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FUEL SUBSIDY REMOVAL AND DOMESTIC INVESTMENT IN NIGERIA

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Abstract

This study examined the effect of fuel subsidy removal on domestic investment in Nigeria. The quarterly data spanning the period from 2005 to 2024. The mixed order of integration of variables warranted the use of Auto Regressive Distributed Lagged (ARDL) model. The study found that fuel price exerts a negative and statistically significant effect on domestic investment in both the short run and long run. To mitigate the negative impact of fuel price volatility on domestic investment, we recommend that the Nigerian government should consider establishing strategic petroleum reserves or targeted subsidy mechanisms that can stabilize fuel prices, particularly in the short term, and provide predictability for investors.

Keywords: Fuel Subsidy, Domestic Investment, ARDL

1. Introduction

Fuel subsidy is a specific type of subsidy that has been widely used by governments to make energy more affordable. Globally, the International Energy Agency (IEA) estimated that fossil fuel consumption subsidies amounted to approximately $180 billion in 2021 and rose to $1trllion in 2022, higher than $150 billion in 2020 (IEA,2022; Muta & Erdogan 2023). In 2020, fuel subsidies in sub-Saharan Africa were estimated to be around 1.2% of the region's GDP (IMF, 2020). In 2022, the Nigerian government spent over N4 trillion on fuel subsidies, representing about 24% of the country's total expenditure that year (Amangwai & Amos 2025). The aim of this significant expenditure was to maintain energy affordability, especially in times of economic uncertainty and fluctuating global oil prices (IEA, 2022). However, while these subsidies provided short-term economic relief, they also perpetuated the reliance on fossil fuels, delaying the transition to cleaner energy sources and contributing to environmental degradation (Coady et al., 2019). The substantial increase in these subsidies reflected the efforts by governments to shield consumers and industries from the volatile and often high costs of energy. The long-term implications of such high levels of subsidy expenditure have raised concerns about fiscal sustainability and the need for more targeted and efficient use of public funds.

Countries like Ghana and Egypt have made efforts to reform their fuel subsidy regimes. Ghana, for example, started phasing out fuel subsidies in 2013 due to the unsustainable fiscal burden, and the savings were redirected towards social protection programmes (Atingi-Ego & Sebudde, 2017). Egypt undertook substantial subsidy reforms in 2014 as part of broader economic reforms, aiming to reduce the fiscal deficit and attract foreign investment (Breisinger et al., 2019). In the same vein the Nigerian government announced the deregulation of the downstream oil sector in 2020, effectively removing fuel subsidies. Additionally, a complete removal of fuel subsidies was implemented in 2023 as part of the governments' economic reforms aimed at addressing fiscal sustainability and improving

the efficiency of the oil sector. The effect of the removal of fuel subsidy on domestic investment in Nigeria may cause uncertainty as it affects the decisions and capacity of domestic firms to invest in innovation, expansion and capital expansion.

Domestic investment plays a pivotal role in the overall economic growth and development of any nation (Asiedu, 2002). The removal of fuel subsidies in Nigeria is anticipated to have profound implications for domestic investment. On the positive side, it could create increased fiscal space for the government, allowing for greater investment in essential sectors. The reallocation of funds from subsidies to more productive uses can enhance the overall business environment, stimulate economic activity, and attract both domestic and foreign investment (Coady et al., 2019. Khan & Ahmed, 2017). On the other hand, it may trigger contractions in investment, thereby undermining economic growth. This study therefore examines the effect of fuel subsidy removal on domestic investment in Nigeria.

This study is organized in 5 sections; section 1 contains introduction; section 2 discusses literature review. Methodology is presented in section 3 while section 4 discusses and interprets the results. Section 5 offers conclusion and policy recommendations.

2. Literature Review

2.1 Conceptual Issues

The Organization for Economic Cooperation and Development define subsidy as any measure that keeps prices for consumers below market levels or for producers above market levels, or that reduces costs for consumers and producers (OECD, 2006). This definition highlights subsidies as government interventions intended to alter market conditions by making goods or services more affordable for consumers or more profitable for producers. Subsidies, especially in developing economies, are mechanisms used to make essential commodities accessible to low-income populations, supporting poverty reduction and promoting equitable growth across critical sectors. Fuel subsidies are a specific type of subsidy that has been widely used by governments to make energy more affordable.

Investment on the other hand is defined by Keynes (1936) as the portion of current output that is not immediately consumed but is instead allocated towards creating future wealth. Adekunle and Aderemi (2012) define real domestic investment as expenditures aimed at increasing the total capital stock in an economy, including income-generating and employment-creating assets within the domestic economy, such as infrastructure and investments in sectors like agriculture and minerals. Ahuja (2010) reiterates that real domestic investment by both the public and private sectors is essential for the economic, social, and political progress of a country. Thus,higher investor participation correlates with stronger economic growth and structural reforms.

2.2 Theoretical Framework

The study adopts the neoclassical theory of investment, Jorgenson, (1963). The theory focuses on the cost of capital and the marginal productivity of capital as key determinants of investment. According to this theory, firms invest in new capital when the expected return on investment exceeds the cost of acquiring that capital. The optimal level of capital is determined by the firm's production function and the cost of capital, which includes the price of capital goods, interest rates, and other costs related to acquiring and using capital, such as fuel costs. Applying the theory, removing fuel subsidies directly increase the cost of capital of firms leading to a decrease in investment in the short run.

Tobin's Q Theory provides another lens through which to examine the impact of fuel subsidy removal on domestic investment. Tobin's Q is the ratio of the market value of a firm's existing capital to the cost of replacing that capital. A Q greater than 1 signal that it is profitable for firms to invest in new capital because the market value of capital exceeds its replacement cost (Tobin, 1969; Hayashi, 1982). Applying this theory, subsidy removal can affect Q by reducing the future profit

expectation and depress stock prices, it can also increase operating cost leading to higher replacement cost.

2.3 Empirical Review

Several studies have examined the effect of fuel subsidy removal, for instance, Ilodigwe (2023) and Oyasipe and Olukoya (2024), examined the effects of fuel subsidy removal on Small and Medium Enterprises (SMEs) in Enugu and Lagos State respectively. Their findings revealed that the removal of fuel subsidies had a significant negative impact on SMEs in the study areas. Nwachukwu and Chike (2011), Nwosa (2014) and Adenikinju (2012), investigated the effects of energy subsidy reform on domestic investment in Nigeria, they found that subsidy removal negatively impacted short-term investment. But other studies such as Al-Sahlawi and Abdullah (2021), Kojima and Koplow (2019), Arouri et.al (2021), Liu and Zhang (2020), Mehdi and Rezaei (2018), Chong and Gradstein (2019), Wesseh and Lin (2020), Van der Ploeg and Poelhekke (2018) Siddiqui and Azam (2019), Pradhan and Devarajan (2017) and Esfahani and Kutan (2019), among others explored the impact of fuel subsidy removal on either private or domestic investment in other countries, this research paper examines the relationship between fuel subsidy removal and domestic investment in Nigeria.

3. Methodology

3.1 Model Specification

This study adapts the model specified by Adewunmi Hounsou and Adeyele (2023) on subsidy removal and investment in Nigeria, where investment was modeled as a function of pump price of petrol, and Gross Domestic Product. However, this model was modified to suit the current study using the simple functional model below,

$$GFCF = F(PPP) \dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Where GFCF = Gross Fixed Capital Formation, a proxy for domestic investment

PPP = Pump price of Petrol

However, several social and economic factors determine the level of domestic investment. Therefore, incorporating other variables, which are possible determinants of domestic investment, the model becomes

$$\mathrm{GFCF_t} = \mathrm{F(PPP_t, EXR_t, INFR_t, INTR_t)} \dots\dots (2)$$

The Econometric form of equation 3.2 can be specified thus;

$$\mathrm{GFCF_t} = \alpha_0 + \alpha_1 PPP_t + \alpha_2 EXR_t + \alpha_3 INFR_t + \alpha_4 INTR_t + \varepsilon_t \dots\dots (3)$$

In order to be able to capture the non-linear property and heteroscedasticity of the variables the above equation will be logged. Thus, taking a partial log of the variables, equation 3 becomes:

$$\mathrm{lnGFCF_t} = \alpha_0 + \alpha_1 \mathrm{lnPPP_t} + \alpha_2 \mathrm{EXR_t} + \alpha_3 INFR_t + \alpha_4 INTR_t + \varepsilon_t \dots\dots\dots (4)$$

Where

GFCF = Gross Fixed Capital Formation (a proxy for domestic investment)
PPP= Pump Price of Petrol
EXR = Exchange Rate
INFR= Inflation Rate
INTR = Interest Rate
Ln= Natural Logarithmic sign
t = Time period
ε_t= Stochastic error term at time t.

$\mathrm{A_1}$ to α_4 are the coefficients to be estimated. While α_2 to α_4 are expected to be negative, $\alpha_1$is expected to be negative in the short run but positive in the long run.

3.2 Data and Sources

Quarterly time series data covering Q12005 to Q42024 are sourced to estimate the model for the study. The variables of interest include Gross Fixed Capital Formation (GFCF), a proxy for Domestic Investment, Pump price of petrol (PPP), Exchange rate (EXR), Inflation rate (INF) and Interest Rate (IR). Data for these variables are obtained from Central Bank of Nigeria (CBN) statistical bulletin, National Bureau of Statistics (NBS), Global Terrorism Database (GTD), and the World Bank Development indicators.

Gross Fixed Capital Formation represents the total value of acquisitions, less disposals, of fixed assets like machinery, equipment, buildings, and other structures used for production in Nigeria. Data on GFCF was obtained from Central Bank of Nigeria's Statistical Bulletin.

Exchange Rate (EXR): The exchange rate refers to the value of the Nigerian Naira relative to other foreign currencies. Exchange rate data is sourced from the World Development Indicators of the World Bank.

Pump Price of Petrol (PPP) represents the retail price of petrol as sold at fuel stations, reflecting fluctuations in domestic fuel prices over time. For this study, data on the pump price of petrol (PPP) is obtained from the National Bureau of Statistics (NBS), ensuring reliable and up-to-date information on fuel price trends in Nigeria.

Inflation Rate (INFR) measures the percentage change in the general price level of goods and services in Nigeria over a specific period. Data was sourced from Central Bank of Nigeria's Statistical Bulletin.

Interest Rate (INTR) is the cost attached to borrowing money by individuals, firms and government from the public. Data on interest rate was sourced from Central Bank of Nigeria's Statistical Bulletin.

3.3 Method of Data Analysis

Quarterly time series data were sourced from Central Bank of Nigeria (CBN) statistical bulletin, National Bureau of Statistical Bulletin and the World Bank Development indicators. The study employed descriptive and econometric tools for data analysis. Using data from Q12005 to Q42024 on the study variables, the study employs the Pairwise Granger causality Test and the Autoregressive Distributive Lag (ARDL) model is used to account for the research questions, the study objectives and hypothesis. The results of the Augmented Dickey-Fuller (ADF) Unit Root Test show that some variables are stationary at levels I(0) while some at first difference I(1) and the optimal lag of three (3) was selected using the Akaike Information Criteria (AIC). The diagnostic test such as Ramsey Reset Test, normality test, the Breusch-Godfrey Serial Correlation LM Test, the Breusch-Pagan-Godfrey Heteroskedasticity Test and the CUSUM and CUSUM square test is conducted to check the violation of the Ordinary Least Square (OLS) assumptions.

4. Results and Discussion

4.1 Descriptive Statistics

The results of descriptive statistics are presented in Table 1.

Table 1: Descriptive Statistics

Variables	GFCF	PPP	EXR	INFR	INTR
Mean	9459.825	227.0980	107.5522	14.10731	16.00316
Minimum	9283.013	141.8750	108.2495	12.33717	16.65719
Maximum	11445.86	1615.960	124.8181	30.85343	18.99083
Std.Dev.	7520.474	60.00000	86.26754	5.388008	11.48313

Source: Extract from Author's computation from E-views 10

A careful analysis of the 80 quarterly observations reveals that Gross Fixed Capital Formation (GFCF), Pump Price of Petrol (PPP), Exchange Rate (EXR), Inflation Rate (INFR), and Interest Rate (INTR) recorded average values of ₦9,459.83 billion, ₦227.10, ₦107.55 per USD, 14.11%, and 16.00%, respectively as shown in Table 1. The average GFCF reflects the level of domestic investment over the observed quarters and points to modest capital accumulation trends in the Nigerian economy. The mean pump price of ₦227.10 per litre suggests that the country experienced both subsidized and deregulated fuel price regimes during the

study period. Similarly, the exchange rate average of ₦107.55 per dollar may mask later periods of currency depreciation due to its concentration around earlier values. Inflation and interest rate averaging 14.11% and 16.00%, respectively point to persistent macroeconomic challenges, including cost-push pressures and tight monetary policy stances that may have constrained borrowing and investment activities.

The broad spread in GFCF and PPP values, reflected in their standard deviations (₦7,520.47 billion and ₦60.00, respectively), indicates high variability, possibly due to inconsistent investment inflows and changing energy policies. Exchange rate and inflation volatility (Std. Dev = ₦86.27 and 5.39%, respectively) further highlight Nigeria's exposure to external shocks and internal policy shifts.

4.2 Unit Root Test

The result of the Augmented Dickey-Fuller (ADF) unit root test is presented in Table 2.

Table 2: Unit Root Test Results

Variables	**At Levels**			**At 1st Difference**			**Level of integration**
	t-stat	Crit. value	Prob.(0.05)	t-stat.	Crit. value	Prob. (0.05)	
lnGFCF	3.113968	2.899115	0.0296	-	-	-	I(0)
LnPPP	1.178460	2.899115	0.9978	3.278262	2.899115	0.0193	I(1)
EXR	2.078897	3.468459	0.5491	3.149350	2.899115	0.0270	I(1)
INFR	0.859123	2.899115	0.7961	3.259368	2.899115	0.0203	I(1)
INTR	2.261965	3.673616	0.4324	4.012639	3.690814	0.0281	I(1)

I(0) indicate that the variable is stationary at levels while I(1) shows that the variable is stationary at first difference.

Source: Extract from Author's computation from E-views 10

The results in Table 2 indicate that variables such as LnPPP, EXR, INFR, and INTR become stationary after first differencing, while LnGFCF is stationary at levels. This suggests a mixed order of integration within the dataset. Consequently, LnGFCF can be classified as I(0), whereas LnPPP, EXR, INFR, and INTR are I(1). These findings create favorable conditions for applying the ARDL model to analyze the impact of fuel subsidy removal on domestic investment in Nigeria.

4.3 Information Criterion

This study utilizes the Akaike Information Criterion (AIC) to determine the optimal lag order for the series. The results are shown graphically in Figure 1.

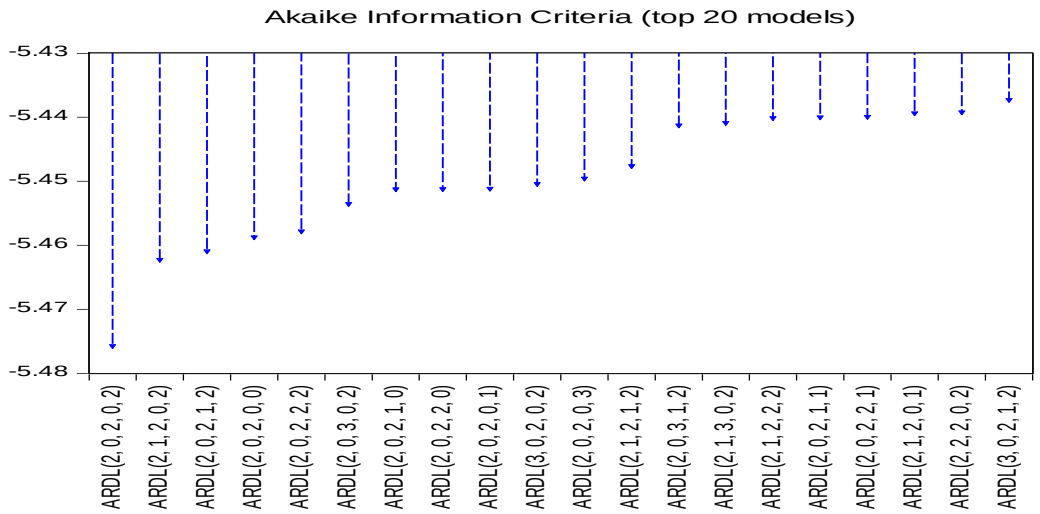

Figure 1: ARDL optimal lag selection result

From the results in Figure 1, it is observed that the maximum lag length is three (3) and the optimal lag length is ARDL (3 0 2 1 2) based on the results of the least Akaike Information Criterion (AIC) as compared to other 20 top models. Therefore, the model will be estimated using lag two (2) for optimal performance and adequate representation of data.

4.4 ARDL Long-run Bound Test

The result of the ARDL Bound Test for cointegration is displayed in Table 3 below.

Table 3: ARDL Bound Test Result

Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
Asymptotic: n=1000				
F-statistic	12.67363	10%	3.03	4.06
K	4	5%	3.47	4.57
		2.5%	3.89	5.07
		1%	4.4	5.72
		Finite Sample:		
Actual Sample Size	75	Finite Sample: n=75		
		10%	3.182	4.248
		5%	3.724	4.88
		1%	4.932	6.224

Source: Author's computation from E-views 10

Result in Table 3 indicates that there is long-run relationship among the variables incorporated in the model. This is because; the F-statistic Value of 12.67363 is greater than the Pesaran Upper Bound critical value of 4.06 for actual sample size and 4.248 for finite sample size at 5% level of significance. This means that in the

long run, there is no tendency that the variables will drift apart, and hence there is co-integration among them.

4.5 The causal relationship between Fuel Subsidy Removal and Domestic Investment in Nigeria.

The findings of the Pairwise Granger Causality Test are presented in Table 4 .

Table 4: Pairwise Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistics	Prob
LNPPP does not Granger Cause LNGFCF	76	5.00243	0.0199
LNGFCF does not Granger Cause LNPPP		5.89686	0.0175
LNEXR does not Granger Cause LNGFCF	76	3.04220	0.0378
LNGFCF does not Granger Cause LNEXR		0.08847	0.7669
INFR does not Granger Cause LNGFCF	76	0.03408	0.8540
LNGFCF does not Granger Cause INFR		5.96040	0.0102
INTR does not Granger Cause LNGFCF	76	4.42832	0.0387
LNGFCF does not Granger Cause INTR		7.64475	0.0071

Source: *Extract from Author's Computation Using E-views 10*

The test results reveal bidirectional causality between the pump price of petrol and domestic investment at the 5% significance level. This indicates that not only does the pump price of petrol Granger-cause domestic investment, but past values of domestic investment also significantly predict movements in petrol prices.

4.6 The Long-run effect of Fuel subsidy Removal on Domestic Investment in Nigeria

Having established that there is long-run relationship among the variables, the ARDL long-run coefficients are estimated and the results are presented in Table 5 below;

Table 5: ARDL Long- run Result; Dependent Variable: Domestic Investment

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LnPPP	-0.095208	0.034217	-2.782456	0.0073
EXR	0.263605	0.236228	1.115891	0.2692
INFR	-0.018565	0.004885	-3.800672	0.0004
INTR	-0.023129	0.008075	2.864177	0.0059

Source: Extract from Author's computation in E-Views 10

The result in Table 5 reveals that in the long run, fuel prices exert a negative and statistically significant effect on domestic investment. Specifically, a 1% increase in the pump price of petrol leads to a 0.095% decrease in domestic investment, holding other factors constant. This finding implies that over time, increases in fuel prices reflecting the removal of fuel subsidies tend to dampen investment activity in the country. The negative and significant coefficient of the pump price of petrol underscores the fact that rising fuel costs increase the cost of production, transportation, and operational expenses for businesses. In an economy like

Nigeria, where many firms particularly in manufacturing, agriculture, and services are heavily dependent on petrol and diesel-powered generators due to inadequate electricity supply, subsidy removal translates into higher energy costs. These increased costs reduce firms' profit margins and deter new capital investment.

Moreover, the result from Table 5 shows that, in the long run, exchange rate has a positive but statistically insignificant effect on domestic investment in Nigeria, indicating that fluctuations in the exchange rate do not exert a strong or consistent impact on long-run investment decisions. The long-run estimates in Table 5 further indicate that inflation has a negative and statistically significant effect on domestic investment in Nigeria. This suggests that in the long run, rising inflation significantly undermines investment activities by increasing macroeconomic uncertainty and eroding the real value of future returns. Interest rate has a negative and statistically significant effect on domestic investment in the long run. This result aligns with classical economic theory, which posits that higher interest rates increase the cost of borrowing, thereby discouraging firms from taking loans to finance new projects or expand existing operations.

4.7 The Short-run effect of Fuel Subsidy removal on Domestic Investment in Nigeria

The ARDL methodology enables the examination of short-term relationships among variables through the Error Correction Model (ECM). The result of the ECM are outlined in Table 6

Table 6: ARDL short Run (ECM) Result

Variable	Coefficient	Std. Error	t-Statistics	Prob.
LNGFCF(-1)	0.627539	0.093042	6.744695	0.0000
LNPPP	-0.037731	0.016203	-2.328590	0.0235
EXR	-0.911911	0.138720	6.573761	0.0000
EXR(-1)	-0.606643	0.144029	-4.211965	0.0001
INFR	-0.003000	0.001774	-1.691016	0.0163
INTR	0.031066	0.005916	5.251397	0.4350
ECM(-1)*	-0.036776	0.010402	-3.535627	0.0008
R-Square = 0.852945,	Adjusted R2= 0.826855,	Durbin-Watson stat =1.882063		

Source: Extract from Author's computation in E-views 10

The result in table 6 indicates that the pump price of petrol (LNPPP) has a negative and statistically significant short-run effect on domestic investment. This suggests that a 1% increase in petrol prices reduces domestic investment by approximately 0.038% in the short run. The result implies that increases in fuel costs due to subsidy removal immediately raise production and operational costs, thus discouraging investment activities. More so, both current and lagged values of the exchange rate (EXR and EXR(-1)) have negative and significant effects on domestic investment in the short run. This implies that depreciation or volatility in the exchange rate immediately hampers domestic investment by increasing the cost of imported inputs and creating uncertainty for investors.

The inflation rate (INFR) shows a negative and statistically significant impact on domestic investment in the short run (-0.0030, p = 0.0163). Rising inflation erodes purchasing power and raises uncertainty, which can reduce investor confidence and slow down investment activity promptly.

Importantly, the error correction term (ECM) is negative and statistically significant (-0.0368, p = 0.0008), confirming the presence of a stable long-run equilibrium relationship among the variables. The coefficient magnitude indicates that approximately 3.68% of any

short-run disequilibrium in domestic investment is corrected quarterly, reflecting a relatively slow but steady adjustment toward long-run equilibrium after the shocks.

The model shows a strong explanatory power with an R-squared of 85.3% and an adjusted R-squared of 82.7%, indicating that the included variables explain a substantial portion of the short-run fluctuations in domestic investment. The Durbin-Watson statistic (1.88) suggests that there is no autocorrelation problem in the residuals, affirming the reliability of the model estimates.

4.8 Discussion of Major Findings

On the causal relationship between fuel pices and domestic investment, the study found a bidirectional causal relationship between the pump price of petrol and domestic investment at the 5% significance level. This indicates that not only do changes in fuel prices Granger-cause domestic investment, but past investment behavior also significantly predicts petrol price movements. This dual causality reflects the Keynesian theory of investment, which posits that cost structures particularly energy and capital costs affect expected returns and thus influence investment decisions. The feedback from investment to petrol prices also supports cost-push inflation theory, where increased economic activity and input demand can strain supply and raise prices. Empirically, this finding complements studies by Ezeibekwe (2020) and Mogaji et al. (2020), which show that inflationary pressures driven by energy costs can weaken the effectiveness of investment-stimulating policies.

On the Effect of Fuel Price on Domestic Investment, the study found that fuel price exerts a negative and statistically significant effect on domestic investment in both the short run and long run at 5% level of significance. This dual significance indicates that increases in fuel prices, often driven by fuel subsidy removal, have both immediate and sustained adverse effects on domestic investment in Nigeria. In the short run, the rise in fuel prices directly increases operational expenses particularly for energy-intensive enterprises thereby discouraging new capital expenditure. Over time, these elevated costs accumulate, compressing profit margins and reducing the marginal efficiency of capital, which dampens long-term investment growth.

This consistency in both the short- and long-run findings aligns strongly with the Keynesian Theory of Investment, which posits that firms' investment decisions are closely tied to production costs and expected profitability. Empirically, these results reinforce the findings of Mogaji et al. (2020) and Oladipo and Akinbobola (2022), who observe that fuel price increases often leads to inflationary pressures and supply chain disruptions significantly reduce domestic investment in Nigeria.

5. Conclusion and Recommendations

Based on the findings of this study, we conclude that there is a significant long-term adverse effect of fuel price increases, driven by fuel subsidy removal on domestic investment in Nigeria, underscoring the sensitivity of investment decisions to energy costs

The following recommendations are made based on the findings of this study:

i. to mitigate the negative impact of fuel price volatility on domestic investment, the Nigerian government should consider establishing strategic petroleum reserves or targeted subsidy mechanisms that can stabilize fuel prices, particularly in the short term, and provide predictability for investors.

ii. to reduce dependence on fossil fuels, the government should create incentives, such as grants, tax credits, and low-interest loans for renewable energy projects (e.g., solar and bioenergy).

iii. in addition, given that exchange rate negatively affects domestic investment, the Central Bank of Nigeria (CBN) should prioritize exchange rate stability by implementing prudent monetary policies, managing foreign reserves effectively, and encouraging non-oil exports to diversify foreign exchange earnings.

References

Adekunle, A. O., & Aderemi, M. (2012). Real domestic investment and economic development. *International Journal of Economic Studies*, 45(1), 34-45

Adenikinju, A. (2012). Phasing out fuel subsidies in Nigeria. Oxford Energy Forum, 90, 21–23.

Adewunmi, M., Hounsou, R., & Adeyele, I. T. (2023). The impact of fuel subsidy removal on socioeconomic development in Nigeria: An econometric investigation. *The Spanish Review of Financial Economics*. Retrieved from www.srfe.journals.es

Ahuja, H. L. (2010). *Macroeconomics: Theory and policy* (19th ed.). S. Chand & Company.

Amangwai, J. M., & Amos, N. (2025), The Impact of Fuel Subsidy Removal on the Nigerian Economy. *African Journal of Economics and Sustainable Development* 8(1), 42-47. DOI:10.52589/AJESD-VTNDJ2O

Al-Sahlawi, M., & Abdullah, A. (2021). Energy subsidy reforms in Saudi Arabia and UAE: Impact on domestic investment. *Middle East Economic Review, 26(1)*, 92-107.

Arouri, M. E. H., Youssef, S., & Nguyen, D. K. (2021). Impact of energy subsidy removal on private investment and economic growth in North African countries. *Energy Economics*, *95*, 104-118.

Asiedu, E. (2002). On the Determinants of Foreign Direct Investments to Developing Countries: Is Africa Different? *World Development*, 30, 107-119.https://doi.org/10.1016/S0305-750X(01)00100-0

Atingi-Ego, M., & Sebudde, R. K. (2017). Fuel Subsidies in Ghana. *Bank of Uganda Working Paper*, No. 02/2017.

Breisinger, C. Mukashov, A. Raouf, M. & Wiebelt, M. (2019). Energy subsidy reform for growth and equity in Egypt: The approach matters. *Energy Policy*, Volume 129, pp 661-671 ISSN 0301-4215, https://doi.org/10.1016/j.enpol.2019.02.059.

Chong, H. D., & Gradstein, M. (2019). The effect of fuel subsidy reduction on economic growth and private sector investment in Latin America. *Energy Economics, 80*, 612-629.

Coady, D., Parry, I., Le, N.-P., & Shang, B. (2019). Global fossil fuel subsidies remain large: An update based on country-level estimates. IMF Working Paper No. 19/89.

Esfahani, H. S., & Kutan, A. M. (2019). Fuel subsidy removal and its effect on domestic investment in the MENA region. *Middle Eastern Finance and Economics, 30*, 121-139.

Ezeibekwe, O. F. (2020). Monetary policy and domestic investment in Nigeria: The role of the inflation rate. *Economics and Business*, 34, 139–155. https://doi.org/10.2478/eb-2020-0010

Hayashi, F. (1982). Tobin's Marginal q and Average q: A Neoclassical Interpretation. *Econometrica, 50*(1), 213–224. JSTOR

Ilodigwe A.O (2023). Fuel Subsidy Removal and Its Negative Impact on Small and Medium Scale Enterprises *Journal of Education, Humanities, Management & Social Sciences* (JEHMSS) 32, 8

International Monetary Fund (IMF) (2020). A Global and Country Update of Fossil Fuel Subsidies. //efaidnbmnnnibpcajpcglclefindmkaj/https://www.imf.org/-media/files/publications/wp/2021/english/wpiea2021236-print-pdf.pdf

IEA (2022), *World Energy Outlook 2022*, IEA, Paris https://www.iea.org/reports/world-energy-outlook-

Ismaila, B.A and Hassan A.S (2024) Effect of Fuel Subsidy Removal on Socio Economic Activities in Zamfara State. *International Journal of Advances in Engineering and Management* (IJAEM) 6, 267-278

Jorgenson, D. W. (1963). Capital Theory and Investment Behavior. *The American Economic Review*, *53*(2), 247–259. JSTOR.

Keynes, J. M. (1936). *The general theory of employment, interest and money*. Macmillan.

Khan, M. H., & Ahmed, S. (2017). Subsidy Reforms and Economic Development: The Case of the Energy Sector in Developing Countries. *Economic Modelling*, 62, 234-245.

Kojima, M., & Koplow, D. (2019). Fiscal and investment impacts of fuel subsidies in developing economies: Evidence from Sub-Saharan Africa. *Energy Economics*, *78*, 114-128.

Liu, W., & Zhang, M. (2020). Fuel subsidy removal and its impact on innovation and private investment in Southeast Asia. *Journal of Asian Economics*, *70*, 77-91.

Mehdi, M., & Rezaei, S. (2018). The impact of fuel subsidy cu ts on investment and household welfare in Iran. *Energy Policy*, 123, 302-314.

Mogaji, O., Falade, A. O. O., & Ogundipe, S. A. (2020). Inflation, interest rate, and domestic investment in Nigeria: Auto-Regressive Distributed Lag (ARDL) approach. *International Journal of Advances in Engineering and Management* (IJAEM), 2(8), 516-525. https://doi.org/10.35629/5252-0208516525

Muta, T., & Erdogan, M. (2023) Fossil fuel consumption subsidies globally rose above USD 1 trillion for the first time in 2022 https://www.iea.org/commentaries/the-global-energy-crisis-pushed-fossil-fuel-consumption-subsidies-to-an-all-time-high

Nwachukwu, M. U & Chike, H (2011). Fuel subsidy in Nigeria: Fact or fallacy. *Energy*, Elsevier 36 (5), 2796-2801. DOI: 10.1016/j.energy.2011.02.020

Nwosa, P. I. (2014). Oil prices and stock market price in Nigeria. *OPEC Energy Review*, 38(1), 59-74.

OECD (2006). Subsidy Reform and Sustainable Development ECONOMIC, ENVIRONMENTAL AND SOCIAL ASPECTS https://www.oecd.org/content/dam/oecd/en/publications/reports/2006/04/subsidy-reform-and-sustainable-development_g1gh6bb2/9789264025653-en.pdf

Oladipo, S. and Akinbobola, T. O. (2011). Budget Deficit and Inflation in Nigeria: A Causal Relationship. *Journal of Emerging Trends in Economics and Management Sciences*, 2(1):1–8.

Oyasipe, S. A., & Olukoya, F. I. (2024). The effect of fuel subsidy removal on the profitability of Entrepreneurial businesses in Lagos state, Nigeria. FULafia *International Journal of Business and Allied Studies*, 2(1), 107–118. Retrieved from https://fijbas.org/index.php/FIJBAS/article/view/55

Pradhan, R. P., & Devarajan, S. (2017). Effects of fuel subsidy reforms on economic growth and domestic investment in India. *Indian Economic Review*, *52(2)*, 203-230.

Siddiqui, R., & Azam, M. (2019). The impact of fuel subsidy removal on private sector investment in Pakistan. *South Asian Economic Journal*, *20(3)*, 345-363.

Tavakol, S., & Taheri, S. (2020). Economic and investment impacts of fuel subsidy reforms in Russia and Central Asia. *Central Asian Economic Journal*, *6(1)*, 45-61.

Tobin, J. (1969). A General Equilibrium Approach To Monetary Theory. *Journal of Money, Credit and Banking*, *1*(1), 15–29. JSTOR

van der Ploeg, R., & Poelhekke, S. (2018). Fuel subsidies, economic stagnation, and private sector investment in resource-rich countries. *Energy Policy*, *115*, 257-269.