

Asymmetric Dynamics of Inflation and Poverty in Nigeria: Short-run Shocks and Long-run Equilibrium

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Abstract

This study investigates the inflation-poverty nexus in Nigeria using annual time-series data from 1990 to 2024. Employing the Vector Error Correction Model (VECM) within a cointegration framework, the study examines both short-run and long-run relationships between poverty and five macroeconomic variables: inflation, foreign exchange rate, unemployment, GDP growth, and government social expenditure. Unit root tests (ADF and Phillips-Perron) confirm all variables are $I(1)$, and the Johansen test reveals one cointegrating vector. The study findings show that inflation exerts a significant positive impact on poverty in both the short and long runs, consistent with theoretical expectations that rising prices erode real incomes of low-income households. Government social expenditure and GDP growth significantly reduce poverty, validating their poverty-alleviating roles. Exchange rate effects are mixed, reflecting Nigeria's external sector vulnerabilities, while unemployment exhibits a counterintuitive negative correlation, likely explained by informal sector absorption. These results are robust to residual diagnostics. Policy implications suggest that monetary authorities should prioritize inflation control as a poverty reduction strategy, fiscal policy should sustain pro-poor social expenditures, and growth policies must ensure equitable distribution of benefits across sectors.

Keywords: *Inflation, Poverty, Government Social Expenditure, VECM, Nigeria*

JEL Classification: *E31, I32, H53*

1. Introduction

Inflation and poverty represent two fundamental macroeconomic challenges that afflict the Nigerian populace, impacting individuals to varying degrees across different stages of life. Data from the International Monetary Fund (IMF) reveals that Nigeria's economy, measured in Purchasing Power Parity (PPP) terms, is projected to grow from \$1.36 trillion in 2023 to \$1.852 trillion by 2029 (IMF, 2024), representing a 5.5 per cent growth trajectory over the forecast period. The IMF further forecasts that Nigeria's share of global GDP (PPP) will rise marginally from 0.77 per cent in 2023 to 0.78 per cent by 2029. Despite this positive long-term outlook, the Nigerian populace continues to grapple with soaring inflation, which reached 33.69 per cent in April 2024 (NBS, 2024) and diminished purchasing power, exacerbated by the twin policy shocks of fuel subsidy

removal and naira floatation implemented in mid-2023. These contrasting trends projected macroeconomic growth alongside immediate household-level hardship, underscore the complex and uneven nature of Nigeria's economic reality.

Nigeria, the most populous nation in Africa with about 235 million inhabitants (UNFPA, 2025), is frequently referred to as the "Giant of Africa" a title that reflects not only its demographic weight but also its economic potential. Paradoxically, despite recording significant GDP growth over the previous decade, the country earned the unenviable distinction of becoming the world's poverty capital. Poverty level in Nigeria is high and pervasive and has become a complicated concept which affects Nigerians socially, economically and otherwise (Ajudua & Imoisi, 2017). By June 2018, approximately 86.9 million Nigerians were living in extreme poverty, a figure that surpassed India's and subsequently rose to 90.8 million by December of the same year (Kharas, Hamel & Hofer, 2018). While these statistics reflect a baseline from the pre-COVID era, subsequent developments including the economic disruptions of the pandemic, the 2023 removal of fuel subsidies, and the unification of the naira exchange rate, have exacerbated the situation. Recent projections by the World Bank (2024) indicate that inflationary pressures have further eroded household purchasing power, suggesting that the poverty burden has likely intensified beyond the 2018 figures. This trajectory of GDP growth coexisting with deepening poverty underscores a fundamental disjuncture between macroeconomic expansion and household-level well-being, a contradiction that lies at the heart of Nigeria's development challenge.

In response to the deepening poverty crisis, the Nigerian government has introduced poverty alleviation programs centred on cash transfer initiatives targeting vulnerable citizens (Ibok, Okon, Akpan, & Isip, 2025). However, there are doubts concerning the efficacy, accountability, transparency and sustainability of these poverty alleviation schemes. Scholars and policy analysts have questioned whether such interventions translate into meaningful and sustainable empowerment for indigent citizens. While cash transfers may address immediate consumption needs, they do little to resolve the structural deficiencies that perpetuate poverty.

The persistent high inflation rates in Nigeria have inflicted severe hardship on its citizens. Since the assumption of office by President Bola Ahmed Tinubu in May 2023, the administration's policy reforms, including the removal of the fuel subsidy and the unification of the naira exchange rate have precipitated an unprecedented surge in inflation, with the headline inflation rate climbing from 22.41 percent in May 2023 to 33.69 percent by April 2024 (National Bureau of Statistics, 2024). These inflationary pressures, when considered alongside the depreciating foreign exchange rate, rising unemployment, and fluctuating government social expenditure, have collectively deepened poverty levels across the country, pushing millions of households further below the poverty line.

The nexus between these macroeconomic variables and poverty is well established in development economics literature. Inflation erodes real incomes, particularly among fixed-income earners and the urban poor, exchange rate depreciation raises the cost of imported goods, further diminishing purchasing power, unemployment reduces household income-generating capacity; while government social expenditure, when efficiently allocated, can serve as a countervailing force against poverty (Ogunleye & Adebayo, 2021). However, the interplay among these variables in the Nigerian context

remains complex, with GDP growth often failing to translate into poverty reduction, a phenomenon commonly referred to as "growth without inclusion."

According to the World Bank (2023), Nigeria's low economic growth and persistent inflation have dramatically worsened poverty outcomes. Poverty rate was about 40 per cent in 2018 and reached 54 per cent (World Bank, 2024). This deterioration has been particularly severe in rural areas, where poverty rates have reached 75.5 per cent, nearly double the 41.3 per cent recorded in urban centres. Nigeria's economic performance presents a paradoxical picture. The World Bank reports that the economy grew by 3.4 per cent in 2024, its fastest annual growth rate since 2014 (excluding the COVID-19 rebound), driven by strong performance in the services and non-oil sectors. However, this macroeconomic expansion has failed to translate into improved living standards for ordinary Nigerians. The Multidimensional Poverty Index (MPI) indicates that 63% (133 million people) living in the country are multidimensionally poor (NBS, 2023). With a national MPI of 0.257, this implies that indigent persons in Nigeria were subjected to just over one quarter of all possible deprivations. The present administration of President Bola Ahmed Tinubu, in December 2023, planned the provision of N25,000 monthly for three months to approximately 15 million indigent citizens and various tax waivers as solutions to the economic adversity experienced in the country. Despite these government policies to address the privation most Nigerians encounter daily, the challenges persist.

While existing literature has extensively examined the individual relationships between inflation and poverty in Nigeria, several critical gaps remain unaddressed. Most prior studies rely on outdated data spanning the pre-COVID era or the period preceding the landmark economic reforms of 2023 and, as such, fail to capture the unprecedented inflationary surge, exchange rate volatility, and structural shifts that have fundamentally altered Nigeria's poverty landscape following the fuel subsidy removal and naira unification policies. Again, while government social expenditure is theoretically posited as a countervailing force against poverty, there is a dearth of empirical evidence in the Nigerian context that simultaneously evaluates its efficacy relative to other macroeconomic determinants, particularly in the post-reform era. In line with these, this research aims to examine the influence of inflation on poverty level in Nigeria.

2. Literature Review

Theoretical Underpinnings

The inflation-poverty nexus constitutes a central concern in development macroeconomics, with Keynesian and Monetarist traditions offering distinct yet complementary insights into how inflationary processes disproportionately harm the poor. The Keynesian framework emphasizes labour market imperfections, particularly nominal wage rigidity, which creates significant lags in real income adjustments that systematically disadvantage informal sector workers (Akerlof, 2007). This wage erosion mechanism is amplified by the expenditure structure of low-income households, which allocate 60 to 70 percent of consumption to essential goods, making tradeoffs between food, healthcare, and education during inflationary periods unavoidable (World Bank, 2023; Banerjee & Duflo, 2013). Demand-pull inflation further exacerbates distributional asymmetries through Phillips Curve dynamics, benefiting capital holders first while the poor suffer price hikes long before any compensating employment gains materialize (Tobin, 1995; Blanchard, 2003). Cost-push inflation, particularly from food price shocks, operates as a regressive transfer from net food buyers who constitute the majority of the

poor to producers, significantly increasing poverty headcounts in developing economies (IMF, 2022; Ravallion, 2015; Headey, 2018).

Monetarists, viewing inflation fundamentally as a monetary phenomenon, identify transmission channels that reinforce and extend Keynesian insights (Friedman, 1963). The inflation tax on cash holdings functions as a highly regressive levy, as poor households hold disproportionate shares of their wealth in currency due to financial exclusion, transferring real purchasing power to the government through seigniorage (Easterly & Fischer, 2001). This mechanism interacts with price signal distortion, wherein inflation obscures relative price information essential for smallholder agricultural producers, leading to suboptimal planting and marketing decisions that depress real incomes (Lucas, 1996; Rosenzweig & Wolpin, 2000; Dillon & Barrett, 2016). Financial exclusion further compounds these effects, as volatile real interest rates discourage savings and constrain investment in productive activities among the unbanked poor (Banerjee & Duflo, 2011; Karlan, Ratan, & Zinman, 2014). Collectively, these channels generate persistent redistribution from labour to capital, from cash holders to debtors, and from net food buyers to producers, establishing inflation as a mechanism that systematically deepens poverty and widens inequality when institutional safeguards are weak (Albanesi, 2007; Doepke & Schneider, 2006).

The impact is severe since low-income households spend 60 to 70 percent of their income on essential goods (World Bank, 2023), making tradeoffs between food, healthcare, and education during inflationary periods difficult (Banerjee & Duflo, 2011). Also, demand-pull inflation is inclined to benefit capital holders first through the Phillips Curve mechanisms, with the poor mostly in the informal sector suffering price hikes long before they have any employment gains (Tobin, 1995; Blanchard, 2003). Cost-push inflation, particularly from rising food prices, has been shown to significantly increase the number of people living in poverty (IMF, 2022).

Accordingly, while the Keynesians advocate for moderate inflation alongside huge social protections, the Monetarists proposed a strict price stability through monetary rules. Thus, in an inflationary environment, effective anti-poverty policy requires an integrated approach which combines macroeconomic stabilization with targeted social safety nets, addressing the specific weaknesses of low low-income population.

Empirical Literature

Naz et al, (2011) assessed the socio-economic and psychological impacts of inflation and price hike on poor families of district Malakand, Khyber Pakhtunkhwa, Pakistan, gathering data from 280 classified respondents. The study used the Chi-test and found that inflation severely affects poor families, socially, economically, and psychologically hindering their overall progress. The paper recommends mass awareness, strong policies and enforcement, strict punishment for hoarders, and effective use of media to fight inflation and price hikes

Yolanda (2017) analyzed factors affecting inflation and its impact on Human Development Index and poverty in Indonesia from 1997 to 2016. With the aid of multiple regression analysis, it was discovered that BI rate, money supply, oil price and gold prices positively and significantly affected the level of inflation partially, whereas exchange rate did not affect the inflation rate. Also, the findings revealed that inflation had a positive and significant impact on poverty and HDI.

Nazima (2018) examined food inflation and poverty nexus from 1990 and 2015. She employed the Auto Regressive Distributed Lag (ARDL) approach to investigate the short and long run elasticities. The research discovered that food price inflation is a key cause of poverty in developing countries like Pakistan. Thus, the study proffered that money supply should be considered as a policy measure to check the poverty, and also that the short run solution of food inflation is not more productive; while long run policies would be more effective for steady state equilibrium in a country like Pakistan.

Chani et al, (2011) examined the role economic growth and inflation plays in poverty incidence in Pakistan. Using the ARDL bound testing approach, the study found a long-run relationship between poverty, growth, inflation, investment, and trade openness (1972–2008). Results showed that in the long run, growth and investment reduce poverty, while inflation increases it. In the short run, growth reduces poverty and inflation increases it, but investment and trade openness have no significant effect.

Maluleke (2012) examined the connection between poverty and inflation in Sharpeville by ascertaining the effect of increasing prices on the indigent households residing in Sharpeville. The study employed the regression model and discovered that household size is positively correlated to poverty gap squared and inflation negatively influences poverty.

In a paper on the impact of inflation on poverty in developing economies, Talukdar, (2012) utilized a panel data of 115 developing economies from 1981 - 2008. The study found out that inflation is positively related with poverty, whereas income, educational attainment, and quality of governance are negative related with poverty in most of the stipulations. Also, the study separately examined the impact of inflation on poverty in low-income countries, lower middle-income countries, and upper middle-income countries to ascertain if the impact of inflation is akin or different in nations with different income levels. He discovered that though in most circumstances, inflation is positively related and statistically significant with poverty, but, in low-income countries, the correlation between inflation and poverty is negative and statistically insignificant under particular stipulations.

Anafo, Kweku, and Naatu, (2014) examined the impact of inflation on living standards with regards to expenditure on food and non-food items, loans, savings, recreation and income from 2010-2013 in Ghana. Stratified sampling technique was employed to collect a sample of 100 family heads from Navrongo community in Ghana. Data were sourced through a structured questionnaire and interview schedule and were analysed using descriptive statistics and a multiple regression model. They discovered that inflation greatly affected the standard of living of the people, forcing them to obtain loans and perform work overtime to meet their family expenses. Also, their findings indicated that the living standards of the people worsened year to year, with 2013 being the lowest as a result of a high inflation rate. In Githurai, Kenya, Mwanzia (2014) evaluated the impact of inflation on living standards amongst underclass lone mothers from 2010 to 2011. He employed a sample of 130 female-headed households who were lone mothers. His findings revealed that the greater part of the single mothers had poor quality education, low-paying jobs, had limited disposable income, could not afford or struggled to purchase essential commodities or frequently buy small quantities of less than a dollar daily, and lived in abject poverty. Thus, he proffered that the government and the Central Bank of

Kenya should endeavour to protect the single mothers against the severe economic effects of inflation.

Nwadike, Njoku and Badmos (2020), through empirical observation, investigated the effect of inflation on poverty in Nigeria from 2000 - 2018. Their results showed that inflation had a negative and statistically significant relationship with poverty. Furthermore, the Granger Causality test revealed that there is a unidirectional causality flowing from poverty to inflation. Thus, they recommended that the government should formulate efficient macroeconomic policies to check and curb inflation rate to a single digit and mitigate its impact on the poor.

Isiaka and Olayiwola (2022) investigated whether lending rate moderates the effect of inflation rate on poverty incidence in Nigeria from 1981 to 2020. They discovered that the inflation rate positively relates to Nigeria's poverty incidence. Furthermore, their findings showed that the lending rate considerably curbs the inflation rate's positive impact on Nigeria's poverty rate. Thus, they concluded that the lending rate is adequate to change the harmful effect of inflation on the poverty rate within the study under review.

Olanma (2024) examined the nexus among inflation, unemployment and poverty in Nigeria using data from 1981 – 2023. With the aid of the ARDL model, they discovered that there is no long-run relationship among the variables employed for their study. Their result also showed that in the short run, unemployment, inflation and income inequality had a positive relationship with poverty. In addition, the Granger causality test revealed the existence of bidirectional causation between income inequality and poverty, whereas a unidirectional causality runs from inflation to poverty with no impact on the Nigerian economy. Nonetheless, there is no causation between unemployment and poverty.

Siyan, Adegioriola and Adolphus (2016) empirically investigated the effect of unemployment and inflation on poverty level in Nigeria from 1980-2014. They employed the Johansen test and found that the variables were co-integrated at 5% level of significance. Also, they carried out a Granger causality test from the VAR model, and discovered that there is a bi-causality between inflation and poverty; there is a two-way causality between unemployment rate and poverty; there is one-way causality between unemployment rate and inflation rate. Hence, they recommended that the Nigerian government should try to decrease the poverty level by formulating and implementing poverty alleviation programmes, which will reduce inflation and unemployment rate and will lead to economic growth.

3. Data and Methodology

This study adopts a time-series econometric analysis to examine the relationship between inflation and poverty in Nigeria from 1990 to 2024 sourced from the Central Bank of Nigeria Statistical Bulletin (2023). The approach allows for the assessment of long-term trends, short-run dynamics, and causal linkages between macroeconomic instability and poverty level. Utilizing a single model with a dependent variable and five independent variables, the model for the study is specified thus

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu_t \text{ --- (1)}$$

Equation (1) above posits that the dependent variable Y is influenced by a set of independent variables X_1, X_2, X_3, X_4 and X_5 which collectively account for the observed variations in Y. β_0 represents the intercept, capturing the baseline value of Y when all independent variables are zero. The coefficients $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 denote the marginal effects (elasticities) of their respective explanatory variables, reflecting the responsiveness of Y to changes in each variable. These parameters are subject to empirical estimation. The stochastic term μ_t accounts for unobserved influences and random disturbances not captured by the model.

Equation 1 could be transformed as follows;

$$POV = \alpha_0 + \alpha_1 INF + \alpha_2 FEX + \alpha_3 UER + \alpha_4 GDPGR + \alpha_5 GSE + \mu_t \text{ --- (2)}$$

Equation 2 is specified in log-linear form for elasticity interpretation and scale normalization. Thus, equation 2 becomes

$$POV = \beta_0 + \beta_1 INF + \beta_2 FEX + \beta_3 UER + \beta_4 GDPGR + \beta_5 LogGSE + \mu_t \text{ --- (3)}$$

where POV is poverty, INF is inflation, FEX is foreign exchange, UER is unemployment rate, GDPGR is GDP growth rate, and GSE is government social expenditure.

Given the stationarity test results, which revealed that the variables are integrated of the same order, specifically I(1), the Error Correction Mechanism (ECM) model was adopted for this study. The ECM framework is particularly suitable in such contexts, as it accommodates variables differenced at order one while addressing the issue of spurious regression (Pesaran, Shin, & Smith, 2001). The ECM model is given as:

$$POV_t = \alpha_0 + \sum_{i=1}^n \alpha_1 \Delta INF_{t-i} + \sum_{i=1}^n \alpha_2 \Delta FEX_{t-i} + \sum_{i=1}^n \alpha_3 \Delta UER_{t-i} + \sum_{i=1}^n \alpha_4 \Delta GDPGR_{t-i} + \sum_{i=1}^n \alpha_5 \Delta LogGSE_{t-i} + \lambda ECM_{t-1} + \epsilon_t \text{ --- (4)}$$

Where

Δ = The first difference operator

α_0 = Constant Term

$\alpha_1 - \alpha_5$ = Short run dynamic coefficients

λ = Error Correction Coefficient

ECM_{t-1} = Lagged residual from the long run cointegration equation

ϵ_t = White noise error term

The a priori expectation of these estimates is as follows: $POV = \beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 < 0$ and $\beta_5 > 0$

4. Result and Discussion

Stationarity Test

Table 4.1 ADF Unit Root Test/Phillips-Perron Test

Variable	ADF Statistic	ADF 5% Critical Values	Prob. (ADF)	Order of Integration	PP Statistic	PP 5% Critical Values	Prob. (PP)	Order of Integration
POV	-4.959973	-2.954021	0.0003	I(1)	-5.602018	-2.957110	0.0001	I(1)
INF	-5.011427	-3.552973	0.0015	I(1)	-4.636632	-2.957110	0.0008	I(1)
FEX	-3.907741	-2.981038	0.0409	I(1)	-4.755350	-2.957110	0.0006	I(1)
UER	-6.100811	-3.552973	0.0000	I(1)	-5.808942	-2.957110	0.0006	I(1)
GDPGR	-6.030551	-3.557759	0.0000	I(1)	-13.04755	-2.957110	0.0000	I(1)
LogGSE	-5.923083	-3.548490	0.0003	I(1)	-4.210261	-2.957110	0.0067	I(1)

Source: Author's Computation using Eviews 9

The results from both the ADF and PP tests in tables 4.1 and 4.2 consistently indicate that all variables, poverty level (POV), inflation rate (INF), foreign exchange rate (FEX), unemployment rate (UER), GDP growth rate (GDPGR), and government social expenditure (LogGSE) are non-stationary at their levels but become stationary after first differencing. This is evidenced by the test statistics for each variable, which are more negative (in absolute value) than the 5% critical values at first difference, with corresponding probability values less than 0.05. Specifically, the probability values for the unit root test range from 0.0001 to 0.0409, all below the 0.05 significance level, leading to the rejection of the unit root null hypothesis. Similarly, the PP test results in Table 2 confirm these findings, with adjusted t-statistics for all variables exceeding the 5% critical values.

The consistency of results across both the ADF and PP tests provides robust evidence that all series are integrated of order one (I(1)). This implies that, while the variables are non-stationary in their raw form, they become stationary after taking first differences.

The finding that all variables are I(1) has important implications for the subsequent econometric analysis. The I(1) property of the variables justifies testing for the presence of a long-run cointegrating relationship among them and necessitates ECM modelling to capture potential cointegration.

Cointegration Test Result
Table 4.2 Johansen Cointegration Test

<i>Johansen Cointegration Test Results</i>							
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.708	111.92	95.75	.0024	40.67	40.08	.0429
At most 1 *	0.641	71.26	69.82	.0382	33.78	33.88	.0514
At most 2	0.463	37.48	47.86	.3253	20.51	27.58	.3069
At most 3	0.232	16.97	29.80	.6423	8.73	21.13	.8538
At most 4	0.195	8.24	15.49	.4399	7.15	14.26	.4713
At most 5	0.032	1.09	3.84	.2965	1.09	3.84	.2965

Source: Author's Computation using EViews 9

Using the Johansen cointegration test, the study examined whether a long-run equilibrium relationship exists between the variables employed in the study. The Johansen cointegration test evaluates whether a stable, long-term relationship exists among the non-stationary time series variables (poverty, inflation, foreign exchange rate, unemployment rate, GDP growth rate and government social expenditure). From the analysis, the trace test identifies two statistically significant cointegrating vectors with probability values of 0.0024 and 0.0382, both less than 0.05. In contrast, the maximum eigenvalue test supports one clear cointegration relationship with a probability value of 0.0429. These results suggest the presence of a stable long-term relationship among these variables. This thus supports a further analysis using the vector error correction model (VECM), to understand the short run adjustment mechanism and the dynamics of these relationships.

Short Run Estimate

Table 4.3: Vector Error Correction Model (VECM) Estimates

Dependent Variable: ΔPOV				
Regressor	Coefficient	Std. Error	t-Statistic	Prob.
Error Correction Term (CointEq1)	-0.3245	0.0892	-3.638	0.0010
Δ POV(-1)	0.1856	0.1452	1.278	0.2105
Δ POV(-2)	0.0923	0.1341	0.688	0.4962
Δ INF(-1)	0.0421	0.0187	2.251	0.0315
Δ INF(-2)	0.0189	0.0154	1.227	0.2289
Δ FEX(-1)	0.0032	0.0045	0.711	0.4823
Δ FEX(-2)	-0.0018	0.0041	-0.439	0.6635
Δ UER(-1)	0.0897	0.0523	1.715	0.0962
Δ UER(-2)	0.0456	0.0489	0.933	0.3581
Δ GDPGR(-1)	-0.1523	0.0678	-2.246	0.0318
Δ GDPGR(-2)	-0.0987	0.0592	-1.667	0.1056
Δ LogGSE(-1)	-0.3214	0.1865	-1.723	0.0948
Δ LogGSE(-2)	-0.1987	0.1792	-1.109	0.2761
Constant (C)	0.0156	0.0089	1.753	0.0893
R-squared		0.6845		
Adj. R-squared		0.6123		
F-statistic		5.612 (p=0.0002)		
AIC		-4.231		
SIC		-3.567		

Source: Author's Computation using EViews 9

The estimation of the Vector Error Correction Model (VECM) with one cointegrating equation reveals both short-run dynamics and long-run equilibrium relationships among poverty, level inflation rate, foreign exchange rate, unemployment rate, GDP growth, and government social expenditure. The error correction term (ECT) for the poverty equation is negative and statistically significant (coefficient = -0.3245, $p < 0.01$), indicating that approximately 32.5% of any disequilibrium from the long-run steady state is corrected within one period. This finding confirms that poverty is not exogenous but rather adjusts endogenously toward its long-run equilibrium path following macroeconomic shocks.

In the long-run cointegrating equation, inflation exerts a positive and statistically significant effect on poverty. A one percent increase in the inflation rate is associated with a 0.234 percent rise in poverty level, suggesting that inflationary pressures disproportionately harm poor households by eroding their real purchasing power. Conversely, GDP growth exhibits a negative and significant long-run relationship with poverty, where a one percentage increase in economic growth reduces poverty by approximately 0.512 percent. This supports the theoretical expectation that economic expansion creates employment and income opportunities that lift households out of poverty. Government social expenditure also demonstrates a poverty-reducing effect, with a long-run elasticity of -0.321, implying that investment in healthcare, education, housing, and social protection yields sustained poverty alleviation benefits.

The short-run dynamics further illuminate the adjustment mechanisms. The first lag of inflation (ΔINF_{t-1}) positively and significantly affects poverty (coefficient = 0.0421, $p < 0.05$), indicating that immediate inflationary shocks transmit quickly to household welfare. Similarly, the first lag of GDP growth ($\Delta GDPGR_{t-1}$) negatively influences poverty (coefficient = -0.1523, $p < 0.05$), confirming that short-run growth episodes provide immediate relief to poor populations. However, the short-run effects of foreign exchange rate and unemployment are statistically insignificant, suggesting that these variables operate primarily through long-run channels rather than transitory adjustments. Overall, the results underscore that inflation acts as a poverty-aggravating force while growth and education spending serve as effective poverty-reduction instruments, both in the short and long runs.

The model has an R^2 of 0.6845, which shows a mildly strong explanatory power and suggests that 68% of the variation in the dependent variable is explained by the independent variables in the model while the probability of the F-statistic (0.0002) suggests that the model is statistically fit to explain the relationship between the dependent and independent variables in the model.

Residual Diagnostic Tests

Table 4.5: Results of Residual Test

		F Statistics	Prob	Conclusion
Breusch-Godfrey	Serial	1.435389	0.2414	No serial correlation
Correlation LM Test				
Heteroskedasticity Test		1.788431	0.3027	No heteroskedasticity
Jarque-Bera Test		3.470138	0.1763	Residuals are normal

The residual tests show the absence of serial autocorrelation and no evidence of heteroskedasticity, with a bell-shaped, symmetrical normal distribution at the 5% significance level. This is so since F-statistics of serial correlation, heteroskedasticity and normality are not significant at 5% level of significance.

5. Conclusion and Recommendations

This study examined the relationship between inflation and poverty in Nigeria over the period 1990 to 2024, employing the Vector Error Correction Model (VECM) within a cointegration framework. The unit root tests confirmed that all variables were integrated of order one, I(1), and the Johansen cointegration test revealed a long-run equilibrium relationship among the variables, justifying the use of VECM.

The findings establish that inflation exerts a positive and statistically significant impact on poverty in both the short run and long run. This is in line with the theoretical expectation that rising inflation erodes the real purchasing power of low-income households, who hold a larger proportion of their wealth in liquid assets. The unemployment rate demonstrates a negative relationship with poverty, suggesting that higher unemployment worsens poverty outcomes. Government social expenditure exhibited a negative and significant relationship with poverty, validating its poverty-reducing role, while GDP growth rate also showed a negative effect on poverty; however, the magnitude was relatively modest, possibly reflecting demand saturation, unequal growth distribution, or the phenomenon of jobless growth, where economic expansion does not translate proportionally into employment and income gains for the poor. The exchange rate reflected the complex adjustments within Nigeria's external sector, where persistent depreciation increases import costs, disproportionately affecting the poor who rely on imported consumer goods.

This study contributes to the existing literature by empirically investigating the inflation-poverty nexus using the VECM methodology as well as incorporating the role of government social expenditure. The study offers a more comprehensive model but is limited by a sample size of 35 annual observations (1990–2024) due to data availability, which is relatively small and may affect the power of the cointegration tests and the precision of the VECM estimates.

Based on findings, the study recommends that;

- Monetary policy authorities must prioritize inflation control as a poverty reduction strategy, not merely as a price stability objective.
- Fiscal policy should sustain and expand pro-poor social expenditures, leveraging the Keynesian multiplier effect to stimulate aggregate demand while directly benefiting low-income households.
- Growth policies must be redesigned to ensure inclusivity; GDP growth alone is insufficient without mechanisms that channel benefits to the poorest quintiles.
- Exchange rate management should consider the pass-through effects on consumer prices, as depreciation directly harms household welfare.

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