

Analyzing the Effect of Government Expenditure on Inflation Rate in Nigeria (1981-2019)

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ABSTRACT

Nigeria is a developing economy with active participation of the federal government in various economic sectors not only to promote economic growth and development but also to instill fiscal and economic discipline in the economy. Government participation in the economy means greater funding of economic activities and this is expected to impact on economic indicators. This study analyses the effect of government expenditure on inflation rate in Nigeria within a period of 39 years spanning (1981-2019). The study specifically seek to ascertain, determine, explore and assess the extent to which government expenditures on key sectors of agriculture, education, health and telecommunications respectively affect inflation rate in Nigeria. In line with the specific objectives of this study, four research questions are raised and four hypotheses duly formulated. Data used for this study were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin. Government Expenditure on Agriculture (GOA), Government Expenditure on Education (GOE), Government Expenditure on Health (GOH) and Government Expenditure on Telecommunication (GOT) are the independent variables while inflation rate (INF) is the dependent variable. Descriptive statistics, diagnostic test employing the Augmented Dickey Fuller and a multivariate regression based on Johanson

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Cointegration and Error Correction Model (ECM) are used to analyze the data. Our findings indicate that government expenditures on education and agriculture have positive but insignificant effect on inflation rate and on the other hand, government expenditure on health and government expenditure on telecommunications have positive and significant effect on inflation rate. Based on our findings, the study recommends that government should increase its allocation to the health and education sectors to trigger increased skills and healthcare of economic operators for enhanced human capital development and economic productivity. Government should also provide adequate infrastructures to facilitate economic growth and reduce high inflation rate.

KEYWORDS: *government expenditure, inflation, government expenditure on agriculture, government expenditure on education, government expenditure on health and government expenditure on telecommunications*

INTRODUCTION

Inflation has been a topical issue of discuss in most developing economies and very pronounced in the Nigerian economy for several decades due to its impact on growth and development on Nigeria. Statistics indicated that inflation in Nigeria has always been relatively high and has significant effect on the life of individuals and other economic variables (Mohsen, Mohsen & Sadeq, 2016). Spending on different sectors to activate economic development is a major responsibility of government but such spending naturally triggers inflation as much money is

injected into the system without reciprocal production. Nevertheless, government needs to spend in order to ensure stability of the economy, stimulate and enhance productivity or investment through direct public spending and investment according to the Keynesians. Government also spend in order to redistribute income between the rich and the poor. In this context, understanding the roots of inflation can assist authorities in designing proper policies. Several theories have been advanced to explain this problem in different countries. With instruments such as

government spending, although in both theoretical and practical experiences of countries, have proved that increases in government spending cause inflation. It is one of the significant issues in the possibility of achieving economic growth (Mohsen, Mohsen & Sadeq, 2016).

Inflation is an inevitable circumstance in the management of an economy as it influences every country, negatively as well as positively, whether a country is developed or developing. Anyanwu (2011) stated that inflation is an important factor leading to social and economic instability and disorder. It is one of the most largely observed and tested economic variables both theoretically and empirically and its causes, impact on other economic variables. Nigeria, being a developing country, could not overcome the continuously year to year rising inflation, and also its causes and consequences (Luis & Marco, 2015).

One of the challenges facing economic managers especially in the third world countries is inflation. It is so worrisome that it has contributed to the fall of governments. Inflation is disturbing where it co-exists with high unemployment and depreciated or devalued local currency. According to the neoclassical economists, inflation is a fundamentally monetary phenomenon by which there is a galloping rise in prices as a result of excessive increase in the quantity of money (Sanjeev 2017). To these economists, inflation results from lack of monetary control (or monetary irresponsibility and indiscipline) with the concomitant effect of undermining the rule of business and the creation of confusion in markets, and financial ruins (Jhingan, 1997). The Nigerian economy has experienced this later aspect but most times there seems to be a separation of inflation from government monetary indiscipline. Hence, several reasons have been advanced as the causes of inflation in Nigeria. The Nigerian economy presently is characterized by stagflation, a situation of high level of unemployment and inflation existing at the same time.

The Nigerian government needs to spend in order to ensure stability of the economy, stimulate or enhance productivity or investment through direct public spending and investment according to the Keynesian view (Olayungbo, 2013). Consequently, there has been a continuous increase in government expenditure in Nigeria and most developing countries over the years in both the recurrent and the capital expenditure. The increased spending are necessitated by the huge receipts from the production and sale of crude oil and the increased demand for public infrastructures like roads, education and health facilities, external and internal security giving an ever increasing population.

Government spending play a very important role in the performance of the economy. Generally, government spending affects the behaviours of producers and consumers in their economic decision making, as well as the distribution of income in the economy. For instance, it is argued that government assumes influential role in promoting investment and growth throughout the economy through its spending. The primary essence of government is to ensure that the economy operates smoothly which it executes through necessary infrastructures (socially, economically and otherwise). In the process of providing such infrastructures, government has to be involved in spending. This is why it is commonly said that government spending represents the costs of carrying out its various activities or that government expenditure refers to the value of goods and services provided through the public sector (Gbosi, 2002). These costs are incurred from general administration, provision of social infrastructures, implementation of development programmes and the payment of interests and principal on national debts. Government or public sector activities are always part of the regular life of any nation. Specifically the level, propensity and size of these activities depend on the level of developmental need, the level of infrastructural facilities available to economic activities, quantum of money available, the focus of the government (as per the type of economy), and the depth of economic advisers, amongst others.

It is against this background that the study examine the effect of government expenditure on inflation in Nigeria. Nigeria is associated with inflationary effects and it has experienced worst consequences reflected by poverty, food crises, price hike Olayungbo (2013). Over the last decades, inflation and government spending have attracted significant attention from finance, economics and development experts, though with mixed findings, the state of inflation rate in Nigeria has been in constant change and this always affect government spending. However in 1981 inflation was at 20.9%, in 1985 it stood at 17.8%, it increased to 54% in the year 1989 and reduce drastically to the tune of 7.36% in 1990. In 1996, it increased to 29.276% and stood at 17.86% and 13.72% respectively in 2005 and 2010 respectively. In 2015, inflation rate was 9.01% and was 15.68%. In 2019 it was 11.4% and as at December 2021 it stood at 15.63%, (source: the economics).

Also, empirical studies on the effect of government expenditure or public spending on inflation have provided mixed results. Dikeogu, (2018) maintained that government capital spending impacts negatively on inflation; government recurrent spending has a

negative and an insignificant impact on inflation. Amuka, Ezeoke, and Asogwa (2016) stated that government capital expenditure on economic services is the major cause of inflation in Nigeria. In the work of Olayungbo (2013), the asymmetry causality test shows that a uni-directional causality exists from negative government expenditure changes (low or contractionary government spending) to positive inflation changes (high inflation) in the Vector Auto regression (VAR) model. The persistence of these problems in Nigeria in spite of various policy measures to stabilize the economy, reduce inflation and the inconclusive debate regarding the actual effect of government spending on inflation motivated this study of the effect of government expenditure on inflation rate in Nigeria.

Objectives of the Study

The main objective of the study is to examine the effect of government expenditure on inflation rate in Nigeria. The specific objectives are to:

1. Ascertain the degree to which government expenditure on agriculture affects inflation rate in Nigeria.
2. Determine how government expenditure on education affects inflation rate in Nigeria.
3. Explore the effect government expenditure on health on inflation rate in Nigeria.
4. Assess the effect of government expenditure on telecommunications on inflation rate in Nigeria.

Theoretical Framework

The Keynesian Perspective on Government Expenditure

This study applied the demand pull theory to justify the Keynesian approach to inflation. The demand-pull theory, which is the traditional and the most common type of inflation results from aggregate demand exceeding aggregate supply of goods and services in an economy. The shortage in the supply could result from underutilization of resources due to inadequate production equipments occasioned by high interest and exchange rates that dissuaded their importation and or the inability of the production to be increased rapidly.

According to the Keynesians, demand-pull inflation occurs when aggregate demand exceeds aggregate supply at full employment level of output that is attributing inflation to the relationship between the aggregate expenditure (C+I+G) and full employment level of output (Agba, 1994). This implies that only an increase in price above the full employment can be called inflation. Therefore, as long as an economy has not reached the level of full employment, any increase in money supply or the price would exhaust itself in

raising the level of employment and output and not the general price level in the economy (Bakare, 2000). The Keynesians emphasized non monetary influences such as government process (CBN, 1991), Keynes then explained inflation through the inflationary gap, which exists when the aggregate demand exceeds the level of output at full employment level (Vaish, 1978). This implies that once an economy has reached the point of full employment, any slight increase in aggregate demand over the available output will obviously lead to a rise in price.

Government spending is a tool that brings stability in the short run but need to be done cautiously as too much of public expenditure would lead to inflationary situation while too little of it would lead to unemployment. From the Keynesian thought, public expenditure can contribute positively to economic growth. Hence, an increase in the government consumption is likely to lead to an increase in employment, profitability and investment through multiplier effects on aggregate demand. As a result, government expenditure augments the aggregate demand, which provokes an increased output depending on expenditure multiplier. The Keynesian analysis of government expenditure formed the bases for this research.

Empirical Review

Idoko, and Jatto, (2018) examined the relationship between government expenditure on agriculture and inflation rate in Nigeria (1985- 2015). The research was guided by two research questions and two objectives. The included variables were government expenditure on agriculture, domestic savings, real gross domestic product and inflation rate. The test of the hypotheses was done using multiple regression analysis and Johansen-co-integration test. The multiple regression results of the study revealed that there exist a positive and significant relationship between government expenditure on agriculture and economic growth in Nigeria. The Johansen co-integration test result showed that the trace test statistics and max-eigen value test indicates five co-integrating equations respectively at 5% level. It concluded that there exists a long-run relationship among the variables. Based on the result of the findings, recommendations such as government formulating policies aimed at promoting government expenditure and domestic savings across the country to promote agricultural growth among others were made.

Iganiga and Unemhilin (2011) examined the effect of Federal government agricultural expenditure on inflation rate between the period of 1985-2009. In the process, other determinants of agricultural output were examined. These include total commercial credits to

agriculture, consumer price index, annual average rainfall, population growth rate, food importation and inflation growth rate. The Cobb Douglas Growth Model was used in the analysis. Federal government capital expenditure was found to be positively related to agricultural output. It was recommended that river basins and irrigation facilities should be provided to guarantee all-year-round availability of agricultural products. Additionally, food importation should be banned to encourage local production and finally, population control should be intensified in the rural setting to avoid the Malthusian Prediction of pestilence and strife.

Kumar, and Dkhar, (2019) examined the short and long run relationship between government expenditure on agriculture and inflation rate of Meghalaya. The study used a time series data of 30 years from 1984-85 to 2013-14. The variables of the study were Government expenditure in different sectors including agriculture, education and transport. Here ARDL approach to co integration and an error correction representation of the ARDL model were used. The results revealed that in the long run, the effect of public expenditure through agriculture and inflation rate is significantly negative, while expenditures on education and transport on agricultural output are significantly positive which is in line with several earlier studies.

Aina, and Omojola, (2017) examined the effect of government expenditure on agricultural sector performance and inflation rate in Nigeria between 1980 and 2013. The model for the regression analysis has government expenditure on agriculture, interest rate and exchange rate as the independent variables while inflation rate was the dependent variable. Using secondary data from the Central Bank of Nigeria Statistical bulletin and applying the econometrics method of Ordinary Least Square and Error Correlation Mechanism (ECM) methods, the regression coefficient of interest rate impacted significantly on agricultural sector output and the coefficient of exchange rate is rightly signed. The long run dynamic result showed that the coefficient of government expenditure on agriculture variable is rightly signed as well as the check variables (interest and exchange rates). The study recommended that budgetary allocation to the agricultural sector should be increased and infrastructural facilities such as good road network and electricity should be concentrated in the rural areas where we have bulk of our farmers.

Okpara (2017), examined Government expenditure on agriculture and inflation rate in Nigeria for the period of 1980 – 2014. The study adopted time series econometrics analysis to determine Government expenditure on agriculture and agricultural output on

Nigeria economic growth. For purpose of clarity, models were specified as (GDP) for the dependent variable, government expenditure on agriculture (GEXPA) and inflation rate (INF) as independent variables. In order to avoid spurious result, some standard econometric tests were conducted. The result revealed that two of the variables: gross domestic products (GDP) and government expenditure on agriculture (GEXPA) were integrated of order $I(0)$, while the remaining variable: inflation rate was integrated of order $I(1)$, given the period under study. The study recommended that since agriculture has positive impact on the Nigerian economy, the government should see that a higher percentage of allocations are invested on agricultural sector so that the economy will keep on growing in an increasing rate.

Mohd., Muhammad, and Razak, (2012) studied the long-run relationship and causality between government expenditure in education and inflation rate in the Malaysian economy. Time series data were used for the period 1970 to 2010 obtained from authorized sources. In order to achieve the objective, an estimation of Vector Auto Regression (VAR) method was applied. Findings from the study showed that government expenditure on education positively co integrated with selected variables namely fixed capital formation, labor force participation, and inflation rate. With regards to the Granger causality relationship, it was found that the economic growth is a short term Granger cause for education variable and vice versa. Furthermore, this study proved that human capital such as education variable plays an important role in influencing economic growth in Malaysia.

Obi, Ekesiobi, Dimnwobi, and Mgbemena (2016), examined government education spending and inflation rate in Nigeria from 1970 – 2013. The study employed Augmented Dickey Fuller (ADF) unit root test for stationarity test and Ordinary Least Square (OLS) method for its analysis. The variables were primary school enrolment rate, public educational spending, public health spending, GDP per capita, inflation rate and urban population. The study revealed that public education spending has a positive and significant effect on inflation rate in Nigeria. Public health expenditure and urban population growth were also found to have positive effects on education outcome but are non significant in determining education outcome. The study recommends among other things, that government should spend more on education which needs to be targeted for the desired effects to be realized. Again government should monitor spending given the history of corruption and embezzlement of public funds in Nigeria.

Oriakhi, and Ameh, (2014) evaluated the influence of government expenditure on education sector and inflation rate in Nigeria from 1986-2012. Using a time series Linear forecasting model, the use of co-integration in this work shows there is a long-run relationship between the variables and they are statistically significant. The variables were Gross domestic product, public expenditure on education, education output and inflation rate. The Granger Causality test shows that the various variables granger cause literacy rate in Nigeria. It is imperative to note that if certain policy measures such as increased funding, reduced corruption, teacher's motivation and strategic planning among others are fully implemented, the sector will be appreciably developed. It is recommended that governments should enhance the funds to the education sector, and that the private sector should also contribute towards meeting UNESCO's recommendation of 26% of total budget allocation to the sector.

Obi and Obi, (2016) looked at the impact of education expenditure on inflation rate as a means of achieving the desired socio-economic change needed in Nigeria. The study used time series data from 1981 to 2012. The Johansen's co-integration analysis and ordinary least square (OLS) econometric techniques were used to analyze the relationship between gross domestic product (GDP) and recurrent education expenditure. The variables were on index of domestic output (GDP), index of capital input, index of labour input and education expenditure. Findings indicated that though a positive relationship subsists between education expenditure and inflation rate, but a long run relationship does not exist over the period under study. In conclusion, the above study has showed that educational sector has not been productive as expected. This is evidenced by the poor quality of graduates, increasing cases of cultism in schools and high rates of drop-outs. Efforts should be made by policy makers to come up with policies that would check, preserve and protect the flight of educational capital to other countries.

Yun, and Remali. (2017) analyzed the determinants of the public education expenditure in Malaysia during the period of 1982 to 2015. This study focused on addressing the existing research gaps within Malaysia context that failed to receive much attention in the past. The determinants of education expenditure modeled using time series data within the Co-integration technique. The results portrayed a rather strong support of the Wagner's law in determining Malaysia's public education expenditure, as implied by a positive relationship between economic growth and public education expenditure. However, the finding

of a positive relationship between the inflation rate and public education expenditure contradicted the Keynesian Counter-Cyclical Theory. Thus, concluding a less robust support to the Keynesian Counter-Cyclical Theory. Furthermore, this study proved that Malaysia's education expenditure is determined by real gross domestic product, inflation rate, unemployment rate, and younger population age less than 65.

Adhwa, Kauthar and Farah (2018), studied the existence of long run relationship and short run causality by priority of Malaysia Government on spending for education and inflation rate. The data used were gross domestic product on nominal value and Malaysia Government spending on education and healthcare annually with inclusion of inflation rate from 1971 to 2010. The method of Autoregressive-Distributed Lag (ARDL), Johansen Co-integration and Granger causality were employed. The results revealed that in the long run, higher Government expenditure on human capital was co integrated with increasing nominal GDP values. In the short run the relationship of both healthcare and education in pair with nominal GDP were significantly bi-directional, except for inflation rate where both directions were insignificant. Government should really invest on basic needs such as healthcare and education. Furthermore, both sectors should not be commercialized for profits.

Nura and Hussaini. (2015) investigated the relationship between government spending on education and inflation rate in Nigeria using annual time series data for the period of 1981 to 2013 sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. With Johansen's co-integrated test, it was established that there is evidence of long run relationship between government spending on education and inflation rate. The long run coefficient of both capital and recurrent expenditures are statistically significant and are positively related to growth. The error correction term was negative and statistically significant. This suggests there is no sign of any problem in the adjustment from short run to long run equilibrium. The study recommends that government should increase budgetary allocation on education expenditure in general in order to improve its effect on the growth of the Nigerian economy.

Gap in Literature

In brief, the relationship between government expenditure on inflation rate of Nigeria has been explained based on literature from previous researchers. However, it is noted that the researchers obtained different result for the relationship between the government expenditure on inflation rate. The reason for inconsistency in result may be due

to the fact that researchers conducted their studies in different countries and thus the data and policies are different. Therefore, the study examines the effect of government expenditure on inflation rate in Nigeria. From the discussion above, the findings revealed that there is correlation between government expenditure on agriculture, government expenditure on education, government expenditure on education and the inflation rate. The study disaggregated government spending into various sectors.

METHODOLOGY

The research design adopted for this study is the Ex-post facto research design with data the study data on total government expenditure on agriculture, government expenditure on Education, government on expenditure Health, Government expenditure on telecommunication and real gross domestic product sourced from publications of the Central Bank of Nigeria (CBN), Statistical Bulletin, 2019. The Study adapted and modified the work of Mohsen, Mohsen & Sadeq (2016) which examined the impact of government spending on inflation through the inflationary environment. The fundamental and linear equation which forms the model is drawn from the theoretical literature and empirical literature reviewed in the previous chapter. It is observed that there is a causal link between government expenditure and the Nigerian economy. Their model is stated thus: $INF = F(GOVT, GR, LQ)$

Where:

- INF = Inflation
- GOVT = Government expenditure
- GR = Growth rate
- LQ = Liquidity rate

The model is modified as follows:

$$INF = F(GOA, GOE, GOH, GOT)$$

The econometric equation for the modified model is:

$$INF = \beta_0 + \beta_1GOA + \beta_2GOE + \beta_3GOH + \beta_4GOT + \mu$$

Where:

- INF = Inflation
- GOA = Government expenditure on agriculture
- GOE = Government expenditure on education
- GOH = Government expenditure on health
- GOT = Government expenditure on telecommunication

- F = Functional notation
- β_0 = Intercept of relationship in the constant
- β_1, β_4 = The coefficients of the explanatory variables
- μ = Stochastic disturbance (Error Term)

The logged form of the model is presented as:

$$INF = \beta_0 + \text{Log } \beta_1GOA + \text{Log } \beta_2GOE + \text{Log } \beta_3GOH + \text{Log } \beta_4GOT + \mu$$

Method of Data Analysis

The study employed error correction model techniques of estimation to establish the importance of the independent variables on the dependent variables. The (OLS) is the most efficient method because of the "Best Linear Unbiased Estimator" (BLUE) properties. Its result is always satisfactory and simple to comprehend. The model equation will be estimated using a variety of analytical tools, including the unit root test and co-integration test.

Apriori Expectation

This is based on the principle of finance theory. Our results can be checked for their reliability with both the size and sign of economic apriori expectation.

VARIABLES	SIGN
Government expenditure on Agriculture (GOA)	+
Government expenditure on Education (GOE)	+
Government expenditure on Health (GOE)	+
Government expenditure on Telecommunication (GOT)	+

The above table shows the likely or expected sign of the variable after analysis in chapter four. The variables are expected to have positive sign with the dependent variable

PRESENTATION AND ANALYSIS OF DATA

The data was analysed with econometric techniques using descriptive statistics, diagnostic test using Augmented Dickey Fuller test and the Johanson co-integration test. The result was subjected to different statistical and econometric test. We begin by discussing the order of integration of the interest variables, after presenting the data for analysis.

Data Presentation**Table of Logged Data for the Model**

	INF	GOA	GOE	GOH	GOT	ECM
1981	20.9	0.01	0.17	0.08	0.03	-4.147450
1982	7.7	0.01	0.19	0.1	0.04	-17.34631
1983	23.2	0.01	0.16	0.08	0.03	-1.848019
1984	39.6	0.02	0.2	0.1	0.04	14.55570
1985	5.5	0.02	0.26	0.13	0.05	-19.54141
1986	5.4	0.02	0.26	0.13	0.05	-19.64141
1987	10.2	0.05	0.23	0.04	0.18	-14.82036
1988	38.3	0.08	1.46	0.42	0.23	13.33922
1989	40.9	0.15	3.01	0.58	0.3	16.03642
1990	7.5	0.26	2.4	0.5	0.29	-17.37927
1991	13	0.21	1.26	0.62	0.24	-11.96288
1992	44.5	0.46	0.29	0.15	0.55	19.57536
1993	57.2	1.8	8.88	3.87	2.03	32.91751
1994	57	1.18	7.38	2.09	0.45	32.46981
1995	72.8	1.51	9.75	3.32	1.08	48.45393
1996	29.3	1.59	11.5	3.02	2.07	5.185105
1997	8.5	2.06	14.85	3.89	1.58	-15.45405
1998	10	2.89	13.59	4.74	1.92	-13.91491
1999	6.6	59.32	43.61	16.64	11.12	-7.132480
2000	6.9	6.34	57.96	15.22	3.03	-14.42829
2001	18.9	7.06	39.88	24.52	33.93	-0.583295
2002	12.9	9.99	80.53	40.62	29.39	-5.174062
2003	14	7.54	64.78	33.27	22.68	-5.644015
2004	15	11.26	76.53	34.2	8.07	-5.029126
2005	17.9	16.33	82.8	55.66	8.04	-2.172601
2006	8.2	17.92	119.02	62.25	9.77	-9.747692
2007	5.4	32.48	150.78	81.91	32.16	-7.315990
2008	11.6	65.4	163.98	98.22	67.39	7.235413
2009	12.5	1.59	137.12	90.2	90.03	0.222534
2010	13.7	2.06	170.8	99.1	42.41	-2.082872
2011	10.8	2.89	335.8	231.8	13.1	-5.542053
2012	12.2	59.32	348.4	197.9	23.2	7.550680
2013	8.5	6.34	390.42	179.99	18.51	-0.946980
2014	8	7.06	343.75	195.98	18.3	-4.859205
2015	9	9.99	325.19	257.7	24.39	-7.092635
2016	15.7	7.54	339.28	200.82	20.57	2.640852
2017	16.5	11.26	403.96	245.19	29.97	6.315008
2018	12.1	16.33	465.3	296.44	30.47	3.493966
2019	12.7	17.92	467.9	297.84	31.07	3.815884

Table 4.2 Descriptive Statistics

	INF	GOA	GOE	GOH	GOT
Mean	37421.52	19.06091	125.4712	75.18182	3134.025
Median	28957.71	9.990000	64.78000	33.27000	1127.230
Maximum	72.0000	65.40000	390.4200	257.7200	90.0300
Minimum	5.40000	0.020000	0.230000	0.040000	0.05000
Std. Dev.	20465.35	20.39829	148.9263	93.25835	4000.498
Skewness	0.565143	0.748773	0.995444	1.039088	1.318694
Kurtosis	1.685317	2.250823	2.457347	2.628988	3.489874

Jarque-Bera	4.133160	3.855374	5.854898	6.127636	9.894216
Probability	0.126618	0.145484	0.053533	0.046709	0.007104
Sum	1234910.	629.0100	4140.550	2481.000	103422.8
Sum Sq. Dev.	1.34E+10	13314.89	709729.2	278307.8	5.12E+08
Observations	33	33	33	33	33

The summary statistics show that the average mean of inflation rate is about 37421.52. The average mean for government expenditure on agriculture is 19.1, while averages mean of government expenditure on health, education and telecommunication rate were 125.4712, 75.18182 and 3134.025 respectively. The standard deviations of government expenditure variables such as government expenditure on Agriculture, government expenditure on health, government expenditure on education and government expenditure on telecommunication are 20.39829, 148.9263, 93.25835 and 4000.498 respectively. The values of the standard deviations indicate that there is wide spread of government expenditure in Nigeria.

This is also evident in the wide gap between the maximum and minimum values. For example, the maximum value of government spending on agriculture is 65.40 while the minimum is 0.020, with difference of 65.38. Similarly, the maximum of government spending on education is 465.30 while the minimum is 0.230. These performance variations are rather at the high side. Even in the case of government spending on health the maximum is 257.72 and the minimum is 0.040. It is equally observed that government spending on telecommunication varied widely over time. For instance, is 0.05 while its minimum value is 90.03. The wide variation over time indicates high level of fluctuation and inconsistencies in government spending which affects real gross domestic product in Nigeria.

Unit Root Test

The first stage of co-integration and Error Correction Model is to test for unit root. The whole analysis then proceeds from it. Konya (2004) maintains that there exists unit root in most time series. Therefore, it is necessary to analyze whether the series are stationary or not when ever time series data are involved. The presence of unit root implies that the timeseries under investigation is non-stationary while the absence of a unit roots shows that stochastic process is stationary. The Augmented Dickey-Fuller (ADF) test is employed to test for unit root.

Unit Root Test Table

Variable	ADF	Integration	Significant
INF	-5.818753	1(1)	1%
GOA	-6.932570	1(1)	1%
GOE	-4.907351	1(1)	1%
GOH	-6.382154	1(1)	1%
GOT	-4.917703	1(1)	1%

Source: Author's computation using E-view 9.1

A conduct of ADF test on government expenditure and Inflation rate reveal the rejection of null hypothesis of unit roots after differencing once. The variable is therefore clearly integrated of order one and at 1% level of significant respectively.

Co-Integration test

Since all the variables are integrated in the first order, co-integration test is necessary to establish whether the variable though individually non-stationary could be co-integrated as a group and also to establish the existence of a long-run relationship among them. We used the Johansen procedure to establish this. The long run coefficients emanating from the co-integration relationship is presented in the table below.

Johansen Co-integration Test Table

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value 0.05	Prob.**
None *	0.975660	227.1972	69.81889	0.0000
At most 1 *	0.846241	100.8656	47.85613	0.0000
At most 2 *	0.501828	37.20515	29.79707	0.0058
At most 3	0.233392	13.51359	15.49471	0.0973
At most 4 *	0.123377	4.477079	3.841466	0.0343

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level *denotes rejection of the hypothesis at the 0.05 level **Mackinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
None *	0.975660	126.3316	33.87687	0.0000
At most 1 *	0.846241	63.66047	27.58434	0.0000
At most 2 *	0.501828	23.69156	21.13162	0.0213
At most 3	0.233392	9.036513	14.26460	0.2831
At most 4 *	0.123377	4.477079	3.841466	0.0343
Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level *denotes rejection of the hypothesis at the 0.05 level **Mackinnon-Haug-Michelis (1999) p-values				

Source: Author’s Compilation Using E-views 9 Output

Both the trace statistic and maximum eigenvalue test are applied to ascertain the number of co-integrating vectors. The Johansen co-integration result reveal the existence of three (3) co-integrating equations at the significance level of 5% because the trace statistic is greater than the 5% critical values. This evidences the existence of long run relationship between government spending and all the explanatory variables. The test statistic therefore rejects the null hypotheses. The maximum eigenvalue test also showed co-integrating relationship at the 5% level. The result asserts that the dependent variables can be efficiently anticipated using the specified independent variables in the long run. There is therefore the need to estimate the Error Correction Model (ECM) to reconcile the short-run dynamics with long-run disequilibrium of the variables. Below is the Error Correction Model result.

Table of Error Correction Model Result

Variable	Coefficient	Std.error	T-test	Prob
C	6.721934	0.070548	95.28185	0.0000
LGOA	0.006009	0.005202	1.155143	0.2569
LGOE	0.002390	0.001467	1.629492	0.1133
LGOH	0.015711	0.002177	7.216736	0.0000
LGOT	0.015759	0.003708	4.250395	0.0002
ECM(-1)	-0.945965	0.047217	-2.003427	0.0000
R-Squared: 0.784338; Adjusted R-squared: 0.771812; F-statistic: 389.6582; Prob (F-statistic): 0.000000; Durbin- Watson Stat: 1.624904				

Source: Author’s Compilation Using E-views 9 Output

The coefficient of determination or the measure of goodness of fit (R^2) shows the degree of variation in the dependent variables. The closer R^2 is to 100%, the fitter the model is. R^2 is 0.78% meaning that the independent variable can explain about 78% of the variations in the dependent variable, leaving the remaining 22% which is attributable to other variables outside the model as captured by the error term.

The adjusted R^2 at 77% implies that even with an adjustment in the dependent variables, they can still explain about 77% of the change in the dependent variable. The F-statistics measures the overall significance of the explanatory parameter. From the result in table of error correction model above, F-statistics is 389.6582 while the probability is 0.0000. Since the probability of the F-statistics is less than the desired 0.05 level of significance, there is a significant relationship between the variance of the estimate and that of the dependent variable.

The result is as shown on the equation:

$$INF = 6.721934 + 0.006009LGOA + 0.002390LGOE + 0.015711LGOH + 0.015759LGOT - 0.945965ECM$$

Government Expenditure on Agriculture as it affects Inflation rate in Nigeria

The error correction table above shows that government expenditure on agriculture has a positive relationship with inflation rate given its value of 0.006009. This is in tandem with the a priori expectation because a unit increase in government expenditure on agriculture increases inflation rate by 6 units. Nevertheless, government expenditure on agriculture is 1.155143 which is statistically insignificant in affecting inflation rate, This further asserts that government spending on agriculture has not affected inflation rate in Nigeria. This finding provides us opportunity to reject the alternative hypothesis and accept null hypothesis which states that Government Expenditure on Agriculture has no significant effect on Economic Growth in Nigeria

Government expenditure on education as it affects Inflation rate in Nigeria.

The coefficient of regression (0.002390LGOE) indicates that government expenditure on education has a positive impact given its value as 0.002390 which is in conformity with our a priori expectation. This implies that an increase in one unit of government expenditure on education increases Inflation rate by 2%. This result suggests little impact of government expenditure on education in Nigeria on interest rate and as a result we reject alternative hypothesis and accept null hypothesis which states that government expenditure on education has no significant effects on Inflation rate in Nigeria

Government expenditure on health as it affect Inflation rate in Nigeria.

Government expenditure on health has a positive impact on Inflation rate given its value as 0.015711 and this is in line with theoretical expectation because increase in one unit of government expenditure on health increases Inflation rate by 15%. Government expenditure on health is statistically significant (7.216736) at 10% level of significant on the Inflation rate. The result from t-test compels us to reject null hypothesis and accept alternative hypothesis which implies that government expenditure on health has significant effect on Inflation rate in Nigeria.

Government expenditure on telecommunication as it affects Inflation rate growth

Government expenditure on telecommunication has a positive impact on the Inflation rate given its value as 0.015759 which is in line with theoretical expectation because a unit increase in government expenditure on telecommunications increases inflation rate by 15%. Government expenditure on telecommunication is statistically significant (4.250395) at 10% level of significant and will increase inflation. on the Inflation rate. As a result of this findings, the null hypothesis will be rejected while the alternative will be accepted which states that government expenditure on telecommunication has significant positive effect on Inflation rate in Nigeria.

The Durbin-Watson (DW) statistics used in testing for the presence or otherwise of autocorrelation in our model is closer or a little above 2 implies the absence of autocorrelation amongst the explanatory variables. The table above shows that the Durbin Watson is 1.6 and as such does satisfy the condition to assert absence of autocorrelation amongst the explanatory variables. Finally, the Error Correction Mechanism (ECM) which is used to correct for disequilibrium from of estimated result is ECM (-1) is significant with an appropriate negative sign. Its negative coefficient of (-0.745965) shows that there is a stable

long-run equilibrium relationship between the variable. The ECM suggests that changes in the independent variables will cause the dependent variable to converge on its equilibrium path.

Discussion of findings

Government Expenditure on Agriculture: The study found that Government Expenditure on Agriculture has no significant effect on inflation rate in Nigeria. The low level of expenditure on Agriculture has not translated into a meaningful growth in Nigeria. For any country to experience economic growth, investment in agriculture is critical.

The implication of these findings is that, for agricultural sector to be functional, productive impactful on the economy, the sector needs to satisfy the expected needs of the individual, and earn much revenue for government. Agricultural developments can increase growth in the non-agricultural sector of the economy. This is in consonance with the findings of Idoko, and Jatto, (2018) who found a positive and significant relationship between government expenditure on agriculture and inflation rate in Nigeria. The findings also corroborate that of Iganiga and Unemhilin (2011) that Agricultural output is a pertinent determinant to economic performance in Nigeria.

Government Expenditure on education: The study found that government expenditure on education has a insignificant positive effect on inflation rate in the Nigeria. The Government spending on education has not spur inflation rate from the findings.

Government Expenditure on Health: The study found that Government expenditure on health activates inflation rate in Nigeria. Further to this is that healthcare sector output is an endogenous variable and determinant of inflation rate in successive healthcare sector output in Nigeria. This is explained by growth and quality of healthcare as an accumulation of efforts and success of previous years expenditure. Thus the continuous development in healthcare resources in forms of human capital (personnel) and equipment is apt to growing the inflation rate. Improvement in government spending on health would translate to increased inflation rate. Edeme, Emecheta, and Omeje. (2017) corroborates this findings by stating that, public health expenditure and health outcomes have long-run equilibrium relationship. This means that, health system indicators and technological advances may also have impact on health expenditure as has been documented in previous literature.

Government Expenditure on Telecommunication: The study found that government expenditure on

telecommunication has a significant positive effect in inflation rate. This implies that a reliable telecommunications networks can improve the productivity and efficiency of other sectors of the economy and enhance the quality of life in generally. Ajiboye, (2007) also argued that telephone spending has a positive impact on inflation rate because it provides a stimulant to economic growth and that as economies become more highly developed, they need more communication. Nwakanma, Asiegbu, Eze and Dibia (2014) found that Government Expenditure, number of telecom subscribers and private investment collectively, have significant impact on inflation rate in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The general objective of this study is to examine the impact of government expenditure on inflation rate in Nigeria. The study scope spanned from 1981-2019 and examined the nature of government expenditure on the inflation rate in Nigeria. Thus, it was hypothesized that government expenditure has a significant impact on the inflation rate. A linear regression model was employed to analyze the data. Our findings are summarized below;

- A. Government expenditure on agriculture has positive short run effect and insignificant impact on inflation rate. This is corroborated by the findings of Iganiga and Unemhilin (2011).
- B. Government expenditure on education has a positive short run and insignificant impact on inflation rate. The finding is in line with the study of Mohd., Muhammad, and Razak(2012).
- C. c.) Government expenditure on health has short run positive effect and significant impact on inflation rate. The finding is in agreement with the study of Edeme, Emecheta, and Omeje (2017) which found that public health expenditure and health outcomes have long-run equilibrium relationship.
- D. d) Government expenditure on telecommunication has short run positive and significant impact on inflation rate which aligns with the findings of Nwakanma, Asiegbu, Eze, and Dibia (2015) which indicated that Government Expenditure, Number of Telecom Subscribers and Private Investment collectively have significant impact on inflation rate in Nigeria.

The findings of this work show that government spending has contributed to inflation rate. The study has shown good empirical evidence that government expenditure has significant effect on inflation rate in Nigeria. In the light of our findings, the following recommendations are presented:

1. The Federal government through the CBN should increase agricultural loan to farmers to enhance their productivity.
2. Private sector involvement in funding education sector activities is necessary. The government should however put in place the necessary regulatory and physical support.
3. The Federal Government of Nigeria (FGN) should increase and restructure the public expenditure allocation to the health sector in order to provide more health healthcare facilities. This can be achieved via the right channeling of funds to the healthcare providers and pharmaceutical companies as well as adequate management of funds in order to prevent corruption and to aid the development of health services
4. The study recommends that steady power supply be provided by government since this is the major problem facing telecom operators, which in turn will reduce operating cost for the telecom operators and lower tariff charges.

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