

Impact of Petroleum Subsidy Removal on Government Expenditure in Nigeria

¹Okereke, ²Samuel F.

Department of Economics and Developmental Studies Federal University, Dutsin-Ma, Kastina State
Corresponding Author: Okereke, Samuel F.

Abstract: *The study investigated the effects of petroleum subsidy removal on government expenditure in Nigeria. The major objective of the study is to examine the impact of subsidized prices of petroleum products on government expenditure in Nigeria. The study used secondary data from 1985 to 2016, sourced from the Central bank 2016 Statistical bulletin. An advanced econometric technique, the Augmented Dickey Fuller (ADF) unit root test, the Engel-Granger co-integration residual test and the error correction model, were employed in data analysis to help in addressing the objectives of the study. Based on the objective of this study, the following findings were made. The result of the study indicates that subsidized price of PMS has a positive significant impact on government expenditure in Nigeria. The study also found that subsidized price of DPK has a negative significant impact on government expenditure in Nigeria; an outcome that is not expected. Lastly, the result of the study indicates that subsidized price of DPK has a positive but no significant impact on government expenditure in Nigeria. On this premises, the study recommends that government should allow the fixing of petroleum prices based on market conditions and channel the amount spent on subsidy to other important sectors of the economy.*

Keywords: *Petroleum Subsidy, Petroleum product prices, government expenditure*

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I. Introduction

Background of the Study

Worldwide, petroleum and energy in general are indispensable for human sustenance and industrial production. Thus, crude oil is the mainstay of the Nigerian economy, accounting for a massive 83% of total federally collected revenue in 2008, 65.8% in 2009 and 73.8% in 2010 (CBN, 2010). It also accounted for 78.1% in the first half of 2012. Certainly, the subjects of oil and deregulation are of immense interest to each of Nigeria's over 160 million citizens. This is due to the huge amount of money that the government spend to subsidize petroleum consumption in the country. Nigerian government spent a whopping N115 billion for the first quarter of 2011 on subsidy. In May 2011 alone, about N74 billion was spent on subsidy (Akinmutumi, 2011). Therefore, petroleum subsidy reforms have been a source of serious concern to Nigerians because of its far reaching implications for industry and Nigerian masses. It leads to product price increases and has generated industrial and social upheavals in the body polity.

The advent of petroleum subsidy reforms dates back to 1973 after the first oil shock experience which led to a decline in the economic growth of most developed economies, (Sachs, 1982). In Nigeria, petroleum subsidy reforms can be categorized into two regimes: pre and post 1999 (Ezeoha and Uche, 2007). Petroleum subsidy reforms under the pre 1999 regime commenced in 1973 following a policy enactment by the then military government of General Yakubu Gowon attempting to stabilize the domestic prices of petroleum products and protect the economy from fluctuations in international oil prices. The justification then was the rise in oil prices in 1973 and 1974 and the resultant surge in oil revenue and foreign exchange reserves (Falola and Ihonvbere, 1985). The government's budget surplus had built up by more 300%. Offering the government the opportunity of redistributing the gains of oil boom through petroleum subsidy and increase in public workers' wage rate. A fall in the demand for oil from 1978 triggered a sharp decline in revenue and imposed fiscal restraints on the operations of government, leaving the military government with an option of increasing domestic petroleum price by about 70%. However, of all the government efforts towards petroleum subsidy reforms within this period 1973 to 1998 proved to be abortive. Following the return to civil rule in May 1999 marked the commencement of another cycle of petroleum subsidy reforms and crises. This was as a result of public declaration of interest by President Olusegun Obasanjo in the month of October to pursue petroleum market deregulation so as to ease government's fiscal constraints. In November the same year, the government formally announced the deregulation plan and an end to fuel subsidy, stressing the need to end the perennial shortages in domestic petrol supply. The announcement consequently resulted to protests led by the Nigeria

Labour Congress to end petroleum subsidies (Fawehinmi, 2002). Hence, efforts made the different governments within this regime were no avail. Sequel to the fall in domestic output of refined petroleum products, successive Nigerian governments have spent so many years in subsidizing the importation of the products for onward sale at lower rates to the Nigerian populace. Considering the huge amounts spent overtime in subsidizing the consumption of petroleum products in Nigeria, the government decided to fully deregulate the domestic price of petroleum having removed the subsidies on diesel and kerosene earlier. This would allow the prices of the petroleum products to fully reflect their market conditions, culminating in the deregulation of the downstream oil sector, (Ayodele, Obafemi and Ebong 2013).

However, studies have opined that prior to recent oil price fall, Nigeria's history of oil revenue management had generally been poor (Okogu and Osafo-Kwaako, 2008). This is premised on the fact that managing oil wealth has proven to be a difficult challenge for many countries across the world, and this is evident in Ecuador, Mexico, Nigeria, and Venezuela. Thus, oil revenue fluctuations as being experienced presently, have adversely affected the Nigerian economy especially budget structure.

However, a notable situation in the country recently is the cut in budgetary allocations and the change in the composition and structure of government budget, and the change has affected the sectoral output growth in the country. When explaining this scenario, the allocation to the health sector readily comes to mind. Of the N6.08 trillion budget estimate for 2016, the Ministry of Health got N257.3 billion, 4.23 per cent of the total. In 2015, the ministry got N259.751 billion (5.78 percent) out of N4.493 trillion (Udo, 2016). In 2015, the total allocation to the agriculture sector in the 2015 budget declined by 20.06 per cent to N66.64 billion compared with N83.37 billion in 2014. From the 1970's till present spending on education, construction and health in that order look like taking an increasing portion of public spending (CBN, 2014). The reverse of this, of course, is that other areas of spending must have become relatively less important. Also, expenditures on non-productive sectors such as administration and defense have been on the increase, even higher than those of the productive sectors like agriculture.

Ironically, budgetary allocations to payment of subsidies on petroleum products have been overwhelmingly large. Between 2012 and 2014, for example, as much as N2.664trillion was spent by government as petroleum consumption subsidies in the country (Habibu and Musa, 2013). Attempts to improve the budgetary operations of government gives credence to the need for subsidy reforms. Hence, the new civilian government embarked on reforms at inception of office in 2015. The idea was that money saved from subsidy reforms would help to improve allocations to the productive sectors of the economy. How effective the subsidy reform process would be consequently depends on whether the impact of price subsidy on the budgetary process has historically been significant. It is this impact that this study aims to empirically examine.

Statement of the Problem

Evidently, petroleum subsidy has made a hole in the country's budget, contributing to the fiscal deficits due to high cost of subsidies. It is obvious that from the 1980s to the time of this study, the oil and gas industries are very critical and without the income accruing from them, Nigerian government may not be able to carry out certain public expenditure and survive as a nation. Empirical investigation of the effects of fluctuations in the revenue base of a nation such as Nigeria is extremely very crucial for the nation. The problems of petroleum income fluctuation and its uncertainties are so great and critical that their study cannot be ignored (Ogbonna and Ebimobowei 2012).

Since 1960, it has become a yearly ritual for the government to allocate public expenditure into various sectors of the economy. What is not clear yet is what determines the structure and composition of the government budget. The main argument is whether the structure of government budget is determined by political consideration rather than economic reasons such as oil revenue fall (Ogbonna and Ebimobowei 2012). These arguments become clearer when one considers the fact that there are expenditure cuts in Nigeria recently as illustrated in the background study above. Thus, it is therefore not empirically certain if the recent changes in the structure and composition of budget outlays in Nigeria is due to the oil subsidy payments or political reasons. This study intends to provide answers to these arguments by analysing the impact of petroleum subsidy reforms on the structure of government budget in Nigeria from 1985 to 2016. However, the relationship between the structure of government budget and petroleum subsidy reforms have continued to generate series of controversies among scholars in economic literature. The nature of the impact is inconclusive. While some authors believed that the impact of petroleum subsidy reforms on government expenditure is negative or non significant, others believed that the impact is positive and significant. Other scholars argue that, petroleum subsidy reforms will improve the efficient use of scarce economic resources by subjecting decisions in the sector to the operations of the forces of demand and supply, thereby, having a significant effect on government revenue. However, this has not been empirically investigated for Nigeria which forms the motivation for this study.

II. Objectives Of The Study

The broad objective of this study is to examine the impact of petroleum subsidy reforms on government expenditure in Nigeria. The specific objectives of this study shall be to:

- i. Investigate the impact of subsidized price of Premium motor spirit (PMS) on budgetary expenditure in Nigeria.
- ii. Investigate the impact of subsidized price of Dual purpose kerosene (DPK) on budgetary expenditure in Nigeria.
- iii. Ascertain the impact of subsidized price of Automotive gas oil (AGO) on budgetary expenditure in Nigeria.

Research Hypotheses

Based on the stated objectives, the following research hypotheses will be structured in null form as follows:

H0₁: Subsidized price of Premium motor spirit (PMS) has no significant impact on budgetary expenditure in Nigeria.

H0₂: Subsidized price of Dual purpose kerosene (DPK) has no significant impact on budgetary expenditure in Nigeria.

H0₃: Subsidized price of Automotive gas oil has no significant impact on budgetary expenditure in Nigeria.

III. Review Of Related Literature

Conceptual Framework

Subsidy is money paid by a government or an organization to reduce the costs of producing goods or services so that their prices can be kept low. In other words, it is a payment made by government to producers in order to enable them produce and sell at a lower price than they would otherwise (Akintola, 2005).

Petroleum subsidy reforms refer to the deregulation of investment and marketing activities in the petroleum sector. This becomes necessary for the governments because of the high cost of petroleum subsidy implementation (Dartanto, 2013) and its likelihood of being influenced by institutional abuses and corruption (OECD, 2010). This is the reasons why different governments embarked on petroleum subsidy reforms and failure persisted. The goal of the petroleum subsidy reform is to restore the sector or industry as well as the economy, increase productivity, give it a new footing and bring it out of the slum it has been for so long (Habibu and Musa, 2013). On the other hand, budget in this context is an estimate of government expenditure and revenue for a given financial year (Ugwu, 2011). Thus, budgetary structure comprises of government expenditure and revenue for a particular financial year.

Furthermore, petroleum subsidy has implications on the Nigeria's budget contributing to the fiscal operations resulting from high cost of subsidies on petroleum products such as Premium motor spirit, Automotive gas oil, Dual purpose kerosene, among others. Hence, increased subsidy payments have the tendency of reducing budgetary allocation to productive sectors of the economy.

Theoretical Framework

This study adopted the Wagner's theory of expanding state activities. The theory is named after the German political economist Adolph Wagner (1835-1917), who developed a "law of increasing state activity" after an empirical analysis on Western Europe at the end of 19th century. He argues that government growth is a function of increased industrialization and economic development. Wagner stated that during the industrialization process, as the real income per capita of a nation increase, the share of public expenditures in total expenditures increases. Wagner designed three basic assumptions in the theory. Firstly, during industrialization process, public sector activity will replace private sector activity. State functions like administrative and protective functions will increase. Secondly, governments needs to provide cultural and welfare services like education, public health, old age pension or retirement insurance, food subsidy, natural disaster aid, environment protection programmes and other welfare functions. Thirdly, increased industrialization will bring about technological change and large firms that tend to monopolize. Government will have to offset these effects by providing social and merit goods through budgetary means.

Adolph Wagner pointed out that public spending is an endogenous factor, which is determined by the growth of national income. Hence, it is national income that causes public expenditure. In other words, as government revenue increases, there is the tendency that the government expenditure will increase at the same time. In support of this, Osinbajo (2016) notes that Federal Government has saved about N1.4 trillion that would have been paid as subsidy to oil marketers as a result of the successful deregulation of the downstream oil and gas sector a few months ago. He added that the successful deregulation of the downstream oil and gas sector has resulted in conservation of budget resources and reduction in demand for foreign exchange. The theory is relevant to this study in that since petroleum subsidy has implication on budgetary structure in Nigeria; the implementation of the subsidy reforms will give rise to competition in the sector as well as efficiency in

production. This will in the longrun bring about increase in government revenue thereby leading to government expenditure which forms the budgetary structure in Nigeria.

Empirical Review

In examining the impact of revenue from oil proceeds and disaggregated government spending on poverty rate in Nigeria, different econometrics tests, that is, pre-estimation test, estimation techniques and diagnostic tests such as Augmented Dickey Fuller, Engel-Granger co-integration, Ordinary Least squares and Granger causality were analysed by the researchers using the data sets within the period of 1970 and 2013. Their empirical result disclosed that gross domestic product and revenue from oil proceeds exert negative effect on poverty rate in Nigeria during the reviewed period. This revealed that oil proceeds being the main revenue source in Nigeria have greater impact in ensuring equal distribution of income as a means of reducing poverty level among her citizens. They concluded by saying that these proceeds are not channeled into right directions with regards to government spending on capital projects and recurrent expenditure. This further exacerbates the poverty level in Nigeria (Adelowokan and Osoba, 2015).

Aregbeyen and Kolawole (2015) examined the relationships among oil revenue, government spending, and economic growth in Nigeria. The study investigated whether oil revenue impacted on government spending, as well as on economic growth in the country over the period from 1980 to 2012. Their data were analyzed using econometric techniques which included Ordinary Least Square (OLS), cointegration, Vector Error Correction Model (VECM), and Granger causality to determine the direction of causality and the magnitude of impacts of the variables. Findings from their analysis revealed that oil revenue granger caused both of total government spending and growth, while there was no-causality between government spending and growth in the country. They therefore suggested that government should increase spending on capital projects as well as intensify efforts at increasing output in the oil sub-sector in order to boost economic growth in Nigeria.

Bash (2015) identified the impact of fluctuations in crude oil prices on the Jordanian public budget for the period of 1995 to 2013. To achieve the objective of the study, the researcher used an econometric model of linear regression. This shows the relationship between the study variables using Variance Auto Regressive (VAR) method. To estimate the parameters, ordinary least squares (OLS) method was used. The results of the study showed that there is a statistically significant impact of crude oil prices on the Jordanian public budget deficit. This means that an increase in crude oil prices would result to an increase in Jordanian public budget deficit. The study recommended that crude oil and natural gas sector should grant special status through the development plan implemented. They should bring financial resources and human expertise and modern technology, whether from domestic or foreign sources. Also, they should expand in awarding contracts to foreign companies while maintaining the national rights on economic grounds. The technical and economic problems facing the crude oil sector should be treated. Finally, the latest technology available to increase its contribution to the GDP should be employed.

Sabiu and Reza (2014) employs the vector auto regression model using variance decomposition, impulse response function and granger causality tests to assess the effect of deregulation of downstream oil sector on two macroeconomic variables which are; GDP and Unemployment in Nigeria. Their study finds evidence that changes in oil price due to deregulation is the major source of variation in GDP, and Unemployment in Nigeria. Their result also reveals that there is positive impact of oil price changes on GDP but negative impact on Unemployment in the short run which became positive in the long run. Finally the Granger causality test indicates unidirectional causality running from Petroleum prices to GDP and also from Petroleum prices to Unemployment.

Bobai (2012) examined the impact of increase of petroleum prices on the Nigerian economy. The variables he used for analysis were inflation rate and petroleum prices in Nigeria and the main tool of analysis was a multiple regression model through the OLS techniques which examines the relationship between petroleum prices and inflation in Nigeria from 1990-2011. His results shows positive relationship exists between PMS, AGO and inflation. PMS had more effect on inflation, while negative relationship exists between inflation and DPK. However, the overall effect showed increase in petroleum product price increase the rate of inflation in Nigeria.

IV. Methodology

Theoretical Framework

This study will adopt ex-post facto research design. Research design represents all arrangements made in order to obtain all relevant data, measurement of such data and the establishment of any relationships existing among the variables (Okpo, 2011). The study covers the impact of petroleum subsidy reforms on budgetary structure in Nigeria using time series data from 1985 to 2016. The regression analysis will be used while the ordinary least square techniques shall be used to estimate the parameters of the model specified by this study.

Sources of Data

The data for this study will depend mainly on secondary sources gotten from Nigerian National Petroleum Corporation (NNPC) Statistical Report, Petroleum Products Pricing Regulatory Agency (PPPRA) Pricing Template, Central Bank of Nigeria (CBN) statistical bulletin.

Model Specification

Based on the theoretical and empirical literature in the previous chapter, changes in the prices of Premium motor spirit (PMS), Dual purpose kerosene (DPK) and Automotive gas oil (AGO) will be adopted as the independent variables of this study while the dependent variable will be government expenditure (GOVEXP).

$$GOVEXP = f (SPMS, SDPK, SAGO, \dots, \mu_t) \dots\dots\dots 1$$

GOVEXP = Government Expenditure, which consecutively is taken as expenditure on health, education, agriculture, administration and defense.

SPMS = Subsidized price of Premium motor spirit.

SDPK = Subsidized price of Dual purpose kerosene.

SAGO = Subsidized price of Automotive gas oil.

μ_t = Standard Error term.

A priori Expectations

The a priori expectations for the equation are: β_1, β_2 and $\beta_3 > 0$. One expects government expenditure to increase with the presence of subsidized prices

Unit Root Test equation

The variables of this study were subjected to non-stationary test using the Augmented Dickey fuller (ADF) testing procedures. The unit root test regression equations with constants are;

$$\Delta(\text{EXP})_t = \alpha_0 + \alpha_1(\text{EXP})_{t-1} + \sum_{i=1}^m \rho_i \Delta(\text{EXP})_{t-i} + \mu_t \dots\dots\dots 2, \text{ etc.}$$

The hypothesis for the test is specified below,

H_0 : The series has unit root

An error correction model for this study was based on the residual based co-integration (Engel-granger approach) which can be specified as:

$$(\Delta \text{GEXP})_t = \beta_0 + \beta_1 \sum_{b=1}^p (\Delta \text{PPMS})_t + \beta_2 \sum_{c=1}^p (\Delta \text{PDPK})_t + \beta_3 \sum_{d=1}^p (\Delta \text{PAGO})_t + \beta_4 \text{ECM}_{t-1} \dots\dots\dots 3$$

The above equation is the error correction model equation which estimates the presence of a short-run equilibrium relation between the dependent and the independent variables after co-integration is established.

Estimation Procedure

This study adopted the OLS technique. First, The Augmented Dickey-Fuller (ADF) test was conducted for stationarity i.e. to determine the order of integration as well as satisfying the economy theory which says certain variables must be integrated, random walk or martingale process. The rule of thumb for unit root tests is that t-statistics must be greater than the critical values for stationarity to be attained. This could be realized at level 'I (0)' or at 1st difference 'I (1)' of the data. Following this, a cointegration test was conducted to ascertain if the time series variables have a long-term or equilibrium relationship among them and then the Error Correction Model (ECM) estimated.

Decision Criterion for t-Statistic

Reject the hypotheses H_{01}, H_{02} on the respective significant effects of the independent variables on government revenue and expenditure if the respective t-probability is less than the 0.05 level of significance. Or otherwise accept the hypotheses.

V. Result Presentation, Data Analyses, And Discussion Of Findings

Unit Root Test and Order of Integration

In time series regression, the unit root test is important so as to avoid having a bad regression and to enable result used for future forecast. The Augmented Dickey Fuller (ADF) test was used for testing the stationarity test and the test result is presented below. Thus, in testing for stationarity of the variables, the hypothesis is stated thus;

H_0 : Y_t is not stationary against H_1 : Y_t is stationary; with critical values which are all negative and larger (in absolute term) than the standard critical values. This will lead to the rejection of the null hypothesis, meaning that the variables are stationary. Tables 4.1 presents the summaries of the unit root test results for the series in levels and in first differences.

Table 4.1 Augmented Dickey Fuller Unit root test results

Augmented Dickey Fuller (ADF) Unit Roots Test						
Variables	ADF Test stat at level	Crit. value at 5%	Trend & C	ADF Test stat at first difference	Crit. value at 5%	Order of Integration
AGO	0.968890	-1.952473	None	-5.069337	-1.952910	I(1)
DPK	2.371489	-1.952473	None	-4.612346	-2.967767	I(1)
PMS	2.666390	-1.952473	None	-3.473050	-1.952910	I(1)
GVTEXP	2.264811	-1.952473	None	-3.879837	-3.587527	I(1)

Source: Researcher’s computation based on Eviews 9

The Augmented Dickey Fuller (ADF) test was conducted on variables in order to determine their stationary nature and those found non stationary were differenced to get rid of the stochastic trend, a phenomenon associated with time series data. The results of the ADF unit root test show that all the variables (AGO,PMS and DPK) were not stationary at levels and were differenced, and they became stationary at first difference. Thus, none of the tests have the variables stationary at second difference but are stationary at first difference and this necessitated the test for cointegration and the use of ECM.

Cointegration test

After establishing the existence of unit root and their order of integration identified then it will be necessary to check if the variables have the same order of integration. If the variables are integrated in the same order then the presence of co-integration is established as well as their linear combination (Enders, 1995).

Table 4.2 Co-integration Table for model

Variables	ADF stat	5% Critical Value	Remark
(RESIDUAL)	-4.348963	-1.952910	COINTEGRATION

Since the saved residual of the model is integrated at level form then we conclude that the variables are co-integrated implying that there exist a short run stability among the variables under study. As a result, the analysis for the model will be based on the short-run equation as shown below.

Estimated Results

Table 4.3: The ECM

Dependent Variable : GOVTEXP				
Variables	Coefficient	Std. Error	T-Statistics	Probability
C	-174535.7	635976.9	-0.274437	0.7860
D(AGO,1)	3672.590	33668.58	0.109081	0.9140
D(DPK,1)	-875562.4	132272.3	-6.619394	0.0000
D(PMS,1)	805581.4	55193.29	14.59564	0.0000
ECM1(-1)	-0.625057	0.221166	-2.826190	0.0091
R-Squared	0.897006			
Probability Of F-Stat	0.00000	F-Statistics: 54.43330		
Durbin-Watson	1.613205			

Interpretation of result

Economic Criteria

The theoretical expectation explain the relationship between the independent variables and the dependent variable, it explains whether the independent variables obey their correct sign. The table below presents the behavior of the variables.

Table 4.4 Economic Criteria Test

Independent Variable	Coefficient	Sign of Coefficient	Expected sign	A priori expectation
AGO	3672.590	Positive	Positive	Obeys a priori
DPK	-875562.4	Negative	Positive	Did not obeyed
PMS	805581.4	Positive	Positive	Obeys a priori

Two of the variables obeyed their a priori expectations, AGO and PMS. This means that subsidized prices of AGO and PMS increased government expenditure in Nigeria. However, DPK came out with a negative sign, implying an inverse relationship with government expenditure; an outcome not expected

The size of the effect

Two out of the three independent variables (DPK and PMS) have a significant effect on government expenditure using the -probability value of 5 percent significant levels). The result shows that when the price of DPK increases, government expenditure in Nigeria will decrease by 875562.4.

Also, the result shows that when the price of PMS increases, government expenditure in Nigeria will increase by 805581.4. The result found that the size of the effect of DPK is higher than that of other products; this may be due to the fact that it is consumed by everyone in both the rural and urban areas of the country.

The coefficient of the ECM

The results from Table 4.4 show the Error Correction Mechanism (ECM) is negative as expected and significant, implying that 63 percent of the deviations or errors in the short-run equilibrium are corrected annually in the long-run. The R-squared of 0.897 implying that about 90 percent of the variations in government expenditure are explained by the independent variables. The F-statistic is 54.4330; with a p-value of 0.0000 indicating that, jointly, AGO, PMS and DPK determine changes in government expenditure in Nigeria during the period of this study.

Test of hypothesis one.

Step I: Statement of Hypothesis

H0₁: Subsidized price of Premium motor spirit (PMS) has no significant impact on budgetary expenditure in Nigeria.

Step II: Statement of Decision Criteria

Reject the null hypothesis if the probability value of PMS is less than 0.05, otherwise accept the alternative hypothesis.

Step III: Presentation of the Hypothesis Test Results

From the table 4.4 the probability value of PMS is 0.0000, thus the null hypothesis is rejected which means that change in the price of PMS as a result of subsidy removal increased government expenditure in Nigeria.

Test of Hypothesis two

Step I: Statement of Hypothesis

H0₂: Subsidized price of Dual purpose kerosene (DPK) has no significant impact on budgetary expenditure in Nigeria.

Step II: Statement of Decision Criteria

Reject the null hypothesis if the probability value of DPK is less than 0.05, otherwise accept the alternative hypothesis.

Step III: Presentation of the Hypothesis Test Results

From the table 4.4 the probability value of DPK is 0.0000, thus the null hypothesis is rejected which means that change in the price of DPK as a result of subsidy removal increased government expenditure in Nigeria.

Testing Hypothesis 3

H0₃: Subsidized price of Automotive gas oil has no significant impact on budgetary expenditure in Nigeria.

Step II: Statement of Decision Criteria

Reject the null hypothesis if the parameter of the probability value of AGO is less than 0.05, otherwise accept the null hypothesis.

Step III: Presentation of the Hypothesis Test Results

From the result table above, the Probability-value of PMS is (0.9140) and it is not significant at 5% significant levels, the null hypothesis is not rejected which means that the price of AGO has no significant contribution to the increase or decrease in government expenditure in Nigeria after subsidy removal.

VI. Summary, Conclusion And Recommendation

Summary Of Findings And Conclusion

This study examined the impact of petroleum subsidy reforms on budgetary structure in Nigeria using time series data from 1985 to 2016. The main focus of the study is Investigate the impact of subsidized price of Premium motor spirit (PMS) on budgetary expenditure in Nigeria. Investigate the impact of subsidized price of Dual purpose kerosene (DPK) on budgetary expenditure in Nigeria. And ascertain the impact of subsidized price of Automotive gas oil (AGO) on budgetary expenditure in Nigeria. The main instrument of the data analyses is the OLS econometrics method using the two step Engel-Granger method-ADF unit root test, the

cointegration test and the Error Correction Mechanism (ECM).. The findings of the result can be summarized as follows;

- i.** Subsidized price of PMS led to increase in government expenditure in Nigeria.
- ii.** Subsidized price of DPK led to decrease in government expenditure in Nigeria.
- iii.** Subsidized price of AGO has no effect in government expenditure in Nigeria.

IV. conclusion

As mentioned earlier, this study examined the impact of petroleum subsidy reforms on budgetary structure in Nigeria. At the conclusion of this research, it was observed that the subsidy removal of the government is not characterized by failure in government duty, rather it a policy option available for improved performance meant to remove the bottleneck that characterise the downstream sub-sector, such as the sorry state of the four refineries, the inefficiency in the distribution and pricing of petroleum products and negative effects of monopolistic structure of the downstream sub-sector. It was also noted that there is need to provide an enabling environment for private individuals and companies to establish refineries. The more refineries, the better for competitive outcome under a deregulated price regime, more so, removing subsidy will bring a lot of economic benefit to the nation. It is not just a cutback of government spending on subsidy, it will improve the delivery service, this the government will do when it channel the fund previously spend on subsidy to providing social and basic infrastructure. The researcher strongly believe that the findings and recommendations made at the conclusion of this study, if well put into consideration will help improve the downstream sub-sector of the petroleum industry.

Policy Recommendation

Sequel to this therefore the study recommend a policy that will guarantee a long term domestic oil price stability in the country which will help in bringing about stability in the macroeconomic environment which will in turn stimulate increase in government spending in other areas and improvement in economic growth and development. The following recommendations are made; i. Government should allow the fixing of domestic prices of petroleum products based on market conditions and just regulate the fluctuations to enable the country maximise the gains from deregulation and subsidy removal.

ii. There is need to provide an enabling environment for private individuals and companies to establish refineries. For instance, the two Port Harcourt refineries were shut down in 2000 simply because the internally generated power was not enough to run them, while the public power supply was unreliable (Federal Ministry of Information, 2000). To avoid a repeat of this ugly experience in the downstream petroleum sector in Nigeria, the federal government should create an enabling environment for the new refineries to thrive for maximum output. This will ensure steady supply of petroleum products to the populace and prevent wasteful government spending.

iii. The study found that subsidized prices of PMS and DPK affected government expenditure, thus, removal of subsidy ought to favour government expenditure, this implies that government should channel the amount spent on subsidy to other important sectors of the economy.

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Appendix
Cointegration Test

Null Hypothesis: ECM1 has a unit root				
Exogenous: None				
Lag Length: 1 (Automatic - based on SIC, maxlag=7)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic				
Test critical values:			1% level	-2.647120
			5% level	-1.952910
			10% level	-1.610011
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(ECM1)				
Method: Least Squares				
Date: 08/01/17 Time: 13:56				
Sample (adjusted): 1987 2016				
Included observations: 30 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECM1(-1)	-0.899661	0.206868	-4.348963	0.0002
D(ECM1(-1))	0.480531	0.184226	2.608373	0.0146
R-squared	0.410430	Mean dependent var		178703.3
Adjusted R-squared	0.388594	S.D. dependent var		3191381.
S.E. of regression	2495420.	Akaike info criterion		32.36428
Sum squared resid	1.68E+14	Schwarz criterion		32.45858
Log likelihood	-467.2821	Hannan-Quinn criter.		32.39382
Durbin-Watson stat	2.128026			

Regression (ECM)

Dependent Variable: D(GVTEXP,1)				
Method: Least Squares				
Date: 08/01/17 Time: 11:51				
Sample (adjusted): 1986 2016				
Included observations: 31 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-174535.7	635976.9	-0.274437	0.7860
D(AGO,1)	3672.590	33668.58	0.109081	0.9140
D(DPK,1)	-875562.4	132272.3	-6.619394	0.0000
D(PMS,1)	805581.4	55193.29	14.59564	0.0000
ECM1(-1)	-0.625057	0.221166	-2.826190	0.0091

Impact of Petroleum Subsidy Removal on Government Expenditure in Nigeria

R-squared	0.897006	Mean dependent var	1662527.
Adjusted R-squared	0.880527	S.D. dependent var	8247100.
S.E. of regression	2850596.	Akaike info criterion	32.71497
Sum squared resid	2.03E+14	Schwarz criterion	32.94850
Log likelihood	-485.7245	Hannan-Quinn criter.	32.78968
F-statistic	54.43330	Durbin-Watson stat	1.613205
Prob(F-statistic)	0.000000		

1Okereke. "Impact of Petroleum Subsidy Removal on Government Expenditure in Nigeria ." International Journal of Humanities and Social Science Invention(IJHSSI), vol. 06, no. 12, 2017, pp. 75-84.