

Oil Price Shocks and Macroeconomic Adjustment: Evidence on Exchange Rate, Inflation, and Interest Rate Dynamics in Nigeria

F. A. Adebimpe^{1,3}, A. A. Onabote²

¹ Directorate of Physical Planning and Development,
Landmark University, Omu-aran, Kwara State, Nigeria

² Department of Economics, Landmark University,
Omu-aran, Kwara State, Nigeria

³ Department of Finance, Federal University Oye-Ekiti,
Ekiti State, Nigeria

Corresponding Author: F. A. Adebimpe

Email: adebimpe.faith@lmu.edu.ng

<https://doi.org/10.56201/ijefm.v11.no8.2026.pg198.219>

Abstract

This study examines the short-run and long-run impact of oil price shocks on three major macroeconomic variables of Nigeria, which are the exchange rate, the inflation rate, and the interest rate for the period of 1974 to 2022. Nigeria is an interesting case study because it is a large crude oil exporter and a net importer of refined petroleum products, resulting in complex and asymmetric macroeconomic responses to global oil price fluctuations. This study adopts the Autoregressive Distributed Lag (ARDL) bounds approach and the Error Correction Mechanism (ECM) after applying the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests. The ARDL bounds test results indicate that the oil price fluctuations are long run cointegrated with all three dependent variables in all three models. The long-run estimates show that oil price change has a statistically significant and negative impact on exchange rate ($\beta = -0.4455$, $p < 0.01$), which suggests that oil price increase is correlated with naira appreciation in line with the Dutch Disease mechanism. Oil price shocks, on the other hand, have statistically insignificant long run effects on inflation ($\beta = 2.4298$, $p = 0.249$) and the interest rate ($\beta = 0.1063$, $p = 0.519$). The ECM coefficients are negative and statistically significant in all three models, which indicates that the adjustment process toward the stable LR equilibrium is taking place at a rate of 47%, 76% and 56% per year for the exchange rate, inflation, and interest rate models, respectively. The results of the CUSUM and CUSUM-of-squares stability tests indicate that the parameters are constant in Models 1 and 2 but that some parameters are not constant in Model 3. The results indicate that Nigeria's monetary and fiscal policy should consider tackling the structural oil reliance, which makes the exchange rate highly vulnerable to oil market shocks, but also that the non-oil domestic factors are the main drivers of inflation and interest rate movements. The policy recommendations are focused on economic diversification, a rules-based exchange rate management framework and coordination between the monetary and fiscal authorities.

Keywords: Oil Price Shocks; Exchange Rate; Inflation; Interest Rate; ARDL; Error Correction; Nigeria; Dutch Disease; Macroeconomic Policy

JEL Classification: Q43; F31; E31; E43; C22

1. Introduction

1.1 Background

The oil prices and macroeconomic link is one of the most studied subjects in international economics literature and has been driven by the importance of crude oil as a globally traded commodity which affects the cost of production, trade balance, fiscal revenues and monetary conditions (Hamilton, 2009; Kilian, 2014). Oil revenues support fiscal sustainability, limit foreign exchange earnings in oil exporting economies, and create inflationary pressures, current account pressures and monetary tightening in oil importing economies. Nigeria's exposure to oil price shocks is embedded in the structure of its economy. Nigeria is one of the largest exporter of crude oil in Africa, it earns over 95% of its foreign exchange from crude oil prices and about 83% of its revenues for the federal government comes from crude oil prices, while it imports almost all its refined petroleum products, which makes the country a structural duality with multiple and sometimes contradictory transmission channels to oil price shocks (National Bureau of Statistics, 2024; Musa et al., 2024). Since the early 1970s, oil prices have exhibited significant and frequent price volatility at the global level. The prices of crude oil rose fourfold from about \$3 per barrel to \$12 per barrel as a consequence of the OPEC oil embargo of 1973–1974; the Iranian revolution of 1979 drove prices above \$30 per barrel; OPEC's production surge in 1986 brought prices back down to \$12 per barrel; the commodity supercycle that occurred in 2007–2008 pushed prices up to an all-time high of \$145 per barrel; and the supply glut that followed in 2014–2016 brought prices down under \$45 per barrel, creating a serious fiscal and foreign exchange challenge for Nigeria (Kilian, 2014; Fadare et al., 2025). Oil prices have experienced the most dramatic and recent downturns in recorded history, sparked by the COVID-19 pandemic of 2020 and the Russia-Ukraine conflict more recently. All these episodes have led to observable macroeconomic dislocations in Nigeria, such as exchange rate depreciation, sharp inflationary episodes, and monetary policy measures, which illustrate the continued structural fragility of the Nigerian economy to oil price shocks. In the context of these developments, Nigeria's macroeconomic history shows that she has experienced a pattern of macroeconomic instability which has been linked to the fluctuations in oil prices. The naira traded at N1.75 to the US dollar in 1986 on the launch of the Structural Adjustment Programme (SAP), but in the space of three decades, the naira has depreciated to N92.34 in 1999, N425.98 in 2022, and over N1,500 in 2024 due to decades of volatile oil prices, structural fiscal rigidity, and the failure of several exchange rate management frameworks (Ayinde & Adeyemi, 2020; Nwikina & Ekere, 2024). At the same time, inflation rose from low single digits in the pre-oil years to 33.96% in 1975, reaching its peak in 1995 during the post-SAP adjustment period, and remained as high as 24.66% in 2023, which is one of the highest in Africa. Interest rate policy has also vacillated, sometimes because of the need to stabilize the exchange rate, sometimes because of the need to control inflation, and sometimes because of the need to support growth to meet the twin goals of growth and development. The unstable monetary policy environment produced by the oscillating interest rate policy has also constrained private investment and financial development. The empirical evidence on the sensitivity of Nigeria's macroeconomic indicators to oil prices is littered with inconsistencies, gaps, and methodological flaws in three key respects, though the sensitivity of such variables is well-known in public discourse and the academic literature. Second, most of the extant studies focus on bivariate oil price relationships, that is, oil price against exchange rate or oil price against inflation, without

accounting for the joint and concurrent adjustment process by which the exchange rate, inflation and interest rate co-evolve to adjust to oil price shocks within an integrated macroeconomic system (Okeke et al., 2024). Second, most studies concentrate on short-run dynamics and do not distinguish between short-run effects and long-run equilibrium relationships, but this distinction is important for the policy implications of transitory and permanent oil price effects for exchange rate management and monetary policy design. Third, despite the theory that exchange rate regime choice is key to the oil-macroeconomy nexus, there has been little systematic research on the way in which the different exchange rate regimes that Nigeria has implemented, from fixed par value to managed floating to multiple quasi-flexible exchange rate systems, transmit shocks from oil prices to domestic variables. The study aims to fill these gaps by offering an integrated empirical analysis of the dynamic effect of oil price shocks on Nigeria's exchange rate, inflation rate and interest rate within the period of 1974–2022. The study aims at the following: (i) to describe the historical evolution of the Nigeria's oil price volatility, exchange rate fluctuation, inflation and interest rates in the country; (ii) to estimate the long run equilibrium relationship among the Nigeria's oil price volatility, exchange rate fluctuation, Nigeria's inflation and Nigeria's interest rates using the ARDL bounds testing framework; (iii) to evaluate the short run dynamics and speed of adjustment to the long run equilibrium using the Error Correction Mechanism; and (iv) to draw policy-relevant conclusions from the study of the management of Nigeria's oil price vulnerability. The following research hypotheses are tested: (H₁) oil price shocks do not significantly affect the Nigerian exchange rate in the long run; (H₂) oil price shocks do not significantly affect inflation in the long run; (H₃) oil price shocks do not significantly affect the interest rate in the long run.

The study has three contributions. First, it provides a simultaneous, integrated analysis of the impact of oil prices on three macroeconomic indicators in a consistent ARDL framework, giving a more comprehensive macroeconomic adjustment picture than bivariate analysis can offer. Second, it covers Nigeria's entire oil era macroeconomic history over 49 years (from 1974 to 2022) which contain all the major oil price cycles and exchange rate regime transitions. Thirdly, it provides policy recommendations that are targeted and based on evidence and therefore addressing the unique structural features of Nigeria's oil-based economy. The conceptual, theoretical and empirical literature is reviewed in Introduction, while Section 2 outlines the data and methodology. Section 3 presents the results while Section 4 then presents and discusses the empirical findings and Section 5 provides policy recommendations.

1.2 Conceptual Review

Oil price is the price of the oil benchmark that is used as a reference to measure the spot price of a barrel (159 litres) of oil in international transactions, and not the price of the oil that is produced in any country. The global benchmarks are Brent Crude from the North Sea, which is used to price about two-thirds of all traded crude oil in the world; West Texas Intermediate (WTI), which is the major North American benchmark crude oil, traded on the New York Mercantile Exchange (NYMEX); Dubai/Oman Crude, which is the primary pricing benchmark for crude oil from the Middle East and Asia; and Bonny Light, which is the main crude oil benchmark for Nigeria. The difference between benchmarks is important for macroeconomic analysis in Nigeria: Nigeria's export revenues are pegged to Bonny Light oil, which broadly follows the price of Brent but swings in periods of regional supply disruption or demand change for different qualities of oil.

Since the early 1970s, oil prices have been volatile, characterised by sudden and significant shifts in crude oil prices, caused by supply and demand shocks, geopolitical events, speculations, and

OPEC production decisions (Hamilton, 2009; Kilian, 2014). There have been significant periods of time in the history of the oil price, including the OPEC embargo of 1973-1974 (prices ranging from \$3/barrel to \$12/barrel), the Iranian Revolution of 1979-1980 (prices exceeding \$30/barrel), the OPEC supply surge of 1986 (prices dropping below \$12/barrel for WTI futures), the commodity supercycle peak of 2007-2008 (prices reaching over \$145/barrel), the supply glut of 2014-2016 (prices falling below \$45/barrel), and the collapse in 2020 when oil prices briefly went negative for the futures of West Texas Intermediate. Every one of these has had its own unique macroeconomic adjustment pressures on oil-dependent economies like Nigeria (Fadare et al., 2025; Ding et al., 2023). In Nigeria, the exchange rate, inflation rate and interest rate are closely related. The exchange rate (which is the rate at which one unit of domestic currency can be exchanged against a foreign currency) can be used as a price signal, as an indicator of competitiveness and as a monetary policy instrument (Jhingan, 2004). The naira's exchange rate movement has been influenced by two decades of oil revenue accumulation (1970s), a series of structural adjustment devaluations (1986 onwards) and the gradual introduction and implementation of flexible exchange rate mechanisms such as the Second-Tier Foreign Exchange Market (SFEM), Interbank Foreign Exchange Market (IFEM), Dutch Auction System (DAS) and variants of the same (Obadan, 2007; Nwinkina & Ekere, 2024). Nigeria's de facto exchange rate regime (the actual management of the currency) has been either a managed float regime or occasional hard pegs, making the empirical analysis of the oil price transmission to the exchange rate difficult (Couharde & Grekou, 2024). The Consumer Price Index (CPI) is a measure of the overall price level, which indicates the rate of inflation in Nigeria. The country's inflation history shows clearly that there have been distinct phases: low and controlled inflation before the oil era, such as deflation in 1963, 1967 and 1968, the strong inflation in 1975, driven by the oil revenues, the hyperinflationary period in the SAP era, peaking at 72.84% in 1995, and the more moderate but still high inflationary rates in recent decades, with 24.66% recorded in 2023 (IMF, 2024; Moser, 1994). The interest rate is represented in this study by the monetary policy rate and the environment of lending rates of the Central Bank of Nigeria (CBN) as a proxy for the monetary stance of the CBN and the cost of credit in the domestic financial system. The Nigerian economy has been guided by conflicting objectives of exchange rate stabilisation, inflation targeting and growth promotion which have created an unpredictable and volatile trend in interest rates in response to oil revenue shocks.

1.3 Dutch Disease Framework

Dutch Disease (1977, *The Economist*; 1982, Corden and Neary) refers to the macroeconomic implications of a resource export boom, whereby a boom in foreign currency inflows causes a real exchange rate to appreciate, non-resource tradable sectors to be crowded out and structural economic imbalances. Dutch Disease has been formulated in two ways: first, through a spending effect, as domestic demand grows more oil-rich, the prices of non-tradables rise, leading to real appreciation; and second, through a resource movement effect, which is the movement of resources from manufacturing and agriculture to the booming resource sector, thereby reducing the potential for long-run productive diversification (Corden & Neary, 1982). The Dutch Disease model suggests that an increase in the price of oil should lead to a real appreciation of the naira, a reduction in the competitiveness of non-oil exports and inflationary pressures in non-tradable sectors when applied to Nigeria. The problem with evidence for Dutch Disease in Nigeria is that there is a paradoxical dependence on refined petroleum imports as a result of the weakness of the

naira during a decline in oil export revenues, which in a pure goods-market adjustment scenario would lead to its strengthening (Laguda, 2019; Mien & Goujon, 2022).

1.4 Krugman's Portfolio-Balancing Theory

The oil price–exchange rate relationship investigated in this study is mainly theoretically supported by the Portfolio-Balancing Theory of Krugman (1983). The model also explains the exchange rate consequences of a worldwide oil price shock within a three-region structure: OPEC (oil-exporting), United States, and the EU (oil-importing). An increase in oil prices causes a transfer of wealth from oil-importing to oil-exporting countries and the increased revenue of OPEC countries is used to import manufactured goods from industrial countries, thereby bringing back the trade balance equilibrium. The analysis is organized around three interrelated model components: (i) the Trade Balance Model, which assumes OPEC immediately reinvests all oil revenues and provides an analysis of how spending propensities are asymmetrical and lead to changes in the exchange rate; (ii) the Capital Flow Model, which introduces inter-temporal dynamics into exchange rate determination by allowing for gradual adjustment of OPEC spending; and (iii) the Speculation Model, incorporating rational expectations, and examining the effect of anticipated future changes in oil prices on current exchange rates. The Trade Balance Model is the most relevant specification for this study on the exchange rate reaction to oil price changes in Nigeria, because the direct oil export revenue influences the naira supply and demand in the foreign exchange market is the main transmission channel.

1.5 Dornbusch Overshooting Hypothesis

An important complementary view on the short-run dynamics of the oil price–exchange rate relationship is offered by Dornbusch (1976) who proposed his exchange rate overshooting model. The model implies that in the short run, the exchange rate responds to monetary condition changes (or equivalently to an external shock like an oil price shock) more than proportionately to the new long run equilibrium because goods markets adjust more slowly than asset markets when prices and wages are sticky. This short-run overshooting is then corrected as prices of goods adjust, bringing the exchange rate back to the long run equilibrium path. In the Nigerian context, sharp naira devaluation after oil price collapse that is larger than the price collapse's impact on the fundamentals is similar to overshooting dynamics, which occurs when foreign exchange market participants adjust their prices in anticipation of a shock to expected revenue before prices in goods markets adjust (Efuntade & Efuntade, 2023; Driskill & McCafferty, 1982).

1.6 Empirical Literature Review

The empirical literature on the impact of oil price shocks on macroeconomic variables is large and mixed in terms of results of the studies, depending on the country, the methodology and the data period. This section presents the evidence in a thematic way, separating oil exporters, oil importers, and Nigeria-specific studies. The issue of the positive relationship between increases in oil prices and currency appreciation has been well established in previous studies of oil-exporting economies but has been found to be quite strong depending on exchange rate regime, institutional quality, and the extent of oil dependence. In comparison to the strong long-run relationship between the real exchange rate and the real price of oil in Russia, Norway and Saudi Arabia with high oil export shares had little sensitivity, as exchange rate regime rigidity and the sovereign wealth fund sterilization mechanisms can insulate the currencies from oil price transmission (Habib &

Kalamova, 2007). In the long run, Suliman and Abid (2020) used the ARDL and error-correction model to analyze the relationship between oil prices and exchange rates in Saudi Arabia for the period 1986–2019, and found that there were significant two-way interactions between the two variables, whereas in the short run, the causality was unidirectional from oil prices to exchange rates. For Russia, Polbin et al. (2020) showed that oil price dynamics are the main source of real GDP and exchange rate volatility in structural VAR models, but some specifications might have global demand shocks as the dominant source. Research on the oil-exchange rate relationship in oil-exporting economies during the post-2008 period underscores the growing complexity of the relationship between the oil and exchange rate. Using a new "pattern causality" approach, Wu et al. (2023) examined six major economies from 2006 to 2022 and concluded that oil-exporting countries' exchange rates are most sensitive to oil price changes in systemic crises, such as the global financial crisis, the European debt crisis, the COVID-19 pandemic, and the Russia-Ukraine conflict, and that oil price effects on exchange rates are often non-linear and structurally heterogeneous, with "dark causality" patterns revealed. Yildirim and Arifli (2021) also found that oil price decreases cause long-lasting currency depreciation for Azerbaijan, which is one of the smaller mono-commodity exporters compared to larger economies with more diversified export portfolios. In general, empirical evidence suggests that for oil importing economies, an increase in oil prices will negatively affect the value of the currency, because a higher price for oil will worsen trade balances and raise the need for foreign currency to import oil. During the post-Bretton Woods period, Amano and Van Norden (1998) have identified oil price shocks as one of the most important factors affecting REER changes in the United States. Ji et al. (2020) also find that oil supply shocks cause a greater depreciation in the exchange rate in oil exporting economies compared with oil importing economies, while global growth cycles, through their impact on oil-specific demand, tend to appreciate currencies in most economies through an increase in external demand. Using NARDL and wavelet transformation techniques, Khraief et al. (2021) conclude that the long-run oil price–exchange rate effects are not necessarily asymmetric after removing the high-frequency noise from data for the key oil-importing Asian countries of China and India. Using the ARDL approach, Hlongwane (2022) revealed that there is a negative oil price–exchange rate relationship for South Africa for the period of 1970 to 2021, but the Granger causality relationship is not statistically significant, which means that correlation does not automatically imply causality. This marked the oil prices' volatility transmission and return spillovers to major currency pairs surged significantly during the COVID-19 pandemic, as reported by Li et al. (2022), highlighting the strong commodity-currency market interdependence and its amplification effects during systemic crises. The empirical results on Nigeria are mixed and generally highlight the complexity of transmission of oil prices in the naira and the impact that domestic price and monetary variables have. The findings of Hamza and Elijah (2018) using NARDL approach on monthly data (2008–2017), show significant negative long-run effects of oil price decline on the naira while the reverse side of the oil price change shows insignificant effect which underscores the existence of strong downside asymmetry between oil price and naira in accordance with the condition of structural fiscal constraint in Nigeria. Using multivariate GARCH, Faruk (2020) used ARDL and Granger causality to conclude that there is bidirectional causality between domestic oil production and exchange rates. The results obtained from the GARCH and ARDL models of Rabi'u and Abdulhamid (2022) revealed significant positive relationships between oil price volatility and exchange rates in the short and long run.

Evidence is less plentiful and mixed on inflation and interest rates. The results of the present study are similar to that of Hasanov et al. (2017) who found that oil price effects on inflation are weak in economies where the monetary policy is insulating domestic prices from external shocks as in Nigeria. A study by Nwagu et al. (2023) indicates that oil prices' volatility did not influence the naira using E-GARCH method, implying that the first moment (level) effect may be more significant than the second moment (volatility) effect. Efuntade and Efuntade (2023), who broke down oil prices by benchmark type, identified long-run positive relationship between oil price volatility and naira which is consistent with the Dornbusch overshooting hypothesis, as well as statistically insignificant relationship between Dutch Disease and OPEC mechanisms.

The present study is motivated by three gaps in existing literature. The first is that most studies conducted in Nigeria focus only on the bivariate relationship between the oil price and exchange rate, or between the oil price and inflation, without incorporating a simultaneous adjustment of the exchange rate, the inflation rate and the interest rate in a single empirical framework. This is important as policy reactions to oil price shocks (interest rate adjustments, foreign exchange measures, fiscal adjustments) have a feedback effect on inflation and exchange rate dynamics, which may lead to misleading analysis if it is only based on two variables. Second, most studies fail to properly separate the short run dynamics from the long run equilibrium relationships, and do not formally test cointegration before making inference about the long run effects. Third, the 49-year period of this study (1974–2022) has covered oil price cycles, regime changes in exchange rates, and structural policy changes that would not have been observed by shorter-sample studies. The current study aims to fill all three gaps.

2. Methodology

2.1 Model Specification

This study adopts a quantitative research design, combining ex-post facto and time-series analytical approaches to examine the impact of oil price fluctuations on selected macroeconomic variables in Nigeria. The dependent variables include the exchange rate (ER), inflation rate (IF), and interest rate (IR), while oil price fluctuations (OPVF) serve as the primary independent variable. This framework enables the simultaneous assessment of short-run dynamics and long-run equilibrium relationships, providing a detailed understanding of the temporal interactions between global oil market movements and domestic economic outcomes.

The linear models are specified as:

The self-constructed estimable econometric model representing this relationship is:

$$ER_t = f(OPVF_t) \quad (1)$$

$$IR_t = f(OPVF_t) \quad (2)$$

$$IF_t = f(OPVF_t) \quad (3)$$

Expanding these into a linear form:

$$ER_t = \beta_0 + \beta_1 OPVF_t + \mu_t \quad (4)$$

$$IF_t = \beta_0 + \beta_1 OPVF_t + \mu_t \quad (5)$$

$$IR_t = \beta_0 + \beta_1 OPVF_t + \mu_t \quad (6)$$

Where ER_t = exchange rate; IR_t = Interest rate; IF_t = Inflation Rate; $OPVF_t$ = oil price fluctuation; β_0 = Intercept term; β_1 = coefficients to be estimated, indicating the degree to which changes in oil prices affect the dependent variable; μ = error term, capturing unobserved factors.

2.2 Data source

The study relies entirely on secondary data collected from reputable sources, covering a 49-year period from 1974 to 2022. This period is deliberately selected to include key economic milestones in Nigeria, such as the introduction of the Naira and periods of significant oil price volatility.

Oil Prices (OPVF): Data for Brent Crude and West Texas Intermediate (WTI) prices are sourced from the U.S. Energy Information Administration (EIA), OPEC, and the World Bank Commodity Price Data (Pink Sheet). Oil price volatility is measured using Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models and Granger causality tests to capture dynamic interactions with macroeconomic variables.

Exchange Rate (ER): Annual exchange rates of the Nigerian Naira against the U.S. Dollar are obtained from the Central Bank of Nigeria (CBN) and World Bank databases, ensuring consistency and accuracy over time.

Inflation Rate (IF) and Interest Rate (IR): These macroeconomic indicators are sourced from CBN statistical bulletins and IMF databases.

2.3 Techniques of Estimation

To accurately capture both short-term shocks and long-term adjustments, the study employs the Autoregressive Distributed Lag (ARDL) modelling approach. ARDL is particularly suitable for macroeconomic time-series data that often exhibit mixed orders of integration (I(0) and I(1)), accommodating stationery and non-stationary variables without the risk of spurious regression. The ARDL framework is extended to incorporate an Error Correction Mechanism (ECM), which quantifies the speed at which deviations from the long-run equilibrium are corrected after a shock. The ARDL Models for can be specified as:

Model for objective (i) will be;

$$\Delta ER_t = \gamma_0 + \alpha_1 ER_{t-1} + \alpha_2 OPVF_{t-1} + \sum_{t=1}^n \beta_1 \Delta ER_{t-1} + \sum_{t=1}^n \beta_2 \Delta OPVF_{t-1} + \mu_t \quad (7)$$

Model for objective (ii) will be;

$$\Delta IF_t = \gamma_0 + \alpha_1 IF_{t-1} + \alpha_2 OPVF_{t-1} + \sum_{t=1}^n \beta_1 \Delta IF_{t-1} + \sum_{t=1}^n \beta_2 \Delta OPVF_{t-1} + \mu_t \quad (8)$$

Model for objective (iii) will be;

$$\Delta IR_t = \gamma_0 + \alpha_1 IR_{t-1} + \alpha_2 OPVF_{t-1} + \sum_{t=1}^n \beta_1 \Delta IR_{t-1} + \sum_{t=1}^n \beta_2 \Delta OPVF_{t-1} + \mu_t \quad (9)$$

Where;

$\sum_{t=1}^n$ = the lag period up to nth period

γ_0 = Constant or Intercepts term

α_1 = Long- run multipliers

β_1 = Short- run multiplier

Δ = the first difference or change operator

The error correction term for can be specified as:

$$\Delta ER_t = \gamma_0 + \sum_{i=1}^n \beta_1 \Delta ER_{t-1} + \sum_{i=1}^n \beta_2 \Delta OPVF_{t-1} + \emptyset_1 ECM_{t-1} + \mu_t \quad (10)$$

$$\Delta IF_t = \gamma_0 + \sum_{i=1}^n \beta_1 \Delta IF_{t-1} + \sum_{i=1}^n \beta_2 \Delta OPVF_{t-1} + \emptyset_1 ECM_{t-1} + \mu_t \quad (11)$$

$$\Delta IR_t = \gamma_0 + \sum_{i=1}^n \beta_1 \Delta IR_{t-1} + \sum_{i=1}^n \beta_2 \Delta OPVF_{t-1} + \emptyset_1 ECM_{t-1} + \mu_t \quad (12)$$

Similar formulations are applied for inflation and interest rates. The inclusion of lagged differences allows the model to account for delayed responses, capturing both immediate (short-run) effects and gradual adjustments to long-run equilibrium. Optimal lag selection is determined using Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC), ensuring model parsimony while maximizing explanatory power.

3. Result

3.1 Descriptive Statistics

The descriptive statistics for all variables considered in this study are shown in Table 3.1 for the entire sample period (1974–2022). The mean value of the exchange rate (ER) is N150.33 per dollar, the maximum value of ER is N536.92, and the standard deviation is N115.05, which shows that the naira has been depreciating significantly during the study period. The skewness of 1.850 and the kurtosis of 5.726 support a right-skewed distribution that is also leptokurtic, which is characteristic of a variable with sharp increases during certain shock periods and relatively flat increases during other periods. The mean of –0.899 and the minimum of –65.857 are both unusual for a descriptive profile of the interest rate (IR) series, indicating that there were periods with a sharp negative interest rate change, and the extreme negative skewness (–2.394) and very high kurtosis (11.666) confirm that there are substantial non-normalities in the series caused by these outliers observations. The average inflation rate (IF) is 18.88% with a maximum of 72.84% which suggests Nigeria's frequent periods of severe inflationary instability and right-skewness (1.935). Oil price volatility (OPVF) is the most extreme in distributional terms with skewness of 4.936 and kurtosis of 30.289, which is far from normality, and indicates the highly non-normal, fat-tailed nature of commodity price volatility. The Jarque-Bera test shows that none of the variables is normally distributed with $p = 0.000$, thus log transformation is required before the variables are estimated so as to stabilize the variance and to reduce the effects of outliers on the regression results.

Table 3.1: Descriptive Statistics

	ER	IR	IF	OPVF
Mean	150.3323	-0.899506	18.88114	0.012218
Maximum	536.9175	18.18000	72.83550	0.142063
Minimum	49.77690	-65.85715	5.388008	0.000383
Std. Dev.	115.0520	13.75597	15.51219	0.021167
Skewness	1.850342	-2.393734	1.935427	4.936157
Kurtosis	5.726403	11.66621	5.915871	30.28912
Jarque-Bera	37.85493	200.1305	47.95019	1719.407
Probability	0.000000	0.000000	0.000000	0.000000
Sum	6464.289	-44.07578	925.1758	0.598702
Sum Sq. Dev.	555952.7	9082.886	11550.15	0.021506
Observations	49	49	49	49

Source: EViews Output (2026)

3.2 Correlation Analysis

The pairwise Pearson correlation matrix is shown below in Table 3.2. The sign of the coefficient between ER and OPVF is negative (-0.173) which shows a weak negative relationship at the aggregate level, implying that naira appreciation is marginally associated with a rise in OPVF, which could be an aggregate effect of booms in oil prices, where higher oil price volatility is associated with higher oil related foreign exchange inflows. The positive correlation between IR and OPVF (0.196) indicates that there is a slight link between oil price volatility and interest rate changes; this could be an indication of the CBN's monetary policy reactions to exchange rate instability or inflation expectations driven by oil market instability. The coefficient of correlation between IF and OPVF is negative and ambiguous (-0.125), which is a weak one and seems to be in line with the result obtained in the econometric analysis of the insignificant effect of oil prices on the aggregate level inflation. These bivariate correlations are useful as initial indicators, but do not include the time dynamics or lag structures, which are captured in the ARDL framework in subsequent sections.

Table 3.2: Correlation Matrix

Variable	ER	IR	IF	OPVF
ER	1.0000			
IR	-0.2009	1.0000		
IF	-0.1422	-0.5075	1.0000	
OPVF	-0.1734	0.1965	-0.124820	1.0000

Source: EViews Output (2026)

3.3 Unit Root Tests

The results of the ADF and PP tests are shown in tables 3.3a and 3.3b, respectively, at level and first difference. Based on these tests, the mixed integration profile supports the ARDL bounds testing approach as it is specifically developed to handle variables of different integration orders. The ADF test (Table 3.3a) confirms that ER, IR, and IF are non-stationary at level (test statistics below the 5% critical value in absolute value; p-values > 0.05), while OPVF is stationary at level (ADF = -6.420 , $p = 0.000$), indicating $I(0)$ behavior. The first difference of ER, IR, and IF are stationary at 1% significance level (p-values of 0.000 , 0.001 and 0.000 respectively) thus proving the $I(1)$ integration for these variables.

The PP test results (Table 3.3b) are fairly similar but some differences can be explained by the fact that the PP test is more robust to heteroscedasticity and serial correlation in the error term. While under PP, IR and IF are stationary at level ($I(0)$), OPVF remains $I(0)$. Only ER is non-stationary at level under the two tests, with stationarity at first difference under PP (test statistic = -4.410 , $p = 0.001$). Both tests support a mixed $I(0)/I(1)$ integration profile, making the ARDL bounds testing the most suitable and valid estimation approach for the data.

Table 3.3a: ADF Unit Root Test Result

Var	Test Statistics at Level	Prob.	Critical Value	Remarks	Test Statistics at 1 st diff.	Prob.	Critical Value	Remarks	Decision
			5%			1%	5%		
ER	-2.0064	0.2831	-2.9332	NS	-4.4740	0.0000	-2.9350	S	I(1)
IR	-1.3782	0.5826	-2.9411	NS	-4.6104	0.0007	-2.9350	S	I(1)
IF	-2.6808	0.0851	-2.9266	NS	-7.0986	0.0000	-2.9350	S	I(1)
OPVF	-6.4198	0.0000	-2.9237	S	-	-	-	–	I(0)

Source: EViews Output (2026)

Note: - NS: Not-Stationary; S: Stationary

Table 3.3b: Phillips-Perron Unit Root Test Result

Var	Test Statistics at Level	Prob.	Critical Value	Remarks	Test Statistics at 1 st diff.	Prob.	Critical Value	Remarks	Decision
			5%				5%		
ER	-2.1256	0.2360	-2.9332	NS	-4.4103	0.0011	-2.9350	S	I(1)
IR	-5.0883	0.0001	-2.9237	S	-	-	-		I(0)
IF	-3.3731	0.0169	-2.9238	S	-	-	-		I(0)
OPVF	-6.4276	0.0000	-2.9238	S	-	-	-		I(0)

Source: EViews Output (2026)

Note: - NS: Not-Stationary; S: Stationary

3.4 Lag Order Selection Criteria

The results of VAR lag order selection used in informing the ARDL lag structure are presented in Table 3.4. The Akaike Information Criterion (AIC) chooses 3 lags, which is the minimum value for all lags (AIC = 21.145 at lag 3); the Schwarz Criterion (SC) and Hannan-Quinn Criterion (HQ) choose 1 lag, as they have a higher parsimony penalty. The study follows the AIC recommended ARDL lag selection in moderate samples of Pesaran and Shin (1999) for the ARDL model, and verifies the non-serial correlation in the ARDL model through the residual diagnostic tests.

Table 3.4: Lag Order

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-444.919	NA	65807.26	22.446	22.614	22.507
1	-404.874	70.0787	19879.65	21.244	22.088*	21.549*
2	-391.977	19.990	23829.40	21.398	22.9188	21.948
3	-370.899	28.455*	19757.33*	21.145*	23.340	21.938

Source: EViews Output (2026)

3.5 ARDL Bound Test for Cointegration

The result for the ARDL cointegration test is presented in Table 3.5, for models one, two and three, where LER, LIF and RI are the dependent variables respectively. In all three models, OPVF is the independent variable. The result indicates that a long-run relationship exists among the variables given that the F-Statistic for model one (13.0737), model two (13.7724) and model three (7.7256) is greater than the upper bound value specifically at the 5% level of significance as given by Pesaran, *et al.* (2001). . All of these results have rejected the null hypothesis of a lack of long-run relationship in all three models and have proven the ARDL-ECM framework as appropriate to estimate long-term parameters and process of short-term adjustment.

Table 3.5: ARDL Bounds Test Result

Model 1			Model 2			Model 3		
Sig.	I(0)	I(1)	Sig.	I(0)	I(1)	Sig.	I(0)	I(1)
10%	4.04	4.78	10%	2.12	3.23	10%	4.04	4.78
5%	4.94	5.73	5%	2.45	3.61	5%	4.94	5.73
1%	6.84	7.84	1%	3.15	4.43	1%	6.84	7.84

Source: EViews Output (2026)

4.6 ARDL Longrun and ECM Results

The ARDL long run estimate result in Table 3.6.1a shows that oil price has a statistically significant but negative effect on exchange rate. This suggests that for every unit increase in oil price fluctuations, the naira-dollar exchange rate in Nigeria would appreciate by 0.445% in the long-run period, which translates into a 1% decrease in the naira-dollar exchange rate. . The relationship is inelastic (the coefficient is less than 1 in absolute value) meaning that any long run shock in oil prices has a strong and consistent long-run effect on the exchange rate, but the pass-through is less than one. The discovery is consistent with Castro and Jiménez-Rodríguez (2020), who report similar price appreciation of the exchange rate in oil exporting countries in oil price booms. It also supports the theoretical claim of Krugman's Trade Balance Model that the windfall of oil revenues leads to currency appreciation in an oil exporter country via the trade account.

Table 3.6.1a: ARDL Long-run Estimates for Model One

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOPVF	-0.445486	0.100353	-4.439202	0.0001
EC = LER - (-0.4455*LOPVF)				

Source: EViews Output (2026)

The short-run ECM results for model 1 are given in table 3.6.1b. The ECM coefficient is of the order of -0.4729 and is statistically significant and suggests a stable long run relationship. Around 47.3% of any short run deviation from the long run equilibrium exchange rate is corrected in each year. Past changes in the value of the naira ($D(LER(-1))$) has a positive and significant impact ($\beta = 0.278$, $p = 0.037$), which implies exchange rate persistence (past change in the naira's value is partly responsible for the current change in the value of naira), which is in line with the dynamics of a managed exchange rate, where the CBN smoothens the adjustment. A contemporaneous short-run coefficient for oil price volatility ($D(LOPVF)$) is also negative and significant ($\beta = -0.108$, p

= 0.007); this shows that oil price shocks immediately cause an immediate naira appreciation in the short-run, but the effect is a bit less than the long-run estimate.

Table 3.6.1b ECM Regression Model One

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.220469	0.241652	5.050517	0.0000
D(LER(-1))	0.277520	0.128010	2.167960	0.0373
D(LER(-2))	0.187674	0.136141	1.378531	0.1770
D(LOPVF)	-0.108219	0.037529	-2.883571	0.0068
ECM	-0.472884	0.091148	-5.188100	0.0000

Source: EViews Output (2026)

ARDL Long-run Estimates for Model Two

The ARDL long run estimate result in Table 3.6.2a shows that oil price has a statistically insignificantly but positive effect on the interest rate. The relationship between the two variables is elastic and indicates that if a substantial relationship exists, it will have a long term effect of a significant proportion, however the large standard error would imply that there is great uncertainty over this estimate.

Table 3.6.2b: ARDL Long-run Estimates for Model Two

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOPVF	2.429758	2.079754	1.168291	0.2488
EC = IR - (2.4298*LOPVF)				

Source: EViews Output (2026)

From Table 3.6.2b, the coefficient of ECT is -0.7555, which is negative and statistically significant at the 5% level. This, therefore, confirms the existence of a long-term relationship among the variables in the model. The negative sign and statistically significant probability value align with the theoretical expectation, suggesting that the speed of adjustment of the model back to equilibrium is 75% in case of any disequilibrium in the model, which is the fastest adjustment speed of the three models. The fact that inflation shows strong mean reverting properties is an indication that the Nigerian inflation dynamics are not directly affected by oil price shocks in the long run, but consistent with the CBN's policy orientation of inflation targeting, which started in 2005.

Table 3.6.2b: ECM Regression Model Two

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.157394	2.444635	3.745914	0.0005
ECT	-0.755554	0.142388	-5.306306	0.0000

Source: EViews Output (2026)

Table 3.6.3a is the long period estimate for Model 3. The statistical results of LOPVF coefficient is 0.1063 ($p = 0.519$) which is not statistically significant at all standard values indicating no long-run relationship between oil price volatility and Nigeria's interest rate. H_3 is thus not rejected.

Table 3.6.3a: ARDL Long-run Estimates for Model Three

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOPVF	0.1063	0.163271	0.6511	0.5188
EC = LIF - (0.1063*LOPVF)				

Source: EViews Output (2026)

From Table 3.6.3b, the coefficient of ECM is -0.5600, which is negative and statistically significant at the 5% level. This therefore confirms the existence of a long-term relationship among the variables in the model. The negative sign and statistically significant probability values align with theoretical expectation, suggesting that the speed of adjustment of the model back to equilibrium is at 56% in case of any disequilibrium in the model. The lack of a significant oil price impact on interest rates in the short-run and long-run is in line with the CBN's interest rate policy, which is driven by domestic monetary policy targets like inflation targets, money supply growth targets, credit market developments among others, and not an immediate response to developments in the oil market.

Table 3.6.3b: ECM Regression Model Three

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.792444	0.466090	3.845703	0.0004
D(LIF(-1))	0.210828	0.134160	1.571472	0.1242
D(LOPVF)	-0.033730	0.071889	-0.469204	0.6415
D(LOPVF(-1))	-0.085024	0.076010	-1.118589	0.2702
D(LOPVF(-2))	0.142434	0.080100	1.778205	0.0832
ECM	-0.560064	0.140689	-3.980871	0.0003

Source: EViews Output (2026)

3.7 Diagnostic Test

To confirm and validate the reliability of the results obtained from the models, the study performs some diagnostics checks to confirm the robustness of the estimation. The results from the residual diagnostic are presented in table 3.7.

Table 3.7: Residual Diagnostic

	Model One		Model Two		Model Three	
Test	OBS R²	P-value	F-statistics	P-value	F-statistics	P-value
Panel A	2.148	0.3824	0.955	0.62	0.426	0.81
Panel B	8.5749	0.1273	11.177	0.08	0.421	0.81
	Jarque-Bera	P-value	Jarque-Bera	P-value	Jarque-Bera	P-value
Panel C	18.35	0.0000103	0.6287	0.7302	429.34	0.0000000

Source: EViews Output (2026)

The Breusch-Godfrey Serial Correlation LM test was used to examine the presence of serial correlation in the residuals, and the Breusch-Pagan-Godfrey test was applied to test for heteroscedasticity. All the model residuals are constant, and therefore, no heteroscedasticity was found in the models. In the same vein, no evidence of serial correlation is found in the model. Model two is normally distributed for the Normality test presented in Panel C. The rules of thumb when interpreting this result are that if the p-value is greater than 0.05 we fail to reject the Null Hypothesis but if the p-value is less or equal to 0.05 we reject the Null hypothesis. The null hypothesis is the data is normally distributed for the Normality test, Homoscedasticity (constant variance of errors) for Heteroscedasticity and No serial correlation for the Serial correlation test.

3.8 Stability Tests

The stability of parameters is checked for each of the three models with the CUSUM and CUSUM-of-squares tests based on recursive residuals. In both of the Test Statistics shown in Figures 3.1 and 4.3 (Figures 3.2 and 3.4 for CUSUM-SQ), both tests, which employ the 5% critical bounds, do not cross them in the sample period 1974–2022, indicating the structural stability and parameter constancy. The findings confirm the validity of using a single regime ARDL specification for Models (1) and (2), and the long-run estimates for the coefficients of these models and the respective ECM adjustment speeds are therefore reliable.

The CUSUM statistic does not cross the 5% critical bound (Figure 3.5) confirming mean stability, but the CUSUM-of-squares statistic briefly crosses the 5% critical bound at one sub-period (Figure 3.6), signifying that the variance of the recursive residuals of the interest rate model is not fully stable over the sample. This instability is probably a response to the dramatic shifts in the policy rate regime that Nigeria has experienced, such as the high-interest rate volatility of the SAP period (1986–1993), the administered interest rate policy of the early 2000s, and the CBN's dramatic policy rate moves in the post-2008 period. Future research will benefit from the extension of this analysis with regime switching specifications or including explicitly structural break points for better parameter stability, and users of Model 3's coefficient estimates should be mindful of this.

Figure 3.1 CUSUM for Model One

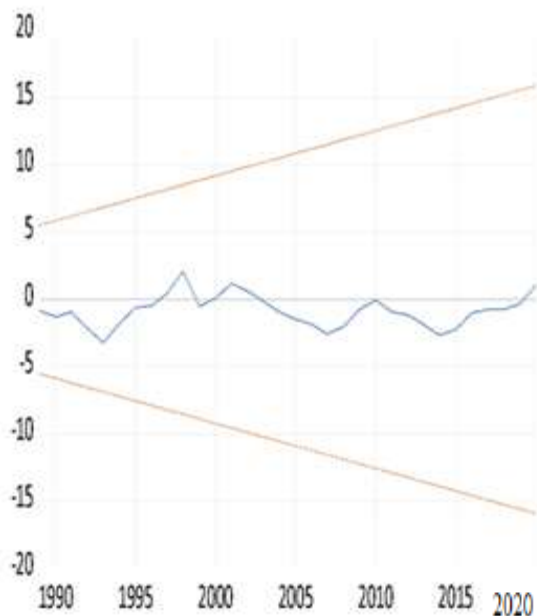


Figure 3.2 CUSUM Square for Model One

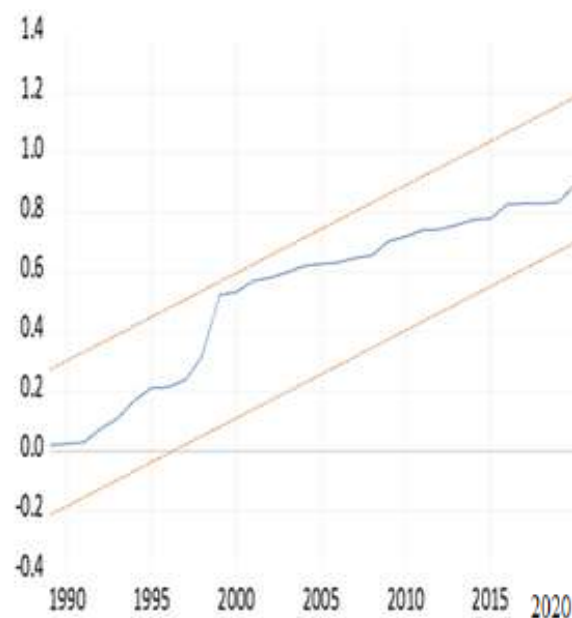


Figure 3.3 CUSUM for Model Two

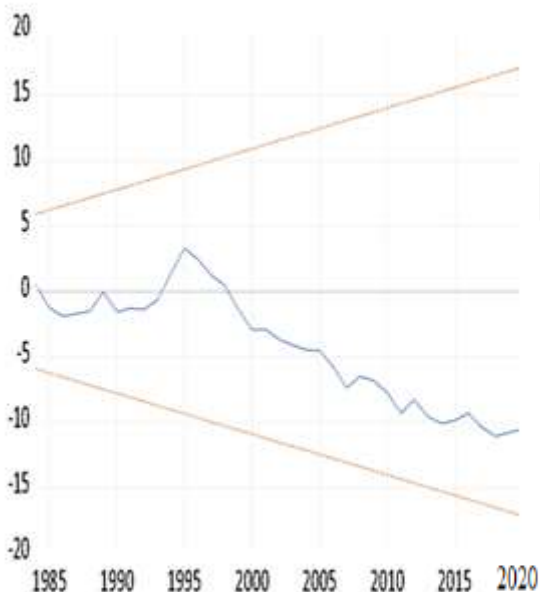
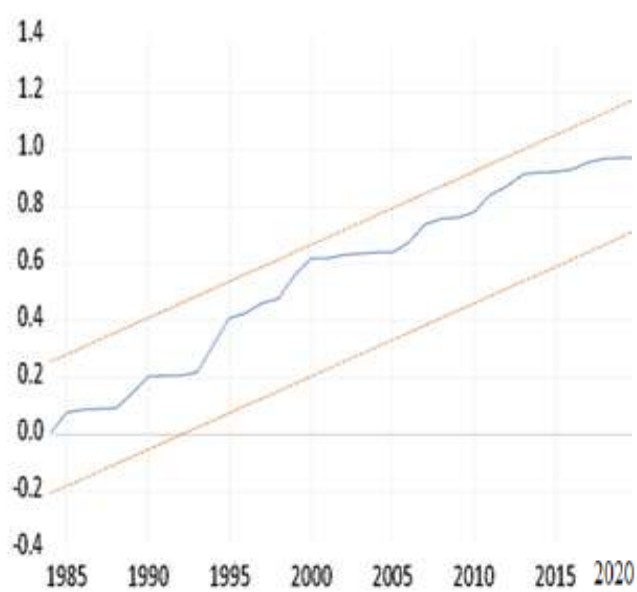


Figure 3.4 CUSUM Square for Model Two



Source: EViews Output (2026)

Figure 3.5 CUSUM for Model Three

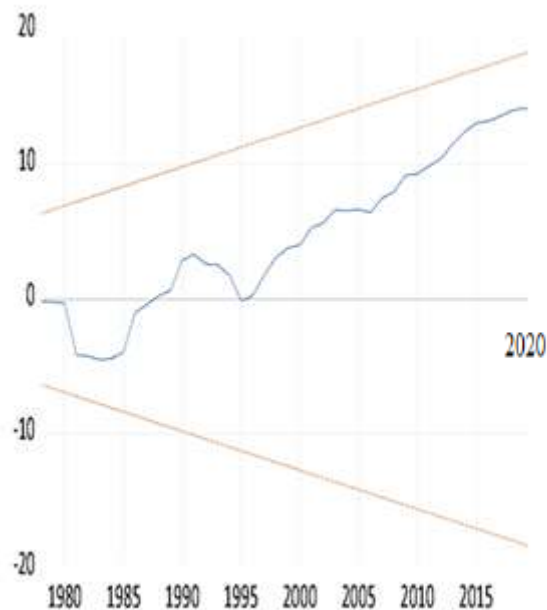
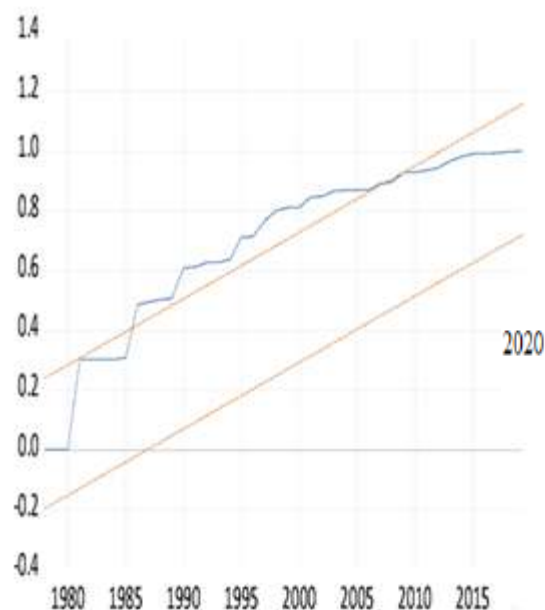


Figure 3.6 CUSUM Square for Model Three



Source: EViews Output (2026)

4. Discussion

This study analyzed the effects of oil price fluctuations on the exchange rate, inflation, and interest rates over time, examining how changes in oil prices influenced currency valuation, contribute to price stability, and affects monetary policy responses and market dynamics. Results show that oil price fluctuation has a statistically significant but negative effect on the exchange rate, this finding aligns with *a priori* expectation that oil price exert pressure on the exchange rate particular for a nation like Nigeria who relies very heavily on oil export. Given that the relationship was significant, it can be implied that oil price fluctuation can destabilize exchange rate. Oil price fluctuation indicates that Nigeria's exchange rate is very sensitive to fluctuations in global oil prices, making the country susceptible to external economic shocks. This situation is particularly worrisome for nations that heavily depend on oil exports, as the stability of their exchange rates is jeopardized by the unpredictability of global oil markets. A depreciating exchange rate, driven by oil price volatility, can also exacerbate inflationary pressures. As the local currency weakens, the cost of imports rises, which can lead to higher domestic prices for goods and services, contributing to inflation. This could negatively impact the purchasing power of consumers, particularly in nations where oil is a major driver of the economy. This result is in line with those of Hamza and Elijah (2018) and the findings of Wu et al. (2023), who documented substantial naira reactions to oil price fluctuations with the help of NARDL methods, and with the general literature regarding the reactions of oil-exporting currencies to oil prices (Habib & Kalamova, 2007; Suliman & Abid, 2020). The finding is also relevant to exchange rate policy, as it suggests that whatever the formal classification of the policy, Nigeria's exchange rate regime cannot be completely insulated from the oil price with domestic monetary policy alone, but the effective management of oil revenue –

through the use of fiscal sterilisation policy or a well-designed sovereign wealth fund – is essential for exchange rate stability. For oil price and inflation rate, the insignificance relationship may indicate that inflationary pressures in the economy are more influenced by non-oil factors, such as domestic monetary policies, supply chain disruptions, or food prices. This underscores the need for policymakers to focus on these alternative inflation drivers rather than solely attributing inflationary trends to oil price volatility. This aligns with the study of Hasanov, Mikayilov, Bulut, Suleymanov, and Aliyev, (2017). The decision of the Central Bank on interest rate and money supply has a direct impact on inflation if the country uses an expansionary monetary policy this could fuel inflation regardless of oil prices and if the central bank adopts a contractionary monetary policy this could reduce inflation even when oil prices are rising. Another factor that impacts inflation is the food prices which are susceptible to changes in weather conditions, agricultural output and global demand for food product. A poor harvest season or any disruption due to disaster can lead to food price inflation. Although the relationship between interest rates and oil price is statistically insignificant, the positive and elastic nature suggests that fluctuations in oil prices could indirectly influence interest rates through other macroeconomic channels, such as inflation expectations or exchange rate movements. Policymakers may need to monitor these dynamics, especially during periods of heightened oil price volatility, to ensure that monetary policy remains effective. Across the models, the coefficients of the Error Correction Model (ECM) are negative and statistically significant at the 5% level, confirming the existence of long-term relationships among the variables. The speed of adjustment back to equilibrium varies. The negative and significant ECM coefficients confirm that the models are well-behaved and capable of correcting short-term disequilibria. This underscores the importance of addressing short-term shocks to ensure long-term stability.

5. Conclusion

This study investigated the effect of oil price shocks on the exchange rate, inflation rate and interest rate in Nigeria in both the short and long run periods using annual data from 1974 to 2022. The ARDL bounds testing method was used to test cointegration, and the result shows that there is cointegration between oil price volatility and all three macroeconomic variables. What is surprising, however, is that the results reveal that the impact of the oil price volatility on the exchange rate is statistically significant in the long run while its impact on inflation and interest rate is not. The results also indicated that the exchange rate is also sensitive to oil price shocks in the short run, whereas this is not the case with inflation and the interest rate. This implies that most of the impact of the oil price – macroeconomic relationship in Nigeria revolves around the exchange rate channel; the policy makers are advised to focus attention on the channel in designing macroeconomic stabilisation policies. Nigeria's sensitivity to oil price shocks, underscores the pressing need to have a rules-based and transparent exchange rate policy framework that anticipates oil price cycles, rather than responds to them as and when they occur. The CBN should adopt a transparent, rules-based regime that reacts systematically to fluctuations in oil prices instead of in a random fashion to cushion the impact of oil price volatility on the naira. The Nigeria Sovereign Investment Authority must be strengthened and made operational as fiscal buffer mechanism, with stipulations on minimum contribution from oil revenues and strict governance mechanisms which ensures that it is not subjected to political interference.

There is need to strengthen efforts to diversify the sources of export earnings and revenue for Nigeria because the current macroeconomic vulnerability of the country is largely due to its overreliance on oil export which cannot be solved by any monetary policy alone.

Government should invest in building local oil refineries to cut off this link between the rise in worldwide oil prices and the loss of domestic purchasing power through rising fuel import prices. While the analysis did not uncover direct and significant long-term effects of oil prices on inflation and the interest rate, it is possible that this is partly a result of the use of a bivariate framework, which excludes indirect channels of oil price effects on these two variables through the exchange rate and fiscal channels. Following the study, future research can use the multivariate analysis approach like structural VAR models and non-linear ARDL models which can take the asymmetrical impact of oil price variations into account as the theories have established that positive and negative oil price shocks can induce different macroeconomic responses. Future studies should also be conducted including quarterly or monthly time series data if available, because this might have obscured some important high frequency dynamics.

Reference

- Amano, R. A., & Van Norden, S. (1998). Oil prices and the rise and fall of the US real exchange rate. *Journal of international Money and finance*, 17(2), 299-316.
- Ayinde, T. O., & Adeyemi, F. A. (2020). Oil Price Shock and Regime Switching Behaviour of Exchange Rate in Nigeria. *Fountain University College of Management Science DOI: 10.21203/rs.3.rs-68486/v1*.
- Castro, C., & Jiménez-Rodríguez, R. (2020). Dynamic interactions between oil price and exchange rate. *PLOS ONE*, 15(8), e0237172. <https://doi.org/10.1371/journal.pone.0237172>
- Corden, W. M., & Neary, J. P. (1982). Booming Sector and De-Industrialisation in a Small Open Economy. In *The Economic Journal* (Vol. 92). <https://academic.oup.com/ej/article/92/368/825/5220457>
- Couharde, C., & Grekou, C. (2024). *Highlights Better Two Eyes than One: A Synthesis Classification of Exchange Rate Regimes Working Paper*. 180(180), 2021–2028. www.cepii.fr
- Ding, S., Zheng, D., Cui, T., & Du, M. (2025). Corrigendum to “The oil price-inflation nexus: The exchange rate pass-through effect” [Energy Economics Volume 125, September 2023, 106828](S0140988323003262)(10.1016/j.eneco.2023.106828). In *Energy Economics* (Vol. 144). <https://doi.org/10.1016/j.eneco.2025.108355>
- Dornbusch, R. (1976). Expectations and exchange rate dynamics. *Journal of political Economy*, 84(6), 1161-1176.
- Driskill, R., & McCafferty, S. (1982). Spot and forward rates in a stochastic model of the foreign exchange market. *Journal of International Economics*, 12(3–4). [https://doi.org/10.1016/0022-1996\(82\)90043-5](https://doi.org/10.1016/0022-1996(82)90043-5)
- Efuntade, O. O., & Efuntade, A. O. (2023). Oil Price-Exchange Rate Interdependence: Relevance of Theory of Exchange Rate Overshooting in Nigeria. *International Journal of Economics and Financial Management*, 8(2). <https://doi.org/10.56201/ijefm.v8.no2.2023.pg75.91>
- Fadare, S. O., Oladipo, O., & Agama, E. (2025). Oil Price Shocks and Economic Growth in Oil Exporting Countries: A Case Study of a Small Open Economy. *International Journal of Energy Economics and Policy*, 15(2). <https://doi.org/10.32479/ijeep.18284>
- Faruk, B. U. (2020). Relationship between volatility in domestic oil production, oil price and exchange rate in Nigeria: Co-integration and Granger Causality Tests. *Bullion*, 44(2), 12–2020. <https://dc.cbn.gov.ng/bullion/vol44/iss4/1>
- Gary G. Moser. (1994). The Main Determinants of Inflation in Nigeria. *International Monetary Fund Working Paper 1994*, 94(76), 1–14.
- Habib, M. M., & Kalamova, M. M. (2007). Are there Oil Currencies? The Real Exchange Rate of Oil Exporting Countries. In *Working Paper Series* (Vol. 839). http://ssrn.com/abstract_id=1032834.
- Hamilton, J. D. (2009). Causes and consequences of the oil shock of 2007-08. *Brookings Papers on Economic Activity*, (1). <https://doi.org/10.1353/eca.0.0047>
- Hamza, N., & Elijah, S. (2018a). Gombe Journal Of General Studies Testing Asymmetric Effect of Oil Price on Exchange Rate in Nigeria: New Evidence From Nonlinear Ardl Approach. In *GJGS* (Vol. 2, Number 1).
- Hlongwane, N. W. (2022). The relationship between oil prices and exchange rates in South Africa. *Munich Personal RePEc Archive*, (113209).

- IMF. (2004). *Classification of Exchange Rate Arrangements and Monetary Policy Framework*. <https://www.imf.org/external/np/mfd/er/2004/eng/0604.htm>
- Jhingan, M. L. (2004). *Money, Banking and International Trade*. New Delhi: Vrinda Publications Ltd. www.vikaspublishing.com
- Ji, Q., Shahzad, S. J. H., Bouri, E., & Suleman, M. T. (2020). Dynamic structural impacts of oil shocks on exchange rates: lessons to learn. *Journal of Economic Structures*, 9(1). <https://doi.org/10.1186/s40008-020-00194-5>
- Khraief, N., Shahbaz, M., Mahalik, M. K., & Bhattacharya, M. (2021). Movements of oil prices and exchange rates in China and India: New evidence from wavelet-based, non-linear, autoregressive distributed lag estimations. *Physica A: Statistical Mechanics and Its Applications*, 563. <https://doi.org/10.1016/j.physa.2020.125423>
- Kilian, L. (2014). Oil price shocks: Causes and consequences. *Annual Review of Resource Economics*, 6(1). <https://doi.org/10.1146/annurev-resource-083013-114701>
- Krugman, P. (1983). New theories of trade among industrial countries. *The American Economic Review*, 73(2), 343-347.
- Laguda, H. A. (2019). *The Impact of Dutch Disease: The Case of Nigeria* [Eastern Illinois University]. <https://thekeep.eiu.edu/theses/4669>
- Li, K., Devpura, N., & Cheng, S. (2022). How did the oil price affect Japanese yen and other currencies? Fresh insights from the COVID-19 pandemic. *Pacific Basin Finance Journal*, 75. <https://doi.org/10.1016/j.pacfin.2022.101857>
- Mien, E., & Goujon, M. (2022). 40 Years of Dutch Disease Literature: Lessons for Developing Countries. *Comparative Economic Studies*, 64(3), 351–383. <https://doi.org/10.1057/s41294-021-00177-w>
- Mohammed Suliman, T. H., & Abid, M. (2020a). The impacts of oil price on exchange rates: Evidence from Saudi Arabia. *Energy Exploration and Exploitation*, 38(5). <https://doi.org/10.1177/0144598720930424>
- Musa, I., Salisu, A., & Magaji, S. (2024). Evaluating the Correlation between Specific Macroeconomic Performance and the Price of Crude Oil in Nigeria. *Journal of Economics, Innovative Management and Entrepreneurship*, 2(2). <https://doi.org/10.59652/jeime.v2i2.230>
- National Bureau of Statistics. (2024, June 23). *Nigeria Gross Domestic Product Report*. Nigeria: National Bureau of Statistics. <https://www.nigerianstat.gov.ng/>
- Nwagu, U., Edeh, C. C., & Onoriode, H. (2023). Oil Price Fluctuation And Exchange Rate In Nigeria: Is There A Volatility Transmission Effect. *Journal of Advanced Research in Economics and Administrative Sciences*, 4(4). <https://doi.org/10.47631/jareas.v4i4.640>
- Nwikina, C. G., & Ekere, U. (2024a). Evidence from Nigeria. *Global Journal of Arts, Humanities and Social Sciences*, 12(3), 36–50. <https://doi.org/10.37745/gjahss.2013/vol12n23650>
- Obadan, M. I. (2007). Exchange Rate Policy Design: Choosing the Right Exchange Rate Response in a Changing Environment. *Changing Environment. CBN Economic and Financial Review*, 45(4), 143–163. <https://dc.cbn.gov.ng/efr>
- Okeke, S. O., Nwoha, C. E., & Duru, A. N. (2024). Effect of Crude Oil Price Shock on Inflation and Exchange Rate in Nigeria. *European Journal of Business and Innovation Research*, 12(2), 56–66. <https://doi.org/10.37745/ejbir.2013/vol12n25666>
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics*, 16(3), 289-326.

- Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American statistical Association*, 94(446), 621-634.
- Polbin, A., Skrobotov, A., & Zubarev, A. (2020). How the oil price and other factors of real exchange rate dynamics affect real GDP in Russia. *Emerging Markets Finance and Trade*, 56(15). <https://doi.org/10.1080/1540496X.2019.1573667>
- Rabiu, S., & Abdulhamid, J. (2022). Impact Of Oil Price Volatility on Exchange Rate in Nigeria. *Journal Of Economics and Finance*, 6(2), 180–189. <https://www.researchgate.net/publication/371782744>
- Wu, T., An, F., Gao, X., & Wang, Z. (2023). Hidden causality between oil prices and exchange rates. *Resources Policy*, 82. <https://doi.org/10.1016/j.resourpol.2023.103512>
- Yildirim, Z., & Arifli, A. (2021). Oil price shocks, exchange rate and macroeconomic fluctuations in a small oil-exporting economy. *Energy*, 219. <https://doi.org/10.1016/j.energy.2020.119527>