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Fuel Subsidy Removal, Prices and Household Financial Health in Nigeria

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Abstract: The removal of fuel subsidies in Nigeria raised concerns about its impact on household financial health. While the policy aimed to address fiscal challenges and reallocate funds, its effects on household financial health required examination. This study examined the impact of fuel subsidy removal (FSR) and price changes on Nigerian households. Using the autoregressive distributed lag and error correction model, the study analysed secondary data on household income, consumption, savings, debt, and prices from 1981 to 2024. The findings showed that, in the short term, fuel subsidy removal increased household income and consumption due to higher wages and rising fuel prices. However, this was offset by a decline in savings, as households prioritised consumption. The impact on household debt was mixed, with a temporary increase observed. Price changes had a limited effect on financial health compared to the direct impact of FSR. The study concluded that while fuel subsidy removal offered short-term benefits, it strained savings and long-term financial stability. The government should redirect subsidy savings into infrastructure and monitor reforms to ensure long-term economic growth and household financial health.

Keywords: Fuel Subsidy, Consumer Price Index, Household Financial Health

JEL: E20, E21, E31, H23

Introduction

Fuel subsidy is one of the oldest economic policies in Nigeria which among others was introduced to ensure that the local population benefited from the country's large petroleum reserves. According to Isaac and Simon (2015), since the discovery of oil in commercial quantities at Oloibiri in the late 1950s, crude oil has become the primary source of income in Nigeria, with the government using fuel subsidy to control inflation and improve standards of living.

The origin of Nigeria's fuel subsidy policy can be traced back to 1977 when the government first introduced it as a temporary fiscal response to mitigate the effects of rising international oil prices (Yunusa, et al., 2023; Emeh, 2012). This

measure, which was initially meant to be a short-term solution, became a long-term economic strategy aimed at stabilising domestic fuel prices and safeguarding citizens' welfare. However, the sustainability of the subsidy has been questioned, as it evolved into a significant fiscal burden for the government.

To address this budgetary burden, earlier administrations attempted to abolish the policy on fuel subsidy, but were met with public outrage, resulting in their failure (Ogwuche et al., 2024). The public views fuel subsidy as a necessary intervention to lower the cost of essential commodities like petrol. The removal of fuel subsidy was however announced in 2023 and led to immediate price hikes, increasing transportation costs and causing ripple effects across various sectors, impacting the cost of food and other necessities (Ozili & Obiora, 2023).

Household financial health, a critical indicator of economic stability, measures a household's ability to manage income, savings, debt, and consumption effectively over time (Kagan, 2024). It reflects the capacity of families to meet essential needs, withstand financial shocks, and achieve long-term goals such as education, healthcare, and homeownership (Friedline et al., 2021). In Nigeria, where the economy is highly sensitive to fiscal reforms and external shocks, it is expected that household financial health would be negatively impacted by policies like fuel subsidy removal.

The immediate effect of subsidy removal has been a significant increase in fuel prices, which directly drives up the costs of transportation, food, and other basic items (Alli et al., 2024).Rising fuel prices, as a consequence of subsidy removal, may destabilise household financial health in the short term and undermine economic resilience over time. This financial burden may erode disposable income, increase reliance on debt, and reduce the ability to save or invest, thereby threatening long-term household financial health particularly on the low-income families.

This study therefore aims to examine the impact of fuel subsidy removal on household financial health in Nigeria, focusing on its effects on key financial dimensions such as income, savings, investment patterns, consumption behaviour, and debt management. By integrating insights from the theories and empirical evidences, the research endeavours to provide evidence-based recommendations for policymakers on mitigating the adverse effects while fostering inclusive economic growth.

Literature Review

Fuel Subsidy

Fuel subsidy is widely regarded as a government policy designed to lower the cost of petroleum products by covering the difference between the market price

and the reduced price offered to consumers (Ogwuche, et al., 2023). Similarly, Yunusa, et al. (2023) describe it as a financial intervention by the government to artificially lower fuel prices, aiming to stabilise the cost of living and curb inflation, particularly in oil-dependent developing economies.

However, Mcchulloch, Moerenhout and Yang (2021) take a slightly different perspective, arguing that fuel subsidies function as a compensatory mechanism to protect consumers from the unpredictable nature of international crude oil markets. When global oil prices fluctuate, the government steps in to absorb some of the costs, ensuring that domestic fuel prices remain relatively stable. This helps prevent sudden price hikes in the domestic market, which could otherwise lead to social unrest and economic hardship, particularly for low-income households.

In oil-dependent economies like Nigeria, fuel costs ripple through various sectors (Nora,2016; Saidu et al., 2020; Maith, Omotosho & Yang,2023), including transportation and production, directly affecting the prices of essential goods. By keeping fuel prices artificially low, the government attempts to shield the economy from inflation, a significant threat to purchasing power and economic stability. Therefore, across different viewpoints, the consensus is that fuel subsidies help protect citizens from the economic volatility in global oil markets while ensuring that essential goods and services remain affordable. Given its protective role in stabilizing prices, the removal of fuel subsidies can significantly disrupt household financial health, particularly in oil-dependent economies.

Prices

The concept of prices refers to the monetary value assigned to goods and services within an economy, determined by the interaction of supply and demand. Prices play a crucial role in resource allocation, guiding consumers and producers in their decision-making processes. Abba and Abdullahi (2024) emphasize that prices act as signals in the market, reflecting the relative scarcity or abundance of goods and services. In competitive markets, prices fluctuate in response to changes in supply and demand, with higher prices typically encouraging producers to increase supply and lower prices signaling excess supply or diminished demand.

External factors such as global commodity price shifts, exchange rates, and government policies also influence price fluctuations (Olusola et al.,2022). Commodity-exporting countries, in particular, are subject to the volatility of global prices, which can significantly impact domestic markets (Blanchard, 2021). When the price of key inputs like oil or food rises, production costs increase, leading to higher prices for consumers.

Inflation plays a critical role in price dynamics . Inflation refers to the sustained increase in the general price level of goods and services over time, eroding purchasing power as the same amount of money buys fewer goods (Gajabo, 2024). Rising inflation generally leads to price increases across the board, diminishing the purchasing power of money (Altunbas & Thornton, 2022). As Jongrim et al., (2019) note, inflation can stem from various factors, such as excessive demand, rising production costs, or expansionary monetary policies. In developing economies, the removal of fuel subsidies often results in inflation spikes that are difficult to control, leading to a reduction in the real value of wages and savings (Abba & Abdullahi, 2024). This erodes households' financial capacity, pushing them further into economic distress. Therefore, inflation and price dynamics post-subsidy removal play a crucial role in shaping household financial well-being, significantly affecting their ability to manage day-to-day expenses.

Household Financial Health

Household financial health refers to the overall financial well-being of a household, encompassing its ability to meet financial obligations, manage expenses, and build financial resilience over time (OECD, 2021). Key factors influencing household financial health include income, savings, investments, debt, and consumption. According to Lusardi and Mitchell (2014), households with strong financial health are better equipped to withstand economic shocks, make informed financial decisions, and plan for long-term financial security.

Household Income

Household income refers to the total amount of money earned by all members of a household, forming the foundation of their purchasing power and financial security (Shuni, 2023). Zebua, Sugina and Gulo (2021) highlight the critical role income plays in shaping consumption patterns and the overall economic well-being of households. Moreover, income affects a household's ability to save and invest for the future, as higher earnings provide more flexibility in managing financial obligations and building wealth (Jiang & Tan, 2013). Thus, household income is crucial in influencing the financial health and security of families.

Household Savings and Investments

Savings and investments are fundamental components of household financial health, acting as a safeguard against economic shocks while also enabling households to build wealth over time. Savings provide a buffer for unexpected expenses, while investments represent opportunities for households to grow their

wealth and secure future financial stability (Ojiegbe, Dunechi & Makare, 2016). In economies where access to credit is limited or expensive, the strain on household savings can significantly affect financial planning and the ability to invest in productive assets. Furthermore, higher fuel prices may discourage investment in long-term assets, as households prioritize immediate consumption needs over future wealth accumulation (Saidu & Yeom, 2020).

Household Debt

Debt serves as a critical financial mechanism for households, particularly when their income falls short of covering essential expenses (Lombard et al., 2017). In such situations, households often rely on borrowing to bridge the gap between earnings and living costs. While this reliance on credit allows households to meet immediate needs, it also exposes them to the risk of accumulating unsustainable debt, especially when interest rates are high or access to affordable credit is limited. Omodero (2019) posits that as household expenses increase, particularly for energy and transportation, households may turn to borrowing to make ends meet. Over time, this reliance on debt can lead to a financial spiral, particularly when borrowing is used for consumption rather than investment (Lusardi & Mitchell (2014).

Household Consumption

Household consumption represents the total expenditure on goods and services, reflecting living standards and overall economic well-being (Blanchard, 2021). Keynes (1936) emphasized the critical role of consumption in driving economic activity, as household spending stimulates demand for goods and services. However, consumption patterns are highly sensitive to income levels, inflation, and economic uncertainty. When income decreases or costs rise, households may be forced to cut back on discretionary spending, shifting their consumption to basic necessities (OECD, 2021).

Theoretical Framework

This study is premised on the Cost-Push Inflation Theory and the Permanent Income Hypothesis (PIH). The Cost-Push Inflation Theory posits that inflation occurs when the rising costs of production, especially due to increases in the prices of essential inputs such as fuel, lead to higher overall prices in the economy. As businesses face higher production and transportation costs, they pass these costs on to consumers in the form of increased prices for goods and services (Keynes, 1936; Blanchard, 2021). In the context of fuel subsidy removal in Nigeria, this theory explains the inflationary pressures that arise when fuel prices increase,

leading to higher costs across various sectors and ultimately reducing the purchasing power of households. The Permanent Income Hypothesis (PIH), suggests that households make consumption decisions based on their expected long-term income rather than immediate, short-term changes in their earnings. According to this hypothesis, when households face temporary shocks, such as the removal of fuel subsidies and the subsequent rise in living costs, they attempt to smooth consumption by drawing on savings, reducing discretionary spending, or taking on debt. In the Nigerian context, where fuel is a critical input in both production and transportation, rising fuel prices due to subsidy removal lead to inflation, compelling households to adjust their financial behaviours. These adjustments often involve reducing investments or increasing borrowing to maintain consumption in the face of rising costs (Saidu & Yeom, 2020).

As fuel price increases contribute to inflation, the interaction between these two theories becomes evident. On one hand, the Cost-Push Inflation Theory explains how subsidy removal triggers price hikes that affect household expenditures. On the other hand, the PIH shows how households respond to these price increases by adjusting their consumption and savings patterns based on their long-term financial outlooks. The strain on household financial health is particularly severe for low-income families, who may deplete savings, increase debt, or limit investments in response to rising prices.

Empirical Review

Empirical studies have consistently shown that fuel subsidy removal significantly impacts various aspects of household financial health and economic variables. Jiang and Tan (2013) examined the effect of energy subsidy removal in China, including oil products, electricity, and coal, using an input-output model. They found that the removal had a considerable impact on general price levels, reducing household consumption and income, which in turn affected economic growth.

In Nigeria, Garba (2023), Hamisu et al. (2024), and Yunusa et al. (2023) have examined the short- and long-term effects of fuel subsidy removal, identifying short-term spikes in transportation and food prices, loss of purchasing power, and an overall increase in the cost of living. They further posited that if the government implements promised infrastructure projects, there could be long-term economic benefits despite the initial hardships.

Abaekih et al. (2024), in their study established that the removal of fuel subsidy has a significant negative impact on the transportation system in Nigeria as it reduces the revenue for transport operators, a decline in long-distance vehicle

availability, and diminishes vehicle maintenance. Their study emphasised the direct effect on the household finances.

Aruofor and Ogbeide (2023), in their study on the Nigerian economy from 1981 to 2021, used Total Differential Modeling to assess the impact of fuel subsidy removal. They argued that for the removal to yield positive economic outcomes, the Nigerian government must improve transparency and accountability in the oil sector, emphasizing that poor governance has historically hampered the expected benefits. Ozli (2023) focused on the implications of subsidy removal on transportation costs and inflation. Their findings showed that the rise in transportation costs triggered inflation in other sectors, resulting in reduced household consumption and a strain on economic growth, highlighting the interconnected nature of household financial health and fuel price dynamics.

Further emphasizing household impacts, Hamisu et al. (2024) found that fuel subsidy removal in Adamawa State, Nigeria, negatively affected income prospects, entrepreneurial opportunities, and education over the long term. Ogwuche et al. (2024) used VECM technique to assess the welfare effects of subsidy removal, concluding that short-term welfare loss would likely stabilize in the long term. Additionally, Evans et al. (2023) noted rapid price hikes in fuel and related commodities, with a ripple effect on household consumption and savings due to sectoral interdependencies. While previous studies focused on the general economic impacts, this study aims to explore the specific effects of subsidy removal on household income, debt, consumption, and savings, providing a more focused understanding of its impact on household financial health.

Methodology

This study adopts a quantitative approach using time series econometrics to evaluate the effects of fuel subsidy removal and rising prices on various aspects of household financial health in Nigeria. The research leverages secondary data from reliable sources such as the National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN), and World Bank, including historical data on fuel subsidy adjustments, consumer price index (CPI), household income, savings and investment rates, debt levels, and consumption. The data set includes 44 yearly observations (1981-2024) for both pre- and post-subsidy removal phases, enabling robust analysis of both short-term and long-term effects.

The dependent variable, Financial Health (FH) is decomposed into Household Income (HI), Household Savings and Investment (HIS), Household Debt (HD) and Household Consumption (HC) while Fuel Subsidy Removal

(FSR) and Prices (CPI) are independent variables. GDP Per capita (GPC) is the control variable for the study. Given the theoretical foundations of this study in Cost-Push Inflation Theory and the Permanent Income Hypothesis, an Autoregressive Distributed Lag (ARDL) model is employed to capture both the short-run and long-run dynamics between fuel subsidy removal, price changes, and household financial health. To complement this, a Dynamic Error Correction Model (ECM) is included to directly link short-term adjustments to the long-term equilibrium, aligning well with the theoretical underpinnings.

Model Specifications

ARDL Model

The general form of the ARDL model is specified as:

$$Yt = \alpha + \sum_{i=1}^{p} \beta_i Y_{t-i} + \sum_{j=0}^{q} \delta_j X_{t-j} + \mu t$$

Where:
Yt represents dependent variable, Financial Health at time t and *X* stands for independent variables: Fuel Subsidy Removal (FSR) and Prices (CPI). Specifically, the ARDL model for each component of household financial health is as follows:

Household Income (HI) as Dependent Variable

$$HI_t = \alpha + \sum_{i=1}^{p} \beta_i HI_{t-i} + \sum_{j=0}^{q} \delta_j FSR_{t-j} + \sum_{j=0}^{q} \theta_j CPI_{t-j} + \sum_{j=0}^{q} \gamma_j GPC_{t-j} + \mu_t$$

$$HIS_t = \alpha + \sum_{i=1}^{p} \beta_i HIS_{t-i} + \sum_{j=0}^{q} \delta_j FSR_{t-j} + \sum_{j=0}^{q} \theta_j CPI_{t-j} + \sum_{j=0}^{q} \gamma_j GPC_{t-j} + \mu_t$$

$$HD_t = \alpha + \sum_{i=1}^{p} \beta_i HD_{t-i} + \sum_{j=0}^{q} \delta_j FSR_{t-j} + \sum_{j=0}^{q} \theta_j CPI_{t-j} + \sum_{j=0}^{q} \gamma_j GPC_{t-j} + \mu_t$$

$$HC_t = \alpha + \sum_{i=1}^{p} \beta_i HC_{t-i} + \sum_{j=0}^{q} \delta_j FSR_{t-j} + \sum_{j=0}^{q} \theta_j CPI_{t-j} + \sum_{j=0}^{q} \gamma_j GPC_{t-j} + \mu_t$$

The ECM is stated as

$$\Delta Y_t - \alpha + \sum_{i=1}^{p} \beta_i \Delta Y_{t-i} + \sum_{j=0}^{q} \delta_j \Delta FSR_{t-j} + \sum_{j=0}^{q} \varphi_j \Delta CPI_{t-j} + \emptyset.(Y_{t-i} - \theta_0 - \theta_1 FSR_{t-1} + \theta_2 CPI_{t-1}) + \varepsilon_t$$

Where Δ, the first-difference operator, capturing short-run changes; $\emptyset$ is the error correction term coefficient, indicating the speed of adjustment to the long-run equilibrium. $Y_{t-i} - \theta_0 - \theta_1 FSR_{t-1} + \theta_2 CPI_{t-1}$) denote the error correction term, which represents the deviation from long-run equilibrium; α is constant term; β_i, δ_j, φ_j are coefficients for *FH*, *FSR* and *CPI* respectively. *HIt* is the household income at time *t; HISt* is the household investment and savings at time *t*; *HCt* is the household consumption at time *t*; HD_t is the household Debt at time *t*.

4. Results

Table 1: Descriptive Statistics

	HI	*HS*	*HD*	*HC*	*CPI*	*FSR*	*GPC*
Mean	37.8250	4.6462	11.9119	54.4799	19.0795	0.9535	1507.2580
Median	35.2260	4.6879	8.1086	59.1264	13.0070	1.0000	1652.1540
Maximum	85.1293	9.7554	22.7548	81.1288	72.8355	1.0000	3200.9530
Minimum	0.0000	0.0000	5.8062	9.7625	5.3880	0.0000	474.4569
Std. Dev.	19.1524	2.4448	5.7702	16.8041	16.2812	0.2131	796.4255
Skewness	0.1343	-0.4103	0.5749	-0.8005	1.8674	-4.3068	0.2031
Kurtosis	2.9468	2.9044	1.5796	3.4139	5.4730	19.5488	1.8440
Jarque-Bera	0.1344	1.2228	5.9829	4.8992	35.9489	623.6026	2.6899
Prob	0.9350	0.5426	0.0502	0.0863	0.0000	0.0000	0.2606

Source: Auhors (2025).

The table above presents the descriptive statistics, showing that all variables have positive mean values and exhibit symmetry, as indicated by the close alignment of mean and median values. Among the variables, GDP per capita (GPC) has the highest mean, followed by Household Consumption (HC) and Household Income (HI), ranking second and third, respectively. This suggests that, on average, household consumption exceeds household income, implying that households may rely on additional sources to meet their consumption needs.

Further analysis reveals that Household Savings (HS) is relatively low at 4.64%, especially when compared to Household Debt (HD), which stands at 11.91%. This discrepancy suggests that many households might be using loans and credit purchases to support their expenditures. Additionally, GDP per capita

(GPC) shows relatively higher volatility than other variables, indicating greater fluctuations over time. In terms of distribution, all variables are positively skewed except for HS, HC, and Fuel Subisdy Removal (FSR), which have negative skewness. Variables such as HC, Prices (CPI), and FSR are leptokurtic, showing more frequent extreme values, while HI, HS, HD, and GPC are platykurtic, indicating fewer extreme outliers than the normal distribution.

Table 2: Unit Root Test

Variables	*t-Statistic*	*Prob.**	*Order*
HI	-2.1581	0.2241	I(1)
D(HI)	-5.7060	0.0000*	
HS	-1.6203	0.4636	I(1)
D(HS)	-6.3105	0.0000*	
HD	-0.7030	0.8350	I(1)
D(HD)	-5.8661	0.0000*	
HC	-2.8892	0.0551	I(1)
D(HC)	-7.5231	0.0000*	
FSR	-4.7514	0.0004*	I(0)
CPI	-3.082368	0.0356*	I(0)
GPCD(GPC)	-1.552244-4.895907	0.49770.0003*	I(1)

*MacKinnon (1996) one-sided p-values.Source: Autors' computation (2025)

The Augmented Dickey-Fuller (ADF) unit root test was conducted to determine the stationarity of the variables in this study. The results indicate that some variables become stationary at the first difference (HI, HS, HD, HC, and GPC), while others are stationary at level (FSR and INF). This suggests that the variables exhibit mixed levels of integration.

With confirmation that none of the variables is integrated at order I(2) and that they demonstrate multi-leveled stationarity, the study applies the ARDL (Autoregressive Distributed Lag) approach to cointegration. This approach is used to estimate the short-run dynamics, long-run relationship, and equilibrium parameters, which are presented in the subsequent sections.

The impact of fuel subsidy removal (FSR) and prices on household financial health in Nigeria was analysed using the ARDL approach to cointegration, allowing for the estimation of short-run dynamics and long-run relationships among the variables. In the short run, the influence of FSR and prices on household financial health shows that the equilibrium parameter CointEq(-1) is significant at the 5% level. It also has the correct theoretical sign for all proxies except for household savings (HS). This indicates that the speed of adjustment back to long-term equilibrium from short-term disequilibrium is approximately

Table 3: Impact of FSR and Prices on Household Financial Health in Nigeria

SHORT RUN COEFFICIENTS				
VARIABLES	*HI*	*HC*	*HS*	*HD*
D(CPI)	0.0603	0.0414	-0.0224	0.0290
	(0.7009)	(0.6452)	-1.4525)	(1.1869)
	0.4879	0.5233	0.1567	0.2449
D(FSR)	14.4472	11.8980	-0.9074	-2.6831
	(2.7318)	(3.4818)	(-0.9040)	(-2.4921)
	0.0098*	0.0014*	0.3732	0.0187*
D(GPC)	-0.0081	0.0036	-0.0005	0.0011
	-1.8955)	(1.1046)	(-0.6654)	(1.1988)
	0.0663**	0.2773	0.5109	0.2403
D(GPC(-1))	0.0098	0.0111	-0.0001	
	(2.2864)	(2.3139)	(-0.1310)	
	0.0284*	0.0270*	0.8967	
D(GPC(-2))		-0.0083	-0.0004	
		(-2.6208)	(-0.3193)	
		0.0132*	0.7517	
D(GPC(-3))			0.0014	
			(1.7931)	
			0.0830**	
D(HD(-1))				0.4782
				(3.4018)
				0.0020*
D(HD(-2))				-0.3342
				(-2.4457)
				0.0208*
D(CPI(-1))				-0.0007
				(-0.0220)
				0.9826
D(CPI(-2))				0.0427
				(1.6623)
				0.1072
CointEq(-1)	-0.3010	-0.3869	-0.0882	-0.4026
	(-3.2156)	(-4.2967)	(-0.8552)	(-3.7965)
	0.0028*	0.0001*	0.3992	0.0007*
Long Run Coefficients				
CPI	0.2002	0.1069	-0.2538	-0.1170
	(0.7247)	(0.6669)	(-0.7122)	(-1.8693)
	0.4734	0.5094	0.4818	0.0717**
FSR	47.9839	30.7538	15.3926	5.3679
	(4.2119)	(4.5653)	(0.9597)	(2.6412)
	0.0002	0.0001*	0.3449	0.0132*
GPC	-0.0125	0.0183	-0.0052	0.0065
	(-2.2192)	(5.7558)	(-0.6516)	(8.1047)
	0.0330*	0.0000*	0.5196	0.0000*

Note: Figures in parenthesis are t-statistics; *5% **10% Significant Level
Source: Authors' computation (2025).

30% for household income (HI), 38% for household consumption (HC), and 40% for household debt (HD).

Additionally, in the short term, CPI had an insignificant effect on all proxies of household financial health. However, for FSR, both HI and HC show positive significant coefficients, implying that FSR boosts household income and consumption in the short run. This effect may be due to a general salary increase when the economy experiences a rise in PMS prices due to subsidy removal or adjustments to the pump price of PMS. Such increases in PMS prices compel households to spend more on fuel and other commodities to maintain their living standards, thereby increasing household consumption.

Conversely, FSR exhibited a negative coefficient with HS (-0.90) and HD (-2.68), suggesting that subsidy removal or price adjustments adversely affect household savings and debt. Increased household consumption indirectly implies reduced savings and, consequently, lower debt levels, as households allocate more income to maintain their previous standard of living post-subsidy removal. Based on the ECM parameter, the results suggest a notable short-term relationship between FSR, prices, and household financial health in Nigeria. This finding aligns with the conclusions of previous studies (Jiang & Tan, 2013; Ozli, 2023; Hamisu et al., 2023).

Table 3 also showed the long run impact of FSR and Prices on Household Financial Health in Nigeria. The findings indicate that CPI exerts limited influence on household financial health in the long run. For Household Income (HI), the coefficient associated with CPI is positive (0.2002) but statistically insignificant, indicating that changes in the general price level have no significant long-term effect on household income which supports the position of Abba and Abdullahi, 2024) and Aruofor and Ogbeide (2023) that the long-term benefits could outweigh the short-term hardships if certain structural improvements (e.g., better governance, infrastructure investments) are implemented.

Similarly, the coefficient for Household Consumption (HC) is positive (0.1069) and statistically insignificant, suggesting that household consumption does not respond significantly to CPI fluctuations over time. The finding is consistent with the PIH, as it suggests that short-term fluctuations in CPI do not significantly impact household consumption, which aligns with the hypothesis that consumption is more responsive to permanent income rather than transitory price changes (Jongrim et al., 2019).

The coefficient for Household Savings (HS) is negative (-0.2538) and the associated p-value is 0.4818, which suggests that there is no significant long-term relationship between changes in the Consumer Price Index (CPI) and

household savings behavior. A negative coefficient indicates that as the CPI increases, there is a tendency for household savings to decrease. However, because the p-value exceeds the conventional significance threshold of 0.05, we fail to reject the null hypothesis, implying that this relationship is not statistically significant. This lack of significance suggests that fluctuations in the CPI, which reflect changes in the general price level, do not appear to have a meaningful or consistent impact on households' saving decisions in the long run. It is possible that other factors, such as income stability, access to credit, or fiscal policies, may be influencing savings behaviour more strongly than price changes alone.

Notably, the impact of CPI on Household Debt (HD) is marginally significant at the 10% level, with a negative coefficient of -0.1170. This result suggests a weak negative relationship between CPI and household debt, indicating that as the general price level rises, households might slightly reduce debt over time. However, the overall effects of CPI on household financial health indicators appear minimal, suggesting that broad inflationary trends alone are not substantial long-term determinants of household financial outcomes.

In contrast, FSR demonstrates a substantial and statistically significant impact on household financial health, particularly on income, consumption, and debt. For Household Income (HI), the coefficient for FSR is positive and highly significant at 47.9839, indicating a strong positive long-term effect. This suggests that as subsidy reforms are implemented, household income increases significantly, potentially due to economic adjustments that follow fuel price changes, such as wage increases. FSR also exerts a significant and positive impact on Household Consumption (HC), with a coefficient of 30.7538. This result implies that subsidy reforms lead to a substantial increase in household consumption in the long term. The increased consumption may be driven by the need to allocate more funds toward necessities, including fuel and related expenses, as households adjust their spending patterns to cope with higher costs resulting from subsidy removal.

In the case of Household Savings (HS), however, the coefficient for FSR is positive (15.3926) but statistically insignificant, suggesting that subsidy reforms do not have a meaningful long-term impact on household savings. This result may indicate that while households increase spending and income in response to reforms, their saving behaviours remain largely unaffected over the long run. On the other hand, Household Debt (HD) shows a positive and significant relationship with FSR, with a coefficient of 5.3679. This result suggests that subsidy reforms lead to an increase in household debt in the long term, as households potentially rely on borrowing to manage the higher expenses

associated with rising fuel prices. This increase in debt may reflect financial strain on households as they adjust to the cost implications of fuel subsidy removal or price adjustments.

In sum, CPI appears to have a limited effect on household financial health indicators over the long term, with only a marginally significant relationship observed with household debt. On the other hand, FSR has a pronounced impact, significantly boosting household income and consumption while also increasing household debt, suggesting that subsidy reforms are a key determinant of long-term household financial outcomes. These findings underscore the importance of managing fuel subsidy reforms carefully, as they have wide-reaching implications for household finances, raising income and consumption but also placing potential debt burdens on households in Nigeria. These results align with those found in the studies of Garba, (2023), Ogwueche et al. (2024) and Yunusa et al (2023).

Table 5: Post-Estimation Test

Test	*F-statistic*	*Prob.*
Breusch-Godfrey Serial Correlation LM Test:	0.383024	F(2,24)- 0.6859
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.701144	F(33,5)-0.7593
Ramsey Test	0.001329	F(1, 25)- 0.9712

Source: Authors' Computation (2025)

The diagnostic test results in Table 5 provide insights into the robustness of the model by checking for issues like serial correlation, heteroskedasticity, and model specification errors. The Breusch-Godfrey test assesses whether there is serial correlation in the residuals. Here, the p-value of 0.6859 is much higher than the typical significance level of 0.05, indicating that we cannot reject the null hypothesis of no serial correlation. This suggests that the residuals do not suffer from serial correlation, meaning there is no pattern in the errors that could bias the results. Therefore, the model does not appear to have issues with autocorrelation.

Furthermore, the Breusch-Pagan-Godfrey test evaluates whether the variance of the residuals is constant (homoscedasticity) or if it varies with the level of independent variables (heteroskedasticity). With a high p-value of 0.7593, we do not reject the null hypothesis of homoscedasticity. This indicates that the residuals have constant variance, and there is no evidence of heteroskedasticity, meaning the model's assumptions regarding error variance are met.

Lastly, the Ramsey RESET test checks for model misspecification by determining if non-linear combinations of the predictors have explanatory power

over the dependent variable. A high p-value of 0.9712 suggests that we cannot reject the null hypothesis that the model is correctly specified. This means there is no significant evidence of omitted variables or incorrect functional form, and the model appears well-specified. These results suggest that the model is robust, reliable, and statistically sound, with no signs of major issues in residual behaviour or specification errors. Therefore, the findings from this model can be considered credible and are unlikely to be biased by common econometric issues.

5. Conclusion and Recommendations

In conclusion, the removal of fuel subsidies leads to a temporary increase in household income and consumption, driven by wage adjustments and higher expenses resulting from rising fuel prices. However, this boost in income and consumption is counterbalanced by a decline in household savings, as families prioritize immediate spending over saving. While the Consumer Price Index (CPI) has a minimal short-term effect on household financial health, the disruptions caused by the fuel subsidy removal tend to subside over time, with household debt adjusting faster than income and consumption. While FSR can stimulate household income and consumption in the short term, it also presents risks to savings and long-term financial stability, underscoring the need for careful management of subsidy reforms.

To ensure that the advantages of subsidy removal are fully realized without compromising household financial stability, the Nigerian government should consider redirecting the funds saved from subsidy removal toward infrastructure development, particularly in sectors like transportation. In the short term, the government could implement inclusive policies, such as offering free transportation for primary and secondary school students, as well as for senior citizens aged 61 and above. Additionally, it may be beneficial to subsidise transport fares for the labour force through the government assisted transport system. Regular monitoring and evaluation of the impact of subsidy reforms will be crucial to ensure the policy remains effective and equitable, with adjustments made to protect vulnerable groups. By adopting these measures, the government can manage the challenges posed by subsidy removal while fostering long-term economic stability and improving the financial health of households across Nigeria.

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