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## Inflation and public expenditure in Nigeria (2008-2019): An empirical analysis

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### Abstract

This study on inflation and public expenditure investigated inflation rate on public spending in Nigeria. The main objective of the study is to assess the impact of inflation on public sector expenditure. The study employed the Expo Facto research design and data for the study are collected from the three (3) tiers of government in Nigeria as contained in the central bank statistical bulletin and the consumer price index (CPI). The study adopted both descriptive and inferential statistics with the Standard Ordinary Least Squares (OLS), analysis of variance (ANOVA) and correlation coefficients. The result shows that there exist a significant and positive relationship between inflation rate and public spending in Nigeria. This infers that the growth in inflation has a negative impact on public expenditure as a rise in the rate of inflation leads to an increase in government's spending and thus government will only provide public goods and services at a higher cost as such government should always strive to control inflation. The study concludes that the anti-inflationary mechanism of government for contraction of money supply through the manipulation of its expenditure is not in adherence as government virtually increases expenditure as inflation rate increases instead of abandoning some projects and programmes except for productive projects and programmes. The study recommends that restrictive fiscal policy mechanism and restrictive monetary policy rate should be implemented as tools to militate against the growth of inflation rate and money supply in the economy. Credit regulatory procedures should be implemented and maintained in order to control high rate of inflation in the country as both monetary and fiscal policies are complimentary tools for the war against the surge in inflation and the attainment of neutrality of money as a key macroeconomic objective. Incentives for savings and investments should be encouraged during inflation as measures to control inflation, promote economic and price stabilization.

**Keywords:** public expenditure, empirical analysis, inflation

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### Introduction

The macroeconomic objectives of any Nation are to achieve price stability and economic growth and this is attained through the implementation of monetary and fiscal policies and public expending is key in the fiscal policy as income generated is expended and controlled through public expenditure tool of the fiscal policy. Inflation is a persistent and appreciable rise in general level of price in an economy (Jhingan, 2011) <sup>[14]</sup>. Aminu and Anono (2012) <sup>[3]</sup>, opined that inflation as a persistent rise in the general price level of broad spectrum of goods and services in a country over a long period of time. They attributed inflation to a popular say that inflation is too much money chasing too few goods. The structuralist argued that inflation is crucial for economic growth while the monetarist posit that it is harmful to economic growth (Doguwa, 2012) <sup>[7]</sup>. Anochiwa and Maduka (2015) <sup>[4]</sup>, said the ability to manage the growth of inflation to single digit may be an important factor to accelerate economic growth. Too much money in circulation, increase production cost, declines in exchange rates, decrease in the availability of limited resources such as food or oil etc. are the causes of inflation. Inflation is a sign that the economy is growing, but excess economic growth may be detrimental as it can lead to hyperinflation. At the other extreme, an economy with no inflation is stagnated. The right level of economic growth and thus the right level of inflation, some were in the middle. Creeping or mild inflation can be viewed as having favorable impacts on the economic growth. On the other hand, zero inflation is harmful to other sectors in the economy with falling price, profit, and employment.

Umaru and Zubaru (2012) <sup>[23]</sup>, maintenance of price stability continues to be overriding objective of monetary policy for most countries in the world today. The emphasis given to price stability in conduct of monetary policy is with a view to promoting sustainable growth and development as well as strengthening the purchasing power of the domestic currency amongst others. The Central Bank of Nigeria (CBN) employs the monetary targeting framework in the conduct of its monetary policy. This is based on the assumption of a stable and predictable relationship between money supply and inflation. Consequently, the need to understand the relationship between inflation and economic growth of the Nigerian economy become imperative and the dynamics of inflation became central to the success of fiscal policy to ensure the achievement of price stability and fiscal authorities have the tool of taxation and public debt to control inflation through income generation and public expenditure to control inflation through public works, debt servicing, cash transfer and capital expenditure. The most important

tool for control is public expenditure because the expenditure increases the money supply level in the economy and the control of economy is either on money supply or increase I output to attain equilibrium in aggregate demand and supply. Thus the effect of inflationary pressures (price instability) in the growth and development of the Nigerian economy cannot be over-emphasized.

However, dealing with these issues will result in increase or decrease of governments spending/expenditure and certainly lead to sustainable budget deficits and this would generate a large number or less of useful jobs and business opportunities (Saad, 2009).

Traditionally, public sector economics has been concerned with the study of how government can deal with the failure of markets to achieve efficient outcomes (Ezeanyej, 2015) <sup>[8]</sup>. One of the major tools they use is the fiscal instrument of public expenditure which has an expansionary and restrictive effect on the economy. To improve economic growth, the Keynesian and post Keynesian school theorist believe that it's necessary for the government to intervene in the economy as the market forces are incapable to run it successful due to market failures.

Generally, high inflation rate imposes welfare costs on a nation, hinders efficient allocation of resources by affecting the role of changes in the relative price level, as well as discourages investments and savings in an economy as it creates unpredictable future prices. The situation also affects financial development because it makes financial intermediation more costly, and the poor are mostly affected because they rescind in holding financial assets that provides a hedge against high inflation and decreases a country's international competitiveness by making exports more expensive. It also has negative effect on balance of payments, and reduces long-term growth of a country. Business and households perform poorly during the period of high inflation (Frimpong & Oteng-Abayie, 2010) <sup>[11]</sup>.

High inflation has been one of the major challenges facing the nation's economy. The inability of the government to proffer a lasting solution to this problem indicates the inevitability of inflation in an economy; hence, it shows that government lacks the power to eliminate the persistent rising prices of goods and services in the domestic economy (Taiwo, 2011) <sup>[22]</sup>. Inflation leads to currency depreciation and a rise in foreign exchange rate. This is obviously the case of the Naira as it has depreciated overtime against US dollar and other major foreign currencies.

Taiwo (2011) <sup>[22]</sup>, opined that inflation in Nigeria has become a major threat to economic activities, especially on workers whose standard of living declines continuously. The inflationary factors traced to Nigeria's high inflation include continuous hike in petroleum product prices and exchange rate depreciation/devaluation. These increase in the two variables (price of petroleum and exchange rate depreciation) have been blamed for the increases in the transportation costs, input materials, foodstuffs, rents, and goods and services coupled with the exchange rate depreciation in Nigeria.

Nigeria is currently experiencing low and high inflation. The cost-push inflation is driven primarily by the severe scarcity of petroleum products which had forced increases in transportation cost and consequently, arbitrary increases in cost of all other commodities and services consistently for several months and years. The world is in the grip of soaring inflation. When inflation crosses the single digit is an index of a weak economy. Inflation can prompt trade unions to demand higher wages, to keep up with consumer's prices and rising wages in turn can propel inflation as is the case of strikes in several sectors of the Nigerian economy today.

Inflation has negative effects because it reduces the value of money, resulting in uncertainty of the value of gains and losses of borrowers, lenders, buyers and sellers. The increasing uncertainty which inflation brings discourages savings and investments. It also has serious effect on reported profits because of high increase in the devaluation of the value of money. The value of the reported profit today might be less tomorrow because of inflation and the decision made today on that reported profit may be misleading tomorrow because of inflation there's a rise in business failure, the failure of money as a standard of deferred payments as losses certain to one and gains to the other arbitrary (Oru and Ubana, 2022) <sup>[19]</sup>. public goods and services are in short supply as bill of quantity and prices of direct materials are distorted within the same period of implementation of contracts and with the issue of variation in public contracts abolished, it's a difficult task for the public contracts to be executed as such the welfare of the citizen is impeded as well as the uncertainty in the real economic sector because the policies of government considering the rate of inflation determines their savings, investments, and the overall growth and stability of the economy. With the scarcity in social income today, the control of inflation is pivotal for the welfare of the citizens of any nation. Is the Nigerian government concerned about the welfare of its citizens? or is government complacent on the control of inflation? or is it an impossible task for the Nigerian government. The main objective of the study is to assess the impact of inflation on public sector expenditure in Nigeria.

## Literature Review

### 1. Conceptual Framework

#### 1.1 Concept of Inflation

Friedman (1959), defined inflation as fundamentally a monetary phenomenon that is everywhere and always a monetary phenomenon and can be produced only by a more rapid increase in the quantity of money and fall in output. Shapiro (1968), defined Inflation as a persistent increase in the general price level within an economy which affects the value of the domestic currency. It is not once and for all upward price movement but has to be sustained over time and affects all goods and services within the economy and thus economist do not agree that

money supply alone is the cause of inflation. Inflation which results from excess aggregate demand which leads to rise in prices is called the demand pull inflation. The cost push inflation results from a rise in prices in the first instance followed by wage increases enforced by unions and profit increases by employers. Inflation is also the mixed demand-pull cost push inflation when excess demand and cost-push forces as stated above occurs simultaneously. The structural inflation arises as the economy develops, rigidities arises initially from increases in non-agricultural incomes accompanied by high growth rate of population that tend to increase the demand for goods and from some constraints such as inefficient production, marketing and distribution systems in the productive sectors of the economy. Sectoral inflation also occurs from increase in excess demand industries (or sectors) and spread to deficient demand industries or sectors through prices of materials and cost of labour. The mark up inflation consist of wage and prices, where industries determine cost of materials and addition to rising wages to yet determine prices of profit for the purpose of marking profits and this might be rising or falling based on the mark up. Inflation is also open or suppressed when markets for goods or factors of production are left to function freely setting the uninterrupted operation of market mechanism and suppressed when government imposes physical and monetary controls to check open inflation like tariffs, bans, and customs and excise duties. Inflation is therefore an economic situation in which the increase in money supply in an economy is faster than the increase in the new production of goods and services in the same economy. Inflation may be imported, open or seasonal. It is intrinsically linked to money, as captured by the often heard maxim "inflation is too much money chasing too few goods". Inflation can be classified as creeping when the change in price level is less than 3 percent, it is walking or trotting inflation when it is between 3 to 7 percent. It is also classified as running when its rate is between 10 to 20 percent and 20 to 100 percent per annum is said to be hyperinflation (Jilghan, 2011).

Inflation is described as a recurrent rise in the overall level of prices for goods and services. It is measured as an annual percentage increase. As inflation rises, every naira one owns buys one a smaller percentage of a good or service. The value of a naira which is measured in terms of the purchasing power, which is the real, tangible goods that money can buy does not remain constant during inflation. When inflation rises, there is usually a decline in the purchasing power of money. Inflation is measured by the consumer price index, which reflects annual percentage change in the cost borne by an average consumer when he or she buys a basket of goods and services that may be fixed or varied from time to time usually on annual basis. The imbalance of aggregate demand and supply is associated with government's deficit, expansion of bank's interest rates and increase in demand of foreign exchange.

Considering the influence of inflation on economic growth, besides high inflation level which constrains economic performance or zero inflation that actually stagnates it, mild (single digit) inflation rate is sine qua non for economic prosperity. In spite of the problems posed by inflation, it is a global phenomenon since it cuts across both developed and emerging economies; therefore, its control remains a "nightmare" to economic policymakers throughout the world. Nowadays in Nigeria, concerns have been raised over the persistent rise in inflation rate with attendant eroding of the value of naira and general price instability (Hossain, Gosh & Islam, 2012) <sup>[13]</sup>.

This phenomenon likely brings about inefficient allocation of production resources with a general decline in macroeconomic performance. Also, decreased savings brings about decreased investments, which ultimately diminishes growth level. General uncertainty about future price levels discourages investment and likely lower capital formation in the economy. However, willing investors will expect to be compensated for their risk due to the increased uncertainty making investment more costly for borrowers (Barro, 2005). Inflation in Nigeria has become a major threat to economic activities, especially on workers whose standard of living declines continuously. The inflationary factors traced to Nigeria's high inflation include continuous hike in petroleum product prices and exchange rate depreciation/devaluation. These increases in the two variables (price of petroleum and exchange rate depreciation) have been blamed for the increases in the transportation costs, input materials, foodstuffs, rents, and cost of production as well as selling and distribution expenses of goods and services coupled with the exchange rate depreciation in Nigeria (Umaru and Zubairu, 2012) <sup>[23]</sup>.

Nigeria had experienced a running inflation as the Inflation rate rose by 12.49 percent between 2008 to 2009, 12.07 percent 2009 to 2010, increased by 11.75 percent between 2010 to 2011 and 15.09 between 2011 to 2012. However, between 2015 to 2019, Nigeria had experienced hyperinflation as proposed by Jhingan (2011) <sup>[14]</sup>, that when the rate of inflation is over 20.0 percent to 100.0 percent per annum or when it is immeasurable or uncontrollable where prices rise everyday and such a situation leads to a collapse of the monetary system because of the continuous fall in the purchasing power of money. The cost-push inflation is driven primarily by the severe scarcity of petroleum products which had forced increases in transportation, total cost of production as well as the selling and distribution of finished goods and services and a consequent arbitrary increase in cost of all other commodities and services consistently for several months and years (Ogu, Adagiri and Abdulsalam, 2020) <sup>[16]</sup>.

Inflation rate is also erosion in the purchasing power of money or a loss of real value in the internal medium of exchange and unit of account in the economy. A chief measure of price inflation is the inflation rate; the annualized percentage change in a general price index (normally the Consumer Price Index) as well as the wholesale price index (WPI) over time, are also a measure of inflation rate but most commonly in use is the consumer price index (CPI).

## 1.2 Inflation and Public Expenditure

Inflation is the new evil roaring its head in almost all world economies and the residual effect of these is in the slow pace of development as the scares resources available to the public sector is grossly inadequate and inefficient in the provision and quality of public goods and services in the economy respectively vis-à-vis the welfare of its citizen.

The control of these new devil (inflation) is reliant on the monetary and fixed policies of any economy and dealing with the public sector our quest is on the fiscal policies and of course one key instrument for the control of these menace is the public expenditure of the government of any Nation and the rate at which this is attained is in the manipulation of the public expenditure during periods of inflation.

During inflation, government is expected to adopt anti-inflation any measures to enhance the contraction of money supply which is either increasing taxes, borrowing from the public expenditure on public goods and services. It is pertinent now to determine the rate at which government deals with its fiscal policy tool; public expenditure or public spending in the control of inflation. As the rate of unemployment is in the surge, is government actually reducing its expenditure? The one of several measures in the control of inflation is the reducing of expenditure to reduce anxiety in circulation and increase the value of money. Government is expected to even abandon some projects and programmes except for those which improve the productive capacity of the economy. Thus it is pertinent to determine the value of Government expenditure during the rising rate of inflation to determine the government's role in the control on inflation in Nigeria. With rise in inflation year after the other is government reducing its expenditure to control inflation.

**Table 1:** Summary of Federal Account Allocation Committee (FAAC) to all Tiers of Government & Inflation Rate

Year	Total Government Expenditure	Inflation Rate	Year	Total Government Expenditure	Inflation Rate
2008	5,956.31	89.66	2014	7,724.44	164.44
2009	4,986.48	102.15	2015	5,814.07	180.15
2010	5,756.12	114.22	2016	4,734.36	213.56
2011	7,383.31	125.97	2017	5,926.05	246.38
2012	7,893.72	141.06	2018	8,002.00	274.57
2013	8,515.95	152.29	2019	7,706.42	307.47

**Source:** CBN Statistical Bulletin, 2019

As shown in table 1 above, as inflation rate rose in 2009,2014,2015,2016 and 2019, the total expenditure to public sector of the economy kept decreasing in line with fiscal policy manipulation of public expenditure tool to reduce money supply, stabilize prices and attain neutrality of money but in 2010,2011,2012,2013,2017 and 2018, as the rate of inflation increased government rather increased her expenditure which is against the manipulation of public spending of fiscal authorities and not a contractionary or anti-inflationary mode of manipulation. Government is not expected to have increased its spending because with the rise in inflation, price stabilization is impossible and without the attainment of neutrality of money, the macroeconomic objective of stabilizing prices and attainment of full employment is an exercise in futility and thus the growth in inflation rate is continuum except for 2014, 2015 and 2016.This is inappropriate as government is supposed to even abandon capital expenditure for programmes and projects except for productive services or public goods.

The extent to which government expenditure on agriculture, government expenditure on education, government expenditure on health and government expenditure on telecommunications affects inflation rate in Nigeria is such that government expenditure on education has a positive and insignificant effect on the inflation rate. It was also discovered that government expenditure on agriculture and government expenditure on education have positive but insignificant effect on the inflation rate, while government expenditure on health and government expenditure on telecommunications have positive and significant effect on inflation rate. That government should increase the allocation to the health and education sectors to increase the skill and health of economic operators which will enhance productivity. Government should also provide adequate infrastructure which will facilitate economic growth and reduce high inflation rate (Akobi, Umeora & Atueyi, 2021) <sup>[2]</sup>.

Boyd, Levine & Smith (2001) <sup>[5]</sup>, when inflation rate rise in an economy, public sector performance reduces. In the long run it has a negative repercussion on trading volume of market equity. This is because the funds from the public sector goes through the circular flow and in turn is in the hands of the private investors who provide public goods and services as well as funds for remuneration for public servants through taxes. The repercussion of the above assertion is the ineffective and inefficient allocation of resources in the financial sector. The assertion of Huyben and smith is ultimately correct as the public expenditure of government decreases the services provided will have a shortfall and this is replicated on the capital expenditure on education, health, as well as economic and social services sector of the economy. There is no statistically discernible relationship between government expenditure growth and inflation in Nigeria and therefore, kick against the 'old-time religion' of restricting aggregate demand by tight monetary policy as often demonstrated by the Central Bank of Nigeria through adjustments in the Monetary Policy Rate (MPR), but we rather advocate a relaxation of the MPR with the necessary adjustments when necessary as inflation is occasionally necessary to jump-start an economy that is floundering (Oniore, Obumneme & Torbira, 2015) <sup>[18]</sup>.

The Public budget is a quantitative representation of qualitative intensions of fiscal authorities' programmes and projects expressed in monetary terms that refers to the financial condition of the government (Turns, 2006). Public capital expenditure is negative and statistically significant in influencing Inflation Rate in Nigeria. This outcome is highly directional in the sense that prudent and productive spending will always subdue inflation in any economy; therefore government should increase its investment in production sectors and encourage skilful land willing citizens to participate, since this would reduce the expenses being incurred on business as a result low currency value and raise the profitability of firms (Jideofor, Michah & Eke, 2021).

Research clue (2020), asserts that government expenditure has no statistical relationship with inflation, though the coefficient of government recurrent expenditure is positively related to inflation. Government expenditure and exchange rate was able to explain 9.65% of the total variation in inflation. Government expenditure is able to induce inflation through its impact on money supply. This implies that Much of government spending should be channeled into productive ventured such as directly productive activities (DPAs) and Social Overhead Capital (SOCs); Money supply should be strictly controlled; Formulate appropriate fiscal and monetary policy - mix to effectively Control inflationary pressure in the economy, maintain a good strategic balance between capital and recurrent expenditure to prevent the economy from being consumption based.

There exists a positive and insignificant relationship between government expenditure and inflation rate in the short-run. Moreover, in the long-run, government expenditure has negative and is statistically significant on inflation rate. Money supply has a negative and statistically insignificant with inflation rate in the short-run. In the long-run, money supply has a positive and significant relationship with inflation rate. Gross domestic product is negatively related to inflation rate in both short-run and long-run. Moreover, exchange rate affected inflation rate negatively but significantly in the short-run and positively significantly in the long-run. The increasing demands of the population affected inflation rate positively and significantly in both short-run and long-run. Investment was positively related to inflation rate but not significant in the short-run but the relationship was negative and significant in the long-run. It is thus pertinent that government should exercise discretion in spending in order to check inflation rate. This can be done by channeling spending on productive activities that will cushion the effect of inflation rate rather than exacerbate it (George-Anokwuru & Ekpeyong, 2020) <sup>[12]</sup>.

Public spending affected the rate of inflation in Nigeria from 1980 to 2017 using public capital (GCE) and recurrent (GRE) spending as the main explanatory variables while money supply (MSS) and exchange rate (EXR) were added as variables. That government capital spending impacts negatively on inflation; government recurrent spending has a negative and an insignificant impact on inflation. Also, money supply has both a positive and negative impact on inflation while exchange rate has a positive and an insignificant impact on inflation. Government needs to ensure appropriate channeling of its expenditure to infrastructural development in order to stimulate investment and production thereby stabilizing price. Also, there is need for the government to efficiently engage monetary policy instruments that are adequate in ensuring a given level of money supply that stabilizes prices asserted that the effect of public spending on inflation in Nigeria from 1980 to 2017 using public capital (GCE) and recurrent (GRE) spending as the main explanatory variables while money supply (MSS) and exchange rate (EXR) were added as check variables. That government capital spending impacts negatively on inflation; government recurrent spending has a negative and an insignificant impact on inflation. Also, money supply has both a positive and negative impact on inflation while exchange rate has a positive and an insignificant impact on inflation. Government needs to ensure appropriate channeling of its expenditure to infrastructural development in order to stimulate investment and production thereby stabilizing price. Also, there is need for the government to efficiently engage monetary policy instruments that are adequate in ensuring a given level of money supply that stabilizes prices (Dikeogu, 2018) <sup>[9]</sup>.

Olagungbo (2013), asserts that government spending and inflation has asymmetry causal relationship between government spending and inflation in Nigeria from the period of 1970 to 2010. 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). These implies that inflationary pressure in Nigeria is state dependent, that is high inflation is caused by low or contractionary government spending.

Ezirim, Muoghalu & Elike (2008) <sup>[10]</sup>, states that the relationship between public expenditure growth and inflation in the United States of America indicates that public expenditure and inflation are cointegrated and thus there exist a long-run equilibrium relation between the two variables. There is also a bi-causal relationship between public expenditure growth and inflation in the United States of America and that Inflation significantly influences public expenditure decisions in the United States of America. Public expenditure growth was seen to aggravate inflationary pressures in the country, where reduction in public expenditure tends to reduce inflation. Thus, as in previous studies, the efficacy of Keynesian's fiscal policy as a veritable tool to combating inflation in the developed countries is not falsified.

Oru and Ubana (2022) <sup>[19]</sup>, asserted that Inflation on bank credit and gross domestic product in Nigeria has proven against that of several economies as the amount of bank credit increases as inflation rate increases even against the hike in lending rate of commercial banks as monetary policy control measures on inflation. This is a proof that investors yet resort to more liquid assets to meet the increased need in income to meet employment, prices and demand seeking a commensurate level of output to bring an equilibrium thereby equating demand and supply to stabilize prices by market forces in the economy against monetary authority manipulations to reduce money supply through the increase in lending rates thereby decreasing investments, employment, income, prices

and output but dare to attain stabilized prices through a slack in the macroeconomic variables to regain the value of money. The positive relationship between inflation and gross domestic product in Nigeria even when it attained the hyper-inflationary state yet supported economic growth as contrasted in several economies in the world. The above conclusions are in consonance with Jinghan (2011), who stated that inflation is not caused by general rise in prices of goods and services or money supply but by the short-fall in output and the New growth theory by Paul Romer (1982), which stated that GDP will also grow because of competition, higher profits and innovations thus we say “much money pursue few goods and services”. The rate of inflation didn't decrease the supply of bank credit amidst rising lending rates because investors sought to increase output of goods and services but this did not retard the growth in the economy because output increased considerably which proxies for economic growth of the nation thus this inflation may have being caused by other factors since output increased as prices increased in the domestic economy and the inflation is therefore imported (foreign exchange rates or and public spending).

A budget is prospective in the sense that it refers to expected future revenue and expenditure. In the Federal Government circle the budget is greatly limited in legal status. It is the official recommendation of the president to the congress in order to provide for a responsible government the strength to provide for its citizens welfare and the budget is generated through a cycle. The cycle allows for the system to absorb and respond to new information and in doing so the government is held accountable for its action though it should be recognized that many factors curtail the extent to which the president can make major changes in the budget and one such factors is inflation as it cause-effect is in both income and expenditure. Its effect on expenditure is key as all items are to be expended on and all these culminates into aggregate public expenditure and impacts on money supply and the value of money which in turn has a deciding index in the livelihood of the citizens. Thus is manipulation of government expenditure during inflation or the effect of inflation on government spending is key to economic stabilization alongside monetary policy tools.

At same time, budget estimates made by the incremental or traditional budgeting techniques takes into consideration anticipated economic trends in order to determine available revenue under existing tax legislation and key amongst that is inflation and demographic statistics. Thus there exist a relationship between inflation and public expenditure and it ought to be established as when inflation rate rises, prices for public goods and services also rises and as government responds to the rate of inflation positively for the provision of public goods the effect on the local economy will be disastrous as inflation rate keeps increasing. In the execution of fiscal programmes and policies like taxes, tariffs, fines and excise duties also causes the open inflation and the public desire on restriction or ban on some commodities also causes the suppressed inflation.

## **2. Theoretical framework**

The study is built on the public expenditure theory and has the Keynesian Quantity theory of money or cash balances approach of the quantity theory of money as the anchor theory to state why expenditure must also be controlled amongst all measures to attain a stabilized economy in view of surplus or scarcity of financial resources.

### **2.1 Cambridge Cash -balances Theory**

Cambridge Economists; Marshall, Pigou, Robertson and Keynes (1923) propounded the Cambridge cash-balances theory. They regarded the determination of value of money in terms of supply and demand. Robertson stated that money is only one of the many economic things. Its value therefore, is primarily determined by exactly Nomic things. The value is determined by the conditions of demand for it and the quantity of it available. They also said money supply is exogenously determined at a point of time by the banking system. Therefore the Cambridge economist discarded the velocity of circulation in the cash balances approach, but opined that the factor of demand and supply determine the value of money. Thus, Cash Balances Approach considers the demand for money not as a medium of exchange but as a store of value. Robertson expressed this distinction as money “on the wings” and “money sitting”. It is money sitting that reflects the demand for money in Cambridge Equations. This equation shows that given the supply for money at a point, the value of money is determined by the demand for cash balances. When demand for money increases, people will reduce their expenditures on goods and services in order to have larger cash holdings. Reduced demand for goods and services will bring down price level and raise the value of money and vice versa. This theory conforms to the study as government should hold back cash balances particularly when money supply is high to control the rate of inflation and promote the value of money by cash balances and maintaining the value of money through its function as a store of value not necessarily as a medium of exchange which increases expenditure during inflation.

### **2.2 Theory of Public Expenditure**

The theory of public expenditure was propounded by Adams, H.C (1895) and its states that the aim of public expenditure is to discover the meaning of expenditures for the life of a people and in this manner to arrive at the principles which controls appropriation. That public expenditure is the social income of which public income is a part, and as the individual is limited in his expenditure by the income which he enjoys, so the state is limited by the proportion of the social income which under the existing political, social and industrial conditions may be rightly placed at its disposal. A distribution of public funds between the various lines of services unshaken by the state also is in a general manner determined by the same considerations as influence individual expenditures.

That as a poor man's income is expended on the necessities rather than the comfort of luxuries life, so the poor state would be called upon to make larger relative expenditure for the primary governmental functions that those which come later in its national development that the public theory follows that of the individual since on the final analysis the state represents the collective interest of the people and maybe regarded as one of the many means by which individuals wants sure for themselves satisfaction. This theory implies that public resources are also scares as individual income and as such government should have a scale of preference and spend only on necessities(productive project and programmes) during inflation to decreasing the level of money supply and thereby causing a decrease in income, employment, demand, investment, construction and prices thereby reducing and increasing the value of money which is main thrust of the fight against inflation which mitigates against the value of money and the provision of public goods and services.

## Research Methodology

### 1. Research design

This research basically is to examine the effect of inflation on public expenditure and therefore, relied heavily on panel data. The research design is the Expo-facto research design.. This is because it involves events which have taken place.

### 2. Population of the study

The population of the study is made up of the three tiers of government t(federal, State and local government) in the country the National bureau of statistics (NBS) and the Consumer Production Index (CPI) for the stated years 2007-2019.

### 3. Sample size and sampling techniques

Data for this study is limited to the information contained and presented by the National Bureau of statistics (NBS) and the Central Bank of Nigeria as contain in the CBN Statistical Bulletin 2019.

### 4. Data analysis techniques

The standard Ordinary lease squares (OLS),analysis of variance(ANOVA) and correlation coefficients signs were relied upon in describing the direction and strength of linear relationship between variables while the t-statistics and p-value were relied upon in determining the magnitude of the effect between inflation and public expenditure.

### 5. Model specification

The linear regression model was used for the hypotheses one and three.

The general model is:

$$Y = \alpha + \beta X + e \quad (1)$$

where;

Y = Dependent variable

X = Independent Variable

$\alpha$  = constant

$\beta$  = coefficient of independent variable

e = error margin

Adopting this to the study, the model is shown below:

$$PsExp = f (Inflr + e_1) \quad (i)$$

$$PsExp = B_0 + B_1 Inflr + e_1 \quad (ii)$$

$$\text{Log}(PsExp) = B_0 + B_1 \text{Log}(Inflr) + e_1 \quad (iii)$$

Where:

PsExp = Public sector Expenditure

Inflr = Inflation rate

$e_1$  = Error term and other lurking variables s

$B_0$  = Regression constant

$B_1$  = Partial correlation

## Results and Discussion of Findings

**Table 2:** Descriptive Statistics

	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
INF	217.81	89.66	307.47	2111.92	175.9933	20.32436	70.40565	4956.956	.678	.637	-.649	1.232
TGP	3781.59	4734.36	8515.95	80399.23	6699.9358	375.12486	1299.47063	1688623.920	-.135	.637	-1.616	1.232

The maximum value of inflation is 307.47 with its mean value as 175.99 which reveals the negative skewness in the inflation distribution and a standard error of 20.32436 and 375.12486 for inflation and total government expenditure. This reveals that there is a more setter on total government expenditure than inflation. Inflation has a standard deviation of 70.40565 and total government expenditure a standard deviation of 1299.470 which reveals a high level of variability in the expenditure of government thus the rate of inflation impacts play of government expenditure thus its performance is impeded upon. The variance of 4956.956 for inflation and 1688623.920 for total government expenditure reveals more variability for total government expenditure to inflation. The result or skewness reveals positively skewed distribution of 0.678 for inflation and a negatively skewed distribution with -0.135. this reveals that there is a negative impact of inflation on government spending thus interring that the inflation rate affects government performance negatively. The standard error of skewness of 0.637 reveals a proof of normality for both the inflation and the total government expenditure. The result of Kurtosis reveals a Platykurtic distribution for both the inflation and the total government expenditure because the curve is less peaked than the normal and the standard error reveals a long tail for both distributions.

**Table 3:** Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	TGP,	.	Enter

a. Independent Variable: INF

b. All requested variables entered.

**Table 4:** Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.937 <sup>a</sup>	.878	.832	28.87004	.878	19.140	3	8	.001	.743

a. Predictors: (Constant), TGP

b. Independent Variable: INF

**Table 5:** ANOVA<sup>a</sup>

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	47858.679	3	15952.893	19.140
	Residual	6667.835	8	833.479	
	Total	54526.514	11		

a. Independent Variable: INF

b. Predictors: (Constant), TGP

**Table 6:** Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-106.433	62.829	-1.694	.129	-251.318	38.452					
	TGP	.013	.007	.234	1.724	-.004	.030	.245	.520	.213	.830	1.205

a. Independent Variable: INF

**Table 7**

		Model		TGP	
1		Correlations	TGP	1.000	
		Covariances	TGP	5.407E-005	
Model	Dimension	Eigenvalue	Condition Index	(Constant)	TGP
1	1	3.364	1.000	.00	.00
	2	.560	2.451	.00	.00
	3	.064	7.227	.02	.13
	4	.011	17.372	.98	.86

**Table 8: Residuals Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	88.7828	262.6599	75.9933	65.96051	12
Residual	-52.52023	44.81009	.00000	24.62046	12
Std. Predicted Value	-1.322	1.314	.000	1.000	12
Std. Residual	-1.819	1.552	.000	.853	12

a. Independent Variable: INF

The regression result testing the relationship between inflation and public expenditure has an R value of 0.937 with  $R^2$  of 0.878 and adjusted  $R^2$  of 0.832 all indicating a positive and significant relationship between inflation and public expenditure. Public expenditure buffered by the 28.87004 standard error of estimate revealing a high degree of scatter or dispersion between inflation and public expenditure as they positively correlate. The Durbin Watson test value of 0.743 indicates a problem in such autocorrelation as the range of good Durbin Watson test should be between 1.5 to 2.5. This means that government expenditure (Recurrent/Capital) should not be rising as inflation is rising as inflation negatively impacts on the public expenditure. The ANOVA result reveals an F value of 19.140 with 0.001 and the table value.

Thus, the calculated F is more than the table value of F. Thus, there is a positive and significant relationship between inflation rate and the public expenditure in Nigeria. The covariance which measures the relationship between two variables and the extent to which inflation and public expenditure change together reveals a 5.407E-005 which is a very high covariance indicating a high degree of change in public expenditure as inflation rises. This implies that as inflation rate rises, public expenditure (TGP) also increases as reported by the Durbin Watson (DW) test of 0.743 proves autocorrelation of inflation and public expenditure thus inferring a lag in restrictive monetary and fiscal policies implementation in Nigeria.

### Conclusion and Recommendations

The ANOVA test result shows that the f-value calculated is more than f-value tabulated at a 0.01 level of significance with a coefficient (R) of 0.937 and a coefficient of determination ( $R^2$ ) of 0.873 reveals that there is a significant positive relationship between inflation rate and public spending. The Durbin Watson of 0.743 and the residual of 6667.8 from the mean of 833.479 are proofs of the positive correlation between inflation and public spending in Nigeria. This infers that inflation has a negative impact on public expenditure and a rise in the rate of inflation leads to an increase in government's spending and this reduces the purchasing power of money and thus government will only provide public goods and services at a higher cost. This study concludes that inflation growth has a negative effect on public expenditure as such government should always strive to control the growth of inflation in the economy and that all the types of inflation are predominant in Nigeria mainly simultaneously and at one time and the other with the average rate of the change in price level as 20.0 percent, depicting the beginning of hyperinflation in Nigeria. This is in consonance with the conclusion of Jhingan (2011) <sup>[14]</sup>, that hyperinflation is a rise in inflation from 20.0 to 100.0 percent per annum or when it is immeasurable or uncontrollable, where prices rise everyday and such a situation leads to a collapse of the monetary system because of the continuous fall in the purchasing power of money. The study revealed that the anti-inflationary mechanism of government for contraction of money supply through the manipulation of its expenditure is not in strict adherence as government virtually increases expenditure as inflation rate increases instead of abandoning some projects and programmes except for productive projects and programmes so its spending is reduced and as such employment, income, demand, investments and prices will also decrease and gear towards stabilize prices and economy rather government increases spending and the trend is in perpetuity until the reverse occurs.

The study recommends that since there exists a close link between the money supply and inflation, controlling money supply can control inflation thereby promoting efficient public spending in Nigeria. Restrictive fiscal policy mechanism and restrictive monetary policy rate should be implemented as a tool to militate against the growth of inflation rate and money supply in the economy. Credit regulatory procedures should be implemented and maintained in order to control high rate of inflation in the country as both monetary and fiscal policies are complementary tools for the war against the surge in inflation and the attainment of neutrality of money as a key macroeconomic objective.

Incentives for savings and investments should be encouraged during inflation as measures to control inflation, promote economic and price stabilization.

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