

The Economic Impact of Fuel Subsidy Removal on Inflation, Household Welfare, and Fiscal Sustainability in Nigeria

UKACHUKWU CHIKODI CYNTHIA¹, TYONONGU SAMUEL², MIRACLE EBERE EJIAKO³,
CHINAZA NAOMI POPOOLA⁴, KELECHUKWU CHISOM OKOLI⁵, FAITH TANGSI
CHRISTOPHER⁶, EMMANUEL CHINAZA IFEDI⁷

¹ Faculty of Social Science, Department of Economics, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria

² Faculty of Management Science, Department of Banking and Finance, University of Jos, Jos, Plateau State, Nigeria

³ Department of Cooperative Economics and Management, Federal Polytechnic Nekede, Owerri, Imo State, Nigeria

⁴ Department of History and International Studies, Babcock University, Ilisan-Remo, Ogun State, Nigeria

⁵ Department of Agricultural Economics, College of Agricultural Economics, Rural Sociology and Extension, Michael Okpara University of Agriculture Umudike, Umuahia, Abia State, Nigeria

⁶ Department of Economics, Faculty of Social Sciences, Taraba State University, Jalingo, Nigeria

⁷ Department of Geology, Faculty of Science, University of Ibadan, Oyo State, Nigeria

Abstract- *This study examined the economic impact of fuel subsidy removal on inflation, household welfare, and fiscal sustainability in Nigeria with particular reference to Nnamdi Azikiwe University, Awka, Anambra State. The study population comprised 750 academic staff and final-year students across selected faculties of the university. A sample of 150 representing 20% of the population was taken. The study adopted a descriptive survey design, while the instrument for data collection was a structured questionnaire. The Likert four-point scale rating was adopted whereas the data collected were analysed using the mean. The results of the data analysis showed that fuel subsidy removal highly influences inflation and household welfare in Nigeria. Rising transport and food costs, reduced purchasing power, and inadequate palliative measures were identified as major channels of impact. The researchers recommend that the government should implement targeted social protection programmes, invest subsidy savings in public transportation and domestic refining, ensure transparent utilisation of fiscal gains, and provide adequate palliatives to cushion the adverse effects on households as measures to maximise the benefits of the reform while minimising its social costs.*

Keywords: *fuel subsidy removal, inflation, household welfare, fiscal sustainability, questionnaire, cost-push inflation, nigeria*

I. INTRODUCTION

The removal of fuel subsidy in Nigeria has been one of the most debated economic policy decisions in the country's recent history. For decades, successive governments maintained a subsidy regime on Premium Motor Spirit (PMS) in order to keep pump prices low for consumers. By 2022, however, the fiscal cost of the subsidy had become unsustainable, consuming approximately ₦4.39 trillion (about US\$9.7 billion) and exceeding allocations to critical sectors such as health and education in some budget cycles [1], [2], [3].

On 29 May 2023, President Bola Ahmed Tinubu announced the complete removal of the subsidy with the declaration that "subsidy is gone." Petrol prices adjusted almost immediately from approximately ₦185-195 per litre to over ₦500-600 per litre and later fluctuated higher in response to exchange-rate movements and global crude prices [4], [5].

The policy generated widespread debate. Supporters argued that it would free fiscal resources, reduce smuggling, encourage domestic refining, and improve long-term macroeconomic stability [1], [6], [7]. Critics, on the other hand, pointed to the immediate

surge in transportation and food prices, the erosion of household purchasing power, rising poverty, and the inadequacy of palliative measures [3], [7].

Just as industrial actions by academic unions have historically disrupted academic calendars and affected student performance [8], the sudden removal of the fuel subsidy disrupted household budgets and the cost of living across Nigeria, including within tertiary institutions such as Nnamdi Azikiwe University, Awka.

This study therefore intends to examine the influence of fuel subsidy removal on inflation, household welfare, and perceptions of fiscal sustainability among staff and students of Nnamdi Azikiwe University, Awka, Anambra State. The findings are expected to contribute to the growing body of knowledge on the distributional consequences of energy-price reforms in developing economies and to provide evidence-based recommendations for policymakers [1], [6], [9].

1.1 Objective of the Study

Generally, the objective of the study is to find out how fuel subsidy removal influences inflation, household welfare, and fiscal sustainability in Nigeria. Specifically, it seeks to:

1. Ascertain the extent to which fuel subsidy removal influences inflation in Nigeria.
2. Identify the effects of fuel subsidy removal on household welfare among staff and students of tertiary institutions.
3. Suggest possible measures to mitigate the adverse effects of fuel subsidy removal while maximising its fiscal benefits.

1.2 Research Questions

1. To what extent does fuel subsidy removal influence inflation in Nigeria?
2. What are the effects of fuel subsidy removal on household welfare?
3. What are the possible measures to mitigate the adverse effects of fuel subsidy removal?

II. CONCEPTUAL FRAMEWORK

2.1 Concept of Fuel Subsidy

A fuel subsidy is a government intervention that keeps the retail price of petroleum products below the market-determined price. In Nigeria, the subsidy on

Premium Motor Spirit (PMS) was maintained for decades as a means of protecting consumers from international oil-price volatility and ensuring affordable energy [1], [3]. By 2022, however, the cost of the subsidy had risen to approximately ₦4.39 trillion (about US\$9.7 billion), representing a significant fiscal burden equivalent to roughly 2.2% of GDP and more than four times the health budget in some estimates [1], [3], [6]. The complete removal of the subsidy in May 2023 marked a decisive shift toward market-reflective pricing [6], [10].

2.2 Concept of Inflation

Inflation refers to a sustained increase in the general price level of goods and services in an economy. Cost-push inflation occurs when the cost of production inputs, such as fuel, rises and is passed on to consumers [11]. Following the removal of the fuel subsidy, petrol prices more than tripled in many locations, raising transportation and production costs across virtually every sector [10], [12]. Headline inflation subsequently rose from approximately 19.5-22 per cent in early 2023 to peaks exceeding 33-34 per cent in late 2024, with food inflation recording even steeper increases [12], [13]. Empirical studies confirm that the subsidy removal acted as a classic cost-push shock transmitted through transport and food prices [14], [15].

2.3 Concept of Household Welfare

Household welfare refers to the overall well-being of households as measured by real income, consumption levels, and access to necessities. The removal of the fuel subsidy reduced the real purchasing power of households, particularly low-income and informal-sector households that spend a larger share of their income on food and transportation [1], [6]. Studies and reports indicate that poverty headcount ratios rose following the reform, with estimates suggesting that several million additional Nigerians (around 7 million in some projections) could be pushed into poverty in the absence of adequate compensation [1], [6]. Welfare losses were regressive: poorer households experienced larger percentage declines in real income despite consuming less fuel in absolute terms [1], [16].

2.4 Concept of Fiscal Sustainability

Fiscal sustainability refers to the ability of government to maintain its spending, tax, and debt

policies without threatening solvency or requiring major corrective adjustments. The removal of fuel subsidy generated substantial fiscal savings, estimated at approximately ₦3.9 trillion in 2023 and projected to exceed ₦21 trillion between 2023 and 2025 relative to a continued-subsidy counterfactual [10]. These savings increased Federation Account Allocation Committee (FAAC) disbursements to the three tiers of government and improved net oil revenues [6]. However, the translation of gross savings into durable fiscal improvement has been constrained by rising debt-service costs and the incomplete channelling of resources into productive investments [1], [6].

2.5 Effects of Fuel Subsidy Removal

Available evidence and public discourse identify the following major effects of the 2023 fuel subsidy removal:

- ❖ Sharp increase in petrol pump prices and transportation costs
- ❖ Cost-push inflation, especially in food and transport components
- ❖ Decline in real household purchasing power and rise in poverty
- ❖ Increased fiscal space and higher FAAC allocations
- ❖ Reduced incentives for fuel smuggling
- ❖ Pressure on businesses and informal-sector operators that rely on generators and commercial transport

2.6 Measures to Mitigate Adverse Effects

Scholars and policy analysts have recommended the following measures to reduce the social costs of subsidy removal:

1. Targeted cash transfers and social safety-net programmes for vulnerable households
2. Investment of fiscal savings in public transportation and domestic refining capacity
3. Transparent reporting on the utilisation of subsidy savings
4. Gradual or sequenced reforms accompanied by adequate palliatives

5. Strengthening of agricultural logistics and food-supply chains to moderate food inflation

III. THEORETICAL FRAMEWORK

This study is hinged on the cost-push theory of inflation, the theory of public finance, and the welfare-economics perspective on distributional effects of price reforms. The cost-push theory posits that increases in the cost of production inputs, such as energy, are transmitted into higher general price levels [16], [17], [18], [19]. The removal of fuel subsidy constituted a classic cost-push shock. Public-finance theory emphasises that inefficient subsidies crowd out productive public expenditure and that their removal, if accompanied by transparent reinvestment, can improve fiscal sustainability [20], [21], [22]. Welfare economics highlights that the burden of energy-price increases is often regressive: poorer households, although consuming less fuel in absolute terms, devote a larger share of their budgets to food and transport and therefore experience larger percentage declines in real income [23], [24], [25]. These theoretical lenses together explain both the inflationary and welfare consequences observed after the 2023 reform as well as the potential fiscal gains.

IV. EMPIRICAL FRAMEWORK

Ozili [1] examined the macroeconomic and microeconomic implications of the 2023 fuel subsidy removal and concluded that while the reform frees fiscal resources and reduces distortions, it also raises inflation and poverty in the short term. World Bank Nigeria Development Updates [26] projected fiscal savings of about ₦3.9 trillion in 2023 and over ₦21 trillion between 2023 and 2025, while warning that an additional 7-10 million people could fall into poverty without adequate compensation. Empirical studies using Vector Error Correction Models and regression analysis have confirmed statistically significant cost-push effects of the subsidy removal on headline and food inflation [27], [28]. Other researchers have documented rising transport fares, declined real wages, and heightened public dissatisfaction arising from the abrupt implementation of the policy and the perceived inadequacy of palliative measures [26], [27], [28]. These findings provide the empirical backdrop against which the present survey of staff and

students of Nnamdi Azikiwe University, Awka is situated.

Final-year Students	330	66	44%
Total	750	150	100%

Source: Field Survey, 2025

V. RESEARCH METHODOLOGY

The research adopted the descriptive survey design in determining the economic impact of fuel subsidy removal on inflation, household welfare, and fiscal sustainability as perceived by staff and students of Nnamdi Azikiwe University, Awka, Anambra State. The design was considered appropriate because it afforded the researcher the opportunity to collect the opinions of respondents directly. The area of the study is Nnamdi Azikiwe University, Awka, Anambra State, Nigeria. The population of the study comprised academic staff and final-year students in selected faculties of the university, estimated at 750. A sample of 150 respondents (20 per cent of the population) was drawn using stratified random sampling to ensure representation across faculties.

Table 1: Distribution of Population and Sample

Category	Population	Sample (20%)	Percentage
Academic Staff	420	84	56%

5.1 Instrument for Data Collection

A structured questionnaire designed by the researcher using a Likert-type scale rating was used as the instrument for data collection. The face and content validity of the instrument were determined by three experts in Economics and Measurement and Evaluation. The instrument was administered to the respondents and collected on the spot to minimise loss. The data generated from the instrument were analysed using the mean. The Likert four-point rating scale was weighted as follows: Strongly Agreed (4 points), Agreed (3 points), Disagreed (2 points), and Strongly Disagreed (1 point). The acceptance benchmark for the mean was 2.50. Any score below 2.50 was rejected, while any score of 2.50 and above was accepted.

VI. DATA ANALYSIS

6.1 Result

Research Question 1: To what extent does fuel subsidy removal influence inflation in Nigeria?

Table 2: Responses on the Influence of Fuel Subsidy Removal on Inflation

S/N	Questionnaire Items	SA	A	D	SD	Total	Σ Score	$\bar{X}$
1	Fuel subsidy removal has significantly increased the general price level	70	55	15	10	150	485	3.23
2	Transport fares rose sharply after subsidy removal	80	50	12	8	150	502	3.35
3	Food prices increased as a result of higher transport costs	75	52	13	10	150	492	3.28
4	Fuel subsidy removal has no significant effect on inflation	10	15	55	70	150	265	1.77
5	The inflationary effect of subsidy removal is temporary	25	40	50	35	150	355	2.37

Grand Mean ≈ 2.80 . The data analysed in Table 2 show that items 1–3 scored above the benchmark of 2.50 and were accepted, while items 4 and 5 scored below and were rejected. Overall, respondents

agreed that fuel subsidy removal has significantly influenced inflation in Nigeria through higher transport and food prices.

Research Question 2: What are the effects of fuel subsidy removal on household welfare?

Table 3: Responses on the Effects of Fuel Subsidy Removal on Household Welfare

S/N	Questionnaire Items	SA	A	D	SD	Total	Σ Score	$\bar{X}$
1	Subsidy removal reduced real household purchasing power	72	48	18	12	150	480	3.20
2	Low-income households were more adversely affected	78	45	17	10	150	491	3.27
3	Palliative measures adequately cushioned the impact	15	25	60	50	150	305	2.03
4	Household welfare improved after subsidy removal	8	12	65	65	150	263	1.75
5	Cost of living has become more difficult for average households	85	40	15	10	150	500	3.33

Grand Mean ≈ 2.72 . Table 3 shows that respondents strongly agreed that fuel subsidy removal reduced real purchasing power, affected low-income households disproportionately, and made the cost of living more difficult. Items asserting that palliatives

were adequate or that welfare improved were rejected.

Research Question 3: What are the possible measures to mitigate the adverse effects of fuel subsidy removal?

Table 4: Responses on Possible Mitigating Measures

S/N	Questionnaire Items	SA	A	D	SD	Total	Σ Score	$\bar{X}$
1	Targeted cash transfers can cushion the impact on vulnerable households	65	55	20	10	150	475	3.17
2	Investment of savings in public transport will reduce long-term costs	70	50	18	12	150	478	3.19
3	Transparent utilisation of fiscal savings is essential	80	45	15	10	150	495	3.30
4	Domestic refining capacity should be prioritised	68	52	20	10	150	478	3.19
5	No special measures are needed; the market will adjust	12	18	55	65	150	277	1.85

Grand Mean ≈ 2.94 . Table 4 indicates strong acceptance of targeted cash transfers, investment in public transport, transparent utilisation of savings, and prioritisation of domestic refining as appropriate mitigating measures. The view that no special measures are needed was rejected.

reveal that the reform has had a significant inflationary impact through higher transport and food prices. This finding agrees with the cost-push inflation literature and with empirical studies [1, 2, 6, 9] that documented sharp increases in headline and food inflation following the May 2023 policy change.

VII. DISCUSSION OF FINDINGS

Table 2 sought to determine the extent to which fuel subsidy removal influences inflation. The findings

Table 3 examined the effects on household welfare. Respondents agreed that real purchasing power declined, that low-income households were disproportionately affected, and that the cost of living

became more difficult. Palliative measures were widely regarded as inadequate. These results are consistent with distributional analyses showing that energy-price increases are regressive and with reports of rising poverty headcounts after the reform [2, 5, 6].

Table 4 explored possible mitigating measures. The findings support targeted cash transfers, investment of fiscal savings in public transportation and domestic refining, and transparent reporting on the use of savings. These recommendations align with policy advice from the World Bank, IMF, and independent researchers who emphasise that the long-term success of subsidy reform depends on complementary social-protection and productive-investment measures [2, 5, 8].

VIII. CONCLUSION

This research indicates that the removal of fuel subsidy in Nigeria has produced significant inflationary pressures and adverse effects on household welfare, while simultaneously generating substantial fiscal savings. The study concludes that the reform is a double-edged policy: necessary for fiscal sustainability and the correction of long-standing distortions, yet socially costly in the short to medium term when compensatory measures are weak. Based on the findings, the following recommendations are made:

- 1) Government should implement well-targeted and adequately funded cash-transfer and social-safety-net programmes for vulnerable households.
- 2) A transparent portion of the fiscal savings should be invested in public transportation systems and the rehabilitation of domestic refining capacity.
- 3) Regular public reporting on the magnitude and utilisation of subsidy savings should be institutionalised to enhance accountability.
- 4) Agricultural logistics and food-supply chains should be strengthened to moderate food-price inflation.
- 5) Future energy-price reforms should be sequenced and accompanied by pre-announced compensatory packages to reduce social disruption.

REFERENCES

- [1] P. K. Ozili, "Implications of fuel subsidy removal on the Nigerian economy," 2023.
- [2] "Nigeria Development Update: Seizing the Opportunity." Accessed: Aug. 26, 2026. [Online]. Available: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099092725100040741>
- [3] S. Steadman *et al.*, "Towards sustainable fuel subsidy reform in Nigeria Evaluating progress and pathways to success," 2024, Accessed: Aug. 26, 2026. [Online]. Available: <https://odi.org/en/publications/towards-sustainable-fuel-subsidy-reform-in-nigeria/>
- [4] "Nigeria petrol prices soar to record high after subsidy removal | Reuters." Accessed: Aug. 26, 2026. [Online]. Available: <https://www.reuters.com/world/africa/nigeria-petrol-prices-soar-record-high-after-subsidy-removal-2023-07-18/>
- [5] "Nigeria - Consumer Price Index and Inflation." Accessed: Aug. 26, 2026. [Online]. Available: <https://microdata.nigerianstat.gov.ng/index.php/catalog/154>
- [6] "Nigeria," *IMF Staff Country Reports*, vol. 2024, no. 102, p. 1, May 2024, doi: 10.5089/9798400275074.002.
- [7] "Nigeria - Consumer Price Index and Inflation." Accessed: Aug. 26, 2026. [Online]. Available: <https://microdata.nigerianstat.gov.ng/index.php/catalog/154>
- [8] N. N. Abaekwume, K. Agundu, E. Agoha, and A. U. Obinna-Akakuru, "Strike Action and the Academic Performance of Students of Alvan Ikoku Federal College of Education Owerri," *International Journal of Education, Teaching, and Social Sciences*, vol. 2, no. 2, pp. 1–20, Apr. 2022, doi: 10.47747/IJETS.V3I1.598.
- [9] A. A. Alexander, "Subsidy removal and its effect on inflation in Nigeria? A critique," *International Journal of Multidisciplinary Research and Growth Evaluation*, vol. 5, no. 1, pp. 211–226, 2024, doi: 10.54660/IJMRGE.2024.5.1.211-226.

- [10] "Nigeria petrol prices soar to record high after subsidy removal | Reuters." Accessed: Aug. 26, 2026. [Online]. Available: <https://www.reuters.com/world/africa/nigeria-petrol-prices-soar-record-high-after-subsidy-removal-2023-07-18/>
- [11] M. Metzgar, "Revised Bloom's Taxonomy in a Principles of Economics Textbook," *Acta Educationis Generalis*, vol. 13, no. 3, pp. 15–28, Nov. 2023, doi: 10.2478/ATD-2023-0019.
- [12] "NBS Invest: Accelerating Investments in Nature-based Solutions for Climate Adaptation - Progress Report, 2023-2025." Accessed: Aug. 26, 2026. [Online]. Available: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099155012162531681>
- [13] "(PDF) Simulating the Inflationary Effects of Fuel Subsidy Removal in Nigeria: Evidence from a Novel Approach Forthcoming: Energy Research Letters." Accessed: Aug. 26, 2026. [Online]. Available: https://www.researchgate.net/publication/375715455_Simulating_the_Inflationary_Effects_of_Fuel_Subsidy_Removal_in_Nigeria_Evidence_from_a_Novel_Approach_Forthcoming_Energy_Research_Letters
- [14] "FG's subsidy reforms, not money supply growth, driving core inflation in Nigeria – Study - Nairametrics." Accessed: Aug. 26, 2026. [Online]. Available: <https://nairametrics.com/2024/04/01/fgs-subsidy-reforms-not-money-supply-growth-driving-core-inflation-in-nigeria-study/>
- [15] "Nigeria's inflation hit 34.80% in December – NBS - Punch Newspapers." Accessed: Aug. 26, 2026. [Online]. Available: <https://punchng.com/nigerias-inflation-hit-34-80-in-december-nbs/>
- [16] "Impacts on poverty of removing fuel import subsidies in Nigeria." Accessed: Aug. 26, 2026. [Online]. Available: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/977601468180545927>
- [17] "Analysing cost-push inflation using world input-output tables | CEPR." Accessed: Aug. 26, 2026. [Online]. Available: <https://cepr.org/voxeu/columns/analysing-cost-push-inflation-using-world-input-output-tables>
- [18] L. Kilian and X. Zhou, "Oil Price Shocks and Inflation," *Federal Reserve Bank of Dallas, Working Papers*, vol. 2023, no. 2312, Aug. 2023, doi: 10.24149/WP2312.
- [19] I. M. Weber, E. Wasner, M. Lang, B. Braun, and J. van 't Klooster, "Implicit coordination in sellers' inflation: How cost shocks facilitate price hikes," *Structural Change and Economic Dynamics*, vol. 74, pp. 690–712, Sep. 2025, doi: 10.1016/J.STRUECO.2025.04.005.
- [20] A. Elgouacem, "Designing fossil fuel subsidy reforms in OECD and G20 countries: A robust sequential approach methodology," *OECD Environment Working Papers*, vol. 168, Oct. 2020, doi: 10.1787/D888F461-EN.
- [21] M. Belgioioso and E. Newman, "Fossil fuel subsidy reform, distributive justice and civil unrest," *Energy Res. Soc. Sci.*, vol. 119, p. 103868, Jan. 2025, doi: 10.1016/J.ERSS.2024.103868.
- [22] "Chapter 2: Public Sentiment Matters in: Fiscal Monitor, April 2025." Accessed: Aug. 26, 2026. [Online]. Available: <https://www.elibrary.imf.org/display/book/9798229002516/CH002.xml>
- [23] Y. Zhu, Y. Zheng, and Z. Ren, "Household welfare loss from energy price crisis: Evidence from China," *Energy Econ.*, vol. 138, p. 107836, Oct. 2024, doi: 10.1016/J.ENERCO.2024.107836.
- [24] P. Levell, M. O'Connell, and K. Smith, "The welfare effects of price shocks and household relief packages: evidence from an energy crisis," Jan. 2025, doi: 10.1920/WP.IFS.2025.0325.
- [25] S. Varal and M. A. T. Reaños, "Energy price shocks in Europe and its impacts on vulnerable households: A demand system approach," *Energy Econ.*, vol. 160, p. 109429, Aug. 2026, doi: 10.1016/J.ENERCO.2026.109429.
- [26] "Nigeria Development Update (NDU)." Accessed: Aug. 26, 2026. [Online]. Available: <https://www.worldbank.org/en/country/nigeria/publication/nigeria-development-update-ndu>

- [27] N. S. O. N. S. OMANG, B. E. O. B. E. OGBO, and O. A. O. O. A. OGBAJI, “Does Fuel Subsidy Removal Drive Food Inflation In Nigeria,” *ADSU International Journal of Applied Economics, Finance and Management*, vol. 10, no. 2, Oct. 2025, Accessed: Aug. 26, 2026. [Online]. Available: <https://ajaefm.adsu.edu.ng/index.php/journals/article/view/186>
- [28] A. Anthony and K. Zacchaeus, “Fuel Subsidy Removal and Inflation Dynamics in Nigeria,” *Middle East Research Journal of Economics and Management*, vol. 6, no. 01, pp. 7–19, May 2026, doi: 10.36348/MERJEM.2026.V06I01.002.