

IMPACT OF FISCAL POLICY ON THE GROWTH OF AGRICULTURAL SECTOR IN NIGERIA, 1981-2013

Okoh, Abo Sunday

Department of Economics, Federal University Wukari, Nigeria.

ABSTRACT: *Most industrialized countries over the years have passed through the agrarian era. In fact, the industrial sector takes its roots from the agricultural sector. In a developing nation, government fiscal responsibility is very central to all facets of development including agriculture. The study thus seeks to examine the impact of fiscal policy on the growth of agricultural sector in Nigeria between 1981 and 2013 using Error Correction Model (ECM). Unit root tests were conducted on each of the variables to avoid spurious regression results. Stationary variables were subsequently used for the analysis. The co-integration results showed that long run equilibrium relationship exists among the variables. The findings from the study revealed that custom and excise duties (CED) though statistically significant, relates negatively with volume of agricultural outputs (VAO). It shows that the amount of tax imposed on agricultural exports has not improved its productions and thus has a dampening multiplier effects on its growth. Value added tax (VAT) was however found to have influenced the growth of VAO positively and significantly. It shows that the amount of VAT imposed on agricultural outputs has improved the growth of the agricultural produce. The total government expenditures on agricultural sector were found to have negatively influenced agricultural growth in Nigeria. It showed that the amount of government expenditures towards the growth of the sector has not been favorable. Government capital allocation and expenditure to agriculture is relatively low and the actual expenditure falls short of budgeting expenditure. The rate of under spending was found to have been higher for agriculture than for any other economic sectors as large proportion of the funds allocated to agriculture has not gone directly to farmers. Suggestive from the analysis therefore is that Government should increase her budgetary allocation to this sector in a consistent manner because of its importance to the national economy, hoping that with proper monitoring of fund, it would contribute more significantly to the economy of the country. Customs and excise duties on agricultural exports should be stream-lined and more incentives should be given to rural farmers since they covered the larger population in agricultural sector.*

KEYWORDS: Customs and Excise Duties, Agriculture Outputs, Fiscal Policy, Value Added Tax, Expenditures

INTRODUCTION

The contribution of agricultural sector to the economy cannot be overemphasized when considering its building roles for sustainable development, in terms of employment potentials, export and financial impacts on the economy. Agriculture is an important sector of Nigerian economy. Before the discovery of oil in the country in the late 1950s and early 1960s, agriculture was the dominant sector of Nigeria economy. It constituted over 65% of the country's Gross Domestic Product (GDP) and provided the bulk of the foreign exchange earnings through the export of cash crops. The sector is one of the most important sectors of Nigeria's economy. It holds a lot of potentials for future economic development of the nation,

having played dominant role in the remote past. With the emergence of oil as a major source of government revenue and foreign exchange earner the sector was neglected and hence led to the decline (Ijaiya, 2000; Iwayemi, 1994; Ukpong and Malgwi, 1991). In the last decade, its impact may not have been so prominent because of the dominating effect of the oil sector which annually contributed not less than 96% of the nation's total export earnings (CBN, Annual Report and Statement of Accounts, various Issues). The population involved in farming is between 60 and 70% (Nwajiuba, 2012). The sector contributed an average of 36.6% to the GDP during the years of study 1980-2011, it was highest in 1992, 43.6% and 2002, 43.9% and lowest in 1980, 20.6%. The total federal expenditure that was allotted to agriculture during 1980 to 2011 was less than 4% (CBN, 2010; JFR, 2012).

In the world today therefore, agricultural sector acts as the catalyst that accelerates the pace of structural transformation and diversification of the economy, enabling the country to fully utilize its factor endowment, depending less on foreign supply of agricultural product or raw materials for its economic growth, development and sustainability. Apart from laying solid foundation for the economy, it also serves as import substituting sector, providing ready market for raw materials and intermediate goods. The agricultural sector contributes significantly to the nation's economic development by increasing government revenue through tax; improving the standard of living; infrastructural growth; contribution to Gross National Products (GNP); employment generation; enhance manpower development; It plays a key role by being the sources of food for man and animal and providing raw materials for the industrial sector, provision of employment and foreign exchange to the government, amongst others. Agriculture remains the most important single activity of the Nigerian economy; with about 70% of the working population still engaged in it. Despite the predominance of the oil and gas sector in Nigeria, agricultural sector still remains source of economic resilience in the Nigerian economy.

Fiscal policy is perhaps the single most important policy instrument available to governments of most developing countries for promoting growth and equitable distribution. Aside the fact that fiscal policy is used to improve technology, human capital and infrastructure development necessary for growth, it also provides the incentives and enabling environment to promote private sector investments in order to further growth. Fiscal policy involves the use of government public expenditure and taxes to regulate the economy. Scholars like (Al- Yousif, 2000), (Ranjan & Shurma, 2008) concluded that expansion of government expenditure and tax contribute positively to economic growth. But, some scholars did not support the claim that increasing government expenditure and taxes promote economic growth, instead they assert that higher government expenditure and taxes may slowdown overall performance of the economy. In fact, studies by (Landau 1986) suggested that large government expenditure has negative impact on economic growth.

However, inadequate funding of the agricultural sector has been re-echoed by several experts as an obstacle to increased agricultural output (CBN, 2007; Bernard, 2009). However, from a nominal point of view, it is evident that in Nigeria, government spending and tax revenue generated from agriculture continue to increase over the years while empirical evidence have revealed that the performance of the agricultural sector has been inadequate (CBN,2000; Ekerete, 2000). There was a sharp decline in export crop production, while food production increased only marginally. Thus, domestic food supply had to be augmented with large imports. Food import bill rose from a mere N513.88 million annually in 1990-1999 to N6,964 million

in 2011 (CBN,2012). Also, in 2011, the agricultural sector performed below the projected 7.2% of budgetary output (Lawal, 2012)

The statement to be set to test in this paper is to examine whether there is a significant relationship between fiscal policy (proxied by government spending and taxes) and agricultural sector growth in Nigeria.

The remaining part of this paper is organized into literature review - where some empirical works of other scholars are reviewed; methods of analysis; analysis and interpretation; and lastly, recommendation and policy implication of the study.

LITERATURE REVIEW

Overview of Agricultural Output

The oil glut of the early 1980s reduced substantially, inflows of foreign exchange and consequently, participation of government in investment activities. Most of the companies erected at the wake of the oil boom witnessed low capacity utilization and in extreme cases out-right closure (CBN, 2004). This led to a drastic rise in food import bills and the price of imported goods. To redress this situation, the government embarked on integrated programmes aimed at increasing agricultural production and productivity (CBN, 2004).

Olaokun (1979), explained that agriculture is a source of food and raw materials for industrial sector, it creates more employment opportunities, it reduces poverty and improve income distribution, it speeds up industrialization and easing the pressure on balance of payment.

According to Fei-Ran (2008), underdeveloped country can hope to move from the condition of stagnation to one of self-sustained growth if the agricultural sector is developed so that, surplus labour force is absorbed by the new industries. Omowale (1979) also viewed agriculture as a means of reducing dependence on certain importations, curtailing food price increase, earning foreign exchange, absorbing many new entrances to labour market and increasing farmer's income. Helleiner (2006) asserts that, no matter how much development and structural transformation is achieved, agriculture will still remain dominant in the economy for many decades to come. For many other developing countries, agriculture remains the gate way to several desired ends which includes poverty reduction, rural transformation, employment generation, food security and improved national health profile of the citizenry (Okpanachi, 2004).

More so, agriculture provides the bulk of capital required for industrial take off in many West African countries. Furthermore, agricultural export provides the necessary foreign exchange required for the purchase of necessary raw materials, manufactured goods and capital equipment for the country (Ogbole, 2006). Egbuna (2003) posited that over the past two or three decades, the dominant role of agriculture in the economy, especially in terms of ensuring food security, gave way to massive importation of basic food items especially grains like rice, beans and millet. This is a clear indication that the agricultural sector needed more attention to keep pace with the demand for its products. Emeka (1992) disclosed that production of staples such as millet, maize and beans rose by 25% from 24.91 million tons in 1987 to 30.37 million tons in 1990. Fishery production rose to 362,000 tons in 1989, from 254,000 tons in 1987. CBN annual report (1992), opined that the above increase in food production was as a result of

increased efforts of extension service agencies to improve efficiency in the procurement and distribution of essential farm inputs. Agriculture's contribution to GDP in Nigeria is very significant despite the declining productivity of the sector. From 60% of GDP in 1960 and an average of 58.8% between 1960 and 1969, the sector's contribution to GDP stood at 35.4%, 40.9%, 39.0%, 34.0% and 41.0% of GDP in 1980, 1985, 1990 and 2000 respectively. The period from 2000-2004 recorded an average of 40% contribution of agriculture to GDP while in the year 2006; agriculture contributed 41.8% to GDP (CBN, 2006).

According to World Bank Development Report (2007), agricultural and rural sector had suffered neglect and under investment in the last twenty years. The World Bank in its development report called for greater investment in agriculture in developing countries. It warned that the sector must be placed at the centre of development agenda of the countries if the goals of reducing poverty and hunger by 2015 were to be realized.

The Concept of Taxation

Taxation has always been an issue for the government and taxpayers alike from the early years of civilization. The issue of taxation has generated a lot of controversy and severe political conflicts over time. According to its importance, several economic theories have been proposed to run an effective system. Atawodi & Ojeka (2012) see taxation as the process by which the sovereign, through its law making body, raises revenues used to defray expenses of government, a means of government increasing its revenue under the authority of the law, purposely used to promote welfare and protection of its citizenry, and the collection of the share of individual and organizational income by a government under the authority of the law.

Iwuji (2011) defines tax as a statutory compulsory contribution imposed by government exacted from a person's or entity's income, property or transaction for the purpose of funding governance. A tax can either be of three basic structures; proportional, regressive or progressive. Tax is said to be proportional when the taxpayer is levied an amount that is an indirect proportion of his income. A regressive tax is one that charges a higher rate to persons receiving lower income, and finally a progressive tax levies a higher rate to higher income earners.

Nigeria runs a tripartite tax administration system where tax assessment and collection is presently carried out through the revenue collection agencies of the State and Federal Governments of Nigeria: the State Board of Internal Revenue (SBIR) and the Federal Inland Revenue Service (FIRS) and the tax administration in Nigeria is basically imposed through Acts of the National Assembly.

Taxation is also seen as a burden which every citizen must bear to sustain his or her government because the government has certain functions to perform for the benefits of those it governs. A précised definition of taxation by Farayola (1987) is that taxation is one of the sources of income for government, such income as used to finance or run public utilities and perform other social responsibilities. Ochiogu (1994) defines tax as a levy imposed by the government against the income, profit or wealth of the individuals and corporate organizations.

According to Adams (2001) taxation is the most important source of revenue for modern governments, typically accounting for ninety percent or more of their income. Taxation is seen by Aguolu (2004), as a compulsory levy by the government through its agencies on the income, consumption and capital of its subjects. These levies are made on personal income, such as

salaries, business profits, interests, dividends, discounts and royalties. It is also levied against company's profits petroleum profits, capital gains and capital transfer. Whereas, Ojo (2008) stresses that, taxation is a concept and the science of imposing tax on citizens. According to him, tax is itself a compulsory levy which is required to be paid by every citizen. It is generally considered as a civic duty. The imposition of taxation is expected to yield income which should be utilized in the provision of amenities, both social and security and creates conditions for the economic well being of the society.

Okon (1997) states that income tax can be regarded as a tool of fiscal policy used by government all over the world to influence positively or negatively particular types of economic activities in order to achieve desired objectives. The primary economic goals of developing countries are to increase the rate of economic growth and hence per capita income, which leads to a higher standard of living.

Progressive tax rate can be employed to achieve equitable distribution of resources. Government can also increase or decrease the rates of tax, increase or decrease the rate of capital allowances (given in lieu of depreciation) to encourage or discourage certain industries (e.g. in the area of agriculture, manufacturing or construction) or may give tax holidays to pioneer companies. Income tax therefore can be used as an agent of social change if employed as a creative force in economic planning and development.

Concept of Government Expenditures

Government expenditure is defined as the expenses incurred by the government in carrying out its responsibilities, i.e. in the provision of social services and defense, to mention just a few. (Owoputi & Alayande, 2010), defined government expenditure as those expenses and expenditures incurred by government in the course of maintaining herself, the society and improving economy.

Economic growth refers to increase in a country's potential GDP, although this differs depending on how national product has been measured. Economic growth must be sustained for a developing economy to break the circle of poverty. Countries usually pursue fiscal policy to achieve accelerated economic growth. (Tanzil, 1994) observes that fiscal policy applies to the use of fiscal instruments (taxation and spending) to influence the working of the economic system in order to maximize economic welfare with the overriding objective of promoting long-term growth of the economy. Perhaps, the aspect of public finance that has received much attention in the literature, debate and empirical analysis is the economic effects of public expenditures. Many support a large public expenditure on the ground that it puts money into circulation, increased investment and employment and reduces tax averseness.

Review of the Existing Tax Policies and Reforms in Nigeria

Over time, Nigeria's fiscal policy measures have been largely driven by the need to promote such macroeconomic objectives as promoting rapid growth of the economy, generating employment, maintaining price levels and improving the balance-of-payment conditions of the country. Although policy measures change frequently, these objectives have remained relatively constant.

The major tax laws in existence as of September 2003, and various related amendments include; Company Income Tax Act of 1990, Value-Added Tax Act of 1993, Customs and Excise Management Act of 1990, Personal Income Tax Act of 1993, Capital Gains Act of 1990,

Petroleum Profits Tax Act of 1990, Stamp Duties Act of 1990; and Taxes and Levies (Approved List for Collection) Act of 1998 (Odusola, 2006).

All laws currently in effect date from the military regime. The civilian regime, which has ruled the country since 1999 is yet to enact tax laws despite critical pending issues. With the exception of the 1999 Constitution, the laws have been amended on a yearly basis in conjunction with the annual budget to correct possible loopholes and to promote their use as macroeconomic management instruments.

Odusola (2006) further observed that in line with fiscal federalism, court jurisdiction over tax matters reflects the three tiers of government. The federal high courts have jurisdiction over company income tax, petroleum profit tax, custom and excise duties as well as stamp duties and corporate capital gains tax, and education tax. Personal income tax (PIT) and capital gains tax and stamp duties payable by individuals are legislated by the federal government, but collected by state authorities. Since the federal government is not a party to these taxes, their adjudication should fall on the state. The fact that any appeal to the VAT tribunal is handled by the Court of Appeal confirms that VAT adjudication is levied with the federal government. Taxes collected by the local government are under the jurisdiction of the magistrate courts.

Theories of Taxation and Expenditures

According to Bhartia (2009), a taxation theory may be derived on the assumption that there need not be any relationship between tax paid and benefits received from state activities. Over time, various theories of taxation have been propounded, but this study presents three of those theories and is discussed as follows:

Benefit Theory of Taxation

According to this theory, the state should levy taxes on individuals according to the benefit conferred on them. The more benefits a person derives from the activities of the state, the more he/she should pay to the government. If, in accordance with the “benefits theory of taxation,” we conceive of taxes as payments in exchange for government benefits, perhaps states should be obliged to confer personal tax benefits on residents who contribute to their tax coffers (Bukie & Adejumo, 2013). The benefits theory would imply that a resident should be able to collect personal tax benefits to the extent that her tax payments to the source state exceed the money value of any source state government benefits she already receives, including infrastructure, regulated labour and capital markets, and so on. Although intuitively attractive, the benefits theory of taxation suffers from several major draw backs.

Ability- to-Pay Principle of Taxation Theory

The most popular and commonly accepted principle of equity or justice in taxation is that citizens of a country should pay taxes to the government in accordance with their ability to pay. Rather than the benefits principle, the “ability-to-pay principle” generally dominates modern equity discussions. Under the ability to pay principle, people with higher incomes should pay more taxes than people with lower incomes. It appears very reasonable and just that taxes should be levied on the basis of the taxable capacity of an individual. For instance, if the taxable capacity of a person A is greater than the person B, the former should be asked to pay more taxes than the latter. It seems that if the taxes are levied on this principle as stated above, then justice can be achieved. But our difficulties do not end here (Sadmo, 2004). The fact is that when we put this theory into practice, our difficulties actually begin. The trouble arises with

the definition of ability to pay. The economists are not unanimous as to what should be the exact measure of a person's ability or faculty to pay.

Diffusion Theory of Taxation

According to diffusion theory of taxation, under perfect competition, when a tax is levied, it gets automatically equitably diffused or absorbed throughout the community. Advocates of this theory, describe that when a tax is imposed on a commodity by state, it passes on to consumers automatically. Every individual bears burden of tax according to his ability to bear it. Advocates of this theory assume perfect competition in the market but in the world of reality, it is imperfect competition which prevails (Sadmo, 2004). If tax gets automatically diffused through the community, then most of the worries of a finance minister will be over. He will simply impose tax and collect money from people without worrying about final resting place of a tax. In actual practice we find that taxes do not get distributed equally. Some taxes remain where they are imposed first and some are partly or wholly shifted on to final consumers. Diffusion theory of taxation has however been criticized. The diffusion theory of taxation has never gained any importance in the world of reality. It has never been seen that a tax gets automatically equitably distributed among people. It is true that in some taxes, diffusion or absorption does take place but that too is not throughout the community. Accordingly, another criticism of the theory of taxation is that there are few taxes like income tax, inheritance tax, toll tax in which there is no absorption at all.

Adolph Wagner's Theory of Government Expenditures

The earliest theory advanced on public expenditure is that of Adolph Wagner in 1876 which came to be known as "Wagner's law". He propounded the "law of increasing expansion of public and particularly states activities" which is referred to as the "law of increasing expansion of fiscal requirements". The law suggests that the share of the public sector in the economy will rise as economic growth proceeds, owing to the intensification of existing activities and extension of new activities. According to Wagner, social progress has led to increasing state activity with resultant increase in public expenditure. He predicted an increase in the ratio of government expenditure to national income as per capita income rises. It is the result of growing administrative and protective actions of government in response to more complex legal and economic relations, increased urbanization, and rising cultural and welfare expenditures. According to Musgrave & Musgrave (1988), however, it is not fruitful to seek an explanation for the total expenditure. Tests carried out by various researchers have shown that the increase in expenditure is far more complex than is evident from the tests carried out on empirical data. Therefore according to the m, it may be far more rewarding to adopt a disaggregated approach (an approach which divides the study of expenditures of government) through a study of expenditures of government on capital formation, consumption and transfer payments. Irving (1968) used the law and came up with a different view (Akogwu, 2007). He opined that public expenditure (E) is an increasing function of per capita gross national product (GDP).

Similarly, Essien (2005) carried out studies and employed modern econometric techniques, He posited that even though the variables public expenditure and economic growth were found to be stationary, that is, integrated of order (1), and they were not co integrated. Thus the long run tendency for public sector spending whether as a proportion of total output, its per capita value or as its singular definition, to grow with income could not be established. He therefore concluded that he found no evidence to support Wagner's law using Nigeria data.

On the contrary, earlier study carried out by Obiechina (2007), established a more than unity income elasticity of public expenditure for Nigeria. In spite of all challenges by scholars, Wagner's law has endured as the premier generalization about the behaviour of government spending (Akogwu, 2007). Any time there is need for important economic decision making on expenditure, policy makers and economic advisers still use the Wagner's law as bases for their decision. Representing Wagner's law functionally, $TGE = f(EG)$ where TGE is total government expenditure and EG is total national output.

Empirical Literatures on the Impact of Fiscal Policy on Agricultural Sector

There have been a number of valuable studies on the relationship between agriculture and economic growth. Oji-Okoro (2011) is of the opinion that agriculture resource has been an important sector in the Nigerian economy in the past decades, and is still a major sector despite the oil boom. The pervasive influence of agriculture on Nigeria's economic and social development has also been articulated by Oluwasami (1966). Ogen (2007) believes that the agricultural sector has a multiplier effect on any nation's socio-economic and industrial fabric because of the multifunctional nature of agriculture.

Fotros (1996) has studied the effect of monetary and fiscal policies on the main variables of the agricultural sector with OLS 1971-1991. Results show the government's fiscal policy has a positive effect on agricultural production. Government fiscal and monetary policy had a positive effect on agricultural investment. Moghaddasi (2008) has examined the major economic variables, monetary and fiscal policies in agricultural sector by using autoregressive integration vectors for the 1971-1997. He concluded that the short-term effect of monetary policy on the agricultural sector is more than fiscal policy, in the long term effects of monetary policy and fiscal policy acts.

Ogwuma (1981), carried out some studies on public expenditure in agricultural sector using econometric analysis. Based on his report, agricultural financing in Nigeria shows positive relationship between interest rate and loanable funds on the level of agricultural output. Using time series data, Lawal (2011) attempted to verify the amount of federal government expenditure on agriculture in the thirty-year period 1979 to 2007. Significant statistical evidence obtained from the analysis showed that government spending does not follow a regular pattern and that the contribution of the agricultural sector to the GDP is in direct relationship with government funding to the sector. The findings of Aigbokha (2003) showed that government capital allocation and expenditure to agriculture is relatively low and that actual expenditure falls short of budgeting expenditure and the rate of under spending is usually higher for agriculture than for other economic sectors. Emeka (2007) reported that a large proportion of the funds allocated to agriculture do not go directly to farmers.

Adofu et al (2012) in their work; effects of government budgetary allocation to agricultural output in Nigeria (1995-2009), show that the percentage, degree or amount of budgetary allocation to agricultural sector has a positive relationship with the total agricultural production in the country. This implies that the more the public spending on agricultural sector, the more the improvements in the performance of the agricultural sector. Also, a large degree of change in agricultural output is accounted for by change in budgetary allocation to agricultural sector. Thus, budgetary allocation to agriculture has a large impact on agricultural output.

International Food Policy Research Institute (2008) wrote on public spending on agriculture in Nigeria (2001-2005). An empirical analysis was employed. Findings revealed that public

spending on agriculture was exceedingly low. Less than 2 percent of total Federal expenditure was allotted to agriculture during 2001 to 2005, far lower than spending in other key sectors such as education, health, and water. This spending contrasts dramatically with the sector's importance in the Nigerian economy and the policy emphasis on diversifying away from oil, and falls well below the 10 percent goal set by African leaders in the 2003 Maputo agreement.

Nigeria also falls far behind in agricultural expenditure by international standards, even when accounting for the relationship between agricultural expenditures and national income. The spending that is extant is highly concentrated in a few areas. They recommended that there is an urgent need to improve internal systems for tracking, recording, and disseminating information about public spending in the agriculture sector.

Ariyo (1993) carried out an evaluation study on the desirability of Nigerian's fiscal profile between 1970 and 1990. The findings from this study suggest that the structures of government expenditure are inherently unsustainable by the country's resources profile. The major cause attributed to this was the phenomenal increase in government expenditure financed through debt raised from both internal and external sources. This has consequently led to persistent and unsustainable annual deficits. The result also suggested that the structural adjustment programme (SAP) implemented in 1986 has so far not been of much assistance in addressing the problem.

METHODOLOGICAL FRAMEWORK

Data Measurement and Sources

The paper employs a non-experimental research design, due to the fact that it combines the theoretical consideration with empirical observation. Annual secondary data covering 1981 to 2013 was used for the analysis. The data was collected from Central Bank of Nigeria (CBN), and National Bureau of Statistics (NBS), and from other literatures.

Method of Analysis

To examine the long-run and the short-run relationship between fiscal policy and agricultural output growth, this study utilized the Co-integration and Error-Correction Methodology (ECM). The Co-integration approach provides information about the long run relationship between the variables, while the Error-Correction Method (ECM) provides information about the short-run relationship between the variables. The error correction term provides information on the speed of adjustment from the short run disequilibrium to the long run equilibrium in the event of any deviations from the long run equilibrium.

Model specification

Taking inference from the empirical findings and theories, which has been derived from the theoretical exposition of the Cobb-Douglas production theory and Adolf-Wagner's theory of government expenditure, and then making agriculture central to the equation, a model was drawn up to determine agricultural sector growth in Nigerian context. The study adopted Okezie, Nwosu and Njoku (2010) model as specified below:

$$VAO = f(CED, VAT, GACE) \text{-----} 1$$

Thus, linearizing equation (1), we obtain:

$$VAO = \beta_0 + \beta_1 CED + \beta_2 VAT + \beta_3 GACE + \mu_t \text{-----} 2$$

β_0 , is intercept, β_1 to β_3 are the slope of the coefficients of the independent variables to be determined where μ is the error term at time t. Equation (2) is the long run regression equation to obtain the long run relationship between the variables.

Suffice it to reiterate that co-integration provides the theoretical underpinning for error-correction model. Specifying equation 3 in the spirit of error-correction model, we have:

$$\Delta \log VAO_t = \Delta \log \alpha + \sum_{i=1}^m \beta_1 \Delta \log CED_{t-i} + \sum_{i=1}^n \beta_2 \Delta \log VAT_{t-i} + \sum_{i=1}^0 \beta_3 \Delta \log GACE_{t-i} + \delta ECT_{t-i} + \varepsilon_t \text{----} 3$$

Where;

α = is the autonomous parameter (or the intercept)

VAO= Value of Agricultural Output (₦m)

GACE= Total Government agricultural capital expenditure (₦m)

VAT = Value added taxes

CED = Customs and excise duties

ECM_{t-1} = the error correction term (ECT_{t-1}) of the short run equation (equation 3)

ε_t = represents the stochastic error term.

We then differentiate partially with respect to the log of each variable to obtain elasticity of VAO and *a priori* sign expectation of equation (3);

$$\frac{\partial \log VAO}{\partial \log CED_t} = \left(\frac{\partial \log VAO}{\partial \log CED_t} \right) \left(\frac{CED_t}{VAO_t} \right) = \beta_1 < 0 \text{-----} 4$$

$$\frac{\partial \log VAO}{\partial \log VAT_t} = \left(\frac{\partial \log VAO}{\partial \log VAT_t} \right) \left(\frac{VAT_t}{VAO_t} \right) = \beta_2 < 0 \text{-----} 5$$

$$\frac{\partial \log VAO}{\partial \log GACE_t} = \left(\frac{\partial \log VAO}{\partial \log GACE_t} \right) \left(\frac{GACE_t}{VAO_t} \right) = \beta_3 > 0 \text{-----} 6$$

$$\frac{\partial \log VAO}{\partial \log ECT_{t-1}} = \left(\frac{\partial \log VAO}{\partial \log ECT_{t-1}} \right) \left(\frac{ECT_{t-1}}{VAO_t} \right) = \delta < 0 \text{-----} 7$$

EMPIRICAL RESULTS AND DISCUSSION OF FINDING**Unit Root / Stationarity Test Results**

To avoid the possibility of having spurious regression results, the variables are tested for stationarity to ascertain the order of their integration. The Augmented Dickey-Fuller unit root stationarity test was utilized. This is to find out if the relationship between economic variables is spurious or nonsensical.

Table 4.1: Summary of Unit Root Test Results

| Variables | ADF Test Statistic(at first difference) | Order of Integration |
|------------------|------------------------------------------------|-----------------------------|
| <i>VAO</i> | -7.692083(-4.273277)* | <i>I(0)</i> |
| <i>VAT</i> | -3.497030(-3.286909)*** | <i>I(1)</i> |
| <i>CED</i> | -3.693496(-3.622033)** | <i>I(1)</i> |
| <i>TGEA</i> | -3.766973(-3.580623)** | <i>I(0)</i> |

Source: Authors Computation, 2015 (Eview-7.0): Note: MacKinnon critical values for the rejection of hypothesis of unit root are in parenthesis in Column 2 and the tests include intercept with trend; * *significant at 1%*; ** *significant at 5%*; *** *significant at 10%*; *Mackinnon critical*

From the table 4.1 above, it was discovered that VAO and TGEA were found stationary at levels. That is, the ADF test statistics of -7.692083 and -3.766973 in absolute values are greater than the tabulated values of -4.273277 and -3.580623 at 1% and 5% level of significance respectively. However, VAT and CED were found stationary at first difference as seen in table 4.1 also. It shows that their respective ADF test statistics of -3.497030 and -3.693496 in absolute values are greater than the critical values of -3.286909 and -3.622033 respectively at 10% and 5%. These stationary variables were subsequently used for further analysis in the computation of our results.

The next specification test that shall be computed is the co-integration test of these variables

Co-integration Estimate

If two or more time series are not stationary, it is important to test whether there is a linear combination of them that is stationary. Economically, variables are co-integrated if they have a long term, or equilibrium relationship between them.

Table 4.2: Results of Johansen Co-integration Test

Date: 07/14/15 Time: 20:04
 Sample (adjusted): 1996 2013
 Included observations: 18 after adjustments
 Trend assumption: Linear deterministic trend
 Series: VAO CED VAT TGEA
 Lags interval (in first differences): 1 to 1

Unrestricted Co-integration Rank Test (Trace)

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|------------------------------|------------|--------------------|------------------------|---------|
| None * | 0.785274 | 58.01243 | 47.85613 | 0.0042 |
| At most 1 * | 0.621896 | 30.32136 | 29.79707 | 0.0435 |
| At most 2 | 0.438096 | 12.81480 | 15.49471 | 0.1218 |
| At most 3 | 0.126728 | 2.439154 | 3.841466 | 0.1183 |

Trace test indicates 2 co-integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|------------------------------|------------|------------------------|------------------------|---------|
| None * | 0.785274 | 27.69107 | 27.58434 | 0.0485 |
| At most 1 | 0.621896 | 17.50655 | 21.13162 | 0.1494 |
| At most 2 | 0.438096 | 10.37565 | 14.26460 | 0.1884 |
| At most 3 | 0.126728 | 2.439154 | 3.841466 | 0.1183 |

Max-Eigenvalue test indicates 1 co-integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 4.2 shows the results of the co-integration test, using the Johansen methodology. The results show that trace statistics test rejected the null hypothesis of no co-integration among the variables at the 5 percent level of significance. The trace statistics indicates 2 co-integrating equations at the 5% level of significance. The co-integration test results are therefore uninformative about the number of co-integrating relations among the variables. Max-Eigen test also indicates 2 co-integration equations at the 5 percent level co-integrating equation.

Model Estimation and Discussion of Findings

From table 4.4, the study shall adopt AIC- Akaike information criterion model selection for building the error correction model. The AIC shows that one lag selection was adopted for the study.

Table 4.3: Lag Selection Criteria

VAR Lag Order Selection Criteria

Endogenous variables: VAT CED

Exogenous variables: C VAO

TGEA

Date: 07/14/15 Time: 20:08

Sample: 1981 2013

Included observations: 19

| Lag | LogL | LR | FPE | AIC | SC |
|-----|-----------|-----------|-----------|-----------|-----------|
| 0 | -448.1072 | NA | 1.98e+18 | 47.80076 | 48.09900 |
| 1 | -427.8209 | 29.89551* | 3.64e+17* | 46.08641* | 46.58349* |

* indicates lag order selected by the criterion

Indicates lag order selected by the criterion. Log likelihood., LR: likelihood ratio, sequential modified LR test statistic (each test at 5% level), FPE: Final predictor error., AIC: Akaike information criterion., SC: Schwarz information criterion.

The ECT (or ECM) result shows how the system adjusts to the long-run equilibrium implied by the co-integrating equation 3. A crucial question concerning the ECT is about the optimal lag for the right-hand-side variables. Hendry's (1987) methodology of "general-to-specific" was employed via stepwise regression procedure (*through the elimination of those variables and their lags that are highly not significant*), before finally arriving at an interpretable model. The elimination process shall be carried out until the coefficient of the error correction term ECT (-1) have the expected negative sign, less than unity and it is highly significant at the 1.0 per cent level of significance. Accordingly, this led to an initial estimation of an ECM with three lagged differences of the explanatory variables, a constant term and error correction term lagged one (ECM_{t-1}). The dimensions of the parameter space were then reduced to a parsimonious ECT specification by using omitted and redundant variable test to exclude the statistically insignificant lags. The results of the reduced short-run dynamic fiscal policy model are presented in table 4.4.

Table 4.4: Parsimonious (Short run) Error Correction Model Result

Dependent Variable: LOG(VAO)

Method: Least Squares

Date: 07/14/15 Time: 20:15

Sample (adjusted): 1995 2013

Included observations: 19 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|-----------|
| C | 8.693762 | 0.329327 | 26.39858 | 0.0000 |
| LOG(CED) | -0.151062 | 0.074509 | -2.027431 | 0.0654 |
| LOG(CED(-1)) | -0.164590 | 0.069461 | -2.369534 | 0.0354 |
| LOG(VAT) | 0.482577 | 0.077338 | 6.239831 | 0.0000 |
| LOG(VAT(-1)) | 0.491498 | 0.084836 | 5.793518 | 0.0001 |
| LOG(TGEA(-1)) | -0.097711 | 0.021272 | -4.593370 | 0.0006 |
| ECT(-1) | 0.868986 | 0.164972 | 5.267471 | 0.0002 |
| R-squared | 0.998884 | Mean dependent var | | 15.20089 |
| Adjusted R-squared | 0.998326 | S.D. dependent var | | 0.886966 |
| S.E. of regression | 0.036291 | Akaike info criterion | | -3.517163 |
| Sum squared resid | 0.015805 | Schwarz criterion | | -3.169212 |
| Log likelihood | 40.41305 | Hannan-Quinn criter. | | -3.458276 |
| F-statistic | 1789.960 | Durbin-Watson stat | | 2.123342 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Authors Computation, 2015 (Eviews-7)

$$\log(\text{VOA}) = 8.69 - 0.16 \log \text{CED} + 0.49 \log \text{VAT} - 0.09 \log \text{TGEA} + 0.86 \text{ECT} \text{-----} 8$$

$$\text{SEE} = \quad 0.32 \quad 0.06 \quad \quad 0.08 \quad \quad 0.02 \quad \quad 0.16$$

$$t^* = \quad 26.2 \quad -2.36 \quad \quad 5.79 \quad \quad -4.59 \quad \quad 5.26$$

$$F^* = 1789; \text{Prob (F-statistic)} = 0.000000$$

$$R^2 = 0.9988; \text{Adj.}R^2 = 0.9983; \text{DW} = 2.12$$

As expected, the error-correction term (ECT_{t-1}) is expected to be significant and less than unity. This result substantiates the findings of co-integration among the variables reported earlier, but more importantly, it suggests that one cannot overlook the co-integrating relationship among variables in the model; otherwise this could introduce misspecification in the underlying dynamic structure. The absolute value of the coefficient of the error correction term indicates that about 86.89 percent of the disequilibrium in the agricultural sector - fiscal policy model is offset by short run adjustment within a year. In this case, the full adjustment is achieved, and takes twelve months to complete the cycles. Thus, to maintain a long-run equilibrium, it is important to reduce the existing disequilibrium overtime.

Moreso, the parsimonious model is free of serial correlation going by the value of the Durbin-Watson statistics of 2.12. The coefficient of determination (R-square) which was used to measure the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction, that is, 99.88percent change in VOA was due to CED, VAT and TGEA collectively, while 0.12percent unaccounted variations was captured by the white noise error term. It showed that CED, VAT and TGAE had strong and significant impact on the VAO in Nigeria.

Discussion of Findings

The parameter estimate for custom and excise duties (CED) though statistically significant, relates negatively with volume of agricultural outputs (VAO). It shows that the amount of tax imposed on agricultural exports has not improved its productions and thus has a dampening multiplier effects on its growth. The function thus shows that a 1% change in CED, on the average holding other factors constant, reduced VAO by 0.16million between 1981 and 2013.

However, the parameter estimate of VAT was found to have influenced the growth of VAO positively and significantly. It shows that the amount of VAT imposed on agricultural outputs has improved the growth of the agricultural produce. The function thus shows that a 1% change in VAT, on the average, had enhanced the growth of agricultural sector by 0.49 million between 1981 and 2013.

The total government expenditures on agricultural sector were also found to be negatively related to agricultural growth in Nigeria. It showed that the amount of government expenditures towards the growth of the sector has not been favorable. This is in-line with the findings of Aigbokha (2003) who in their study stressed that government capital allocation and expenditure to agriculture is relatively low and that actual expenditure falls short of budgeting expenditure and the rate of under spending is usually higher for agriculture than for other economic sectors. Emeka (2007) reported that a large proportion of the funds allocated to agriculture do not go directly to farmers. This is also in agreement with International Food Policy Research Institute (2008) who wrote on public spending on agriculture in Nigeria (2001-2005). Their findings

revealed that public spending on agriculture was exceedingly low. Less than 2 percent of total Federal expenditure was allotted to agriculture during 2001 to 2005, far lower than spending in other key sectors such as education, health, and water. Nigeria thus falls far behind in agricultural expenditure by international standards, even when accounting for the relationship between agricultural expenditures and national income. The spending that is extant is highly concentrated in a few areas. They recommended that there is an urgent need to improve internal systems for tracking, recording, and disseminating information about public spending in the agricultural sector. The function shows that a 1% change in TGEA, on the average, had reduced the VAO by 0.09million between 1981 and 2013

CONCLUSION AND RECOMMENDATIONS

This research work examined the impact of fiscal policy on agricultural output in Nigeria from 1981 to 2013. From the nominal point of view, taxes and government spending on agriculture is on the increase while empirical evidence revealed inadequate performance of the sector. It is in line with this argument that this study was carried out in order to investigate the extent to which government expenditure and taxes had influenced agricultural output in Nigeria. Finding from the results of this study suggest the overriding importance of intensifying fiscal policy measures by the Nigerian government, that will enhance increased agricultural output and the result of this study would provide useful guidelines, particularly for the government and policy makers in developing policy framework effectively and planning future strategies for agricultural development. Subsequently, future fiscal policies on agricultural development should be streamlined and implemented coherently.

Other specific recommendations are:

- Government customs and excise duties on agricultural exports should be stream-lined and more incentives should be given to rural farmers since they covered the larger population in agricultural sector.
- Government should increase her budgetary allocation to this sector in a consistent manner because of its importance to the national economy, hoping that with proper monitoring of fund, it would contribute more significantly to the economy of the country. An effective utilization of such funds is also advocated and all areas of wastage blocked. All organs of the Government should exhibit good corporate governance and transparency.

REFERENCES

- Adams, C. (2001) *For Good and Evil; The impact of Taxes on the Course of Civilization*, U. S. A; Madison Publishers
- Aguolu, Osita. (2010), "Tax Reform in Nigeria: Unrealized Expectations. *Bulletin for International Taxation*, 64(1): 61-67
- Akogwu,G.(2007). An Analysis Of Government expenditure On Economic growth And Its Contribution To GDP In Benue State University Journal of Economics and Finance,2(20)
- Al-yousif Y, (2000). Does government expenditure inhibits or promote economic growth; some empirical evidence from Saudi Arabia, *Indian economic journal*

- Arifalo and Gboyega Ajayi (Eds) (2003). *Essays in Nigerian Contemporary History*. Lagos First Academic Publishers.
- Ariyo, A. (1993). "An Assessment of the Sustainability of Nigeria's Fiscal Deficit, 1970-1990". CBN Statistical bulletin, (2008). Annual Report and statement of account " PP 97-99
- Atawodi, O .W.,& Ojeka, S.A(2012)Relationship between Tax Policy, Growth of SMEs and the Nigerian Economy. *International Journal of Business and Management*; 7(13)
- Bernard O.A. (2009). The effect of Agricultural Government Expenditure, Government and Economic growth
- Bhatia, H.L., (2009). *Public Finance*. 13th Edn., Vikas Publishing House PVT Ltd., New Delhi.
- Bukie,O.H & Adejumo, T.O.(2013). The effects of Tax Revenue on Economic growth in Nigeria (1970 – 2011) *International Journal of Humanities and Social Science Invention*. 2(6)
- CBN (2004). "Changing the Structure of the Nigerian Economy and Implication for Development". Realm Communication Ltd Lagos. Central Bank Annual Report and Statement of Accounts, 2005.
- Central Bank of Nigeria (2010). *Statistical Bulletin Central Bank of Nigeria*. 2(1), December.
- Ekerete, P. (2000). Assessment of Agricultural contributions to Total Export Marketing in Nigeria. *International Journal of Economics and Development* (1), (2)
- Emeka, M. (1992). "Long Road to Food Security". *Business Concord* Vol.5 No.370
- Essien, A. E. (2005). "A Consistent Macroeconomic Framework for the Agricultural Sector Under the National Economic Empowerment and Development Strategy (NEEDS)". *CBN Bullion* Vol.29, No.4, Oct\Dec.
- Farayola, G.O. (1987). *Guide to Nigerian Taxation*, Ikeja, All Group Nigeria Limited Publishers
- Fei-Ran,M.(2008). Food and Agriculture Organisation Statistical Database. <http://faostat.fao.org>
- Helleiner, A.E. (2006). "Contemporary Economics". 4th Edition. Worth Publishers, Inc, USA.
- Ijaiya G.T. (2000). *Economic Growth in Nigeria: An asymmetry of the Balanced Growth Doctrine in Usman A and Ijaiya GT (eds), selected essays on the contradictions of economic development theories*. Ilorin: Haytee Publishing Co.
- Iwayemi A. (1994), *Perspectives and Problems of Economic Development in Nigeria: 1960-1990*. Ibadan: CEAR. Jones EI, Woolf SS (1969). *Agrarian Change and Economic Development: The Historical Problems* London: Methuen.
- Iwuji, G.I. (2011). *Creating awareness on tax matters for small and medium units*. [PowerPoint Slides]. Retrieved from: <http://www.docstoc.com/docs/19747636/Creating-Small-and-Medium-Enterprises-Tax-Matters-Awareness>
- Jones E..I, Woolf SS (1969). *Agrarian Change and Economic Development: The Historical Problems* London: Methuen. *Journal of Africa Economics*, Vol.2 No.2, October.
- Landau, D. (1986). *Government and Economic Growth in less Developed Countries: An Empirical Study for 1960-1980*. *Economic Development and Cultural Changes* 35, 35-37
- Lawal W.A. (2011). An Analysis Of Government Spending On Agricultural Sector And Its Contribution To GDP In Nigeria. *Int. J. Bus. Soc. Sci.* 2(20).
- Moghaddasi, S (2008). *Agricultural Public Spending in Nigeria*. IFPRI Discussion Paper 00789 September.
- Musgrave, R.A. and Musgrave, B. (1988) *Public Finance in Theory and Practice*. New York, McGraw-Hill Book Company.

- Obiechina, M.E. (2007). Improving the Agricultural Sector toward Economic Development and Poverty Reduction in Nigeria. *CBN Bullion* vol.31, No. 4, Oct.- Dec.
- Odusola, A. F. (2006): Tax Policy Reforms in Nigeria'. A Research work of *UNU-WIDER (United Nations University-World Institute for Development Economies Research)*, Research Paper No. 2006/03 Pg. 1-45
- Ogbole, O. (2006). "Patterns of Economic Growth and Development in Nigeria since 1960" in S.
- Ogen O (2007). "The Agricultural Sector and Nigeria's Development: Comparative Perspective from the Brazilian Agro-Industrial Sector Economy (1960-1995)". *Nebula March 2007@Noble World Archives*.
- Ogwuma, P.A (1981). The growth of the banking Industry in Nigeria, Presented at the Annual Seminar of the Chartered Institute of Bankers of Nigeria, Bankers House, Lagos State.
- Oji-Okoro I. (2011). "Analysis of the contribution of agricultural sector on the Nigerian economic development." *World Rev. Bus. Res.* 1(1):191-200.
- Okezie A. Ihugba, Nwosu C and Njoku A.C (2010). GOVERNMENT EXPENDITURE ON AGRICULTURE AND AGRICULTURAL OUPUT IN NIGERIA (1975-2010). *Journal of Economics and International Finance*, 5(5)
- Okon, E. (1997). *Company Income Tax In Nigeria* (unpublished Monograph) University of Por Harcourt
- Okpanachi, U.M. (2004). "Public Options for Repositioning the Nigerian Agricultural sector" in the food Basket Myth,.: Implication for food Security and Agricultural policy Reform in Nigeria, (ED) Ogiji P. Makurdi, Aboki publishers
- Olaokun, A. (1979). "The Structure of Nigerian Economy". Macmillan Press Ltd. Lagos.
- Oluwasanmi H.A (1966). *Agriculture and Nigeria's Economic Development* Ibadan: Ibadan University Press.
- Omowale, A. I. (1979). "Economics for Professionals". Best Printing Company, Ibadan, Nigeria.
- Sandmo, A. (2004). *The Theory of Tax Evasion: A Retrospective View. Discussion Paper 31/04*, Norwegian School of Economics and Business Administration.
- Ukpong G, Malgwi U (1991). Federal Government Policies in respect of agricultural finances. *CBN Bulletin*, Lagos pp. 47-59.
- World Bank Development Report (2007). *Operation of the Agricultural Credit Support Scheme (ACSS)*" published by the Central Bank of Nigeria.