Impact of Fuel Subsidy Removal on Economic Growth in Nigeria (2003-2023)

Ejeka Lilian Nkechi
ejekaca@yahoo.com
Department of Banking and Finance
Imo State Polytechnic, Omuma

Abstract
This study examined the effects of the fuel subsidy removal on Nigerian economic growth. The decision to outrightly remove fuel subsidy on May 29, 2023, increased petrol price from N184 per litre to N1,200 per litre, and ignited a series of debates among Nigerians nationwide. Methodology employed in the study is a descriptive design. Time series data were used for the period of 21 years (2003-2023). Gross Domestic Product was a proxy as an independent variable for measuring economic growth, while unemployment rate (UNEMPR, interest rate (INTR), and investment rate (INVR) were the dependent variables. Three hypotheses were used to analysis this work and its findings are that there is significant and negative impact of unemployment rate on economic growth with R^2 = -1.020667, p-value 0.0003, Interest rate has significant and negative impact on economic growth of R^2 = -1.750105, p-value = 0.0024 and Investment rate also has significant and negative impact on economic growthofR^2 = -0.001687, p-value 0.1839. It was concluded that fuel subsidy removal has a negative and significant impact on economic growth in Nigeria and recommended that funds saved from subsidy removal should be channeled into vital sectors that will create more employment opportunities to the teeming youth to reduce unemployment. Government should make interest free loan available or reduce interest rate on loan to encourage investor to borrow and invest into agricultural and other viable sector to reduce the high cost on food prices and over dependency on importation and also government should provide interest free loan for small businesses in the informal sector to boost their businesses, and empower them to fight poverty and create more jobs for unemployed Nigerians.

Keywords: Fuel subsidy, Economic growth, Unemployment

Introduction

Fuel subsidies have been a bone of contention in Nigeria for many years. The implemented of fuel subsidies in Nigeria is a means to provide cheaper petroleum products to its citizens. Fuel subsidy is a government discount on the market price of fuel to make consumers pay less than the prevailing market price of fuel (Ovaga and Okechukwu, 2022). When subsidies are in place, consumers would pay below the market price per litre of the petroleum product. Globally, there are debates about fuel subsidy because of its huge amount and its effect on citizens' welfare and the fiscal health of a nation.

The size of global fuel subsidy is large and is estimated at $1 trillion in 2022 from $325 billion in 2018, according to the International Energy Agency. This amount is significantly higher than the value of global aid which was estimated at $204 billion in 2022 and larger than the combined government revenue of developing countries. This has led to calls for the removal of fuel subsidy so that the saved funds can be channeled to assist the poor and vulnerable in need of humanitarian assistance in our developing countries (Couharde & Mouhoud, 2020; Ozili and Ozen, 2021).

In the early 1990s, Nigeria's four state-owned but independently operated refineries could not keep up with its demand. The nation began to export crude oil and import refined petroleum at a huge cost since its old 4 refineries could not refine crude oil need for the nation, which the government still subsidizes after importing refined product. The subsidy was the difference between the projected open market price and the pump price. To make up for the market shortfall, the government issued it as a direct or indirect payment to individuals or companies that imported refined products. In 2000, the government approved about 20 licenses to private sector players for building new refineries in the country, yet they built none.

Previous administrations were reluctant to jettison the subsidies. The subsidies had been in place since the1970s, when the government sold petrol to Nigerians at a price below cost – though most consumers weren't aware of this. The 1977 Price Control Act made it illegal for some products (including petrol) to be sold above the regulated price. The Olusegun Obasanjo regime introduced this law to cushion the effects of inflation, caused by a worldwide increase in energy prices. The subsidies were also considered to be a drain on public finances, costing the government US10 billion in 2022. About40% of Nigeria's revenue in 2022 was spent on fuel subsidies. Fuel subsidies in Nigeria were notorious for their opacity and graft, billions of dollars were said to have been lost through corrupt practices in the payment of the subsidies.

"The fuel subsidy is gone," said Nigeria President Bola Tinubu, in his inaugural address on 29 May 2023. "The subsidy can no longer justify its ever-increasing costs in the wake of drying resources. We shall instead re-channel the funds into better investment in public infrastructure, education, health care and jobs that will materially improve the lives of millions". This subsidy removal is one decision we must bear to save our country from going under and take our resources away from the stranglehold of a few unpatriotic elements." Mr. Tinubu is confident that ending subsidy payments will free up resources for massive infrastructure investments in transportation, energy and other sectors. These pronouncements prompted a spike in the pump price of petrol from about ₦780 a gallon (approximately $1) to ₦2160 a gallon ($2.80), driving up the overall cost of living in the country.

A subsidy is a direct payment from the government to a customer or provider of a particular product, in this case, petrol. Some people have even linked the end of subsidies to free trade opening the downstream oil industry. A subsidy, sometimes called subvention, is basically a sum of money paid by the government to the suppliers (providers or producers) of a product or service so that they can sell their products or services to final consumers at a price set by the government that is less than the true cost of supply to ensure product reaches the target customers at the control price (Encharang, Mansur, & Kogid, 2022). The Organization for Economic Co-operation and Development (OECD) defines a subsidy as a measure implemented by the government to provide producers or consumers with an advantage so that they can increase their revenue or decrease their expenses. Subsidies can take the form of tax breaks, grants, or other financial assistance.

Subsidy removal is when the government decides to stop or cut back on assistance for certain goods or services. Often, this entails removing funds or price break previously provided to buyers or producers. Eliminating subsidies can have serious effects on the economy. However, subsidies, even when intended for good reasons, are never a good method to run a government since they might misuse resources, particularly if the selling price falls below the production costs (Yunusa, Yakubu, Emeje, Ibrahim, Stephen & Ebgunu 2023). According to Umeji & Eleanya (2021) carriers have already increased the cost of transport.

Coady, Parry, Le, and Shang (2019) investigated the economic effects of changing subsidies, focusing on how getting rid of subsidies could save money for the government, make better use of resources, and make the market work better. Removing subsidies raises the prices of the affected goods or services. This could have an impact on prices and what people can buy. Apergis, Babalos, Christou, and Gupta (2019) conducted a study looking at the relationship between subsidy removal and inflation and concluded that subsidy reform could cause inflation.

Economic growth is defined as the constant increase in the amount of goods and services produced per head of the population over a period of time; it is the increase in the production of goods and services per head of population over a stated period of time. Due to the removal of fuel subsidy more jobs that are supposed to be created that will increases income and also increase consumers more access to money in buy additional products and services and drive higher growth has been declining as many citizens are struggling to have two square meal a day by ignoring investment and employment due to bad economy. For this reason, all countries want positive economic growth, and this makes economic growth the most-watched economic indicator. Economists usually measure economic growth in terms of Gross Domestic Product (GDP) or related indicators, such as Gross National Product (GNP). GNP is derived by adjusting GDP to include repatriated income that was earned abroad and exclude expatriated income that was earned domestically by foreigners. In countries where inflows and outflows of this sort are significant, GNP may be a more appropriate indicator of a nation's income than GDP. Gross National Product considers the value of goods produced by a country's residents regardless of whether they live inside the country or abroad. Unemployment is frequently used as a measurement of economic growth.

Unemployment is defined as when a person who is actively searching for employment and is willing and able to accept the prevailing wage rate is unable to find work. With the current unemployment rate in Nigeria, fuel subsidy removal has generated a multiplying effect on unemployment rate in the country. The removal of fuel subsidy has made small businesses that cannot afford the rising cost of petrol and whose profit margins have been completely eroded by fuel subsidy removal in the informal sector to drop their workers or relocate to another country (Houeland, 2022). Overhead cost of Industries has increase leading to closure of some businesses and relocation to neighboring towns or countries (Essig, 2024).

Saving is a mechanism by which economic agents make deliberate choice to allocate a portion of their current income for the purpose of making investment and increasing their future earning capacity. Saving is income not spent, or deferred consumption. Methods of saving include putting money aside in, includes deposit account, pension account, an investment fund, or as cash (Umoh, Okonkwo & Mbah, 2024).

Statement of the Problem

The removal of fuel subsidies in Nigeria poses a significant challenge to the country's economy, triggering a cascade of impacts across various sectors. The abrupt removal of fuel

subsidies leads to inflation in fuel prices, subsequently increasing the cost of transportation, economic growth, and decrease in consumption pattern, education and production in the economy. Prices of goods and services are on the increase nationwide to the extent that low-income earners cannot afford two good square meal for their families, as they struggle to cope with higher living expenses amidst stagnant wages. This economic shock also has the potential to stir social unrest and political instability, as citizens voice their discontent over the government's decision.

Economist have constantly lamented on the economic hardship fuel subsidy removal has brought, if adequate measure was not put in place to cushion the effect on Nigeria citizen and the economy as a whole it might shift from protest to revolution in the country. Annually the turnout of graduates who roam the streets daily in search of jobs outrageous couple with this present economic situation only God can save them. The Nigerian system has failed to capture the dynamic nature of education as agent of transformation and catalyst for individual and societal self-reliance. The target of subsidy removal is to bring innovation in that of wealth creation, employment generation, and poverty reduction and also for value reorientation to be effectively pursued, attained and sustained through an efficient relevant and functional education system but all to no avail.

However, there is a growing concern that after the introduction of fuel subsidy unemployment, low standard of living, poverty, inflation etc will be reduced rather they are on the increased because the subsidy on petrol only enrich the elite living the masses to their doom.

It is becoming more worrisome that fuel subsidy which is widely acclaimed to have helped many nations of the world to reduce hardship in the nation has not made much impact on the Nigerian inflation situation. This is becoming more worrisome as many people are still found roaming the streets in search of white-collar jobs that are scarcely available. Many graduates remain unemployed. Prices of food, education and standard of living is very high. This situation is so obvious that one may ask: what could be responsible for the ugly situation? Could it be due to bad governance or mismanagement of government fund? Could it be linked to the human and material resources used or the teaching and evaluation methods adopted by stakeholders in the country? These questions constitute the worry of this study.

Objectives of the Study

The broad objective of this study was to examine the effects of fuel subsidy removal on Nigerians' economy. The specific objective of this research work includes:

1. To determine the effect of unemployment on economic growth in Nigeria.
2. To examine the effect of interest rate on economic growth in Nigeria.
3. To ascertain the effect of investment rate on economic growth in Nigeria.

Research Questions

Based on the research objectives, the following research questions were raised to guide the study under consideration.

1. What is effect of unemployment on economic growth in Nigeria?
2. What is the effect of interest rate on economic growth in Nigeria?
3. What is the effect of investment rate on economic growth in Nigeria?

Research Hypotheses

The following research hypotheses stated in null forms were tested and analyzed in this study to achieve research objective

Ho_1: There is no significant effect to unemployment on economic growth in Nigeria.
Ho_2: There is no significant effect of interest rate on economic growth in Nigeria.
Ho_3: There is no significant effect of investment on economic growth in Nigeria.

Methods

The research design employed in this study is the *ex-post facto* research design, to establish the effect of fuel subsidy removal on unemployment, interest rate and investment, this method aims at measuring and establishing the relationship between one variable and another or the impact of one variable on another, in which the variables involved are not manipulated by the researcher. Time series data on the model variables was sourced from Central Bank of Nigeria Statistical Bulletin (2023).

The real gross domestic product (RGDP) was used as the dependent variable while unemployment, interest rate and investment rate were the independent variables. The functional relationship among the variables was expressed as follows:

RGDP = f (UNEMPR, INTR, INVR) (1)

The econometric form of the model was expressed as follows:

$RGDP = \beta 0 + \beta 1UNEMPR + \beta 2INTR + \beta 3INVR + U_t$ (2)

Where; RGDP = real gross domestic product; UNEMPR = Unemployment rate; INTR = interest rate; and INVR = investment rate. U_t is a random error term representing all other variables not specified in the model.

Description of Model Variables

Economic Growth (EGR): Economic growth was measured using economic growth rate. The RGDP was calculated as the difference between the growth rate in previous year and the growth year in current year expressed in percentage.

Interest Rate (INTR) represents the interest rate at which the CBN lends to financially sound Deposit Money Banks at a most favourable rate of interest.

Investment Rate (INVR) is calculated as value/volume of investment rate in previous year after one another expressed in percentage.

The techniques used in data analysis were Ordinary Least Squares (OLS), descriptive tests, diagnostic test and multiple regression tests. Descriptive statistical test were used to determine the mean, median, standard deviation, variance and graphical trend analysis of the dependent and independent variable. Correlation test was carried out to determine the relationship between them. Diagnostic test carried was normality test to ascertain if the data set is well modeled. The decision rule was to accept the null hypothesis if t-stat <2.000 or p-value > 0.05, otherwise reject it and accept the alternative hypothesis.

Preliminary Diagnostic Tests

The study carried out pre-estimation tests on the data. The tests help to preview the properties of the data and the model which often inform reliability of findings. The tests included the unit root test of stationarity, the descriptive statistic and the correlation test.

Unit Root Test

The first pre-estimation diagnostic test performed on the data was the unit root test of stationarity. Stationarity is an important concept in time series analysis. It usually implies that the statistical properties of a time series (or rather the process generating it) do not change over time. Stationarity is important because many useful analytical tools and statistical tests and models rely on it. The summary of the stationarity test is presented on table 1 below:

Table 1: Unit Root Test Result

ADF TEST @ LEVEL					
Variable	**t-stat**	**p-value**	**5% critical value**	**Observation**	**Decision**
GDP	-4.400573	0.0000	-3.690814	20years	stationary
UNEMPR	-5.270076	0.0000	-3.690814	20years	stationary
INTR	-3.807981	0.0000	-3.690814	20years	stationary
INVR	-6.549093	0.0000	-3.690814	20years	stationary

Source: Author's computation (E-views 10)

The results on table 1 above showed that (@ level, the model variable became stationary. The 5% critical values were greater than the ADF statistic; and the p-value were less than 0.05. The decision was that the series are stationary, and they are integrated of order 1(0). Series that are stationary at level testing produce more reliable findings.

Descriptive Test

Descriptive test as carried to ascertain the patterns, trends and distributions within the dataset. The major statistics of importance were the mean, the standard deviation, and the Jarque-Bera normality statistic.

Table 2: Descriptive Test Result

	GDP	**UNEMPR**	**INTR**	**INVR**
Mean	4.105666	11.93421	22865.77	3017.388
Std. Dev.	3.298036	3.046904	16308.25	1509.940
Jarque-Bera	0.828777	0.136908	2.295163	0.491992
Probability	0.660744	0.933836	0.317404	0.781926
Observations	20	20	20	20

Researcher's Computation 2024 using (E-views)

From the result of the descriptive test, the economic growth (proxy by the annual growth rate) averaged 4.11% between 2003 and 2023. The various components of the fuel subsidy removal averaged 11.93% (unemployment rate), 22865.77 billion naira (interest rate) and 3017.388 billion naira (investment).

Correlation Test

Correlation test as carried out to further identify the nature of the association between the variables. The result of the correlation test is presented on table 3.

Table 3: Correlation Test Result

	EGR	UNEMPR	INTR	INVR
GDP	1.000000			
UNEMPR	-0.526207	1.000000		
INTR	-0.658221	0.756529	1.000000	
INVER	-0.666668	0.863238	0.858854	1.000000

Researcher's Computation 2024 (Using E-views)

The correlation test result on table 3 above showed the direction and magnitude of association between fuel subsidy variables and economic growth in Nigeria. The direction of relationship was negative for all the components. For the period reviewed (2003-2023).

Table 4: OLS Regression Result
Dependent Variable: GDP
Method: Least Squares
Date: 11/23/24 Time: 00:52
Sample: 2003 2023
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UNEMPR	-1.020667	3.214706	-4.753795	0.0003
INTR	-1.750105	2.991405	-2.861664	0.0024
INVR	-0.001687	0.001211	-1.393099	0.1839

R-squared	0.332663	Mean dependent var	4.105666
Adjusted R-squared	0.199196	S.D. dependent var	3.298036
S.E. of regression	2.951335	Akaike info criterion	5.187056
Sum squared resid	130.6557	Schwarz criterion	5.385885
Log likelihood	-45.27703	Hannan-Quinn criter.	5.220706
Durbin-Watson stat	1.293453		

Researcher's Computation 2024 (Using E-views)
The OLS regression result presented in table 4 showed that the fuel subsidy variables have negative impact of subsidy removal on Nigerian economy with UNEMP-1.020667, INTR -1.750105 and INVR -0.001687 which means that none of these variables has contributed to the economic growth of the economy since the removal of fuel subsidy rather the economy is going into deficit. The coefficient of determination R2 was 0.332663 indicating that only about 33.27% of the total variation in the economic growth rate was explained by the fuel subsidy variables.

Test of Hypotheses
Test of Hypothesis One
HO_1: There is no significant impact of unemployment rate on economic growth in Nigeria.
HA_1: There is significant impact of unemployment rate on economic growth in Nigeria.
From the results obtained, the estimated coefficient value for unemployment rate variable (UNEMPR) was -1.020667, with p-value of 0.0003; therefore, the study rejected the null hypothesis and accepted the alternative hypothesis (HA_1) with the conclusion that there is significant and negative impact of unemployment rate on economic growth in Nigeria.

Test of Hypothesis Two
HO_2: Interest rate has no significant impact on economic growth in Nigeria.
HA_2: Interest rate has significant impact on economic growth in Nigeria.
From the results obtained, the estimated coefficient value for Interest rate was -1.750105 with a p-value of 0.0024. Therefore, following the decision rule, the study rejected the null hypothesis

and accepted the alternate hypothesis. It was concluded that interest rate is significant and have negative impact on economic growth in Nigeria.

Test of Hypothesis Three

HO_3: Investment rate has no significant impact on economic growth in Nigeria.

HA_3: Investment rate has significant impact on economic growth in Nigeria.

From the results obtained, the estimated coefficient value for significant (INVR) was -0.001687, with a p-value of 0.1839. Therefore, following the decision rule, the study accepted the null hypothesis and rejected the alternate hypothesis. It was concluded that investment rate has negative but no significant impact on economic growth in Nigeria.

Summary of Findings

The summary of the findings was as follows:

1. There is significant and negative impact of unemployment rate on economic growth in Nigeria [Regression coefficient = -1.020667, p-value 0.0003].
2. Interest rate has significant and positive impact on economic growth in Nigeria [Regression coefficient = -1.750105, p-value = 0.0024].
3. Investment rate has no significant impact on economic growth in Nigeria [Regression coefficient = -0.001687, p-value 0.1839].

Conclusion

Based on findings from the empirical results, the study found convincing evidence to summarily conclude that fuel subsidy removal in Nigeria has negative impact on the economic growth. High-interest rates have a negative effect on bank performance. Those who can take up such loans may also find it very difficult to repay because of the exorbitant interest rates. A high liquidity ratio will reduce the bank performance in the short term and long term. Furthermore, a higher exchange rate, though increases bank profitability, hurts banks' performance in the long term.

Recommendations

Based on the findings, the following recommendations were made:

1. Funds saved from subsidy removal should be channeled into vital sector by the government to create more employment opportunity to the teeming youth to reduce unemployment.
2. Government should make interest free loan available or reduce interest rate on loan to encourage investor to borrow and invest into agricultural and other viable sector to reduce the high cost on food prices and over dependency on importation.
3. Government should provide interest free loan for small businesses in the informal sector to boost their businesses and empower them to fight poverty and create more jobs for unemployed Nigerians.

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