ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

Statistical Analysis of Premium Motor Spirit after Subsidy Removal

[1]Olokojo Victoria Oyiza, [2]Adefemi Emmanuel

[1]Department of Statistics, School of Applied Sciences, Kogi State Polytechnic, Lokoja, Nigeria

[2]Nigeria Korea Friendship Institute Lokoja, Kogi State, Nigeria

DOI: https://doi.org/10.51584/IJRIAS.2026.11070053

Received: 13 July 2026; Accepted: 18 July 2026; Published: 31 July 2026

ABSTRACT

This study examined the impact of fuel subsidy on the Nigeria economy and her citizen. The impact of Premium Motor Spirit (PMS) popularly known as petro subsidy was felt virtually in every facet of the Nigerian society because the increment plays a significant role in the Nigerian economy. In this research work, we try to compare the current price, new price and the variation across the six geo-political zones. Also, this had led to inflation in the prices of every goods sold in the market including food stuffs as well as reduction in the number of vehicles plying our roads in Nigeria. In addition, the increase had led to demonstration by various groups including the Nigerian Labour Congress (NLC) demanding for better wages for their members to cushion the effect of the removal of fuel subsidy. It is interesting to know that the removal of petroleum subsidy has multiplier effect that is multifarious and multi-faceted on the citizenry including the political class once perceived as the untouchable. Looking at the differences, the least increment based on the State and geo-political is 63% which is an indication that the increase is on the higher side. This study tries to examine the increment, its consequences and possible recommendation.

Regression model is fitted to determine the effect of the changes in price of Premium Motor Spirit (PMS) from old price to the new price after the subsidy removal, and Variance Inflation factor (VIF) is applied to determine if there is correlation among the predictors variables in this case it is mild (accepted).

Keywords: Premium Motor Spirit (PMS), subsidy, inflation, Nigerian Labour Congress (NLC), difference, increment, geo-political zones, multiplier, demonstration, Variance Inflation factor (VIF).

INTRODUCTION

The removal of fuel subsidy as it generally called in recent times is increasingly becoming a topic of discussion in a every public place in the country. In no doubt, many countries and nations have attempted to reform their fuel subsidy policies and programmes with various degrees of success (Tara, et al, 2010). The driving forces behind these reforms can include among other things a desire to reduce urban pollution and Green House Gas (GAG) emission. However, if proper plan is not in place and executed, social or environmental repercussions will be as a result of high fuel prices (Tara et al, 2010). Fuel subsidy is defined as any government action that lowers the cost of fuel production, raises the revenue of fuel producers or lowers the price paid by fuel consumers (IEA, OECD and World Bank Joint Report, 2010). It is on this premise that the most Calamai (1997) cited in Kwang at el(2011) states that subsidies compromises all measures that keep prices for producers above market level or that reduces cost for consumers and producers by giving direct or indirect support. It is on the concern of subsidies reducing cost for consumers and producers through direct or indirect support that Nigeria is measured in.

However, fuel subsidy reforms and economic policy interventions in most cases take two dimensions. On the hand, government accelerates consumption by regulating domestic consumption and enhanced demand of the subsidized product(s). On another perspective, production may be subsidized by government by setting minimum prices exhaustion while public budgets are used to pay the surpluses. Sometimes, both subsidy reform policies are maintained at the same time and that of cause, may have unfavourable implications on the fiscal balance.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

Conversely, in some countries, subsidies are usually given openly without targeting the consumers who are eligible to receive it and thus, consumption and demand differ when a product is subsidized with a product that is not subsidized Kwang at el (2011). It was on this light that World Bank (2008) argues that petroleum subsidies strain public finances, distort markets, and provides only a blunt tool in the fight against poverty. In many countries such as Azerbaijan, Bolivia, Ecuador, Egypt, Indonesia, Malaysia, Jordan, etc, petroleum subsidies account for more than 3% of their GDP and are comparable in size to public spending on health and education put together (World Bank, 2008). Of course, one may start to wonder if these policies (subsidy reforms) will not lead to diverting resources away from more productive uses and as lead to fuel adulteration and inefficiency petroleum processing sector given the scenarios involved in the regulating market. In Nigeria, there have been a series of policy reforms on the subsidy which include, direct budgetary transfer, tax exemptions, and price controls. Starting from 1999 when democratic government was re-installed in Nigeria. Starting from June year 2000, there has been series of fluctuations in the pump prices of Petrol Motor Spirit in Nigeria. The pump price being N20 at then continued to go and down till N145 as it is obtained today.

In a study by Von Mckee and Morgan (2004) cited in Jennifer (2010), petroleum subsidy is said to alter fuel prices leading to market distortions with consequences that go well beyond the specific policy objectives that the subsidy is intended to achieve. These distortions have wide economic impacts. In many cases, they include increasing petroleum consumption, straining government budgets, diverting funding that could have other wise been spent on social priorities such as health care or education, accumulation of debts of existing national refineries, and reducing the profitability of alternative resources sector.

Against this background, and in the view of the above arguments, it is not yet established clearly on the likely effects, economics and other wise the effects Petroleum Motor-Spirit Subsidy removal will have on Nigeria economy, considering its peculiar factors, hence the paper.

Removing petroleum subsidies is considered by economists to be a win-win policy measure that would benefit both the global economy and the environment (Burniaux, 2009). However, PMS subsidy reform is likely to prove challenging for many countries, Nigeria inclusive given the numerous economic and social changes the reform could precipitate. Estimating the nature and scale of those changes is therefore critical to assessing the costs and benefits of subsidy removal and to identifying what measures may be needed to ensure that negative impacts are minimized. Nigeria government during a public debate and awareness campaign on deregulation of petroleum downstream sub-sector in reduction in development in other sectors of the economy as such discourages economic growth.

However, consumers on their parts see fuel subsidy removal as a calculated attempt to subject them to economic hardship as that will not only lead to reduction in household's disposable income and real income but also increase inflation in the country. This study was necessitated by the need to have a common perception of both the government and the consumers of Petroleum Motor-Spirit on the likely economic effects of the subsidy removal on the products in the Nigerian market.

LITERATURE REVIEW

Nigeria was a traditional primary commodities supplier of cocoa, palm oil, cotton, etc. during 1960s and therefore, emphasis was laid on diversification and modernization of Agriculture, Mineral resources and Manufacturing sector of the economy. Following oil Exploration, Nigeria grew into a net oil-exporting country at middle of 1970s which accounts for about 80% of her export earnings. However, Nigeria like some other countries introduced fuel subsidies in the economy.This was known as energy subsidy as at that time. Energy subsidies came in two forms: Those designed to reduce the cost of consuming fuels, and those aimed at supporting domestic fuel production. Burniaux et al(2009).Subsidies can be regarded as any government intervention that lowers the price of fuel below its economic opportunity cost (African Development Bank, 2009). “The reverse or removal of subsidy leads to deregulation”. Akinwumi, at el(2005), opine that deregulation is the removal of government interference in the running of a system. This means that government rules and regulations governing the operations of the system are relaxed or held constant in order for the system to decide its own optimum level through forces of demand and supply (Ekundayo and Agayi, 2008).

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

Impact of the increment of petroleum prices in industrial sectors depends on the share of petroleum in the production cost, the elasticity of output demand in each sector and the substitution possibilities among the energy source Hope and Singlh (1995). The impact on industrial output would be small if the share of diesel was low in the production cost. In February 2001, the Ghanaian government attempted to liberalize its fuel prices as part of an international Monetary Fund (IMF) Poverty Reduction and Growth facility programme. Ex-refinery petroleum prices were raised by 91%, followed in June, 2001, by the introduction of an automatic price-setting mechanism. This was designed to ensure full cost recovery for Ghana's already heavily indebted Tema oil Refinery (TOR), Tara at el(2010). By the end of 2002, in the face of rising world oil prices, the s u p p o s e d l y a u t o m a t i c p r i c i n g mechanisms had fallen entirely into disuse and TOR's debt had continued to rise until 2005 when necessary palliatives measures were put in place in addition to public sensitization on the need for deregulation.

From the study of Hope and Singh (1995), it is clear that the effect of subsidy removal on industrial sectors depends largely on the elasticity of output demand in each sector. Secondly, meaningful effects will not be made towards reducing debt and establishment of new refineries necessary if palliative measures were not put in place. Magnitude of global fossil fuel subsidies would be on increase and as such have negative impact on other sectors unless the affected country reduces or remove the subsidies. Economic effects of subsidy removal depend very much on the type and size as well the structure of the economy. The effects also vary over time, but evidence shows that subsidies involve large economic cost in the long run. Subsidies are often intended for the poor but largely enjoyed by the rich, depriving government's money that could otherwise be used to pay for welfare programs that truly targeted the poor. In this case, the poor would benefit from the removal of subsidies especially where they consume little of the subsidized fuel. None the less, there is evidence that the structural upheavals caused by the removal of subsidies can involve economic costs in the short term as the economy adjusts to higher prices. Again, subsidy removal increases inflation and that, may require the government to tighten fiscal and monetary policies.

Nisreen (2008) looked at the impact of the removal of the fuel subsidies on the manufacturing industries in Jordan. The objective of the study was impact assessment of the removal of fuel subsidy on the competitiveness of the manufacturing sector and rising fuel prices on products in Jordan by selecting three sub-sectors that belong to heavy, medium and low energy intensity manufacturing industries in an attempt to a general idea on the impact for each group. Survey design was employed, while correction coefficient, regression analysis, and simple statistical tools were used to ascertain grow rates, ratio, etc. Findings showed that increase in energy costs can actually benefit the manufacturing industries if costs are willing to sustain short-term pain for long-term gain. This long term gain can be realized if the industries are driven by higher efficient methods which would all in the long term enhances its competiveness.

Onyisi, at el(2012) studied the domestic and international implications of subsidy removal on the economy in general and the populace in particular. The paper was anchored on neo-liberalism theory and employed conceptual issues of subsidy and deregulation to achieve its objectives. Findings unveiled that the removal of fuel subsidy has provided a good platform for national reflections and issues on the extent of sovereignty of government and that of people.

Kwang, at el(2011) conducted a research on the determinant of latent income on who is eligible to receive energy subsidy. A case in Malaysia the study sought to identify the eligibility of an individual to receive subsidy based on energy resources. The study used a cross-sectional data collected from 500 respondent using structured questionnaire. Findings showed that leakage exists in the consumption of energy when subsidies are given and not given. The result went further to show that both poor and non-poor households could afford to purchase fuel when subsidy was distributed, hence, subsidy removal will enhance government revenue in Malaysia.Moreover, petrol consumption has a positive relationship with income per capita in urban households.

Dartanto (2011) carried out a study on reducing fuel subsidies and the implication and effect on fiscal balance and poverty in Indonesia. The study sought to establish the effect of fuel subsidies reduction on fiscal balance and poverty in Indonesia. Secondly, to ascertain how effective are reallocation policy in protecting low income groups from the adverse impacts of removing subsidies. The study employed comparative methodologies in

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

order to calculate the poverty impact of removing subsidies and re-allocation budget policies. The mythologies were a combination of a macro model (a Computable General Equilibrium, CGE), a micro model (household data) and the endogenous poverty line. Findings showed that transferring subsidies from middle income class to poor household and r eallocating fue l subs idi e s into infrastructure projects and investment on human capital would improve income distribution and accelerate more equal economic growth. It added that reallocation budget might not effectively compensate the adverse impact of the 100% removal of fuel subsidies if the economic agents try to seek gains through mark-up pricing surpassing the increase in production costs.

Burniax and Chateou (2011) carried out a study on mitigation potential of removing fossil-fuel subsidies: a general-equilibrium assessment. The paper sought to provide, based on simulations using the OECD general equilibrium ENV-linkage model, a quantified estimates of the emission reduction and the realgains that can be achieved by removing fossil-fuel subsidies. The concept used to assess changes in real income is the Hayekian equivalent variation income relative to the base-line scenario. The paper analyzed 37 countries, including two OECD countries. (South Korea and Mexico) and was made of pricegap technology to calculate the effect of fossil-fuel subsidy removal on economy. Findings of the study showed that the removal of fuel subsidies brings in both environmental and economic benefits it went further to show that the “oil-exporting countries” as a whole do not incur any real income loss as the GDP loss resulting from reduced oil extraction is compensated by the relatively large welfare gains from the subsidy removal.

Saunders and Schneider (2000) studied the removing energy subsidies in developing and transition economies. The study aimed at knowing the impacts of subsidy removal on energy consumption, production and trade as well as on the level of greenhouse gas emissions in developing and transition economies. Findings showed that there were complex interactions within an economy when an economic policy instrument such a subsidy on the consumptions of energy is removed. Where subsidies are removed on more than one fuel, there may be changes in the relative prices of alternative fuels that can be used in the same and use, such as electricity generation, that lead to inter-fuel substitution and reduction in energy consumption.

Mason, at el (2006) carried out a study on a topic “Does subsidy removal hurt the poor”. The study seeks to examine the effects of the removal of petroleum subsidies on poverty in Nigeria. The study employed a computable generalequilibrium micro-simulation analysis to assess the impacts or poverty. This enables explicit poverty assessments to be carried out by incorporating information on households from a national household survey. Findings unveiled that subsidy removal without spending of the associated savings would increase the national poverty level. This was due to the consequent rise in input costs which is consequent rise in inputs' Costs which is higher than the rise in selling prices of most firms' products. A highly expansionary policy of spending all savings from subsidy removal will favour rural and disfavor urban households.

Clements, Wilfred and Oliver (2011) studies the petroleum subsides in Yemen: Leveraging reform for development. The paper seeks to know whether petroleum subsidy reform will give an opportunity for consolidating public finances and f o s t e ring sus t a ina b l e e c onomi c development in Yemen. Findings of the paper supported a comprehensive petroleum subsidy reform in Yemen. Economic growth is projected to accelerate annually as a result of reform though the design of the reform is critically important especially for the poor. They further added that petroleum subsidy removal enhances public investments. The investment should focus on the utilities, transport, trade, and consumption sectors to integrate economic spaces and create the platform for a restructuring of agriculture, industrial, and service value claims, which should encourage private sector led Job creating growth in the medium term.

MATERTIAL AND METHODOLOGY

Data Collection

The data used in this research work is secondary data sourced from Nigerian National Petroleum Company (‘NNPC’) Limited, on 31st May 2023, adjusted retail prices for PMS.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

Method of Data Analysis

Multiple linear regression (MLR), also known simply as multiple regression, is a statistical technique that uses several explanatory variables to predict the outcome of a response variable. The goal of multiple linear regression is to model the linear relationship between the explanatory (independent) variables and response (dependent) variables. In essence, multiple regression is the extension of ordinary least-squares (OLS) regression because it involves more than one explanatory variable.

Regression models are used to describe relationships between variables by fitting a line to the observed data. Regression allows you to estimate how a dependent variable changes as the independent variable(s) change.

Multiple linear regression is used to estimate the relationship between **two or more independent variables** and **one dependent variable**. You can use multiple linear regression when you want to know:

1. How strong the relationship is between two or more independent variables and one dependent variable (e.g. how rainfall, temperature, and amount of fertilizer added affect crop growth).

2. The value of the dependent variable at a certain value of the independent variables (e.g. the expected yield of a crop at certain levels of rainfall, temperature, and fertilizer addition).

Assumptions of multiple linear regression

Multiple linear regression makes all of the same assumptions as simple linear regression:

Homogeneity of variance (homoscedasticity): the size of the error in our prediction doesn't change significantly across the values of the independent variable.

Independence of observations: the observations in the dataset were collected using statistically valid sampling methods, and there are no hidden relationships among variables.

In multiple linear regression, it is possible that some of the independent variables are actually correlated with one another, so it is important to check these before developing the regression model. If two independent variables are too highly correlated (r2 > ~0.6), then only one of them should be used in the regression model.

Normality: The data follows a normal distribution.

Linearity: the line of best fit through the data points is a straight line, rather than a curve or some sort of grouping factor.

How to perform a multiple linear regression

Multiple linear regression formula

The formula for a multiple linear regression is:

$$y = \beta_0 + \beta_1 X_1 + \ldots + \beta_n X_n + \epsilon$$

- y = the predicted value of the dependent variable
- B_0 = the y-intercept (value of y when all other parameters are set to 0)
- $B_1 X_1$ = the regression coefficient (B_1) of the first independent variable (X_1) (a.k.a. the effect that increasing the value of the independent variable has on the predicted y value)
- … = do the same for however many independent variables you are testing
- $B_n X_n$ = the regression coefficient of the last independent variable

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

- ϵ = model error (a.k.a. how much variation there is in our estimate of y)

To find the best-fit line for each independent variable, multiple linear regression calculates three things:

- The regression coefficients that lead to the smallest overall model error.
- The *t* statistic of the overall model.
- The associated *p* value (how likely it is that the *t* statistic would have occurred by chance if the null hypothesis of no relationship between the independent and dependent variables was true).

It then calculates the *t* statistic and *p* value for each regression coefficient in the model.

Test Of Multicollinearity

The useful statistics for estimating the strength of multicollinearity in a model is the variance inflation factor (VIF). It helps to estimates how much there is a variation in regression coefficients is artificially increased due to multicollinearity between predictors in the model.

Calculating VIF

VIF quantifies how much the variance of a regression coefficient is inflated due to multicollinearity with other independent variables. Here's how to calculate VIF:

1. Choose an Independent Variable: Select one variable from your model.
2. Fit a Regression Model: Regress the chosen variable (dependent variable) on all the other independent variables in the model.
3. Calculate R-squared (R^2): Determine the coefficient of determination (R^2) for this regression model.
4. Compute VIF: Use the formula: $VIF = 1 / (1 - R^2)$

Interpreting VIF Values

- VIF = 1: No correlation, the variable is not inflated.
- 1 < VIF < 5: Moderate correlation, usually not a severe problem.
- VIF > 5: Indicates high correlation, suggesting significant multicollinearity. Some use a threshold of 10.
- Higher VIF: Values much greater than 5 (or 10) indicate problematic multicollinearity, and the variable's coefficient is inflated.

Data Presentation

Summary Statistics Of Premium Motor Spirit (Pms) Recorded Across Nigeria

State Capital	States	Region	Current NNPC Pump Price	New Pump Price per 31st May 2023	Difference In Prices (New-Old)	Percentage Difference
ABUJA	FCT	NC	194	537	343	64%
LAFIA	NASARAWA	NC	189	537	348	65%
JOS	PLATEAU	NC	189	537	348	65%
ILORIN	KWARA	NC	189	515	326	64%

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

LOKOJA	KOGI	NC	189	537	348	65%
MAKURDI	BENUE	NC	189	537	348	65%
MINNA	NIGER	NC	189	537	348	65%
YOLA	ADAMAWA	NE	199	550	351	64%
JALINGO	TARABA	NE	199	550	351	64%
BAUCHI	BAUCHI	NE	199	550	351	64%
GOMBE	GOMBE	NE	199	550	351	64%
MAIDUGURI	BORNO	NE	199	557	358	65%
DAMATURU	YOBE	NE	199	557	358	65%
KANO	KANO	NW	194	540	346	64%
KADUNA	KADUNA	NW	194	540	346	64%
KATSINA	KATSINA	NW	194	540	346	64%
SOKOTO	SOKOTO	NW	194	540	346	64%
DUTSE	JIGAWA	NW	194	540	346	64%
BIRNIN KEBBI	KEBBI	NW	194	545	351	65%
GUSAU	ZAMFARA	NW	194	540	346	64%
UMAHIA	ABIA	SE	189	515	326	64%
OWERRI	IMO	SE	189	515	326	64%
AWKA	ANAMBRA	SE	189	520	331	64%
ENUGU	ENUGU	SE	189	520	331	64%
ABAKALIKI	EBONYI	SE	189	520	331	64%
PORT HARCOURT	RIVERS	SS	189	511	322	63%
UYO	AKWA-IBOM	SS	194	515	321	63%
YENEGOA	BAYELSA	SS	189	515	321	63%
CALABAR	CROSS-RIVERS	SS	194	511	317	62%
BENIN	EDO	SS	189	511	322	63%
ASABA	DELTA	SS	189	511	322	63%
LAGOS	LAGOS	SW	184	488	304	63%
ABEOKUTA	OGUN	SW	189	500	311	63%

IBADAN	OYO	SW	189	500	311	63%
OSOGBO	OSUN	SW	189	500	311	63%
AKURE	ONDO	SW	189	500	311	63%
ADO-EKITI	EKITI	SW	189	500	311	63%

Source: Nigerian National Petroleum Company ('Nnpc') Limited

Data Analysis0and Results

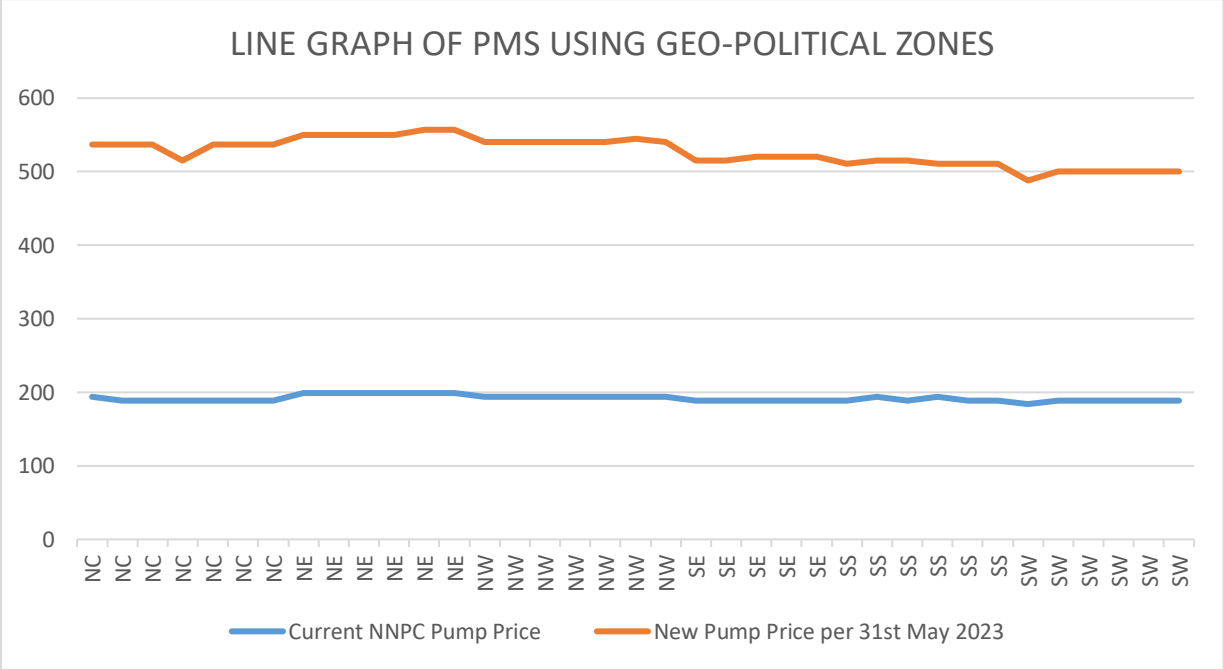

Figure 3.1: Line Graph Showing Premium Motor Spirit (Pms) Across The Six Geo-Political Zones

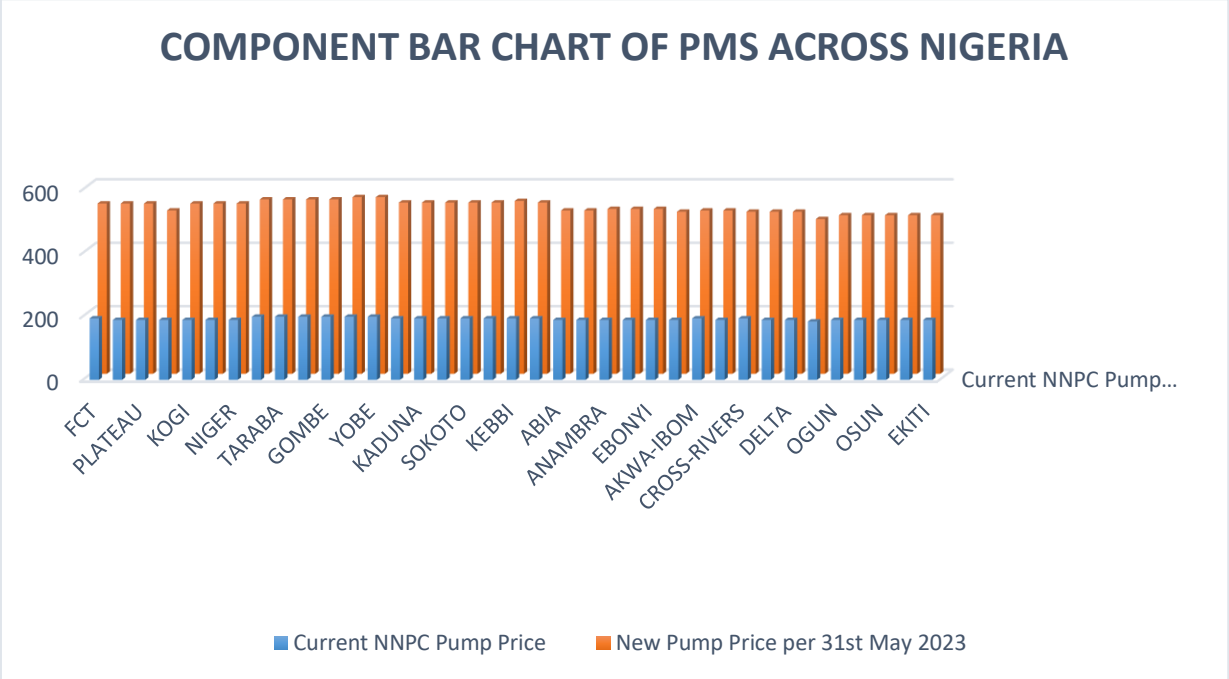

Figure 3.2: Component Bar Chart Showing Premium Motor Spirit (Pms) Across The Thirty-Six States Including Fct

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

Regression Model

Call:

lm(formula = DIFFERENCE_IN_PRICES ~ CURRENT_PRICE + NEW_PRICE)

Residuals:

Min 1Q Median 3Q Max

-4.7936 0.0756 0.1800 0.2064 0.3395

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	VIF
(Intercept)	-4.63282	7.05178	-0.657	0.516	
CURRENT_PRICE	-0.97984	0.05616	-17.446	<2e-16 ***	2.581945
NEW_PRICE	1.00120	0.01187	84.313	<2e-16 ***	2.581945
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' ' 1

Residual standard error: 0.8396 on 34 degrees of freedom

Multiple R-squared: 0.9974, Adjusted R-squared: 0.9973

F-statistic: 6597 on 2 and 34 DF, p-value: < 2.2e-16

DISCUSSION OF RESULTS

From Figure 3.1, prices Premium Motor Spirit (PMS) are high in the North-East (NE) and North-West (NW) both for the current pump price and the new pump price respectively. While in the North-Central (NC), South-East (SE) and South-West (SW) the prices are lower.

From Figure 3.2, prices Premium Motor Spirit (PMS) are high in the States in the North-East (NE) and North-West (NW) both for the current pump price and the new pump price respectively. While in the States in the North-Central (NC), South-East (SE) and South-West (SW) the prices are lower.

The summary first prints out the formula ('Call'), then the model residuals ('Residuals'). If the residuals are roughly centered on zero and with similar spread on either side, for these (median -0.1800, and min and max around -4.7936 and 0.3395) then the model probably does not fits the assumption of heteroscedasticity.

Next are the regression coefficients of the model ('Coefficients'). Row 1 of the coefficients table is labeled (Intercept) – this is the y-intercept of the regression equation. It's helpful to know the estimated intercept in order to plug it into the regression equation and predict values of the dependent variable:

Price Difference = -4.63282 + 1.00120 * NEW_PMS_PRICE – 0.97984* OLD_PMS_PRICE

Note that since the coefficient for old PMS Price in negative, shows that it has no effect on the new PMS Price.

In addition, the VIF suggests moderate multicollinearity with 2.581945 for both predictors which showed a Mild to moderate correlation (usually fine). There's some correlation between the two predictors, but it's usually not severe.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

CONCLUSION

It can be seen from the regression model that the positive coefficients of the New-PMS price indicates a direct relationship. As this predictor increases, the target variable increases (holding all other variables constant). But the negative value of the coefficients of the Old-PMS price indicates an inverse relationship. As this predictor increases, the target variable decreases (holding all other variables constant).

Looking at the p-value for each coefficient. They are all greater than 0.05 chosen significant level which showed that all the coefficients are statistically significant. This conclude that the relationship exists. This measures the precision of the coefficient estimate. Since the standard error is small, it means the coefficient estimate is more reliable.

Again, the R-Squared measures the proportion of variance in the dependent variable that is predictable from all independent variables combined. The value of 0.9974 means 99% of the variation in the outcome is explained by the predictors, while 1% remains unexplained. It shows how well the model fits the data.

Also, adjusted R-squared measures the proportion of variance in the dependent variable explained by the model, adjusted for the number of predictors. The p-value is < 0.05, which rejects the null hypothesis. This tells that multiple regression model fitted is statistically significant and the predictors are jointly useful. The F-statistic shows that the model explains variation in the data better than random chance.

The results indicate that the removal of subsidy has changed the pattern of living of the people because the relationship between the change in price of PMS and the New-PMS price is so highly significant. This shows that the masses will have to pay more money to fuel their vehicles and even pay more fares to get to their destination such as going to work, visiting family friends, and going on vacation e.t.c.

Inflation is the order of the day since virtually all the goods transported in Nigeria are through the road which increases cost of transporting these goods thereby adding to the prices of goods with the multiplier effects on the standard of living of the people.

REFERENCES

1. **Akinwumi, F.S., Isuku, E.J., & Agwaranze, D.Q. (2005),** University Education Deregulation: Pros and Cons in G.O Akpa, S.U Udoh and E.O. Fagbamiije (Eds) Deregulating the provision and management Education in Nigeria, Jos:NAEAP publication. PP 151-158.
2. **Burniausc, J.M., Chateau J., Dellink, R., Duval, R & Jamat S. (2009).** The Economic of Climate change Mitigation: How to build the necessary global action in a cost effective manner. Economics Department working paper No. 701.
3. **Bumiaux, J. & Chateau J., (2011),** Mitigation Potential of Removing Fossil fuel subsidies: A General Equilibrium Assessment, OECD Economics Department working papers, No 853, OECD publishers.
4. **Clemens, B., Wilfred, E., Oliver, E., (2014) .** Petroleum Subsidy in Yemen: Leveraging Reform for Development. International Foodpolicy Research Institute, (IFPRI). Discussion paper paper 01071 .
5. **Coady, D.M., EL-said, R., Gilliangham, K., Kpodar, P., Medas, and Newhouse, D . , (2 0 0 6) .** The magnitude and distribution of fuel subsidies: Evidence from Bolivia, Ghana, Jordan, Maliand Sri-lanka. Working paper. Washington, DC: International Monetary Fund.
6. **Dartanto, T. (2011)** Reducing fuel subsidies and the implication on Fiscal Balance and Povert y i n Indonesia: A simulation Analysis. Graduate school of International Development, Nagoy a University and Institute for Economic and social Research (L P E M F U U I) De p a rtment o f Ec onomi c s , University of Indonesia, 3(4), 667- 673.
7. **De Moor, A. (2001).** Towards a Grand Deal on subsidies and climate change. " N a t u r a l Resources Forum, 25(2): 167 -176.
8. **Ekundayo, A and Ajayi, A.I. (2008),** the De r egul a ti on o f Uni v e r s it y E d u c a t i o n in N i g e r i a I m p l i c a t i o n o r Q u a l it y Assurance Nebula 5(4), 21-18.

9. **European Environment Agency (EEA), (2004).** Energy subsidies in the E u r o p e a n U n i o n : A b r i e f overview,Copenhagen.EEA.
10. **Hope, E. and Singh, B. (1995).** Energy prices increase in Developing countries. Policy Research p a p e r 1442. The World Bank: Washington D.C.
11. **IEA, OPEC, OECD, World Bank (2010),** Analysis of the scope of Energy s u b s i d i e s a n d suggestions for the G – 20 Initiative, J o i n t Re p o rt p r e p a r e d f o r s u b m i s s i o n t o t h e G - 2 0 summit meeting Torouto (Canada), 26-27 June 2009.
12. **IEA, OECD, and World Bank (2010).** The scope of fossil fuel subsidies in 2009 and a roadmap f o r phasing out fossil-fuel subsidies, Joint Report prepared for the G-20 summit, South Korea, II November.
13. **IEA, (2007), World Energy Outlook (2006),** IEA, Paris (International Energy Agency) International Energy Agency, Paris.
14. **International Energy Agency (IEA), 2008 World Energy Outlook (2008)** I n t e r n a t i o n a l E n e r g y Agency, Paris.
15. **Koplow, D. (2007).** Subsidies in the US Energy sector: Magnitude, causes, and options for Reform. Sub s i d i e s and sus t a ina b l e Development: Political Economy Aspects, OECD, Paris.
16. **Kwang, J.Y., Amran A., Caroline, G., Vivin, V.C. (2011),** the Determinant of latent income on w h o i s Eligible to Receive Energy subsidy: A case in Malaysia. International Journal of Economics and Management Sciences; 1 (5), 19-28.
17. **Mauson N., Kanayo, O., and Robery, A. (2006).** Does subsidy Removal Hurt the poor? Evidence f r o m computable General Equilibrium Analysis: African Institute for Applied Economics,128 Park Avenue, G.R.A. Enugu, Nigeria.
18. **Misreen Barahet, (2008).** Impact of the Removal of the fuel subsidies on the manufacturing Industry in Jordan. Sustainable Achievement of Business Expansion. Salem Centre S e q u l e y a h street, AI, Rabiyeh, Ammen, Jordan.
19. **Morgan, T., (2004).** Designing and implementation Energy subsidy Reforms: Lessons Learned i in Assessing their impact and Designing Policy Reform (PP 146 - 1 5 4) . G e n e v a ; U n i t e d Nations Environment Programme and Greenleaf publishing.
20. **Morgan, J., (2007).** Energy subsidies: Their Magnitude, how the effect Energy I n v e s t m e n t a n d G Greenhouse Gas Emissions, and prospect for Reform, menecon consulting.
21. **Mukwaya, Aaron (2005).** Truth without reconciliation. The Niger Delta and t h e c o n t i n u i n g c h a l l e n g e s o f N a t i o n a l Reconciliation". In: Fowole, W. Alade/ukeje, charlse (eds.): The c crisis of the state and Regionalism in west Africa. Identify, c i t i z e n s h i p a n d c o n f l i c t , Dakar: 112 – 135.
22. **Odey, S.E. Akpan, F.U (2012).** The politics Fuel subsidy populist Resistance a n d i t s s o c i o - E c Economic Implications for Nigeria. Global Journal of human social science 12(7), 12 – 20.
23. **Oladipo, S. and Kehinde, A. A. (2010).** The 'War' of Appropriate Pricing of p e t r o l e u m P r o d u c t s : The Discourse of Nigeria's reform Agenda. Linguistic online 42, 2/10.
24. **Onyishi, A. O. Eme, O.I., and Emeh, I.E. J. (2 0 1 2).** T h e D o m e s t i c a n d International Implications o f f u e l subsidy Removal crisis in Nigeria. Kuwait chapter of Arabian Journal of Business a n d management review 1(6) 57 -80.s
25. **Revenue Watch Institute (2010) Nigeria.** A v a i l a b l e a t httpaa;//www.revenuewatch.org/ourwork/.
26. **Saunders, M. and Schneider K. (2000).** The Removing Energy subsidies in Developing and Transition Economies: A simulation rd analysis. Paper presented at the 23 Annual IAEE **International Conference, Sydney 7 – 10 June. Taimur, B., Amine, M., David, C., and Joseph, N. (2007).** Domestic petroleum product prices and subsidies: Recent Developments and Reform strategies: IMF working paper 07/71 (International M o n e t a r y Fund).
27. **Tara, L., Christopher, B., and Bertille, P. (2010).** Strategies for Reforming Fossil – Fuel subsidies: practical lessons from Ghana, France, and Senegal. The Global subsidies initiative of the International Institute for sustainable Development. Retrieved 18 March, 2012 from the GST : htt:/www.globalsubsidies.org/files/asset/effects-ffs.pd/.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue VII July 2026

28. **Uisreen Baraket, (2008).** Impact of the Removal of the fuel subsidies on the manufacturing I n d u s t r y i n Jordan. Sustainable Achievement of Business Expansion. Jordan centre sequleyah street, AI, Rabiyeh.