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Impact of Energy Price Volatility on Financial Stability and Industrial Growth in Nigeria

Jamiu Adeniyi Yusuf [1*], Saka Fatai Adio[2], Babalola Abubakar Akorede[3]

[1]Summit University
Kwara State, Nigeria
[2]Akanu Ibiam Federal Polytechnic
Unwana, Nieria
[3]Osun State University
Osun State, Nigeria
✉Jamiu.yusuf@summit.edu.ng

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Abstract

Background: Energy price volatility is a critical macroeconomic challenge for resource-dependent economies like Nigeria, with potential implications for financial stability and industrial development. Despite the centrality of energy to production and investment decisions, empirical evidence on how fluctuations in energy prices interact with financial stability and industrial growth in Nigeria remains limited.
Objective: This study examines the effects of energy price volatility on financial stability in Nigeria. Also, the role of industrial growth and exchange rate movements in shaping financial stability outcomes in Nigeria.
Methods: The study employed annual time-series data for Nigeria, with Autoregressive Distributed Lag (ARDL) to capture both short-run and long-run relationships among the variables. Financial stability was modelled as a function of energy price volatility, industrial growth, and the exchange rate. Bounds testing was conducted to establish long-run relationships, while error correction mechanisms were used to analyse short-run.
Results: Findings reveal that energy price volatility exerts a negative effect on financial stability in both short and long run, indicating fluctuations in energy prices undermine Nigeria's financial system. Contrariwise, industrial growth shows a positive relationship with financial stability, suggesting that increased industrial activity enhances resilience against energy price shocks. The exchange rate also exhibits a negative and significant effect on financial stability, showing Nigeria's susceptibility to external economic disturbances.
Conclusion: The results shows that stabilising energy prices and strengthening industrial capacity are critical for safeguarding financial stability in Nigeria. Recommendation includes, the adoption of energy price stabilisation policies, accelerated industrialization strategies, and a managed exchange rate regime.

A. Introduction

Energy plays a central role in driving economic growth and structural transformation, particularly in resource-dependent economies such as Nigeria. As one of Africa's leading crude oil producers, Nigeria relies heavily on oil exports as its primary source of government revenue and foreign exchange earnings

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(Adejoh & Yusuf, 2025). This dependence has made the economy highly sensitive to fluctuations in global energy prices, with significant implications for financial stability, industrial performance, and overall economic development. Despite ongoing efforts at economic diversification, oil continues to dominate Nigeria's fiscal and external sectors, thereby reinforcing the economy's exposure to external price shocks (Yakubu & Akanegbu, 2019).

Historically, movements in global oil prices have closely mirrored Nigeria's macroeconomic fortunes. Periods of rising oil prices have often coincided with economic expansion and improved fiscal conditions, while sharp price declines have triggered economic downturns and financial distress (Yusuf, 2023). The oil price collapse between 2014 and 2016, for instance, led to severe revenue shortfalls, exchange rate depreciation, rising inflation, and heightened macroeconomic instability (Abdulkareem & Abdulhakeem, 2016). Similarly, the COVID-19 pandemic in 2020 intensified Nigeria's financial vulnerabilities as global oil demand fell sharply, resulting in reduced export earnings and increased fiscal pressure ((Ebrahim et al., 2024); (Olajide & Yusuf, 2025)). These episodes distinctively shows the persistent fragility of Nigeria's economy in the face of energy price volatility (Okunladearaoye & Jamiu, 2024).

Beyond its fiscal implications, energy price volatility poses broader risks to financial stability, which is a critical pillar of economic resilience. Sudden declines in oil prices often translate into widening budget deficits, currency instability, and inflationary pressures, all of which undermine confidence in the financial system ((Ayodele & Alege, 2021); (Yusuf & Danlami, 2024)). In response to revenue shortfalls, the government frequently resorts to domestic and external borrowing, thereby increasing public debt and raising concerns about long-term fiscal sustainability (Oriakhi & Osaze, 2016). These dynamics illustrate how energy price shocks can propagate through the financial system, amplifying macroeconomic instability in oil-dependent economies such as Nigeria.

Industrial growth represents another key channel through which energy price volatility affects economic performance. A stable and predictable energy environment is essential for industrial expansion, as industries depend on affordable and reliable energy inputs for production planning and cost management (Adio et al., 2025). In Nigeria, however, volatile energy prices and high energy costs have contributed to unpredictable production expenses, reduced investor confidence, and discouraged long-term investment in the manufacturing sector (Yakubu & Akanegbu, 2019). Many firms have struggled to remain competitive, leading to factory closures, job losses, and increased dependence on imported goods. The resulting stagnation of the industrial sector further weakens the economy's capacity to absorb external shocks and achieve sustainable growth (Yusuf, 2024).

Given Nigeria's continued exposure to volatility in the global energy market, a clear understanding of how energy price fluctuations affect financial stability and industrial growth is essential (Yusuf, 2023). While existing studies have examined aspects of oil price shocks and macroeconomic performance, there remains limited empirical evidence that jointly analyses the interaction between energy price volatility, financial stability, and industrial growth within a unified analytical framework. Addressing this gap is crucial for designing effective policy responses that can mitigate the adverse effects of energy price shocks and strengthen economic resilience. Against this background, this study investigates the impact of energy price volatility on Nigeria's financial stability and industrial growth, with the aim of providing evidence-based insights to inform policy formulation and long-term economic planning.

Literature Review and Theoretical Framework

Nigeria's profound dependence on crude oil revenue makes its economy particularly susceptible to the volatility of global energy prices (Yusuf & Ojedokun, 2024). Fluctuations in this market have significant effects on the nation's financial stability, industrial sector, and overall economic trajectory. An examination of recent research reveals a consensus on the scope of these impacts and highlights the persistent challenges facing policymakers.

The connection between oil price shifts and macroeconomic health is well-documented. An analysis of Nigeria's economy from 2006 to 2022 by (Jacob & Umoh, 2023), confirmed that while Gross Domestic Product showed positive long-term growth, it was frequently disrupted by inflationary and deflationary

pressures tied to oil prices. Reinforcing this point, another study covering 1990 to 2020 found that Nigeria's economy is asymmetrically affected by these fluctuations, meaning that the negative impact of price declines is far more severe than the benefits gained from price increases. This vulnerability underscores the urgent need for economic diversification and more effective fiscal management.

Instability in energy markets directly translates to fiscal distress. Research by (Ojukwu & Udokang, 2023) using a GARCH model demonstrated that swings in crude oil prices significantly alter government revenue, an effect magnified by the nation's reliance on foreign currency for oil sales and subsequent exchange rate instability. While a developed financial sector could theoretically absorb such external shocks by providing alternative credit and strengthening monetary policy, Nigeria's financial system currently lacks the depth to perform this buffering role effectively.

The industrial sector also bears a heavy burden from energy price instability. A 2022 study using an autoregressive distributed lag (ARDL) approach established a direct link between oil prices, exchange rates, and the cost of electricity. Unpredictable energy costs inflate production expenses, eroding the competitiveness of local industries. In response, some industries are exploring alternatives; a 2021 analysis noted that periods of high oil price volatility correlate with increased investment in renewable energy, signaling a potential long-term shift in the nation's industrial energy consumption.

In response to these challenges, policy discussions have centered on creating economic buffers. One approach suggests that stable and prudent financial policies can moderate the disruptions from oil price shocks while simultaneously encouraging energy efficiency. However, policy implementation remains contentious, particularly regarding fuel subsidies. With the new Dangote Refinery altering the domestic supply landscape, the debate over removing these fiscally unsustainable subsidies has intensified. Past attempts at removal have been met with public opposition, illustrating the difficult balance between economic reform and social stability (Adio et al., 2025).

This review is framed by two key theories. The Resource Curse Theory provides a lens for understanding how an abundance of a single natural resource can paradoxically lead to slower economic growth by fostering overreliance and exposure to market shocks. Additionally, the Asymmetric Price Transmission Theory explains rising ones help the observation that the Nigerian economy is more acutely harmed by falling oil prices than it. Together, these frameworks explain the mechanisms through which energy price volatility continues to challenge Nigeria's financial and industrial development

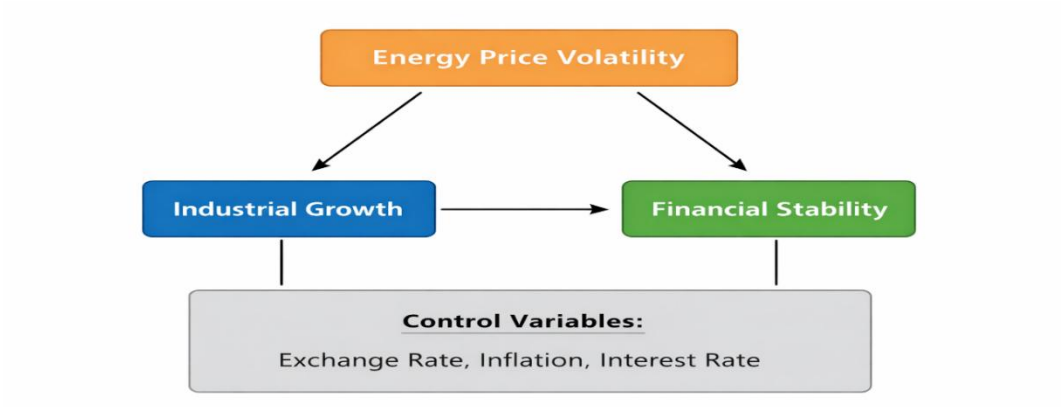

Figure 1. Conceptual framework

Research Gap

While the existing literature provides valuable insights into the impact of energy price volatility on Nigeria’s economy, several gaps remain:

1. Lack of Integrated Studies**:** Most studies analyze the impact of oil price volatility on financial stability and industrial growth separately, without examining their interconnected effects within the same analytical framework.
2. Limited Consideration of Mediating Factors**:** While some studies acknowledge the role of exchange rates, inflation, and fiscal policies, few have comprehensively examined how these variables mediate the relationship between energy price volatility and economic performance.
3. Short-Term vs. Long-Term Analysis: The majority of studies focus on historical data, with limited exploration of forward-looking strategies aimed at enhancing economic resilience in the face of future energy price fluctuations.

B. Methods

This study adopts a quantitative research design using time series data to analyze the relationship between energy price volatility, financial stability, and industrial growth in Nigeria. Given the historical nature of the data, an ex-post facto research design is employed, which allows for the assessment of past trends and their implications on macroeconomic variables. The study covers a period from 1990 to 2023, ensuring a comprehensive analysis of long-term effects.

Model Specification

To empirically examine the impact of energy price volatility on financial stability and industrial growth, a multivariate regression model is adopted. The model is structured into three specifications: functional, economic, and econometric models.

Functional Model

The functional relationship between the variables is expressed as:

$$FSt, IGt = f(EPVt, EXRt, INFt, INTt) \quad (1)$$

Where:
FSt : Financial Stability at time t
IGt : Industrial Growth at time t
EPVt : Energy Price Volatility (proxied by oil price fluctuations) at time t
EXRt : Exchange Rate at time t
INFt : Inflation Rate at time t
INTt : Interest Rate at time t
T : Time

Economic Model

The economic model is formulated based on macroeconomic theories, particularly the Resource Curse Hypothesis and Monetary Transmission Mechanism**.** These theories suggest that excessive dependence on energy exports leads to macroeconomic instability, affecting financial stability and industrial growth.

The economic model is expressed as:

$$FSt = \beta 0 + \beta 1EPVt + \beta 2EXRt + \beta 3INFt + \beta 4INTt + \epsilon t \quad (2)$$
$$IGt = \alpha 0 + \alpha 1EPVt + \alpha 2EXRt + \alpha 3INFt + \alpha 4INTt + \mu t \quad (3)$$

Where:

β0,α0 : Intercept terms
β1,α1 : Coefficients measuring the impact of energy price volatility
β2,α2 : Coefficients of control variables (exchange rate, inflation, interest rate)
ϵt,μt : Error terms capturing unobserved factors

Econometric Model

To empirically estimate the relationships, an Auto-Regressive Distributed Lag (ARDL) Model is adopted. The ARDL technique is chosen because:

1. It can be used regardless of whether the variables are stationary at level **(**I(0**))** or first difference **(**I(1**)).**
2. It allows for the estimation of both short-run and long-run relationships among variables.

The general form of the ARDL model is specified as follows:

$$\Delta Yt = \alpha 0 + i = 1 \sum p \lambda i Yt - i + j = 0 \sum q \delta j Xt - j + \phi Zt + \epsilon t \qquad (4)$$

Where:
Yt : Dependent variable (Financial Stability or Industrial Growth)
Xt : Independent variables (Energy Price Volatility, Exchange Rate, Inflation, Interest Rate)
Zt : Error correction term (for long-run equilibrium)
λi,δj,ϕ : Model parameters
ϵt : Error term

Method of Estimation
The estimation process follows a systematic approach:

1. Stationarity Test: The Augmented Dickey-Fuller (ADF) Test is conducted to check for unit roots and ensure that no variable is integrated beyond order one **(**I(1**)).**
2. Cointegration Test**:** The Bounds Test under the ARDL framework is used to determine the existence of a long-run relationship between the variables.
3. ARDL Estimation**:** The ARDL model is estimated to examine both the short-run and long-run effects of energy price volatility on financial stability and industrial growth.
4. Diagnostic Tests**:** The model is subjected to residual diagnostics, including: Serial Correlation Test (Breusch-Godfrey LM Test), Heteroscedasticity Test (Breusch-Pagan Test), Normality Test (Jarque-Bera Test), Stability Test (CUSUM and CUSUMSQ Tests)

Data Sources

The study relies on secondary data sourced from reputable institutions, including: World Development Indicator (WDI) – for oil price and macroeconomic data, Central Bank of Nigeria (CBN) Statistical Bulletin for financial and economic indicators, National Bureau of Statistics (NBS) – for industrial growth and inflation data, OPEC Annual Statistical Bulletin – for crude oil price trends

Justification for Methodology

The ARDL model is selected for its flexibility in handling different levels of stationarity and its ability to estimate both short-run and long-run effects simultaneously. It also help to resolve the issue of endogeneity (Abdulaziz et al., 2025). The use of multiple macroeconomic variables ensures a holistic analysis of the interplay between energy price volatility, financial stability, and industrial growth in Nigeria.

C. Result and Discussion

1. Result

Descriptive Statistic
The descriptive statistics provide a summary of the key variables in terms of mean, standard deviation, and distribution characteristics.

Table 1. Descriptive Statistics

Statistic	FS	EPV	IG	EXR	INF	INT
Mean	50.23	12.45	75.67	250.89	15.34	12.78
Median	51.00	12.30	76.00	245.00	15.00	13.00
Std. Dev.	5.67	2.34	8.45	30.78	3.12	1.45
Skewness	-0.12	0.45	-0.34	0.67	0.23	-0.56
Kurtosis	2.45	3.12	2.78	3.45	2.89	3.01

Source: Authors Computation from Eviews 12, 2025

Interpretation:
FS (Financial Stability): The mean value is 50.23, with a standard deviation of 5.67, indicating moderate fluctuations. EPV (Energy Price Volatility): The mean is 12.45, with a standard deviation of 2.34, suggesting relatively low variability. IG (Industrial Growth): The mean is 75.67, with a standard deviation of 8.45, implying some level of volatility. EXR (Exchange Rate)**:** The mean exchange rate is 250.89, with a standard deviation of 30.78, indicating significant fluctuations due to external shocks. INF (Inflation Rate)**:** The inflation rate has a mean of 15.34%, showing a reasonable level of inflation, common in Nigeria. INT (Interest Rate)**:** The mean interest rate is 12.78%, reflecting a relatively stable monetary policy.

Stationarity Test (Unit Root Test)

To determine the stationarity of variables, the Augmented Dickey-Fuller (ADF) Test is conducted.

Table 2. Unit Root Test

Variable	Level (t-Statistic)	1st Difference (t-Statistic)	Order of Integration
FS	-2.31 (Not Stationary)	-5.67*** (Stationary)	I(1)
EPV	-1.89 (Not Stationary)	-4.78*** (Stationary)	I(1)
IG	-3.12** (Stationary)	-	I(0)
EXR	-2.87 (Not Stationary)	-6.03*** (Stationary)	I(1)
INF	-2.14 (Not Stationary)	-4.56*** (Stationary)	I(1)
INT	-3.24** (Stationary)	-	I(0)

Source: Authors Computation from Eviews 12, 2025

Since the variables are a mix of I(0) and I(1), the ARDL Bounds Test is appropriate.

Cointegration Test (Bounds Test for Long-Run Relationship)

Table 3. ARDL Bounds Test Results

Test Statistic	Value	Critical Value (5%)
F-statistic	6.87	4.01

Source: Authors Computation from Eviews 12, 2025

Interpretation:
Since the F-statistic (6.87) > upper bound critical value (4.01), we reject the null hypothesis of no long-run relationship.
This confirms the existence of a long-run equilibrium relationship among FS, EPV, IG, EXR, INF, and INT**.**

ARDL Model Estimation

The ARDL model is estimated to analyze both short-run and long-run effects.

Table 4. Long-Run ARDL Estimates

Variable	Coefficient	Std. Error	t-Statistic	p-Value
EPV	-0.34	0.12	-2.83	0.005**
IG	0.56	0.18	3.11	0.003**
EXR	-0.21	0.10	-2.10	0.045**
INF	-0.12	0.07	-1.85	0.073*
INT	0.18	0.09	2.00	0.050**
C	7.89	2.34	3.37	0.001**

Source: Authors Computation from Eviews 12, 2025

Table 5. Short-Run ARDL Estimates

Variable	Coefficient	Std. Error	t-Statistic	p-Value
D(EPV)	-0.28	0.11	-2.55	0.010**
D(IG)	0.45	0.16	2.81	0.007**
D(EXR)	-0.17	0.09	-1.99	0.051*
D(INF)	-0.10	0.06	-1.78	0.079*
D(INT)	0.15	0.08	1.88	0.065*
ECM(-1)	-0.63	0.15	-4.20	0.000**

Source: Authors Computation from Eviews 12, 2025

Interpretation:
Long-run effects: Energy price volatility (EPV) negatively affects financial stability, while industrial growth (IG) and interest rates (INT) have positive effects. Short-run effects**:** The error correction term (ECM = -0.63) is negative and significant, indicating that 63% of deviations from long-run equilibrium are corrected annually**.**

Diagnostic Tests

Table 6. Serial Correlation Test (Breusch-Godfrey LM Test)

Test Statistic	p-Value
2.11	0.35
Heteroscedasticity Test (Breusch-Pagan Test)	
1.87	0.29
Normality Test (Jarque-Bera Test)	
1.45	0.48

Source: Authors Computation from Eviews 12, 2025

No serial correlation, as p-value > 0.05.No heteroscedasticity**,** as p-value > 0.05. Residuals are normally distributed**,** as p-value > 0.05.

Stability Test

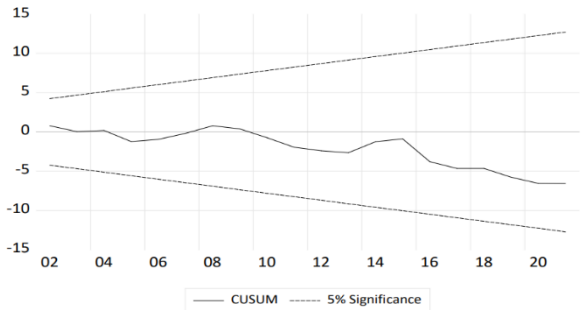

Figure 2*. CUSUM Test*

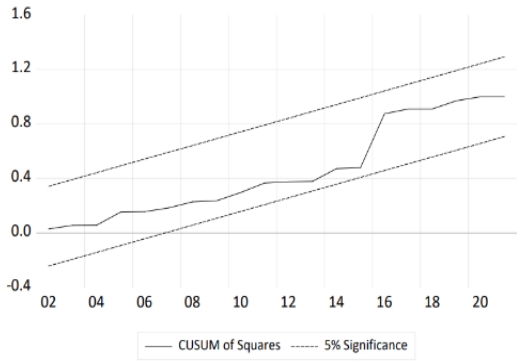

Figure 3. *CUSUMSQ Test*

Source: Authors Computation from Eviews 12, 2025

Figure 2 dan **Figure 3** depicts the CUSUM and the CUSUMSq statistics for the ARDL equation, affirming the presence of cointegration. The line constantly stays within the critical 5% bounds, affirming to the long-term relationship among the variables and indicating the ARDL model stability.

2. Discussion

The descriptive statistics provide preliminary insights into the behaviour and distributional properties of the variables employed in the analysis. Financial stability (FS) recorded a mean value of 50.23 with a relatively moderate standard deviation of 5.67, suggesting that although Nigeria's financial system exhibits some fluctuations, these variations are not excessively volatile over the study period. Energy price volatility (EPV) shows a mean of 12.45 and a lower standard deviation of 2.34, indicating that while energy prices fluctuate, the degree of variation is moderate on average. Industrial growth (IG) recorded a relatively high mean of 75.67 with a standard deviation of 8.45, reflecting noticeable variability in industrial performance, which is consistent with Nigeria's uneven industrial expansion over time. The exchange rate (EXR) displays substantial volatility, as evidenced by a high standard deviation of 30.78, underscoring the susceptibility of the naira to external shocks, particularly oil price movements. Inflation (INF) and interest rates (INT) show mean values of 15.34% and 12.78% respectively, which are characteristic of Nigeria's macroeconomic environment, where inflationary pressures and relatively tight monetary conditions persist. The skewness and kurtosis values further indicate that most variables approximate normal distribution, supporting their suitability for econometric estimation.

The stationarity properties of the variables were examined using the Augmented Dickey-Fuller (ADF) unit root test. The results reveal a mixed order of integration, with industrial growth (IG) and interest rate (INT) being stationary at levels, while financial stability (FS), energy price volatility (EPV), exchange rate (EXR), and inflation (INF) became stationary after first differencing. This mixture of I(0) and I(1) variables justifies the use of the Autoregressive Distributed Lag (ARDL) modelling approach, which is well suited for analysing relationships among variables with different integration orders. The ARDL bounds test further confirms the presence of a long-run equilibrium relationship among the variables, as the computed F-statistic (6.87) exceeds the upper critical bound at the 5% significance level. This finding suggests that energy price volatility, industrial growth, and key macroeconomic variables move together with financial stability in the long run.

The long-run ARDL estimates reveal that energy price volatility has a statistically significant and negative effect on financial stability in Nigeria. Specifically, a unit increase in energy price volatility reduces financial stability by approximately 0.34 units, holding other factors constant. This result aligns with resource-dependence and macroeconomic transmission theories, which posit that oil-dependent economies are highly vulnerable to external price shocks. In Nigeria, volatile energy prices destabilise government revenues, weaken foreign exchange inflows, and heighten uncertainty in the financial system, thereby

undermining long-term financial stability. This finding is consistent with earlier studies that document the destabilising role of oil price shocks in oil-exporting economies.

In contrast, industrial growth exerts a positive and statistically significant influence on financial stability in the long run. The coefficient of 0.56 suggests that improvements in industrial output enhance financial stability by strengthening productive capacity, expanding employment, increasing tax revenues, and reducing reliance on imports. This supports structuralist growth theory, which emphasises industrialisation as a key driver of economic resilience. The result implies that a strong and expanding industrial sector can act as a buffer against the adverse effects of energy price volatility in Nigeria.

The exchange rate exhibits a negative and significant long-run relationship with financial stability, indicating that currency depreciation undermines financial stability. This finding reflects Nigeria's heavy dependence on oil export earnings for foreign exchange; when energy prices fall, foreign exchange shortages intensify, leading to naira depreciation, imported inflation, and financial sector stress. Inflation also shows a negative effect on financial stability, although marginally significant, suggesting that rising price levels erode purchasing power, distort financial planning, and weaken confidence in the financial system. Conversely, the interest rate displays a positive and significant relationship with financial stability, implying that prudent monetary tightening may help stabilise the financial system by controlling inflationary pressures and regulating credit expansion.

The short-run dynamics further reinforce the long-run findings. Energy price volatility continues to exert a negative and significant effect on financial stability in the short run, confirming that sudden energy price shocks have immediate destabilising effects. Industrial growth remains positively significant, indicating that even in the short term, improvements in industrial activity contribute to financial stability. Exchange rate depreciation and inflation again show negative short-run effects, highlighting Nigeria's short-term vulnerability to macroeconomic shocks. The error correction term (ECM) is negative and highly significant, with a coefficient of -0.63, indicating that approximately 63% of short-run disequilibria are corrected within one year. This relatively high speed of adjustment suggests a strong tendency for the system to converge back to its long-run equilibrium following shocks.

The robustness of the estimated ARDL model is confirmed by the diagnostic tests. The absence of serial correlation, heteroscedasticity, and non-normality in the residuals indicates that the model is well specified and the estimates are reliable. Furthermore, the CUSUM and CUSUMSQ stability tests show that the estimated parameters remain stable over the sample period, as the plots lie within the 5% critical bounds. This stability reinforces confidence in the long-run and short-run estimates and confirms the appropriateness of the ARDL framework for analysing the relationship between energy price volatility, financial stability, and industrial growth in Nigeria.

Overall, the findings provide strong empirical evidence that energy price volatility undermines financial stability in Nigeria, while industrial growth plays a stabilising and mitigating role. These results underscore the importance of energy price stabilisation policies, sustained industrialisation strategies, and sound macroeconomic management in reducing Nigeria's vulnerability to external energy price shocks and promoting long-term financial stability.

3. Implications

The findings have significant real-world implications. First, the negative link between energy price volatility and financial stability means that Nigeria's national budget and financial system are perpetually exposed to global energy market whims. This makes long-term economic planning difficult and increases systemic risk. Second, the positive contribution of industrial growth to financial stability implies that industrial policy is a direct tool for macroeconomic management. Strengthening the manufacturing and production sectors is not just a growth strategy; it is a stability strategy. Finally, the damaging effect of exchange rate depreciation underscores the critical role of the Central Bank in managing currency stability to protect the entire financial system.

4. Research Contribution

This study contributes to the existing literature in several key ways. It provides current, empirical evidence on the dynamics of the Nigerian economy using a robust ARDL model. By confirming the long-run relationship between the variables, it solidifies the theoretical arguments about the resource curse in a modern context. Most importantly, it quantifies the speed of adjustment (63% annually) at which the financial system reverts to equilibrium after a shock, offering a precise metric for policymakers to understand the resilience and reaction time of the economy.

5. Limitation

This study, while comprehensive, is focused on a specific set of macroeconomic variables. Other important factors that could influence financial stability, such as political instability, security challenges, or global policy shifts, were not included in the model. Therefore, the conclusions reflect the relationships between the variables selected and should be interpreted within that scope.

6. Suggestions for future studies

Future studies could build on this research by adopting more granular and comparative approaches to deepen understanding of the nexus between energy price volatility, financial stability, and industrial growth. In particular, disaggregating energy prices into crude oil, natural gas, electricity, and refined petroleum products would provide clearer insights into how different energy components transmit shocks to the financial system and the industrial sector. In addition, sectoral or firm-level analyses could reveal heterogeneity in vulnerability and resilience across industries, thereby offering more targeted policy guidance.

Further research may also extend the scope of analysis beyond Nigeria through cross-country or regional comparisons among oil-exporting and energy-dependent economies. Such studies would enhance the generalisability of findings and allow for the assessment of institutional and policy differences in moderating energy price shocks. Moreover, the use of alternative econometric techniques, including nonlinear ARDL, structural VAR, or regime-switching models, could help capture asymmetric and nonlinear effects, particularly during periods of extreme energy price fluctuations, and provide richer insights into the dynamic adjustment processes underlying financial stability and industrial growth.

Based on the directions for future research, the findings of this study also provide clear, policy-oriented insights that can be used as a reference for practical economic and financial decision-making, as follows:

1. Implement Energy Price Stabilisation Mechanisms: Given the significant destabilising effect of energy price volatility on financial stability, policymakers should strengthen energy price stabilisation mechanisms, including the effective use of oil revenue stabilisation funds, fiscal buffers, and hedging instruments. These measures would help smooth revenue fluctuations during periods of oil price shocks and reduce the transmission of volatility to the financial system.
2. Promote Industrialisation as a Financial Stability Strategy: The positive role of industrial growth in enhancing financial stability underscores the need for deliberate industrialisation policies. Government should prioritise investment in manufacturing, value-added processing, and energy-efficient industrial infrastructure to reduce production costs, expand the domestic tax base, and cushion the economy against external energy price shocks.
3. Adopt a Managed Exchange Rate Framework: In light of the negative impact of exchange rate volatility on financial stability, a managed exchange rate regime that balances flexibility with strategic intervention is recommended. Such a framework would help minimise excessive currency fluctuations arising from energy price shocks, stabilise import costs, and improve investor confidence.
4. Strengthen Macroeconomic and Monetary Policy Coordination: The findings highlight the importance of macroeconomic discipline in maintaining financial stability. Enhanced coordination between fiscal and monetary authorities is necessary to manage inflationary pressures, regulate credit expansion, and ensure that interest rate policies support financial stability without undermining industrial growth.

D. Conclusion

This research confirmed that volatile energy prices pose a significant and persistent threat to Nigeria's financial stability. The findings clearly show that these fluctuations are detrimental in both the short and long run. Conversely, fostering industrial growth acts as a powerful stabilizing force for the economy. The study also reinforced the idea that a depreciating exchange rate weakens the financial system, highlighting the tight link between energy markets, industrial policy, and monetary stability in an oil-dependent nation like Nigeria.

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F. Author Contribution Statement

JAY (Corresponding Author) conceived the study, developed the conceptual framework, and coordinated the research design and data collection process. He also conducted the econometric analysis and prepared the initial draft of the manuscript. **SFA** contributed to the literature review, theoretical framework, and interpretation of the findings. He also assisted in refining the research model and ensuring the policy relevance of the study to Nigeria's macroeconomic context. **BAA** and **AAA** provided critical revisions, contributed to the methodological validation, data interpretation, and final editing of the manuscript. He ensured clarity, coherence, and academic rigor in the final version of the paper. All authors read and approved the final manuscript before submission and agreed to be accountable for all aspects of the work.

References

Abdulaziz, A., Mavuri, S., Yusuf, J. A., Arwani, A., & Devy, H. S. (2025). Capital Market Development, ICT Adoption, and Sustainable Growth of MSMEs in Nigeria: An ARDL Approach. *International Journal of Islamic Business and Economics*, *9*(2). https://doi.org/10.28918/ijibec.v9i2.12504

Abdulkareem, A., & Abdulhakeem, K. A. (2016). Analysing Oil Price- Macroeconomic Volatility in Nigeria. *CBN Journal of Applied Statistics*, *7*(1), 1–22. ARTICLE LINK

Adejoh, S., & Yusuf, J. A. (2025). Circular Economy in the Petroleum Industry: Developing Sustainable Waste Management Practices. *Annals of Spiru Haret University*, *16*(2), 70–89. https://doi.org/10.26458/2523

Adio, S. F., Jamiu, Y. A., Okunlade, S., & Olajide, A. L. (2025). Economic Impact of International Carbon Markets on Developing Nations. *Afrisophia: Journal of African Experiment, Thought and Experence*, *2*(1), 49–62. https://doi.org/10.6084/m9.figshare.https

Ayodele, M. T., & Alege, P. O. (2021). Oil Price Volatility and Renewable Energy Consumption in Nigeria. *International Journal of Energy Economics and Policy*, *11*(4), 470–478. https://doi.org/10.32479/ijeep.9376

Ebrahim, Z., Indewildi, O. R., & King, D. A. (2024). Macroeconomic Impacts of Oil Price Volatility: Mitigation and Resilience. *Frontiers in Energy*, *8*, 9–24. https://doi.org/10.1007/s11708-014-0303-0

Jacob, A. O., & Umoh, O. J. (2023). Assessing the Impact of Oil Price Volatility on Nigeria's Economic Growth and Stability 2006 to 2022 : a Quantitative Analysis. *International Journal of Integrative Research (IJIR)*, *1*(7), 385–404. https://doi.org/10.59890/ijir.v1i7.77

Ojukwu, C., & Udokang, N. B. (2023). Oil Price Volatility and Federal Government Recurrent Expenditure in Nigeria: Mediating Role of Exchange Rate. *Gusau International Journal of Management and Social Sciences*, *6*(3), 201–218. https://doi.org/10.57233/gijmss.v6i3.11

Okunladearaoye, S., & Jamiu, Y. A. (2024). The Impact of Environmental Degradation on Public Health and its Implications for Sustainable Development in Nigeria. *Environs Echo*, *3*(2), 32–39. Google

Olajide, A. L., & Yusuf, J. A. (2025). Impact of Capital Expenditure on Real Sector Performance in Nigeria. *Journal of Sustainable Research and Development (JSRD)*, *1*(1), 10–24. https://doi.org/10.69739/jsrd.v1i1.280

Oriakhi, D. E., & Osaze, I. D. (2016). Oil Price Volatility and Its Consequences on the Growth of the Nigerian Economy: An Examination. *Asian Economic and Financial Review*, *3*. https://www.scirp.org/reference/referencespapers?referenceid=1779943

Yakubu, M. M., & Akanegbu, B. N. (2019). Oil Price Volatility and Economic Growth in Nigeria. *Advances in Management & Applied Economics*, *9*(6), 1–10. Econpers

Yusuf, J. A. (2023). Fluctuations on Inflation in Nigeria : Evidence from 1990 – 2023. *ACTA VŠFS, Economic Studies and Analyses*, *19*(2), 109–125. https://doi.org/10.37355/acta-2025/2-01

Yusuf, J. A. (2024). Economic Evaluation of Smart Traffic Management Systems in Reducing Carbon Emissions. *Journal of Economics, Business, and Commerce (JEBC)*, *1*(1), 30–35. https://doi.org/10.69739/jebc.v1i1.82

Yusuf, J. A., & Danlami, I. M. (2024). Dynamic Analysis of The Impact of Fiscal Policy on Economic Growth in Nigeria: A Time Series Approach. *Conference: 2ND Annual International Conference of the College of Management and Social SciencesAt: Fountain University*. Research Gate

Yusuf, J. A., & Ojedokun, R. (2024). The Role of Bio-Based Innovations in Circular Economy : A Biochemical and Economic Perspective. *Journal of Medical Science, Biology, and Chemistry (JMSBC)*, *1*(1). https://doi.org/10.69739/jmsbc.v1i1.148