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PROJECT NOTE AUGUST 2026

Transmission of the 2026 Geopolitical Energy Shock

Fuel, Food Prices, and Welfare Implications in Nigeria

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KEY FINDINGS

- The 2026 geopolitical energy shock increased global oil prices by approximately 60 percent, leading to a 14–15 percent increase in domestic fuel prices in Nigeria.
- Higher fuel prices were transmitted rapidly to food markets through increased transportation, storage, milling, and distribution costs, with the strongest impacts observed for local rice, imported rice, wheat flour, and *garri*.
- Food prices exhibited high persistence, suggesting that the effects of the energy shock are likely to extend beyond the initial shock period.
- Estimates from a simulation of the shock's impact on household welfare show increases in food poverty (+3.4 percentage points) and undernourishment (+2.9 percentage points) and declines in food expenditure (−3.9 percent) and calorie intake (−3.1 percent).
- Urban households experience larger declines in food expenditure and diet quality, while rural households experience larger increases in food poverty.
- The findings highlight the importance of strengthening transport systems, improving energy security, and expanding targeted social protection to reduce the vulnerability of food systems to external energy shocks.

[1] The note benefited from discussions and inputs from Ruth Hill, Alan de Brauw, and Sediqa Zaki, which helped inform the analysis and presentation.

1. Introduction

Global geopolitical tensions in early 2026, including the escalation of conflict involving Iran and the temporary closure of the Strait of Hormuz, triggered a sharp increase in international oil prices. Brent crude prices rose by nearly 70 percent within a few weeks, generating widespread concerns about fuel costs, inflation, and food security across many developing countries (Hirvonen et al. 2026). Although a fragile ceasefire subsequently eased prices, the shock exposed the vulnerability of food systems that depend heavily on imported fuel and long-distance transportation. While Nigeria is an oil-producing country, its domestic economy remains highly exposed to international energy shocks because of its continued reliance on imported refined petroleum products and exchange-rate fluctuations (Bueno et. al. 2025). Since the removal of fuel subsidies, domestic diesel and gasoline prices have become increasingly responsive to global oil market movements. During the 2026 oil shock, Nigeria experienced one of the largest increases in diesel prices in Africa, with domestic diesel prices rising by approximately 86 percent, illustrating the rapid transmission of global energy shocks to domestic markets (Hirvonen et al. 2026).

In Nigeria, these global pressures coincided with the removal of the long-standing fuel subsidy, further amplifying the increase in domestic fuel prices. The impact was particularly pronounced because Nigeria's food system is heavily dependent on road transportation, which links major agricultural production zones in the North and Middle Belt with urban consumption centers through extensive wholesale and retail marketing networks. Consequently, increases in fuel prices raise transportation, storage, processing, and distribution costs, which are subsequently transmitted to food prices. Evidence from East Africa shows that global oil price shocks are rapidly transmitted to local staple food prices through transport costs, often more quickly than international grain price shocks themselves (Dillon and Barrett 2016). Similarly, evidence from Nigeria demonstrates that spatially integrated food markets facilitate the transmission of transportation costs across regions, amplifying the effects of fuel price increases on domestic food prices (Amare et al. 2024). Food expenditures account for a substantial share of household budgets in Nigeria, particularly among poorer households, making them highly vulnerable to increases in food prices. Rising food prices reduce real purchasing power, resulting in lower food consumption, calorie intake, and dietary quality, with disproportionate welfare losses among vulnerable populations (Ivanic and Martin 2008; Balana et al. 2025; Amare et al. 2026).

This policy note examines recent trends in fuel and food prices in Nigeria and assesses the potential implications of the 2026 global oil price shock for household food security. First, it analyzes historical movements in domestic fuel and food prices to understand their relationship and transmission over time. Second, it employs autoregressive time-series models to estimate the likely evolution of fuel and food prices under the 2026 energy shock scenario. These forecasts are then used to simulate the expected impacts on household welfare using the Food Security Simulator, an Excel-based simulation tool developed by the International Food Policy Research Institute (IFPRI) (Ecker and Comstock 2021). The simulator estimates the short-term effects of food price increases and household income shocks on household consumption expenditure, calorie intake, dietary quality, and food security across Nigeria. By integrating empirical price forecasting with household-level welfare simulations, the analysis provides evidence on the likely distributional consequences of the 2026 energy shock and identifies the population groups most vulnerable to rising food prices.

2. Transmission Mechanism

Stage 1 – Fuel price adjustment: International oil price increases are transmitted to domestic fuel prices through import-parity pricing and exchange-rate pass-through. Because Nigeria imports a substantial share of its refined petroleum products, changes in international oil prices rapidly affect domestic diesel and gasoline prices (Bueno et al. 2025). During the 2026 crisis, Nigeria recorded one of the largest diesel price increases in Africa, reflecting the interaction of global oil prices, exchange rate depreciation, and market-based pricing (Hirvonen et al. 2026).

Stage 2 – Food price transmission: Higher fuel prices increase transportation, storage, milling, processing, and wholesale distribution costs. These additional costs are passed through to consumers in the form of higher food prices, although the magnitude of pass-through varies across commodities, degrees of market integration, and existing infrastructure. Empirical evidence indicates that fuel price shocks are transmitted to staple food prices through transportation costs, with substantial but heterogeneous pass-through across regions and commodities (Baffes and Dennis 2013; Dillon and Barrett 2016; Amare et al. 2024).

Stage 3 – Welfare adjustment: Higher food prices reduce households' real purchasing power and force households to adjust their consumption patterns. Poor households are disproportionately affected because food accounts for a larger share of their total expenditure. Consequently, increases in food prices reduce food consumption, calorie intake, dietary diversity, and overall food security (Ivanic and Martin 2008; Balana et al. 2025; Amare et al. 2026). The Food Security Simulator captures these welfare effects by translating food price and income shocks into changes in household food consumption, nutrient intake, and food security outcomes (Ecker and Comstock 2021).

3. Data and Methods

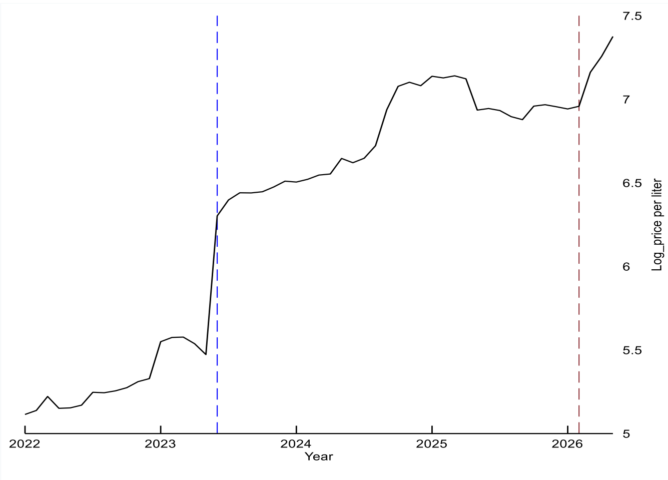
Our analysis uses monthly food price data from the Nigerian National Bureau of Statistics (NBS) Selected Food Price Watch, which covers all 36 states and the Federal Capital Territory. The data set is constructed from approximately 10,000 retail outlets and provides nationally representative food price information. State-level prices are computed as averages of observed market prices. National prices are simple averages across states following the NBS methodology, ensuring comparability over time. The empirical strategy combines a dynamic price specification estimated within an autoregressive regression framework for clarity, together with reduced-form models that capture both short-run adjustments and persistent effects of shocks. The analysis explicitly accounts for price persistence, seasonal variation, spatial heterogeneity, and structural breaks associated with the 2023 subsidy reform and the 2026 geopolitical shock.

We then employed the Food Security Simulator to estimate the short-term impacts of food price and household income shocks in Nigeria on consumption expenditure and caloric intake. The analysis is grounded in a partial equilibrium simulation framework, in which changes in food prices are translated into changes in household food expenditure, caloric consumption, and dietary quality using baseline expenditure shares and food-group composition. A key limitation of this approach is that it captures only short-run welfare adjustments. The simulator does not incorporate longer-term general equilibrium responses, including changes in wages, producer supply responses, economic growth effects, and behavioral adaptation over time. As such, the results should be interpreted as immediate welfare impacts rather than equilibrium outcomes.

4. Fuel and Food Price Trends

Figures 1 and 2 provide evidence on energy and food price dynamics. Figure 1 documents sharp structural breaks in fuel prices following the 2023 policy reform and the 2026 geopolitical energy shock. Both episodes are characterized by abrupt increases in price levels and persistent deviations from pre-shock trends, indicating limited reversion and the emergence of higher equilibrium price paths in the post-shock period.

Figure 1: Monthly fuel price trends in Nigeria (2022–2026)

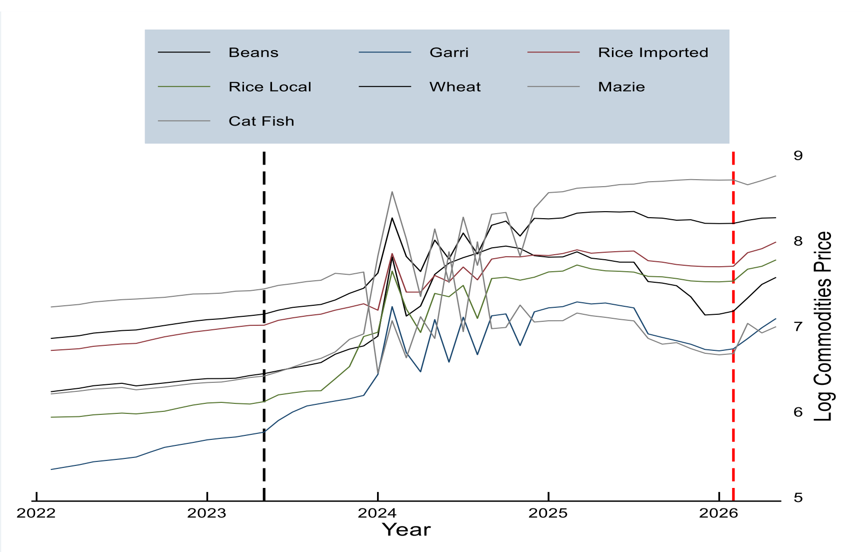


Source: Authors' computations based on NBS dataset.

Note: The figure shows monthly average retail fuel prices in Nigeria from January 2022 to May 2026. The vertical reference lines denote the June 2023 fuel subsidy removal and the 2026 global energy price shock associated with geopolitical disruptions. Prices are expressed in nominal Nigerian naira per liter.

Figure 2 illustrates how these energy shocks are transmitted into food markets. Prices of key staples exhibit broad-based and synchronized increases across commodities, consistent with strong pass-through from fuel costs to food prices. The observed increases following the 2026 geopolitical energy shock are particularly pronounced, suggesting that energy price disruptions play a central role in driving persistent upward adjustments in food price levels across markets.

Figure 2: Staple food price trends in Nigeria (2022–2026)



Source: Authors' computations based on NBS dataset.

Note: The figure presents monthly average retail prices of selected staple food commodities in Nigeria from January 2022 to May 2026. Prices are expressed in nominal Nigerian naira and illustrate changes before and after the June 2023 fuel subsidy removal and the 2026 global energy price shock.

5. Estimated Effects of the Energy Shock

Fuel prices in Nigeria exhibit high persistence over time, indicating limited short-run adjustment. The 2026 geopolitical shock is associated with a statistically significant upward shift in fuel price levels. Unlike earlier fluctuations caused by domestic policies, the 2026 shock reflects external global market conditions. The absence of strong seasonal or spatial effects suggests nationally integrated pricing behavior. Overall, the evidence is consistent with a structural break in domestic fuel pricing dynamics in 2026. These findings are consistent with recent evidence showing that Nigeria experienced one of the largest increases in domestic diesel prices related to the 2026 global oil shock because of its market-based fuel pricing system (Hirvonen et al. 2026)

Table 1: Fuel price dynamics and seasonality

Variable	Baseline dynamic	Higher-order dynamics
Lagged price	0.800*** (0.125)	0.837*** (0.205)
L2.price	—	−0.032 (0.102)
Shock 2023	0.284* (0.128)	0.284 (0.197)
Shock 2026	0.144** (0.054)	0.136** (0.052)
Spread	0.001 (0.001)	—
Monthly effects	Smal and inconsistent	Small and inconsistent

Source: Authors’ computations based on NBS dataset.

Note: Baseline dynamics includes the first lag of the dependent variable; higher-order dynamics additionally includes the second lag (L2.price). Spread measures the price differential between states, capturing inter-state market integration and spatial price transmission. Monthly fixed effects are included in all specifications. Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Food price transmission

Food markets exhibit strong but heterogeneous responses to the 2026 geopolitical energy shock. Across most commodities, price increases are highly persistent and slow to dissipate over time, with lag coefficients ranging between 0.86 and 0.96. This suggests limited short-run adjustment in food markets following energy price shocks. The strongest and most statistically robust price increases are observed in local rice, imported rice, wheat flour, and *garri*. These commodities are particularly sensitive to prices of imported inputs and transportation costs, due to Nigeria’s fuel-intensive distribution systems. In contrast, beans and catfish exhibit weaker and less statistically significant responses to the shock. Maize shows a negative and statistically insignificant effect, which may reflect substitution patterns, localized production dynamics, or market-specific supply adjustments.

Overall, the observed heterogeneity in price transmission reflects differences across commodities in supply chain length, storage capacity, import dependence, and degree of market integration. Commodities with longer supply chains and more fuel-intensive distribution networks are more exposed to energy price shocks, reinforcing the role of transport costs as a key transmission channel. Similar evidence has been documented for East African markets, where increases in international oil prices are transmitted to local staple food prices through transportation costs (Dillon and Barrett 2016). Evidence from Nigeria likewise shows that spatial market integration facilitates the transmission of transport costs across food markets (Amare et al. 2024). More broadly, rising energy prices have been shown to increase food marketing and distribution costs, contributing to food price inflation (Headey and Fan 2008; Baffes and Dennis 2013).

Table 2: Food price transmission from energy shock

Commodity	Persistence	Shock 2023	Shock 2026
Beans	0.938***	0.076*	0.222
Catfish	0.954***	0.203	0.061
Garri	0.861***	0.169*	0.205*
Imported rice	0.956***	0.029	0.070*
Local rice	0.922***	0.108*	0.103*
Wheat flour	0.928***	0.072	0.061*
Maize	−0.019	−0.274	−0.274

Source: Authors' computations based on NBS dataset.
Note: Persistence is the coefficient on the lagged dependent variable. Shock 2023 captures the effect of the June 2023 fuel subsidy removal, while Shock 2026 captures the additional impact of the 2026 global energy price shock. Models include state and month fixed effects. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Welfare and nutrition outcomes

The 2026 increase in food prices is associated with measurable deterioration in household welfare and nutrition outcomes, as shown by our simulation. Food poverty—that is, the inability to obtain enough healthy food—increases by 3.4 percentage points, while undernourishment rises by 2.9 percentage points, indicating reduced access to adequate food consumption among vulnerable households. These welfare losses are also reflected in consumption adjustments. Average food expenditure declines by 3.9 percent, while calorie intake falls by 3.1 percent, suggesting that households adjust to higher prices through both quantity reductions and substitution effects. Diet quality also deteriorates moderately, as households shift toward less diverse and lower-cost food groups in response to rising food prices.

Table 3: Welfare impacts of energy shock

Dimension	Indicator	National	Rural	Urban	Income Gradient	
Food poverty	Food poverty (pp)	+3.4	+4.0	+2.4	—	
	Undernourishment (pp)	+2.9	+2.1	+4.2	—	
Consumption	Food expenditure (%)	−3.9	−3.7	−4.3	Q1: −1.5	Q5: −5.1
	Calories (%)	−3.1	−2.7	−4.0	Q1: −1.2	Q5: −4.2
Diet quality	Diet quality index (%)	−2.3	−2.5	−2.0	Q1: −1.5	Q5: −2.5
	Adequate food groups (%)	−3.7	−1.9	−6.7	Q2: −4.5	Q5: −4.9
	Sufficient food consumption (pp)	−2.5	−2.3	−2.7	Q1: −0.9	Q5: −7.5

Source: Authors' computations based on NBS dataset.

Note: pp denotes percentage points and % denotes percentage changes relative to the baseline. National, Rural, and Urban report average estimated impacts, while the Income Gradient shows impacts by household consumption quintile (Q1 = poorest, Q5 = richest). Negative values indicate declines in welfare outcomes, whereas positive values indicate increases (e.g., food poverty and undernourishment). Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Distributional effects

The impact of the energy shock varies across households and regions. Urban households are more exposed to food price and diet quality changes due to their reliance on purchased food and transport services. Rural households experience relatively larger increases in food poverty, reflecting smaller income buffers and greater market access constraints. Net food buyers experience larger welfare losses, while net sellers experience only partial gains because of higher input costs and imperfect market pass-through. These results suggest heterogeneous adjustment patterns across different segments of the population. These heterogeneous impacts are consistent with previous studies examining food price shocks in low-income countries (Ivanic and Martin 2008; Balana et al. 2025; Amare et al. 2026)

6. Conclusions and Implications

The 2026 geopolitical energy shock demonstrates that external energy price disruptions can be rapidly transmitted to domestic food systems through higher transportation, processing, and distribution costs. Similar transmission mechanisms have been documented in both African and global food markets (Baffes and Dennis 2013; Dillon and Barrett 2016). In Nigeria, these transmission channels resulted in persistent increases in staple food prices and measurable declines in household welfare and nutrition. Strengthening transport infrastructure, improving market integration, expanding domestic refining capacity, and investing in shock-responsive social protection systems would reduce household vulnerability to future global energy shocks (Balana et al. 2025; Bueno et al. 2025; Hirvonen, Kosec, and Abay 2026). The simulation results also indicate that the magnitude of these impacts depends on structural characteristics of the economy, including transport infrastructure, market integration, dependence on imported refined petroleum products, and household reliance on purchased food. Strengthening these underlying systems can reduce the vulnerability of households to future global shocks.

To prevent declines seen in household welfare as a result of shocks to food prices, well-targeted cash transfer and food assistance programs that protect vulnerable households need to be expanded during periods of rapid food price inflation. For the long term, strengthening national social protection systems and shock-responsive safety nets that can be rapidly scaled up during future crises is essential. To improve early detection and responses to price shocks, market monitoring and early warning systems are needed, as well as better coordination across energy, agriculture, and food security institutions to ensure timely policy responses.

In the medium term, transport and logistics costs can be reduced by investing in road infrastructure, storage facilities, and market connectivity, and other investments in supply chain efficiency for staple foods can reduce the pass-through of fuel price increases. Improvements in strategic food reserves and emergency response mechanisms can also stabilize food availability during external shocks. Over the long term, structural changes are needed to reduce dependence on imported refined petroleum products, including continued investment in domestic refining capacity and energy sector reforms. More resilient and diversified food systems can be promoted by supporting agricultural productivity, local value addition, and market integration. Taken together, these measures would reduce the sensitivity of Nigeria's food system to external energy shocks while strengthening household resilience and supporting long-term food security.

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ACKNOWLEDGMENTS

The authors acknowledge financial support from the European Commission through the Food Security Portal (FSP) and Food Frontiers and Security (FFS) Science Program.

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Funding for this work was provided by (European Commission through the Food Security Portal (FSP). This publication has been prepared as an output of [name of program/project] and has not been independently peer reviewed. Any opinions expressed here belong to the author(s) and are not necessarily representative of or endorsed by IFPRI.

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