Investment Uncertainties and Economic Growth in Nigeria

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Abstract
This study investigates the effect of investment uncertainties on economic growth in Nigeria for the period of 1993-2023 (31years). The investment uncertainties wasproxied with Exchange Rate (EXRF), Inflation Rate (INFR), Interest Rate Fluctuations (INTRF), Stock Market Fluctuation (SMKTF), Foreign Direct Investment Inflows (FDII) and Public Debt Ratio (PDR on economic growth proxied with Real Gross Domestic Product (RGDP) in Nigeria.Data for the study was obtained from CBN Statistical Bulletin and World Development Indicators. Data was analyzed using the descriptive statistics, correlation matrix and several diagonistics tests, followed by the unit root test, ARDL Bound Co-integration test, and ARDL Co-integrating and Long form were utilised via Econometric Views version 9.0. The findings revealed mixed effects across these variables. In the short run, EXRF showed a weak effect on RGDP with a coefficient of 0.0208 and a p-value of 0.0938, indicating a statistically significant effect at the 10% level. However, the long-run effect of EXRF is not significant, with a coefficient of 0.3863 and a p-value of 0.1427, suggesting that EXRF do not significantly affect RGDP over the long term. INFR on the other hand, shows a significant positive effect on Nigeria's RGDP in both the short run and long run. The short-run coefficient for INFR is 0.0445, with a p-value of 0.0092, while the long-run coefficient is 0.8270, with a p-value of 0.0231. This suggests that inflation fluctuations significantly affect Nigeria's economic growth over both timeframes. Similarly, INTRF are found to significantly influence RGDP, with short-run and long-run coefficients of 0.0969 (p-value = 0.0408) and 1.8001 (p-value = 0.0357), respectively. Both short-run and long-run effects of INTR are statistically significant, confirming their crucial role in Nigeria's economic performance. In contrast, SMKTF do not have a statistically significant effect on Nigeria's RGDP in either the short run or long run. The short-run coefficient for SMKTF is 0.0163 with a p-value of 0.3797, and the long-run coefficient is 0.3029 with a p-value of 0.3061, indicating no significant effect. Similarly, FDII and PDR also do not significantly influence RGDP. The short-run coefficient for FDII is -0.0006 with a p-value of 0.9783, and the long-run coefficient is -0.0118 with a p-value of 0.9783. The short-run coefficient for PDR is -0.0020 with a p-value of 0.9476, while the long-run coefficient is -0.0377 with a p-value of 0.9477, suggesting that both FDI and public debt do not significantly contribute to RGDP. The study concluded that investment uncertainties have a mix effect economic growth in Nigeria. Hence, the study recommends that the Nigerian government should implement policies that stabilize the exchange

rate, such as strengthening foreign reserves and regulating currency markets.

Keywords: *Investment, Uncertainties, Stock, Market, Fluctuation, Debt, Economic and Growth*

Introduction

Investment uncertainties significantly shape economic growth globally, across Africa, and in Nigeria, as they often deter investment flows and slow development. These uncertainties stem from factors such as political instability, economic policy unpredictability, exchange rate volatility, inflation, and fiscal imbalances. At the global level, heightened policy uncertainty leads to reduced capital expenditures as firms delay or scale back projects due to unpredictable returns (IMF, 2025). In Africa, weak institutions and external shocks compound uncertainties, making foreign direct investment (FDI) inflows highly sensitive to global fluctuations (Ogbonna et al., 2022). In Nigeria, exchange rate instability, inflation, and inconsistent policies particularly undermine both domestic and foreign investments, with research emphasizing the need for stable, predictable frameworks to attract sustainable capital inflows (Michael et al., 2024).

Nigeria's macroeconomic variables serve as proxies for these uncertainties, directly influencing real GDP. Exchange rate fluctuations remain a critical issue, with persistent naira depreciation increasing import costs, fueling inflation, and eroding purchasing power. While depreciation may enhance export competitiveness, it destabilizes the economy (Obi-Nwosu&Ibechiole, 2024). Inflation, closely tied to exchange rate volatility, diminishes the real value of money, discourages savings and investment, and contributes to stock market volatility. Studies show inflation significantly affects investor confidence, underscoring the importance of effective monetary policy to stabilize the market and foster growth (Peter et al., 2024). Interest rate fluctuations also play a major role; high rates restrict borrowing and capital formation, while low rates discourage savings. Findings by Okechukwu et al. (2019) highlight a negative relationship between interest rates and stock market returns, stressing the importance of balanced rate policies that stimulate investment without triggering runaway inflation.

The stock market itself reflects broader uncertainties. Its volatility, often driven by inflation, interest rates, and exchange rates, influences investor sentiment and long-term growth prospects. Proactive regulatory measures to manage volatility are necessary to restore investor confidence. Similarly, FDI is vital for Nigeria's economic strategy, bringing capital, technology, and jobs. However, instability in exchange rates and policy inconsistency often deter inflows. Zakari (2023) found that exchange rate stability strongly correlates with FDI, suggesting that liberalized and predictable currency policies are essential for sustaining investor interest. Public debt further compounds uncertainties. While borrowing can fund infrastructure and growth, excessive debt risks fiscal imbalances and crowds out private sector investment. Proper debt management ensures that loans remain growth-supportive rather than destabilizing.

Recent reforms, including exchange rate unification and fuel subsidy removal, aim to stabilize Nigeria's economy and rebuild investor trust. However, these measures have imposed short-term hardships through higher fuel costs and inflation, highlighting the need for complementary social protection policies and diversification into non-oil sectors. Overall, the interplay of exchange rates, inflation, interest rates, stock market dynamics, FDI, and public debt defines Nigeria's growth trajectory. Addressing investment uncertainties requires coherent policies that enhance macroeconomic stability, rebuild investor confidence, and foster long-term sustainable development.

Statement of the Problem

This study addresses the complex relationship between investment uncertainties and economic growth in Nigeria, measured by real gross domestic product (RGDP). Key macroeconomic variables such as exchange rate fluctuations (EXRF), inflation (INFR), interest rate variations (INTRF), stock market volatility (SMKTF), foreign direct investment inflows (FDII), and public debt ratio (PDR) play significant roles in shaping economic outcomes, yet their combined and long-term impact on RGDP remains inadequately examined. Existing research has often focused on isolated variables or short-term effects, relying on limited data and neglecting dynamic interactions, thereby offering incomplete insights for policy formulation (Akinlo, 2021; Ajayi&Oloyede, 2022; Ogun&Ogbetunji, 2023, Ehiedu, et al 2022). This gap underscores the need for a unified analytical approach.

To address this, the study employs the Autoregressive Distributed Lag (ARDL) model, which is effective for analyzing both short- and long-run dynamics, even with small or mixed-order datasets. By integrating these macroeconomic variables within a single empirical framework, the research aims to generate more robust estimates of how investment uncertainties influence economic growth over time. The findings will provide critical evidence to guide policymakers in designing strategies that stabilize Nigeria's economy, enhance investor confidence, and promote sustainable development.

Research Hypotheses

$H0_1$: There is no significant long-run relationship between exchange rate fluctuations (EXRF) and Nigeria's real GDP (RGDP).

$H0_2$: Inflation rate (INFR) has no significant effect on Nigeria's real GDP (RGDP) in both the short-run and long-run.

$H0_3$: Interest rate fluctuations (INTRF) have no significant effect on Nigeria's real GDP (RGDP) in both the short-term and long-term.

$H0_4$: Stock market fluctuations (SMKTF) have no significant effect on long-run relationship with Nigeria's real GDP (RGDP).

$H0_5$: Foreign direct investment inflows (FDII) have no significant effect on Nigeria's real GDP (RGDP) in both the short and long run.

$H0_6$: Public debt ratio (PDR) has no significant effect on Nigeria's real GDP (RGDP) in both the short-run and long-run.

Review of Related Literature

Investment Uncertainties

Investment uncertainty refers to the unpredictable changes in macroeconomic variables, political conditions, and market dynamics that shape the investment environment. In emerging economies like Nigeria, these uncertainties are magnified by external shocks, such as global oil price fluctuations, and internal weaknesses, including political instability and fragile institutions (Akinlo, 2021). Such instability undermines investor confidence, reduces capital flows, and constrains economic growth (Ajayi & Oloyede, 2022). Exchange rate fluctuations are a major source of risk, particularly in Nigeria where dependence on oil exports makes the economy vulnerable. Persistent naira depreciation raises import costs, fuels inflation, and creates an unstable environment for investment (Ehiedu, et al, 2022, Ogun & Ogbetunji, 2023). Inflation itself adds further uncertainty, eroding consumer purchasing power and distorting price signals. High and volatile inflation discourages long-term planning and deters both domestic and foreign

investors (Ewetan & Ekpe, 2021).

Interest rate volatility also affects investment decisions. High rates raise borrowing costs and stifle private sector growth, while low but unstable rates may distort savings and returns (Olowe, 2023). Stock market fluctuations further contribute to uncertainty, as both domestic political crises and global shocks affect asset prices, weakening firms' ability to raise capital and dampening investor confidence (Okoye et al., 2023). Foreign direct investment (FDI), critical for technology transfer and capital inflows, is particularly sensitive to these uncertainties, with volatile exchange rates and inflation deterring sustained investment (Ajayi&Oloyede, 2022). Additionally, Nigeria's rising public debt ratio has created concerns about fiscal sustainability, crowding out private investment and constraining long-term growth (Ewetan&Ekpe, 2021). Thus, investment uncertainties—ranging from exchange rate instability to public debt—significantly affect Nigeria's economic trajectory. Addressing them is crucial to stabilizing the economy, boosting investor confidence, and fostering sustainable growth.

Economic Growth

Economic growth refers to the sustained increase in the production of goods and services within an economy, often measured by changes in real gross domestic product (RGDP). For developing countries like Nigeria, growth is crucial for reducing poverty, creating jobs, and improving living standards (Akinlo, 2021). However, this potential is frequently undermined by investment uncertainties that disrupt capital flows and hinder economic planning (Bassey, 2021). RGDP, adjusted for inflation, serves as the most reliable measure of economic activity and prosperity, reflecting the overall health of the economy (Ogun&Ogbetunji, 2023). Nigeria's RGDP is influenced by both domestic factors such as inflation, exchange rate fluctuations, and fiscal policy and external shocks like oil price volatility and global financial crises. These uncertainties weaken investor confidence, reduce long-term planning, and slow capital accumulation (Olowe, 2023). Exchange rate instability and persistent inflation create unpredictability for businesses, deterring investment and discouraging economic expansion (Akinbobola&Fashola, 2022). Consequently, Nigeria's economic growth has remained inconsistent, marked by alternating periods of expansion and contraction. Understanding how investment uncertainties affect RGDP is therefore essential for designing policies that stabilize the macroeconomic environment, enhance investor confidence, and foster sustainable long-term growth (Akinlo, 2021, Ehiedu et al 2022).

Theoretical Review

The relationship between investment uncertainties and economic growth has been widely examined in economics, with several theories offering insights into how uncertainty shapes macroeconomic outcomes. In Nigeria, investment uncertainties proxied by exchange rate fluctuations (EXRF), inflation (INFR), interest rate variations (INTRF), stock market volatility (SMKTF), foreign direct investment inflows (FDII), and public debt ratio (PDR)—play a major role in influencing real gross domestic product (RGDP). Real Business Cycle (RBC) theory, developed by Kydland and Prescott (1982), argues that real shocks such as technology and productivity shifts drive business cycle fluctuations. Applied to Nigeria, exchange rate and inflation shocks act as real disturbances, disrupting production costs and consumer purchasing power, thereby influencing cyclical changes in output. Studies like Ijaiya et al. (2022) show that in developing economies, these shocks strongly affect growth, aligning with the RBC perspective.

Tobin's Q theory, introduced by James Tobin, links the value of capital to investment decisions. When the Q ratio exceeds one, firms invest more, but when uncertainties like high interest rates, inflation, or stock market instability reduce Q, investment slows. In Nigeria, interest rate volatility and stock market weakness reduce profitability, discouraging both domestic investment and FDI (Nnanna et al., 2021).

Keynesian Uncertainty theory highlights the role of expectations, arguing that unpredictable conditions such as exchange rate instability, inflation, and rising public debt erode business confidence. Firms delay investment when future profitability is unclear, leading to weaker GDP growth. This is particularly relevant in Nigeria, where persistent macroeconomic instability heightens uncertainty (Okafor & Omojolaibi, 2022).

Together, these theories explain how Nigeria's investment uncertainties affect RGDP. RBC emphasizes real shocks, Tobin's Q highlights capital market responses, and Keynesian theory stresses confidence and expectations. Empirical studies show that Nigeria's economy is highly sensitive to these uncertainties, with fluctuations in FDI and debt sustainability further shaping growth outcomes.

Empirical Review

Several empirical studies have investigated the impact of investment uncertainties on economic growth in Nigeria, focusing on macroeconomic variables such as exchange rates, inflation, interest rates, stock market volatility, foreign direct investment (FDI) inflows, and public debt ratios as determinants of real gross domestic product (RGDP). Akinwale and Ogunleye (2023) found that exchange rate fluctuations had a negative but significant effect on growth, as volatility undermined investor confidence. Similarly, Adeola et al. (2023) showed that FDI inflows positively influenced RGDP, particularly in the oil and gas sector, but were highly sensitive to political and economic instability.

Interest rates have also been widely examined. Akintoye and Adedeji (2023) revealed that fluctuations discouraged investment by raising borrowing costs, while Nnanna et al. (2022) confirmed that high interest rates reduced overall investment and slowed growth. On public debt, Adebayo et al. (2023) and Olowolabi and Olagunju (2022) both found significant negative effects, concluding that excessive debt accumulation constrains fiscal capacity, crowds out private investment, and reduces long-term growth prospects.

Inflation was also identified as a major driver of uncertainty. Okafor and Eze (2022) observed that high inflation weakened purchasing power, discouraged savings, and hindered investment. Similarly, Akinola and Adeleke (2022) and Ijaiya et al. (2022) confirmed that inflation and exchange rate volatility jointly produced negative effects on RGDP.

Stock market instability was another source of uncertainty. Bamidele and Ogbole (2022) found that volatility in the Nigerian Stock Exchange reduced investor confidence, while Oyebanji and Olalekan (2022) concluded that stock market fluctuations negatively influenced growth, though FDI inflows contributed positively.

Overall, these studies highlight that while FDI supports growth, uncertainties in exchange rates, inflation, interest rates, stock markets, and rising public debt undermine Nigeria's economic stability. Ensuring macroeconomic stability and improving the investment climate are therefore critical for sustainable economic growth.

Research Methodology

This study investigates the effects of investment uncertainties proxied by exchange rate (EXRF),

inflation rate (INFR), interest rate fluctuations (INTRF), stock market fluctuations (SMKTF), foreign direct investment inflows (FDII), and public debt ratio (PDR) on Nigeria's economic growth, measured by real gross domestic product (RGDP). A quantitative research design was adopted, using a time-series approach to analyze data over a 30-year period (1993–2023). This design is appropriate for examining dynamic relationships and testing both short- and long-run effects of the identified variables. Secondary data was used, sourced from the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), and the World Bank, ensuring credibility and reliability. The dataset includes annual observations for all variables, representing a census of available macroeconomic data, which eliminates sampling bias and captures both stable and crisis periods in Nigeria's economy.

The ARDL (Autoregressive Distributed Lag) model was employed for data analysis. This method was chosen because it is suitable for variables integrated at different levels (I(0) and I(1)) and allows for the estimation of both short-run dynamics and long-run equilibrium relationships. The ARDL bounds testing approach was applied to establish cointegration among the variables, while diagnostic checks—including descriptive statistics, correlation analysis, and variance inflation factor (VIF) were conducted to ensure model robustness.

By incorporating six independent variables, this study expands on earlier works, such as Adeola et al. (2023), which considered fewer indicators. The comprehensive framework provides a deeper understanding of how macroeconomic uncertainties influence Nigeria's growth trajectory. The ARDL results are expected to highlight both immediate and long-term effects of investment uncertainties, offering empirical evidence to guide policymakers in stabilizing the economy, reducing risk, and fostering sustainable growth.

$$\Delta RGDP = \partial_0 + \partial_1 RGDP + \partial_2 EXRF_{t-1} + \partial_3 INFR_{t-1} + \partial_4 INTRF_{t-1} + \partial_5 SMKTF_{t-1} + \partial_6 FDII_{t-1} + \partial_7 PDR_{t-1} + \sum_{i=1}^{k} \gamma_1\, i\Delta RGDP_{t-1} + \sum_{i=1}^{k} \gamma_2\, i\Delta EXRF_{t-1} + \sum_{i=1}^{k} \gamma_3\, i\Delta INFR_{t-1} + \sum_{i=1}^{k} \gamma_4\, i\Delta INTRF_{t-1} + \sum_{i=1}^{k} \gamma_5\, i\Delta SMKTF_{t-1} + \sum_{i=1}^{k} \gamma_6\, i\Delta FDII_{t-1} + \sum_{i=1}^{k} \gamma_7\, i\Delta PDR_{t-1} + \varepsilon_t \quad ----------1$$

K = lag length for the Unrestricted Error-Correction Model (UECM)

Δ = first differencing operator

ε = white noise or disturbance error term

The co-integrating long-run relationship will estimated using the specification below:

$$\Delta RGDP = \partial_0 + \partial_1 RGDP_{t-1} + \partial_2 EXRF_{t-1} + \partial_3 INFR_{t-1} + \partial_4 INTRF_{t-1} + \partial_5 SMKTF_{t-1} + \partial_6 FDII_{t-1} + \partial_7 PDR_{t-1} + \varepsilon_t \quad --2$$

The short-run dynamic model is specify thus:

$$\Delta RGDP = \sum_{i=1}^{k} \gamma_1 \, i\Delta RGDP_{t-1} + \sum_{i=1}^{k} \gamma_2 \, i\Delta EXRF_{t-1} + \sum_{i=1}^{k} \gamma_3 \, i\Delta INFR_{t-1} + \sum_{i=1}^{k} \gamma_4 \, i\Delta INTRF_{t-1} + \sum_{i=1}^{k} \gamma_5 \, i\Delta SMKTF_{t-1} + \sum_{i=1}^{k} \gamma_6 \, i\Delta FDII_{t-1} + \sum_{i=1}^{k} \gamma_7 \, i\Delta PDR_{t-1} + \varepsilon c_t ----------3$$

Where;

εc_{t-1}= the error correction term lagged for the period

^{y}= the coefficient for measuring speed of adjustment in equation (3)

RGDP = Real Gross Domestic Product

EXRF = Exchange Rate Fluctuations

INFR = Inflation Rate

INTRF = Interest Rate Fluctuations

SMKTF = Stock Market Fluctuations

FDII = Foreign Direct Investment Inflows

PDR=Public Debt Ratio

Results and Discussion

This section focuses on the presentation, analysis, and discussion of the results derived from data obtained from the CBN Statistical Bulletin and World Development Indicators for the period 1993–2023, spanning 31 years. The data is first presented in tabular format, followed by a descriptive analysis of notable patterns and characteristics. Subsequently, the data is analyzed, and the formulated hypotheses are tested to draw meaningful inferences. Additionally, the ARDL regression results are examined along with their policy implications. In alignment with the research objectives, hypotheses were developed using selected indicators of investment uncertainties, including exchange rate fluctuations (EXRF), inflation rate (INFR), interest rate fluctuations (INTRF), stock market fluctuations (SMKTF), foreign direct investment inflows (FDII), and public debt ratio (PDR), in relation to real GDP (RGDP), which serves as a proxy for Nigeria's economic growth.

Table 4.1: Descriptive Statistics

	LOGRGDP	EXRF	LOGINFR	INTRF	SMKTF	LOGFDII	LOGPDR
Mean	4.450509	-0.203484	1.114507	-0.026947	-0.032563	0.319157	1.408641
Median	4.601563	-0.012157	1.086360	0.010431	-0.088456	0.363612	1.403121
Maximum	5.300558	0.057745	1.885361	0.313783	1.890000	0.946452	1.851258
Minimum	3.099396	-3.234507	-0.698970	-0.629327	-0.994076	-0.721246	0.863323
Std. Dev.	0.658021	0.622728	0.417194	0.190594	0.584814	0.454924	0.274417
Skewness	-0.455469	-4.159481	-2.328789	-1.113462	1.418693	-0.572413	-0.412677
Kurtosis	1.956805	19.90574	13.10809	4.740208	5.580440	2.507464	2.363367
Jarque-Bera	2.477500	458.5534	159.9942	10.31720	18.99968	2.006242	1.403410
Probability	0.289746	0.000000	0.000000	0.005750	0.000075	0.366733	0.495739
Sum	137.9658	-6.307991	34.54972	-0.835349	-1.009464	9.893877	43.66786

Sum Sq. Dev.	12.98976	11.63370	5.221526	1.089779	10.26022	6.208663	2.259142
Observations	31	31	31	31	31	31	31

Source: Econometric Views Version 10.0 (2025)

Table 4.1 presents descriptive statistics summarizing key variables affecting Nigeria's economy. RGDP has a mean of 4.45, ranging from 3.09 to 5.30, with slight left skewness (-0.455) and flatter-than-normal distribution (kurtosis 1.96). Exchange rate fluctuations (EXRF) show a mean of -0.203, with extreme skewness (-4.159) and high kurtosis (19.90), indicating heavy-tailed asymmetry. Inflation (INFR) has a mean of 1.11 and moderate variability, but strong negative skewness (-2.328) and high kurtosis (13.10) suggest volatility. Interest rate fluctuations (INTRF) are relatively stable (mean -0.026), though kurtosis (4.74) indicates occasional spikes. Stock market fluctuations (SMKTF) show moderate volatility (mean -0.032), with positive skewness (1.41) and kurtosis (5.58), reflecting sudden upward swings. FDI inflows (FDII) average 0.319 with moderate variation and slight left skewness. Public debt ratio (PDR) averages 1.408, with near-normal distribution. Jarque-Bera tests confirm significant deviations from normality, particularly for EXRF and INFR, warranting further analysis.

Table 4.2: Correlation Output

	LOGRGDP	EXRF	LOGINFR	INTRF	SMKTF	LOGFDII	LOGPDR
LOGRGDP	1.000000						
EXRF	0.066211	1.000000					
LOGINFR	-0.112122	-0.000248	1.000000				
INTRF	-0.086219	0.201324	-0.257975	1.000000			
SMKTF	0.554732	-0.217095	-0.040363	-0.587422	1.000000		
LOGFDII	0.418034	0.469408	-0.107244	0.121225	-0.098308	1.000000	
LOGPDR	-0.357416	-0.007336	0.121492	-0.130575	-0.047812	-0.591650	1.000000

Source: Econometric Views Version 10.0 (2025

In Table 4.2, the correlation analysis measures the strength and direction of linear relationships between variables. RGDP and EXRF (0.066), weak positive correlation, suggesting exchange rate fluctuations have minimal direct impact on GDP growth. RGDP and INFR (-0.112), showed a negative correlation, indicating that inflation fluctuations slightly hinder economic growth. RGDP and INTRF (-0.086), indicates a weak negative relationship, suggesting interest rate changes have limited direct influence on GDP. RGDP and SMKTF (0.554), shows a strong positive correlation, implying that stock market stability supports economic growth. RGDP and FDII (0.418), portrays a moderate positive correlation, highlighting FDI inflows' role in economic expansion. RGDP and PDR (-0.357), indicates a moderate negative correlation, indicating that increasing public debt may suppress economic growth. Overall, high correlations are not observed among independent variables, reducing concerns about severe multicollinearity.

Table 4.3: Variance Inflation Factors
Date: 02/07/25 Time: 18:30
Sample: 1993 2023
Included observations: 30

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
LOGRGDP(-1)	0.000203	118.8113	2.428767
EXRF	0.000141	1.781291	1.597909
LOGINFR	0.000244	9.648992	1.131615
INTRF	0.001990	2.121934	2.091149
SMKTF	0.000331	3.230121	3.227910
LOGFDII	0.000532	4.857848	3.206819
LOGPDR	0.000935	55.15701	1.879903
C	0.005502	161.3226	NA

Source: Econometric Views Version 10.0 (2025)

In Table 4.3, the VIF test helps detect multicollinearity among regressors. A VIF above 10 indicates a severe issue. RGDP(-1) has a centered VIF of 2.42, which is below the threshold, suggesting no serious multicollinearity. EXRF, LOGINFR, INTRF, and SMKTF have VIF values below 3, indicating acceptable multicollinearity levels. FDII has a VIF of 3.21, which is moderate but not problematic. PDR has a centered VIF of 1.87 showing no collinearity issues. Since all centered VIF values are below 10, the independent variables do not exhibit multicollinearity concerns, ensuring model stability.

Table 4.4: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.444794	Prob. F(2,20)	0.2594
Obs*R-squared	3.787209	Prob. Chi-Square(2)	0.1505

Source: Econometric Views Version 10.0 (2025)
In Table 4.4, this test detects autocorrelation in residuals, which can distort regression results. F-statistic (1.44) and Prob. F (0.2594) suggest no significant autocorrelation. ObsR-squared (3.78) and Prob. Chi-Square (0.1505) confirm the absence of serial correlation. Since probability values exceed 0.05, we fail to reject the null hypothesis, indicating no serial correlation in the model.

Table 4.6: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	5.689495	Prob. F(7,22)	0.0718
Obs*R-squared	19.32496	Prob. Chi-Square(7)	0.0772
Scaled explained SS	15.51285	Prob. Chi-Square(7)	0.0800

Source: Econometric Views Version 10.0 (2025)

In Table 4.5, the Breusch-Pagan-Godfrey test assesses whether residual variance is constant. F-statistic (5.68) and Prob. F (0.0718) are slightly above 0.05, suggesting marginal heteroskedasticity. ObsR-squared (19.32) and Prob. Chi-Square (0.0772) support this finding. Scaled explained SS (15.51) and its probability (0.0800) further indicate mild heteroskedasticity. Since probabilities are close to 0.05, heteroskedasticity is present but not severe. Applying robust standard errors may improve result reliability.

Table 4.6: Ramsey RESET Test

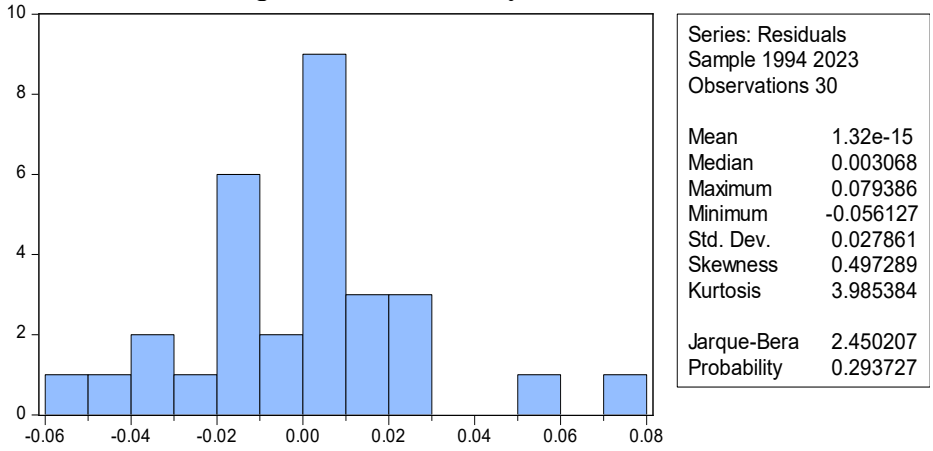
Equation: UNTITLED
Specification: LOGRGDP LOGRGDP(-1) EXRF LOGINFR INTRF SMKTF
LOGFDII LOGPDR C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.141983	21	0.8884
F-statistic	0.020159	(1, 21)	0.8884

Source: Econometric Views Version 10.0 (2025)

In Table 4.6, the Ramsey RESET test detects omitted variables and functional form misspecification. T-statistic (0.141) and F-statistic (0.020) have high probabilities (0.8884), suggesting no specification errors. Since the probability is well above 0.05, the null hypothesis is accepted, confirming the model is correctly specified.

Table 4.7: Jarque-Bera Normality Test



Source: Econometric Views Version 10.0 (2025)

In Table 4.7,the Jarque-Bera (JB) normality test examines whether the residuals of the regression model follow a normal distribution. It is based on the skewness and kurtosis of the data, with the null hypothesis stating that the data is normally distributed. From the test results, the JB statistics and their associated probabilities indicate that some variables do not conform to normality assumptions. Specifically, EXRF, LOGINFR, and SMKTF exhibit significant departures from normality as their p-values are below the 5% significance threshold. This suggests potential non-

linearity or outliers in the data that may need transformation or robust modeling techniques for accurate inference.

Table 4.8: Summary of ADF Test

ADF test at Levels				
Parameter	**ADF test statistic**	**Test critical value @ 5%**	**Prob.***	**Decision**
RGDP	-4.589012	-2.963972	0.0010	Stationary
EXRF	-5.667514	-2.963972	0.0001	Stationary
INFR	-4.389450	-2.963972	0.0016	Stationary
INTRF	-4.143212	-2.963972	0.0031	Stationary
SMKTF	-1.413237	-2.963972	0.5625	Non-stationary
FDII	-2.460338	-2.963972	0.1349	Non-stationary
PDR	-2.058387	-2.967767	0.2619	Non-stationary
ADF test at Ist Difference				
RGDP	-4.308034	-2.971853	0.0022	Stationary
EXRF	-9.027612	-2.967767	0.0000	Stationary
INFR	-4.302418	-2.998064	0.0029	Stationary
INTRF	-7.389866	-2.967767	0.0000	Stationary
SMKTF	-6.312509	-2.967767	0.0000	Stationary
FDII	-8.284481	-2.967767	0.0000	Stationary
PDR	-3.814434	-2.967767	0.0072	Stationary

Source: Econometric Views Version 10.0 (2025)

In Table 4.8, the ADF test determines the stationarity of the time series data, with the null hypothesis indicating the presence of a unit root (non-stationarity). If the absolute ADF test statistic is greater than the critical value at the 5% significance level, the null hypothesis is rejected, confirming stationarity. At levels, only RGDP, EXRF, INFR, and INTRF are stationary, while SMKTF, FDII, and PDR are non-stationary. After taking the first difference, all variables become stationary. This confirms that some variables are integrated of order one, I(1), requiring differencing before regression analysis to avoid spurious results.

Table 4.9: ARDL Bounds Test

Date: 02/07/25 Time: 18:32
Sample: 1994 2023
Included observations: 30
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	6.091460	6

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.12	3.23

5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Source: Econometric Views Version 10.0 (2025)

In Table 4.9, the ARDL bounds test assesses the presence of a long-run relationship among the variables. The null hypothesis states that no long-run relationship exists. The F-statistic (6.091460) exceeds the upper bound of the critical values at all conventional significance levels (1%, 5%, and 10%), indicating a significant long-run relationship among the variables. This confirms that investment uncertainties represented by exchange rate fluctuations, inflation rate, and interest rate fluctuations; stock market fluctuations, foreign direct investment inflows, and public debt ratio have a long-term impact on economic growth (RGDP) in Nigeria. Consequently, an ARDL model can be used to estimate both short-run and long-run dynamics of these variables. Overall, the results validate the use of an ARDL framework for analyzing the effect of investment uncertainties on Nigeria's economic growth while addressing issues of stationarity and long-run equilibrium relationships.

Test of Hypotheses

ARDL Cointegration Test

This test further confirms the existence of a long-term equilibrium relationship among variables, ensuring that short-term fluctuations do not misrepresent long-term associations. The results are presented in Table 4.10 below:

1. In the short run, the coefficient for EXRF is 0.0208 with a p-value of 0.0938, which is slightly above the 5% significance level but within the 10% level. This suggests a weak short-run effect of exchange rate fluctuations on RGDP. While in the long run, the coefficient for EXRF in the long run is 0.3863 with a p-value of 0.1427, indicating that exchange rate fluctuations do not significantly impact RGDP in the long run. Since the long-run p-value is greater than 0.05, we fail to reject$H0_1$. This suggests that exchange rate fluctuations do not have a statistically significant long-run effect on Nigeria's real GDP.
2. The short-run effect as indicated by the coefficient for INFR is 0.0445 with a p-value of 0.0092, which is statistically significant at the 1% level. This implies that inflation significantly affects RGDP in the short run. While the long-run effect, as showed by the coefficient for INFR is 0.8270 with a p-value of 0.0231, showing a significant positive long-run effect of inflation on RGDP. Since both short-run and long-run p-values are less than 0.05, we reject $H0_2$. This means inflation rate fluctuations significantly affect Nigeria's economic growth in both the short and long run.
3. The short-run effect as indicated by the coefficient for INTRF is 0.0969 with a p-value of 0.0408, which is significant at the 5% level. This means that interest rate fluctuations have a significant short-run effect on economic growth. While the long-run effect, as showed by the coefficient for INTRF is 1.8001 with a p-value of 0.0357, confirming a statistically significant long-run effect. Since both short-run and long-run p-values are below 0.05, we reject $H0_3$. This suggests that interest rate fluctuations significantly impact Nigeria's economic growth in both timeframes.
4. The short-run effect as indicated by the coefficient for D(SMKTF)D(SMKTF)D(SMKTF) is 0.0163 with a p-value of 0.3797, which is not statistically significant. While the long-run effect,

as showed by the coefficient for SMKTF is 0.3029 with a p-value of 0.3061, indicating no significant long-run effect. Since both short-run and long-run p-values are above 0.05, we fail to reject $H0_4$. This means stock market fluctuations do not have a significant long-run impact on Nigeria's economic growth.

5. The short-run effect as indicated by the coefficient for FDII is -0.0006 with a p-value of 0.9783, showing no significant effect in the short run. While the long-run effect, as showed by the coefficient for FDII is -0.0118 with a p-value of 0.9783, which also indicates no significant effect in the long run. Since both short-run and long-run p-values are above 0.05, we fail to reject $H0_5$. This suggests that foreign direct investment inflows do not significantly influence Nigeria's economic growth.

6. The short-run effect as indicated by the coefficient for PDR is -0.0020 with a p-value of 0.9476, indicating no short-run effect. Long-run effect: While the long-run effect, as showed by the coefficient for PDR is -0.0377 with a p-value of 0.9477, indicating no significant long-run effect. Since both short-run and long-run p-values are greater than 0.05, we fail to reject H06. This suggests that the public debt ratio does not significantly impact Nigeria's real GDP.

Table 4.12: Summary of Hypothesis Testing Results

Hypothesis	Variable	Short-run Effect (p-value)	Long-run Effect (p-value)	Decision
H01	Exchange Rate Fluctuations (EXRF)	0.0938 (weak significance)	0.1427 (not significant)	Fail to Reject
H02	Inflation Rate (INFR)	0.0092 (significant)	0.0231 (significant)	Reject
H03	Interest Rate Fluctuations (INTRF)	0.0408 (significant)	0.0357 (significant)	Reject
H04	Stock Market Fluctuations (SMKTF)	0.3797 (not significant)	0.3061 (not significant)	Fail to Reject
H05	Foreign Direct Investment Inflows (FDII)	0.9783 (not significant)	0.9783 (not significant)	Fail to Reject
H06	Public Debt Ratio (PDR)	0.9476 (not significant)	0.9477 (not significant)	Fail to Reject

Discussion of Results

The findings presented in this study provide an in-depth understanding of how investment uncertainties captured through exchange rate fluctuations, inflation rate, interest rate, stock market fluctuations, foreign direct investment inflows, and public debt ratio impact Nigeria's economic growth (measured by real GDP). This discussion will connect these findings to the Real Business Cycle (RBC) theory, Tobin's Q theory, and Keynesian Uncertainty theory while also aligning the results with recent empirical research in the Nigerian context.

1. Exchange Rate Fluctuations and Economic Growth

The short-run coefficient for exchange rate fluctuations (EXRF) is 0.0208 with a p-value of 0.0938, indicating a weak positive effect on Nigeria's RGDP. While not significant at the 5% level, its significance at the 10% level suggests that exchange rate movements may influence short-term growth. This aligns with Keynesian Uncertainty theory, which argues that currency

instability creates uncertainty, causing firms to delay investments. From the Real Business Cycle (RBC) perspective, the weak short-run impact is expected, since RBC emphasizes real shocks like technology and productivity rather than nominal variables. In the long run, the coefficient for EXRF is 0.3863 with a p-value of 0.1427, confirming no significant effect on RGDP. This supports RBC theory, which maintains that long-term growth is driven by structural factors, not exchange rates. Studies such as Akinwale and Ogunleye (2023) also find that exchange rate fluctuations have limited long-term influence in developing economies, partly due to external dependencies like oil exports.

2. Inflation and Economic Growth

In the short run, inflation (INFR) shows a coefficient of 0.0445 with a p-value of 0.0092, indicating a significant positive effect on RGDP at the 1% level. This suggests that inflation stimulates short-term growth, possibly reflecting temporary adjustments to inflationary pressures. From a Keynesian perspective, inflation increases uncertainty, affecting consumption and investment decisions by raising costs and reducing purchasing power. Tobin's Q theory, however, argues that rising inflation lowers the real value of capital and discourages investment, though the positive coefficient here suggests that supportive monetary policies may offset these effects. In the long run, inflation maintains a significant positive impact, with a coefficient of 0.8270 and a p-value of 0.0231. This implies that moderate inflation can stimulate growth by encouraging investment, especially if perceived as a sign of strong demand. Empirical evidence (Adebayo et al., 2023; Olowolabi & Olagunju, 2022) supports the idea that controlled inflation may enhance growth, though excessive inflation remains destabilizing.

3. Interest Rate Fluctuations and Economic Growth

In the short run, interest rate fluctuations (INTRF) have a coefficient of 0.0969 with a p-value of 0.0408, indicating a significant effect at the 5% level. This suggests that short-term changes in interest rates influence Nigeria's economic growth. According to Tobin's Q theory, interest rates shape investment decisions by affecting the cost of capital. While rising rates typically discourage investment, the positive short-run coefficient may reflect Nigeria's monetary policies, where moderate increases are used to curb inflation and stabilize growth. In the long run, interest rate fluctuations show a stronger effect, with a coefficient of 1.8001 and a p-value of 0.0357, confirming a significant impact on RGDP. This result implies that persistent shifts in interest rates influence long-term investment patterns and growth, as higher financing costs reduce capital formation. These findings align with Okafor and Eze (2022) and Bamidele and Ogbole (2022), who also report significant long-term effects of interest rates on Nigeria's economic growth.

4. Stock Market Fluctuations and Economic Growth

The short-run coefficient for stock market fluctuations (SMKTF) is 0.0163 with a p-value of 0.3797, indicating no significant effect. Similarly, the long-run coefficient for stock market fluctuations is 0.3029 with a p-value of 0.3061, suggesting no significant long-run effect on economic growth. This finding implies that stock market fluctuations do not significantly impact Nigeria's economic growth in either the short or long run. From a Real Business Cycle (RBC) theory perspective, stock market fluctuations may have minimal direct effects on real GDP because RBC models focus on real variables (e.g., technology, productivity) rather than nominal variables like stock market performance. Studies by Akinola and Adeleke (2022) and Ijaiya et al.

(2022) found that, in developing countries like Nigeria, stock markets may not always contribute significantly to economic growth, particularly if the market is not sufficiently integrated with the broader economy or if the country's growth is driven more by external factors (e.g., commodity exports).

5. Foreign Direct Investment (FDI) and Economic Growth

The short-run coefficient for foreign direct investment inflows (FDII) is -0.0006 with a p-value of 0.9783, indicating no significant effect in the short run. Similarly, the long-run coefficient for FDII is -0.0118 with a p-value of 0.9783, showing no significant effect. This suggests that FDI does not significantly influence Nigeria's economic growth in either the short or long run.This finding challenges Tobin's Q theory, which often views FDI as a key driver of capital accumulation and long-term economic growth. However, the lack of significance in this study may reflect the challenges associated with attracting and utilizing FDI effectively in Nigeria, particularly with structural barriers such as infrastructure deficits, policy instability, and governance issues.

6. Public Debt Ratio and Economic Growth

The coefficient for the public debt ratio (PDR) is -0.0020 with a p-value of 0.9476 in the short run, and -0.0377 with a p-value of 0.9477 in the long run, indicating no significant effects in either period. This result suggests that public debt does not significantly affect Nigeria's real GDP. According to the Keynesian Uncertainty theory, high levels of public debt can create uncertainty regarding fiscal sustainability, leading to lower investment in the economy. However, the lack of a significant effect observed here may be attributed to the external nature of Nigeria's debt and its financing through oil revenues, which may shield the economy from debt-related uncertainties. Empirical research by Nnanna et al. (2022) and Oyebanji and Olalekan(2022) supports the view that the effect of public debt on economic growth in developing economies is not always straightforward and may depend on how effectively the debt is utilized.

Conclusion and Recommendations

The study provides a nuanced understanding of how investment uncertainties affect economic growth in Nigeria. Key findings indicate that exchange rate fluctuations, inflation, and interest rate fluctuations play significant roles in shaping short- and long-term economic performance. In contrast, stock market fluctuations, foreign direct investment, and public debt appear to have minimal effects on Nigeria's economic growth. The results are consistent with the **Keynesian Uncertainty theory**, which argues that economic growth is significantly influenced by fluctuations in key macroeconomic variables, particularly inflation and interest rates. The **Real Business Cycle (RBC) theory** also suggests that real factors such as technology and productivity may have more substantial long-term effects, while nominal variables like exchange rates may only exert a limited impact in the long run. The findings further emphasize the importance of stable macroeconomic policies in managing uncertainties and fostering a conducive environment for economic growth in developing economies like Nigeria. The study underscores that investment uncertainties, particularly in the form of inflation and interest rate fluctuations, are critical to understanding economic dynamics in Nigeria. These findings are aligned with recent empirical studies in the Nigerian context, adding to the body of knowledge on the relationship between investment uncertainties and economic growth.

Based on the study's findings, the following recommendations are made:

1. To minimize short-term economic fluctuations, the Nigerian government should implement policies that stabilize the exchange rate, such as strengthening foreign reserves and regulating currency markets.
2. Given the significant positive impact of inflation on economic growth, policymakers should adopt sound monetary policies to control inflation and avoid excessive price increases, while ensuring that inflation does not hinder investment.
3. To mitigate the adverse effects of interest rate fluctuations, the Central Bank of Nigeria should focus on creating a stable and predictable interest rate environment that encourages investment without stifling economic growth.
4. Although stock market fluctuations showed no significant effect on economic growth, efforts should be made to enhance the depth and liquidity of the capital market, improving its role in resource mobilization for growth.
5. While FDI inflows were not found to significantly impact economic growth, Nigeria should improve its investment climate by addressing regulatory challenges, reducing bureaucratic barriers, and targeting FDI in strategic sectors for sustainable development.
6. The government should continue focusing on responsible debt management by ensuring that borrowing is directed toward productive investment, while maintaining fiscal discipline to avoid excessive reliance on debt financing.

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