond oil dependency, strengthening of institutions, and improved governance are essential to build a more resilient economy that delivers sustainable and inclusive growth.

5.3 Conclusion

This study set out to investigate the impact of poverty on economic growth in Nigeria for the period 1981–2024. Using the ARDL bounds testing approach, the study confirmed the existence of a stable long-run relationship between poverty, growth, and other macroeconomic indicators. The findings reveal that poverty, unemployment, and inflation are key constraints to Nigeria's growth, while the benefits of FDI and government expenditure emerge only with time and under the right conditions.

The Granger causality analysis further established that poverty is not merely a byproduct of low growth but an active determinant of economic performance in Nigeria. This reinforces the argument that without decisive policies to reduce poverty and unemployment, growth will remain weak and unsustainable.

The study highlights the need for a holistic policy framework that simultaneously targets poverty reduction, job creation, inflation management, and effective utilization of government expenditure and FDI. Only by addressing these structural challenges can Nigeria unlock sustainable, inclusive, and broad-based economic growth in the years ahead.

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APPENDIX

Null Hypothesis: LNFDI has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.258259	0.0233
Test critical values:	1% level	-3.592462	
	5% level	-2.931404	
	10% level	-2.603944	

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

Null Hypothesis: LNGOVTEX has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.739038	0.4050
Test critical values:	1% level	-3.592462	
	5% level	-2.931404	
	10% level	-2.603944	

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

Null Hypothesis: LNINFL has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.443043	0.0147
Test critical values:	1% level	-3.592462	
	5% level	-2.931404	
	10% level	-2.603944	

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

Null Hypothesis: LNPOV has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.962394	0.0466
Test critical values:	1% level	-3.592462	
	5% level	-2.931404	
	10% level	-2.603944	

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

Null Hypothesis: LNRGDP has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.964247	0.7570
Test critical values:	1% level	-3.600987	
	5% level	-2.935001	
	10% level	-2.605836	

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

Null Hypothesis: LNUNEM has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.065886	0.2590
Test critical values:	1% level	-3.592462	
	5% level	-2.931404	
	10% level	-2.603944	

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

Null Hypothesis: D(LNGOVTEX) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic
Augmented Dickey-Fuller test statistic		-4.256451
Test critical values:	1% level	-3.596616
	5% level	-2.933158
	10% level	-2.604867

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

Null Hypothesis: D(LNRGDP) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.208554	0.0019
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	

	10% level	-2.604867

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

Null Hypothesis: D(LNUNEM) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic
Augmented Dickey-Fuller test statistic		-9.074241
Test critical values:	1% level	-3.596616
	5% level	-2.933158
	10% level	-2.604867

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

F-Bounds Test Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	5.311806	10%	2.08	3
K	5	5%	2.39	3.38

		2.5%	2.7	3.73
		1%	3.06	4.15
			Finite Sample:	
Actual Sample Size	42		n=45	
		10%	2.276	3.297
		5%	2.694	3.829
		1%	3.674	5.019
			Finite Sample:	
			n=40	
		10%	2.306	3.353
		5%	2.734	3.92
		1%	3.657	5.256

Dependent Variable: LNRGDP

Method: ARDL

Date: 09/13/25 Time: 07:11

Sample (adjusted): 1985 2024

Included observations: 40 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): LNFDI LNGOVTEX LNINFL LNPOV

LNUNEM

Fixed regressors: C

Number of models evalulated: 12500

Selected Model: ARDL(3, 4, 4, 3, 4, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNRGDP(-1)	0.833497	0.138868	6.002091	0.0001
LNRGDP(-2)	0.138377	0.180685	0.765845	0.4586
LNRGDP(-3)	-0.172827	0.140291	-1.231919	0.2416
LNFDI	-0.023883	0.008039	-2.970950	0.0117
LNFDI(-1)	-0.014249	0.007390	-1.928182	0.0778
LNFDI(-2)	0.013999	0.007099	1.972019	0.0721
LNFDI(-3)	0.034982	0.006878	5.085979	0.0003
LNFDI(-4)	-0.007179	0.005710	-1.257258	0.2326
LNGOVTEX	-0.025606	0.013361	-1.916394	0.0794
LNGOVTEX(-1)	0.032064	0.024057	1.332818	0.2073
LNGOVTEX(-2)	0.095910	0.026327	3.642987	0.0034
LNGOVTEX(-3)	0.018461	0.025638	0.720057	0.4853
LNGOVTEX(-4)	-0.090941	0.022727	-4.001399	0.0018
LNINFL	-0.049094	0.010874	-4.514942	0.0007
LNINFL(-1)	0.001409	0.012239	0.115101	0.9103
LNINFL(-2)	-0.021922	0.014455	-1.516554	0.1553
LNINFL(-3)	-0.055978	0.014749	-3.795286	0.0026
LNPOV	-0.025526	0.024986	-1.021608	0.0011

LNPOV(-1)	-0.007478	0.026241	-0.284982	0.7805
LNPOV(-2)	0.054077	0.029200	1.851986	0.0888
LNPOV(-3)	-0.007917	0.031408	-0.252057	0.8053
LNPOV(-4)	-0.046855	0.029587	-1.583659	0.1393
LNUNEM	-0.030970	0.011396	-2.717701	0.0187
LNUNEM(-1)	0.009238	0.011263	0.820252	0.4281
LNUNEM(-2)	0.012993	0.010564	1.229955	0.2423
LNUNEM(-3)	0.000973	0.010210	0.095295	0.9257
LNUNEM(-4)	0.025446	0.011624	2.189130	0.0491
C	2.350643	0.821616	2.861000	0.0143

R-squared	0.949702	Mean dependent var	10.53426
Adjusted R-squared	0.899031	S.D. dependent var	0.541174
S.E. of regression	0.016844	Akaike info criterion	-5.133665
Sum squared resid	0.003404	Schwarz criterion	-3.951450
Log likelihood	130.6733	Hannan-Quinn criter.	-4.706213
F-statistic	1490.651	Durbin-Watson stat	2.222331
Prob(F-statistic)	0.000000		

ARDL Error Correction Regression

Dependent Variable: D(LNRGDP)

Selected Model: ARDL(3, 4, 4, 3, 4, 4)

Case 2: Restricted Constant and No Trend

Date: 09/13/25 Time: 07:14

Sample: 1981 2024

Included observations: 40

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNRGDP(-1))	0.034450	0.086083	0.400199	0.6960
D(LNRGDP(-2))	0.172827	0.075255	2.296555	0.0404
D(LNFDI)	-0.023883	0.004919	-4.855123	0.0004
D(LNFDI(-1))	-0.041802	0.007037	-5.940277	0.0001
D(LNFDI(-2))	-0.027803	0.005357	-5.189729	0.0002
D(LNFDI(-3))	0.007179	0.003797	1.890944	0.0830
D(LNGOVTEX)	-0.025606	0.009477	-2.701875	0.0192
D(LNGOVTEX(-1))	-0.023430	0.012286	-1.907021	0.0807
D(LNGOVTEX(-2))	0.072481	0.014170	5.115082	0.0003
D(LNGOVTEX(-3))	0.090941	0.012915	7.041618	0.0000
D(LNINFL)	-0.049094	0.007047	-6.966613	0.0000
D(LNINFL(-1))	0.077901	0.010629	7.329321	0.0000
D(LNINFL(-2))	0.055978	0.008905	6.285862	0.0000
D(LNPOV)	-0.025526	0.014634	-1.744336	0.1066
D(LNPOV(-1))	0.000694	0.014679	0.047299	0.0031
D(LNPOV(-2))	0.054771	0.015837	3.458364	0.0047
D(LNPOV(-3))	0.046855	0.017150	2.732010	0.0182
D(LNUNEM)	-0.030970	0.006872	-4.506579	0.0007

D(LNUNEM(-1))	-0.039412	0.009636	-4.089970	0.0015
D(LNUNEM(-2))	-0.026419	0.008266	-3.196187	0.0077
D(LNUNEM(-3))	-0.025446	0.007084	-3.592190	0.0037
Ecm(-1)	-0.200953	0.022974	-8.746825	0.0010

R-squared	0.933809	Mean dependent var	0.040349
Adjusted R-squared	0.856587	S.D. dependent var	0.036316
S.E. of regression	0.013753	Akaike info criterion	-5.433665
Sum squared resid	0.003404	Schwarz criterion	-4.504782
Log likelihood	130.6733	Hannan-Quinn criter.	-5.097810
Durbin-Watson stat	2.222331		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	4.566896	Prob. F(2,26)	0.0700
Obs*R-squared	10.91881	Prob. Chi-Square(2)	0.0043

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 09/10/25 Time: 02:23

Sample: 1983 2024

Included observations: 42

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRGDP(-1)	0.415961	0.191798	2.168741	0.0394
LNRGDP(-2)	-0.396678	0.182676	-2.171487	0.0392
LNUNEM	-0.002600	0.010965	-0.237073	0.8145
LNUNEM(-1)	0.001473	0.010646	0.138370	0.8910
LNFDI	-0.005641	0.008546	-0.660057	0.5150
LNFDI(-1)	-0.000510	0.006627	-0.076969	0.9392
LNFDI(-2)	-0.007446	0.007580	-0.982373	0.3350
LNGOVTEX	0.003072	0.014571	0.210807	0.8347
LNGOVTEX(-1)	-0.008460	0.016674	-0.507383	0.6162
LNINFL	0.005107	0.010254	0.498029	0.6227
LNINFL(-1)	0.005034	0.009735	0.517134	0.6094
LNINFL(-2)	-0.005329	0.012066	-0.441655	0.6624
LNPOV	-0.003945	0.026709	-0.147693	0.8837
C	-0.176164	0.431577	-0.408187	0.6865
RESID(-1)	-0.766229	0.272119	-2.815785	0.0092
RESID(-2)	-0.003965	0.209454	-0.018932	0.9850

R-squared	0.259972	Mean dependent var	-2.18E-15
Adjusted R-squared	-0.166968	S.D. dependent var	0.023375
S.E. of regression	0.025252	Akaike info criterion	-4.237517
Sum squared resid	0.016579	Schwarz criterion	-3.575547

Log likelihood	104.9878	Hannan-Quinn criter.	-3.994879
F-statistic	0.608919	Durbin-Watson stat	1.933428
Prob(F-statistic)	0.841200		

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	3.924541	Prob. F(13,28)	0.1672
Obs*R-squared	27.11751	Prob. Chi-Square(13)	0.1120
Scaled explained SS	12.12849	Prob. Chi-Square(13)	0.5171

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 09/10/25 Time: 02:24

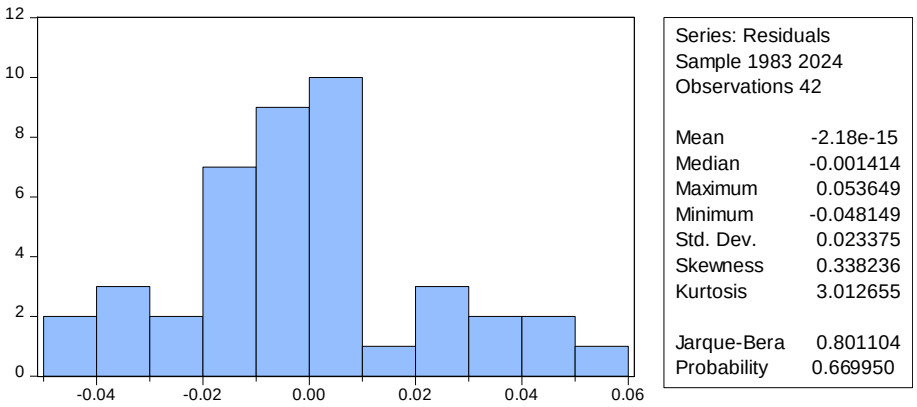
Sample: 1983 2024

Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.008327	0.009331	-0.892324	0.3798
LNRGDP(-1)	0.002975	0.002892	1.028801	0.3124
LNRGDP(-2)	-0.001628	0.002751	-0.591794	0.5587
LNUNEM	-0.000301	0.000232	-1.294908	0.2059
LNUNEM(-1)	3.38E-05	0.000232	0.145350	0.8855

LNFDI	-5.32E-06	0.000173	-0.030824	0.9756
LNFDI(-1)	0.000314	0.000145	2.168524	0.0388
LNFDI(-2)	-0.000264	0.000156	-1.694242	0.1013
LNGOVTEX	0.000182	0.000318	0.572751	0.5714
LNGOVTEX(-1)	-0.000644	0.000359	-1.792776	0.0838
LNINFL	-0.000287	0.000219	-1.309559	0.2010
LNINFL(-1)	0.000311	0.000209	1.486368	0.1484
LNINFL(-2)	-0.000309	0.000261	-1.186025	0.2456
LNPOV	-0.000230	0.000567	-0.404867	0.6887

R-squared	0.645655	Mean dependent var	0.000533
Adjusted R-squared	0.481138	S.D. dependent var	0.000766
S.E. of regression	0.000552	Akaike info criterion	-11.90595
Sum squared resid	8.52E-06	Schwarz criterion	-11.32673
Log likelihood	264.0249	Hannan-Quinn criter.	-11.69364
F-statistic	3.924541	Durbin-Watson stat	2.801846
Prob(F-statistic)	0.001181		



Ramsey RESET Test

Equation: UNTITLED

Specification: LNRGDP LNRGDP(-1) LNRGDP(-2) LNUNEM LNUNEM(-1) LNFDI LNFDI(-1) LNFDI(-2) LNGOVTEX LNGOVTEX(-1) LNINFL LNINFL(-1) LNINFL(-2) LNPOV C

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.541532	27	0.1348
F-statistic	2.376320	(1, 27)	0.1348

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.001812	1	0.001812
Restricted SSR	0.022403	28	0.000800
Unrestricted SSR	0.020591	27	0.000763

Unrestricted Test Equation:

Dependent Variable: LNRGDP

Method: ARDL

Date: 09/10/25 Time: 02:28

Sample: 1983 2024

Included observations: 42

Maximum dependent lags: 2 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (2 lags, automatic):

Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNRGDP(-1)	-1.313765	1.649088	-0.796662	0.4326
LNRGDP(-2)	0.350015	0.480191	0.728908	0.4723
LNUNEM	0.027520	0.033157	0.829998	0.4138
LNUNEM(-1)	-0.024250	0.031444	-0.771189	0.4473
LNFDI	0.024456	0.030045	0.813998	0.4228
LNFDI(-1)	-0.010725	0.018006	-0.595597	0.5564
LNFDI(-2)	-0.012521	0.019978	-0.626752	0.5361
LNGOVTEX	0.035076	0.041329	0.848695	0.4035
LNGOVTEX(-1)	-0.051292	0.068900	-0.744447	0.4630
LNINFL	0.044679	0.057402	0.778358	0.4431
LNINFL(-1)	-0.044738	0.055648	-0.803952	0.4284
LNINFL(-2)	0.057306	0.071015	0.806960	0.4267
LNPOV	0.054674	0.068690	0.795956	0.4330
C	9.507554	5.133098	1.852206	0.0750
FITTED^2	0.097778	0.063429	1.541532	0.1348

R-squared	0.998389	Mean dependent var	10.49400
Adjusted R-squared	0.997554	S.D. dependent var	0.558373
S.E. of regression	0.027616	Akaike info criterion	-4.068421
Sum squared resid	0.020591	Schwarz criterion	-3.447825

Log likelihood	100.4368	Hannan-Quinn criter.	-3.840948
F-statistic	1195.355	Durbin-Watson stat	2.671324
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.