Government Expenditure on Agriculture and Agricultural output in Cross River State Nigeria

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Abstract
This study examined the impact of government expenditure on agriculture and agricultural output in Cross River State from 1999-2018 using data from Cross River State Annual Statistical Report 2019. The study employed a thorough pre-estimation diagnostic test and econometric technique under the framework of Ordinary Least Squares (OLS) to estimate the model. Findings as analyzed in the empirical result of aggregate model revealed that log of government expenditure on agriculture LOG (GEA) has a positive and insignificant impact on agricultural output indicating that log of government expenditure on agriculture LOG (GEA) is a major factor that reduces agricultural output in cross river state. Inflation (INF) has a positive and significant impact on agricultural output in cross river state indicating that inflation (INF) is a major determinant of agricultural output in Nigeria. Interest rate (INTR) has a negative and insignificant impact on agricultural output indicating that interest rate (INTR) is not a determinant of agricultural output in cross river state. The study recommends that government should increase their spending on agricultural sector to boast productivity, create employment and induced agricultural output in cross river state.

Keyword: Government Expenditure, Agricultural Output, Cross River State.

Introduction

Cross River State is one the 36 States in Nigeria endowed with abundant natural resources that support agricultural productivity in the State and Nigeria at large. Unfortunately, issues such as poverty low capital formation, unemployment, malnutrition, diseases and illiteracy are found in the rural areas, where about 70% of the population lives on subsistence farming. These issues are among the challenges encountered by farmers in their quest to be more productive. Cross River State is situated in the southern part of the country with a population of about 4 million people. It is endowed with abundant natural resources and as such has been rightly described as a storehouse of agricultural wealth. Blessed with a convenient location in the tropical region, a large body of water, arable land with rich variety of soil, and congenial climate, the state's agricultural endowments include food and cash crops such as; Cocoa, Oil Palm coffee, Banana and Plantain, Yams, Cassava, Melon, Millet, cucumber, Groundnut. Fruits such as citrus, guavas, coconuts, mangoes, etc. Cross River State derives its name from the Cross River which passes through the state. It is a coastal state located in the Niger Delta region, and occupies 20,156 square kilometers. It shares boundaries with Benue State to the north, Ebonyi and Abia States to the west, to the east by Cameroon Republic and to the south by Akwa-Ibom and the Atlantic Ocean. The South-South State was created on 27 May 1967 from the former Eastern Region, Nigeria by the General Yakubu Gowon regime. Its name was changed to Cross River State in the 1976 state creation exercise by the then General Murtala Mohammed regime from South Eastern State. Its major towns are Akamkpa, Biase, Calabar South, Ikom, Igede, Obubra , Odukpani , Ogoja , Bekwarra, Ugep, Obudu , Obanliku, Akpabuyo, Ofutop, Iso-bendghe, Danare, Boki , Yala , Bendeghe Ekiem, Etomi, Ukpe and Ukelle (Wikipedia, 2019).

According to Ebomuche and Ihugba (2010) agriculture involves the cultivation of land, raising and rearing of animals for the purpose of production of food for man, feed for animals and raw materials for industries. It involves cropping, livestock, and forestry, fishing, processing and marketing of these agricultural products. Essentially it is composed of crop production, livestock, forestry and fishing. The agricultural sector has the potential to be the industrial and economic springboard from which a country's development can take off. This enormous resource base if well managed could support a vibrant agricultural sector capable of ensuring the supply of raw materials for the industrial sector as well as providing gainful employment for the teeming population (Ukeje, 2002). Having understood the anomaly in

depending on one sector (i.e., crude oil sector that conquered every other sector in terms of GDP's contributions) in the economy, efforts had been made by several Nigerian governments in their policies to diversify the economy into sectors— such as: agriculture; manufacturing; tourism; theatre & Arts; etc. In 1976-1979, the policies of Green Revolution (GR) and Operation Feed the Nations (OPNs) were adopted to diversify the Nigerian economy from a mono economy. This effort was nipped in the bud, when another government took over powers. Though stringent efforts were made by the succeeded administration, in terms of policy formulation in diversifying the economy. Under the policy the financial institutions were instructed via Central Bank of Nigeria to make 40% of their total credit facilities available for farmers (peasants) who wielded into farming with minimum cost of borrowing (i.e., interest rate). These credit facilities enable the farmers (peasants) to buy modern farming facilities instead of the crude tools for farming, in the end, food would be made surplus, wealth and employments would be generated, and/or foreign earnings from exports. Dwindling in agrarian sector outcomes or outputs continued till the introduction of the Structural Adjustment Programme (SAP) in 1986, in the bid that the agricultural sector would be revamped in order to support the diversification stride of the government policy, in the end the policy could not achieve its objectives as well as revamping the agrarian sector.

The Nigerian government had introduced series of macroeconomic programmes and policies (both monetary and fiscal policy) aimed at improving the sector performance. It established the Rural Banking Scheme (RBS) in 1977, the Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1977, Nigerian Agricultural and Cooperative Bank (NACB) Ltd – in 2011, transformed into the Bank of Agriculture (BOA) Ltd., and later the Commercial Agricultural Credit Scheme (CACS) which was established in 2009.More-over, there was also the National Agricultural Land Development Authority (NALDA), the River Basin Development Authorities, the Agricultural Development programmes (ADP), and the International Institute for Tropical Agriculture (IITA). But it is disheartening to note that these efforts have not yielded appreciable successes (Okezie, Nwosu, and Njoku 2013).Others include but not limited to the Directorate for Food, Roads and rural Infrastructure (DFRRI), National Economic Empowerment and Development Strategy (NEEDS), FADAMA a Hausa word for irrigable land, selective credit control, agricultural subsidies, exchange rate and interest rate management, the Youth Employment in Agriculture Program (YEAP) in 2014 led to introduction Agricultural Transformation Agenda (ATA) which became the largest ever government-enabled private sector-led effort to grow agriculture in Nigeria. This is believed to eliminate the bottleneck problems caused by middlemen associated with earlier programmes and rent seeking behaviour hence, encourage large scale farming that brings along with its economies of scale and consequently food security (Muftaudeen and Abdullahi, 2014).

The previous efforts of the government in tackling unemployment include the following: formation of a National Directorate of Employment (NDE); encouragement of small scale industries; creating employment opportunities in schools/ministries; Operation Feed the Nation (OFN); Better Life for Rural Area; Youth Enterprise with Innovation in Nigeria (YouWIN) – a public and private initiative with a vision to finance the projection of the government of enhancing 3800 entrepreneurship youths in the country and Graduate Internship Scheme (SURE-P) Subsidy Reinvestment and Empowerment Programme (Federal Ministry of Finance, 2012). The N-Power Volunteer Corps reveals an expression of President Muhammadu Buhari Administration in commitment to invest in the human capital development of Nigerian citizens of which 200,000 are unemployed graduates, 150,000 to teach, 30,000 to work in the agricultural sector and 20,000 in healthcare delivery covering three specific programme assignments (Ishmael Ogboru et al, 2018).

Therefore, it is not an overstatement to assert that the growth and development of any nation depend, to a large extent, on the development of agriculture. The saying that "agriculture is the mainstay of the economy may have become a cliché, as far as the region is concerned. It nevertheless underscores the emphasis placed on agriculture as the engine of growth in the Nigerian economy. Abayomi (1997) noted that stagnation in agriculture is the principal explanation for poor economic performance, while rising agricultural productivity has been the most important concomitant of successful industrialization. Generally, the sector contributes to the development of an economy in four major ways-product contribution, factor contribution, market contribution and foreign exchange contribution (Kuznetz 1961; Mackie 1964; Abayomi 1997; Abdullahi 2002; World Bank 2007).

Literature review

Government expenditure is defined as the expenses incurred by the government in carrying out its responsibilities, that is, in the provision of social services and defense, to mention just a few. According to Owoputi and Alayande in (Okoh, 2015), government expenditure is defined as those expenses and expenditures incurred by government in the course of maintaining herself, he society and improving economy. Government spending, in other words, public expenditure is reflected in existing budgets. These budgets indicate how much will be spent and how much money will be extracted from the stream of private spending by taxation (Everett, 2011). The concept of Government expenditure fall under the latter purview of one of the three broad areas in finance that specialized institutions, procedures, standards, and goals have developed; that is, business finance, personal finance, and public finance. Economy, benefit, authorization and balance are the characteristics of government expenditure. And the factors that determine government expenditure are urbanization, population, economic growth, depreciation, technological change and reduction in inequality. Expenditure addresses the situation of how spending is or should be composed. Such expenditure structure facilitates accounting aspects of fiscal management and other expenditures. Government expenditure is usually categorized as recurrent and capital expenditure (Ogba, 2011).

Agriculture can simply be defined as the cultivation of the soil and rearing of animals for the purpose of feeding for survival. This definition in itself point out the relevance of agriculture in every society. According to Ogbu (2011), former President Goodluck Jonathan stressed that "agriculture holds a better promise in the march towards growing the economy than the oil and gas as it provides more employment as well as ensures food security". Agriculture is a way of life that involves production of animals, fishes, crops, forest resources for the consumption of man and supplying the agro-allied product required by our sectors. It is seen as the inherited and dominant occupation employing about 70% of Nigerians. Though, subsistence agriculture is practiced in this part of the world, it will not be an exaggeration to say that it is the life-wire of the economies of developing countries. According to Yusuf (2014), the systems of agriculture prevalent in Nigeria comprising of crop production, peasant farming, plantation farming, and mechanized agriculture as its components cannot be overlooked.

Economic growth is best defined as a long term expansion of productive potential of the economy. The trend of growth could be expanded by raising capital investment spending as a share of national income as well as the size of capital inputs and labour supply, labour force and the technological advancement. Economic growth is the increase of per capita Gross Domestic Product (GDP) or other measure of aggregate income. The International Monetary Fund (IMF) defines Economic growth as the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. It is conventionally measured as

the percent rate of increase in real gross domestic product, or real GDP, usually in per capita terms (Carreon, 2013).

Multiple research work abound on the impact of agriculture and economic growth are available in school archives, because it is an old phenomenon. Some researchers in the result of their findings discovered that agricultural sector has a direct relationship with economic growth. While others, in the result of their findings discovered that though agricultural sector has a direct relationship with economic growth, the constraint is that agricultural sector in the emerging countries—such as Nigeria is fundamentally crude method. Hence much is not being expected as a profit.

Shuaib (as cited in Boutros Boutros Ghali, 1995) said that a country's underdevelopment is not based on her resources per se but as a result of nervous breakdown. Todaro et al. (as cited in Rostow) under examining the stages of growth—he enumerated five stages: (i) the traditional stage; (ii) preconditions for take-off into well sustaining growth; (iii) the take off stage; (iv) the drive to maturity; and (v) the age of high mass consumption. The stages are known as the steps to growth by the developed and emerging countries. It is pertinent to acknowledge the fact that the developed countries had passed through the first three stages to the drive to maturity and perhaps the age of high mass consumption. The emerging countries are tarrying around the (i) to (iii).

In the discussions of contribution of agriculture to economic growth, Oji-okoro (2011) examined the analysis of the contribution of agricultural sector on the Nigerian economic development, the multiple regression was used to analyze the panel data, the result indicated a positive relationship between Gross Domestic Product (GDP) vis-avis domestic saving, government expenditure on agriculture and foreign direct investment between the period of 1986-2007. Despite these laudable efforts, Nigeria's agricultural sector is still characterized by low yields, attributable to the use of crude implements, a low level of inputs and limited areas under cultivation, among others.

Ekpo et al. (1994) observed that Nigerian agricultural export has enlarged to include cocoa, beans and palm kernel. Statistics indicate that in 1960 agricultural export commodities contributed well over 75% of total annual merchandise exports. In 1940's and 50's Nigeria was ranked very high in the production and exportation of major crops in the world. For instance, Nigeria was the largest exporter of palm oil and palm kernel, second to Ghana in cocoa and third position in the exportation of groundnut. He further reported that Nigeria export earnings from major agricultural crops contributed significantly to the Gross Domestic Product (GDP).

Examining the government allocation to the agriculture sector, Oyakhilomen (2013) examined the agricultural budgetary allocation and economic growth in Nigeria from an econometric perspective, the results of the analysis show that the relationship between agricultural budgetary allocation and economic growth in Nigeria is positive but not significant in the long run, while the relationship is positive and significant only for the two-year lagged value of agricultural budgetary allocation. This observed relationship is not unrelated to the low budgetary allocations to agriculture over the years in Nigeria. This implies that there is a need for a significant increase in budgetary allocations to agriculture in order to ensure that the agricultural sector plays a pivotal role in the national transformation of Nigeria.

Ijaiya and Ijaiya (2004), examined the influence of change in government expenditure in agriculture on agricultural output over the years using time subscript and difference-in-difference estimator. Times series data was chosen because the years coincided with different government agricultural development policies and programmes for the period 1985-2002 on the total expenditure of the government to the agricultural sector and the total output of major

agricultural commodities in Nigeria were utilized. A multiple regression analysis was used in order to reflect the explanatory nature of variables. The findings indicated that the initial level of government expenditure on agriculture had helped improve output more than the changes experienced as at the time of this study. It recommended a vigorous improvement in the nation's tax bases and in administrative capacity of the board of internal revenue to collect taxes.

Aladejare (2013), utilized the analytical technique of Vector Error Correction Model (VECM) and Granger Causality test due to the properties of most times series based on annual data covering the period 1961-2010 to identify the direction of the relationship within the variables of interest that is, Gross domestic product, Government expenditure and government capital expenditure. The study pointed to the agreement that the Wagnerian and Rostow Musgrave hypothesis were applicable to the relationship between the fiscal variables. The results showed that the Wagnerian hypothesis of economic growth spurring increase in aggregate government expenditure in the economy holds to be valid for Nigeria – and recommended that government consumption spending should be well coordinated at all arms of government investment which will have assignment impact on economic growth and development.

Etale and Ayunku (2015) investigated the effect of agriculture spending on economic growth in Nigeria over a period from 1977 to 2010 with particular focus on sectional expenditure analysis. The paper used ex-post factor research design and employed the Augmented Dickey Fuller (ADF) and Phillips Perron (PP) unit root tests, as well as Johansen Cointegration followed by Error Correction Model (ECM) tests. It found out that Real GDP was particularly influenced by changes in agriculture expenditure, inflation rate, interest rate, and exchange rate. The paper recommended that an increase spending on agriculture by the government, since most of the poor but active people reside in the rural areas and their main source of livelihood is agriculture as it could provide food security, generate employment for the teeming youths and create wealth for the citizens in Cross River State and Nigeria as large.

Wahab (2011) examined an analysis of government spending on agricultural sector and its contribution to Gross Domestic Product (GDP) in Nigeria, using trend analysis and a simple linear regression to analyse the time series data, the result obtained shows that such spending does not follow a regular pattern and that the contribution of the agricultural sector to the GDP is indirect relationship with government funding to the sector. Ebere et al. (2014) examined the impact of government expenditure on agriculture on economic growth in Nigeria over the years. A time series data of 33 years sourced from the Central bank of Nigeria was used. Ordinary Least Square (OLS) technique of data analysis was used in evaluating the secondary data. From the findings agricultural output, government expenditure and GDP are positively related. It was found that a significant relationship exists between government expenditure in the agricultural sector and the economic growth in Nigeria. The findings also revealed that the sector still encounter some problems like inadequate finance, poor infrastructure, and others.

Iganiga (2011) examined the impact of federal government agricultural expenditure on agricultural output in Nigeria, they used the Cobb Douglas Growth Model, Descriptive Statistics and Econometrics Model were used to analyze the time series data. Co-integration and Error Correction methodology were employed to draw out both long-run and short- run dynamic impacts of these variables on the value of agricultural output. Federal government capital expenditure was found to be positively related to agricultural output. With a one-year lag period, it shows that the impact of government expenditure on agriculture is not instantaneous. The policy import of the study is that investment in the agricultural sector is very imperative and this should be complemented with monitored credit facilities.

Theoretical framework

Rostow-Musgrave theory of public expenditure growth

Rostow and Musgrave carried out a research on the growth of public expenditure on changes in the income elasticity of demand for public services and concluded that, at the early stages of economic development, the rate of growth of public expenditure will be very high, because government provides the basic infrastructural facilities that is, social overhead. And most of these projects are capital intensive; therefore, the spending of the government will increase steadily. The investment in education, health, roads, electricity, and water supply are necessities that can launch the economy from the traditional stage to the take off stage of economic development making government to spend an increasing amount with time in order to develop an egalitarian society (Ogba, 2011).

Government Policy on Agriculture

Having realized the declining role of agriculture in economic development, the government over the years has put in place certain policy measures and programmes with a view of increasing the contribution of agriculture to economic development. However, a peep into the federal government capital expenditure on agriculture as a ratio of the total federal government capital expenditure, it portraits a gloomy future for the sector's development in the country. From 1980 to 2011, the federal government capital expenditure on agriculture were below 10% exept in the following years; 1981, 1982, 1983 (the highest), 1985, 1986, 2001, 2002, 2004, 2005, 2007, 2008 and 2009 because these were the years that coincided with or the years after different government agricultural development policies and programmes such as the Green Revolution in 1980, the structural adjustment programme (1986), The Directorate of Foods, Roads and Rural Infrastructure (1987) although it was 5.7% but increased to 7.1% the following year, food for all programme in 1987, the better life for rural women programme also in 1987, the Rural Agro-Industrial Development Scheme (RAIDS) in 2001 and Economic Empowerment Development Strategy (NEEDS, SEEDS and LEEDS) of 2003 which was implemented in 2004. The federal government recurrent expenditure on agriculture as a ratio of the total federal government recurrent expenditure was highest in 2008 (3.4) the year after the introduction of late president Yardua's seven point agenda which has agriculture as one of the seven priority sectors and lowest from 1981-1987 (0.3%). Despite these huge sums of money allocated to the sector during these years, there was little or no improvement in agricultural production because successive governments only used policies/programmes to embezzle public funds to the total neglect of food production (Ijaiya and Ijaiya, 2004).

Beginning from the era of Commodity Board in the 1960s, the country has witnessed a myriad of policies and programmes ostensibly introduced to address perceived problems in the agricultural sector. Such policies and schemes have focused on enhancing agricultural output, improving the expected linkages (backward and forward) with the manufacturing sector, increasing earnings and employment opportunities, increasing food security, etc. They have therefore basically touched on availability of supplies and equipment production, incentives to farmers, transportation, agricultural credit, land reform, food preservation, extension services, infrastructural facilities, etc. Government involvement in agriculture not only goes beyond providing supportive services, it also includes direct participation in the production of agricultural products (Rogers, 1999). One of the first steps by government was the launching, in 1972, of the National Accelerated Food Production Programme, a campaign to grow more food. In 1973, the Federal Government established the Nigerian Agricultural Credit Bank (NACB) with an initial paid up capital of N20 million. In further recognition of the need to make credit available for the development of agriculture, the Agricultural Credit Guarantee Scheme Fund was set up under Decree 20 of 1977 with an authorized capital of N100 million.

This programme brought financial institutions into the financing of agriculture in the country. Since then, and up till 1996 when sectorial allocation of credit was abolished, it became compulsory for a specified proportion of bank's credit to be made available for agricultural activities. As at 1996, a minimum of 18 per cent of the total loans and advances of a bank should go to agriculture and agro-allied activities.

In 1976, the Operation Feed the Nation (OFN) programme was launched with objectives of increasing food production, attaining self-sufficiency in food supply, encouraging all sections of the Nigerian population to grow food, encouraging balanced nutrition and by extension a healthy nation. The scheme encouraged mass participation. During the same period, the government announced guaranteed minimum prices for agricultural outputs and also reformed the marketing board system to generate adequate returns to farmers thereby ensuring that customers are charged reasonable prices. Various other incentive schemes were offered in the areas of tax relief, subsidy of prices of agricultural inputs, and machinery and equipment. A major policy that was designed to improve agricultural production was the promulgation of the Land Use Decree in 1978. The focus of the Decree was to reform the land tenure system, which was believed to constitute a formidable obstacle to the development of agriculture in Nigeria. The Central focus of government policies in the 1980s was the objective of changing agricultural production to large-scale production. It was identified that the bulk of food production in Nigeria was being undertaken by small holder farmers who rely on muscles rather than equipment, thereby resulting in low output. Emphasis therefore shifted into provision of credit and skilled manpower, and expansion of agro-allied businesses to mention a few. From 1986 when the Structural Adjustment Programme was introduced, the focus had been on returning Nigeria to self-sufficiency and enhancing the contribution of agriculture to foreign exchange earnings.

Part of the programmes over the years had been the establishment of relevant institutions. Thus there were agricultural research institutes like the National Cereal Research Institute, the National Agricultural Extension and Research Liaison Service, Nigeria Institute for Oceanography and Marine Research, Veterinary Research Institute, the Cocoa Research Institute of Nigeria, Forestry Research Institute of Nigeria, Rubber Research Institute of Nigeria, National Agricultural Extension Research and Liaison Services (AERLS) Ahmadu Bello University, Zaria: with 5 Zonal Offices, one in each of the 5 agro-ecological zones of the country – Umudike (South-east), Ibadan (South-west), Maiduguri (North-east), Badeggi (North-central), Zaria (North-west) etc.

In the 1980s the Federal Government also established Universities of Agriculture, apart from various schools of Agriculture in Nigeria and the faculties of Agriculture in the conventional Universities and the Polytechnics. More-over, there was also established the National Agricultural Land Development Authority (NALDA), the River Basin Development Authorities and the Agricultural Development programmes (ADP). There are also international institutions complementing these institutes like the International Institute for Tropical Agriculture (IITA). But it is disheartening to note that these efforts have not yielded appreciable successes. The reasons for the low successes were not because the projects and programmes were mere paper and pencil solutions, but the methodology of their implementation seems to have missed some vital links, such as effective youth and local community participation and free from politicians' interference. However, there are also problems at the micro (individual) level that borders on management of farm, sources of finance, supervision, etc. In Nigeria, farmers are the most impoverished and backward amongst all types of businesses and professions. This is not the case in developed countries of the world, where farmers are among the richest and most successful entrepreneure

Government Expenditure on Agriculture

Nigeria is supposedly a rich country with a GDP of about 41% of West Africa's GDP and substantial natural and human resource endowment. As the 6th oil producing country in the world, Nigeria exports over 80% of its crude petroleum and nearly 95% of the country's foreign exchange earnings come from it while the consumption pattern has high import contents (Daramola, 2004). Growth in the economy in recent quarters has been significantly less than in previous years. Growth in the third quarter of 2015 was 2.84%, slightly higher than in the second quarter but still well below the average growth rate of 5.32 achieved between 2011 and 2014. This decrease can be attributed to the decline in the oil price as well as non-oil sectors that suffered setbacks during the year as political uncertainty coupled with supply shocks weighed on economic activity.

In particular however, Nigeria depends heavily on oil for both exports and government revenues, and therefore movements in the oil price have a large effect on the economy (NBS, 2016). Africa spends about $45billion on food imports annually. In Nigeria, dairy is one of the most valuable items in the country's agriculture industry, but it generates complexity importing over 1.5 billion litres of milk per year which presents opportunities in the sector. The African Development Bank stipulated the food import bill of the African continent was $35billion in 2015. It resulted to increased food import bills into the country attached with the already depreciating exchange of Naira, thus culminating to rise in food prices and worsening poverty level. This is evidenced by the increase in the rate of inflation measured in terms of food deprived from 3.9% in 2006 to 15.5% in 2009, while experiencing a marginal improvement in 2011, though still higher compared to that of 2006 but steady at 10.6% in 2015.

A critical look shows a declining growth rate in food crops production far below the government set target of annual growth rate of about 5% to 10% for food crops production as well as population average growth rate of about 2.67%. Nigeria incurred a food import bill around $17.03 million in 2014, which latter drop to $12.16 million in 2015 besides about $5 billion dollar smuggled food item products across the Nigeria border with vegetable oil, rice, processed chicken and turkey been the highest. According to the Lagos Chamber of Commerce as at 2015, Nigeria imported goods mostly from China, United States, India, Belgium and Netherlands, which respectively accounted for N336.5 billion or 22.5%, N143.6 billion or 9.6%, N115.4 billion or 7.7%, N83.4billion or 5.6% and N80.9billion or 5.4% of the total value of goods imported. By Continent, Nigeria consumed goods largely from Asia, with an import value of N665.7 billion or 44.6% of the quarterly total. The country also imported goods valued at N502.3 billion or 33.6% of the total from Europe, and N210.1 billion or 14.1% of the total from The Americas. Imports from Africa stood at N97.8 billion or 6.5% of total imports, while imports from the region of ECOWAS amounted to N39.0 billion, 39.9% of total African imports. These are indications of serious food insecurity for the country and poor macroeconomic policy performance (LCCI, 2015).

Table 1: Discrepancy between actual and budgeted expenditures in Cross River State

	2008		2009		2010		2011	
Share of total crop production expenditure	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**
Seeds	5.66	0.00	6.67	7.20	22.73	0.00	0.00	0.00
Fertilizers	4.02	0.00	33.29	20.87	28.68	100.00	89.45	0.00
Agrochemicals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous	90.32	100.00	60.04	71.93	48.59	0.00	10.55	100.00
Share of total general services expenditure								
Research	5.00	0.00	14.06	50.79	6.58	0.00	3.56	0.00
Extension	0.00	100.00	69.88	0.00	13.99	9.82	6.01	0.00
Credit scheme	95.00	0.00	0.00	0.00	8.64	12.88	1.84	2.05
Rural development	0.00	0.00	10.04	39.68	32.51	48.47	71.04	78.99
Agro-processing	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.00
Advocacy program	0.00	0.00	0.40	0.00	33.74	28.22	16.07	17.87
Market development	0.00	0.00	5.62	9.52	4.53	0.61	6.98	1.09

Source: Mogues and Olofinbiyi (2018); based on data from Federal Ministry of Agriculture and Rural Development and Cross River State Ministry of Agriculture. 2023

The Method

In this study we attempt to examine the relationship between government expenditure and agricultural output in Cross State, to achieve this we adopted the ordinary least square (OLS) method of multiple regression technique. Cross River State is the area of our study with a promising and plentiful raw materials potential in agriculture and would make a budding industrialization centre. Government expenditure in the sector will enhance industrialization and increase economic growth in the region. The region also has an Export Processing Zone (EPZ) open to doing business with its neighbors.

The Model

The study adopted the Keynesian theory. Government expenditure and other macroeconomic features are policy instruments which are exogenous factors responsible for driving demand and overall output. We specify that the growth of government expenditure on agriculture is a function of inflation and interest rates.

This is given as:

AGRQ = f (GEA, INFLA, INTR) ..... (1)

Where:

GEA = Government expenditure on agriculture
INFLA = Inflation
INTR = Interest rate
AGRQ= Agricultural output
The empirical model for this study is specified as:
AGRQ = f (GEA, INFLA, INTR,)..... (2)
Where:
AGRQ= Agricultural output
GEA = Government expenditure on agriculture
INFLA = Inflation
INTR = Interest rate
The equation above can be transformed into an econometric model of the form:
$AGRQ = bo - b_1INFLA + b_2 INTR + b_3GEA + U$..... (3)
B_1 to b_3 are the coefficients of the parameters to be estimated.

The Results

The pair wise correlation matrix test was adopted to test for correlation between the variables captured in the specified model. This test compares the correlation result of each pair variables against 0.8 thresh hold proposed by Gujarati and Sangeetha (2007). A correlation value of 0.8 or above shows the presence of multicollinearity.

Table 4.1 Result of Pairwise Correlation Matrix Test

	AGRQ	GEA	INFLA	INTR
AGRQ	1	0.05580075674848308	0.01680037312035998	0.03533484597516442
GEA	0.05580075674848308	1	0.4377389118522234	0.6629488082479245
INFLA	0.01680037312035998	0.4377389118522234	1	0.4188227644019841
INTR	0.03533484597516442	0.6629488082479245	0.4188227644019841	1

Source: E-views 9 Output for the Result of Pairwise Correlation Matrix Test 2023

The above result presented in table 2 revealed that none of the variables had pair -wise correlation matrix of greater or equal to 0.8. This implies that the variables captured in the specified model are free from multi-collinearity and as such, none of the variables contains full information about the other.

Dependent Variable: AGRQ
Method: Least Squares
Date: 01/28/21 Time: 01:37
Sample: 1999 2018
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.23E+09	1.61E+10	-0.138552	0.8916
LOG(GEA)	8.21E+08	8.29E+08	0.990552	0.3376
INF	9.1728480	4.3034293	2.131521	0.0500
INTR	-2.82E+08	4.12E+08	-0.684263	0.5042

R-squared	0.851729	Mean dependent var	5.71E+09
Adjusted R-squared	0.842074	S.D. dependent var	3.28E+09
S.E. of regression	3.11E+09	Akaike info criterion	46.73766
Sum squared resid	1.45E+20	Schwarz criterion	46.93649
Log likelihood	-440.0077	Hannan-Quinn criter.	46.77131
F-statistic	1.682068	Durbin-Watson stat	1.466924
Prob(F-statistic)	0.213412		

Source: *Author's Computation (E-view 9), 2023*

Conclusion and recommendations

This study investigates the relationship between government expenditure on agriculture and agricultural output in Cross river state using time series data from 1980-2018. The study reviewed conceptual framework, relevant literature, theoretical and empirical literature as discussed in the body of the work. The study is anchored on the Keynesian approach which states that public spending may increase the aggregate demand, which further stimulates output and employment in Nigeria. The model is specified to examine the relationship between government spending on agriculture and agricultural output in Nigeria overtime as extensively discussed in the body of the work. The study employed a thorough pre-estimation diagnostic test and econometric technique under the framework of Ordinary Least Squares (OLS) to estimate the model. Data were sourced from Central Bank of Nigeria Statistical Bulletin (2019)

and estimated using E-view 9 package. The findings as analyzed in the empirical result of aggregate model revealed that log of government expenditure on agriculture LOG (GEA) has a positive and insignificant impact on agricultural output indicating that log of government expenditure on agriculture LOG (GEA) is a major factor that reduces agricultural output in cross river state. The findings as analyzed in the empirical result of aggregate model revealed that inflation (INF) has a positive and significant impact on agricultural output in cross river state indicating that inflation (INF) is a major determinant of agricultural output in Nigeria. The findings as analyzed in the empirical result of aggregate model revealed that interest rate (INTR) has a negative and insignificant impact on agricultural output indicating that interest rate (INTR) is not a determinant of agricultural output in cross river state.

This study investigates the relationship between government expenditure on agriculture and agricultural output in cross river state using time series data from 1980-2019. The regression results presented above revealed that log of government expenditure on agriculture LOG(GEA) and interest rate (INTR), are statistically insignificant impacting on agricultural output in Cross river state., while Inflation (INF) is statistically significant impacting on agricultural output in Cross river state because of their signs and magnitudes. Therefore, the study recommends that government should increase their spending on agricultural sector to boast productivity, create employment and induced agricultural output in cross river state.

Recommendations

Based on the findings of the study, the following recommendations are made:

1 The positive and insignificant impact of government expenditure on agriculture calls for government to increase funds in the agricultural sector with adequate agricultural polices to boast agricultural output in cross river state.
2 The negative and insignificant impact of interest rate calls for Central Bank of Nigeria to adopt a stringent interest rate policy that will flourish agricultural programmes to boast agricultural output in Cross river state.
3 The positive and significant impact of inflation calls for government to adopt a single digit inflationary gap to stimulate aggregate demand and maintain price stability.

References

Abayomi, Y. O (1992). The agricultural sector in Nigeria; the way forward. *Central Bank of Nigeria Bullion*, Lagos. 21(3), 11-24.

Aladejare S. A. (2013). *Government spending and economic growth: Evidence from Nigeria*. MPRA Paper No. 43916, 2013.

Ayunku, E. & Etale, M. (2015). Effect of Agriculture spending on economic growth in Nigeria: Research Journal Finance and Accounting. 6(*2*), *(2015).*

Carreon, M.A. (2013). *Youth Unemployment Analysis*. Mexican Institute of Youth (IMJUVE). Retrieved July 18, 2014

Daramola, B. (2004). *"Competitiveness of Nigerian Agriculture in a Global Economy: Any Dividend(s) of Democracy?"* Inaugural Lecture Series 36, delivered at the Federal University of Technology, Akure, Nigeria

Ebere, et, al (2014). Government expenditure on agriculture and economic growth in Nigeria. *International Journal of Science and Research*, 9(3), pp.188-194.

Ebomuche N. C. & Ihugba A. O. (2010). *Structure of the Nigerian Economy*. Peacewise Systems; 124 Tetlow Road, Owerri, Imo State Nigeria.

Ekpo A, Egwaikhide F (1994), "Exports and Economic growth in Nigeria: A Reconsideration of the evidence", *Journal of Economic Management*, 1, 100 – 115

Everett, R. W. (2011). *Economic Forecasting*. Encyclopedia Britannica Ultimate Reference Suite. Chicago: Encyclopedia Britannica

Gujarati, D. & Sangeetha, N. (2007) Basic Econometrics. Fourth Edition, Tata McGraw-Hill, New Delhi.

Iganiga, B.O., & Unemhilin, D.O. (2011). The Impact of Federal Government Agricultural Expenditure on Agricultural Output in Nigeria. *Journal of Economics, 2,* 81 - 88.

Ijaiya, M .A, Ijaiya, G.T (2003). The impact of agricultural finance on agricultural output in Nigeria. Poverty, Globalization and Human Development. Edited by Jugale

Ijaiya, M. A., & Ijaiya, G. T. (2004). "The Impact of Agriculture Finance on Agricultural Output in Nigeria." Poverty, Globalisation and Human Development, Shivaji University – Kolhapur, India; 220-231. Serials Publications, New Delhi. University of Ilorin, Nigeria.

Muftaudeen O., Hussainatu A. (2014) Macroeconomic Policy and Agricultural Output in Nigeria: *Implications for Food Security American journal of Economics,* 4(2), 99-113.

Musgrave, R.A. & Musgrave, B. (1988) Public Finance in Theory and Practice. New York, McGraw-Hill Book Company.

National Bureau of Statistics, (2016). Economic outlook and Review.

Oji-Okoro, I. (2011). Analysis of the Contribution of Agricultural Sector on the Nigerian Economic Development. World Review of Business Research, 1, 191-200.

Okezie A. I., Nwosu C. and Njoku, A. C (2013) An assessment of Nigeria expenditure on the agricultural sector: Its relationship with agricultural output (1980 - 2011). *Journal of Economics and International Finance*, Vol. 5(5) :177-186

Rostow, W.W. (1961). *The Stages of Economic Growth: A won Communist manifesto.* Cambridge University Press

Ukeje, E. U (2002). "Towards Accelerated industrial crop production:

Wahab, M. (2011). Asymmetric output growth effects of government spending: Spending: Cross-Sectional and panel Data evidence. *International Review of Economics & Finance*, 20(4), 574-590.

Yusuf, S. A. (2014). Role of Agriculture in Economic Growth & Development: Nigerian Perspective. Munich Personal RePEc Archive Paper 55536; 1-22. University of Lagos, Akoka, Nigeria