

Effect of Government Consumptions on Performance of Annual Capital Expenditure in Nigeria

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Abstract

Consumptions, in decades; had taken the highest allocation compared to capital expenditure, as confirmed from the current 2023 appropriation bill that was laid before the national assembly. This study seeks to investigate the effect of government consumptions on performance of annual capital expenditure in Nigeria. Government consumptions was proxied by Administration, Economic services, Social and Community services, and Transfers' consumptions while performance of annual capital expenditure was proxied by aggregate annual capital expenditure. The study employed ex-post facto research design, and used descriptive statistic and ordinary least square regression techniques to analyze the data. Secondary data used were sourced from the Federal Ministry of Finance and the Office of Accountant-General of the Federation, over a period of forty-one years (1981-2021). The data collected were analyzed using Johansen Co-integration test and vector error correction model (VECM). The findings revealed that besides administrative consumption, other explanatory variables economic service consumption, social and community services consumption, and transfers' consumption had positive and significant effect on the performance of annual capital expenditure. The study concluded that changes in the performance of annual capital expenditure are explained by changes in government consumptions. The study suggested, amongst others; that Government should put in place mechanisms, such as adequate internal control system; to reduce wastages in administrative consumption.

Keywords: Government consumptions, Performance, Capital expenditure, Economic services, Social and community services.

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1. INTRODUCTION

One of the duties of government is the provision of services to its populace by way of expenditure. Government expenditure is classified into capital expenditure and recurrent expenditure. The former include spending of government on creating or acquiring non-current assets that are permanent in nature. The benefits of capital expenditure are not immediately reveal in, yet necessary for the development and growth of the economy. These include construction of roads, buildings, health and educational facilities, dams, air and sea ports, et cetera. The recurrent expenditure (hereinafter refers to as government consumptions), on the other hand; is concerned with spending on items consumed for a limited period of time or expenses incurred on a regular basis for the functioning of government machinery. Such items include wages, salaries, consumables like stationery for schools, drugs for health services, national defense,

pensions, cost of governance, among others. Darma (2014) refers to recurrent expenditure as a necessary spending incurred on the purchase of goods and services, payment of wages and salaries and settlement of depreciation on non-current assets for the maintenance of the economy. Nwaeze and Avoaja (2022) described government consumptions as expenses of government which occur regularly throughout the year and include; salaries of employees, expenses on maintenance and repairs of facilities, money spent on administration etc. while referring to capital expenditure as expenses of government on the acquisition of things of permanent nature. Performance could be described as a measure of how well or badly something is done or works. Ghalem *et al.*, (2016) defined performance as the act or process of executing a task or an action. Specifically, performance is a function of effectiveness, efficiency and economy. Effectiveness is an indicator of the degree of goal

attainment; efficiency measures the resources that were consumed to reach the level of achievement while economy focuses on the cost-benefit (Ghalem, *et al.*, 2016). The '3Es' of performance find a veritable start in the public sector - Effectiveness (delivering desired outputs, and even outcomes); Efficiency (using as few inputs as possible to obtain these outputs); and Economy (buying inputs as cheaply as possible). Performance of annual capital expenditure in Nigeria refers to delivering desired goods and services with few resources at minimal cost - the annual capital expenditure.

Nwaeze and Avoaja (2022) posited that government consumptions consist of administrative, economic services and, social and community services consumptions as well as transfers. The administrative consumptions are total amount spent on general administration, defense, internal security and national assembly. Economic services are the aggregate spending on agriculture, construction, transport, communication and other economic services. Social and community services encompassed total expenses incurred by government on education, health and other social and community services. Transfers are the total spending by government on public debt servicing, pensions and gratuities, contingencies/subventions, among others.

Interestingly, a number of studies conducted over the years linked the rise or fall in public spending to several factors including corruption, political regimes, foreign aid, elections, bureaucratic and administrative process, information asymmetries about incumbent government competence of public good provisioning, degree of openness, rising populations and urbanizations, ethnic fractionalizations, external debt servicing burden, fiscal illusion, and income, amongst others (Ayeni *et al.*, 2019; Akpan & Abang, 2013). Other studies focus on effect or impact of either capital or recurrent expenditure on the growth or development of emerging economies, like Nigeria; with polarized outcomes. On one extreme is the group that averred that increase in capital expenditure has long-run positive effect on the growth of a nation's economy (Jideofor *et al.*, 2021; Aluthge *et al.*, (2021); Ahuja & Pandit, 2020; Njarko-Asomani *et al.*, 2019; Awode, 2019; Olayungbo & Olayemi, 2018; Ihugba & Njoku, 2017; Jibrin & Babayo, 2015; Akanbi, 2014; Aigbeyisi, 2013). On the other extreme are the group that maintained that capital expenditure has negative effect on economic growth (Saidu & Ibrahim, 2019). Notwithstanding, which of the arguments may be more convincing, certainly; there is need for further studies. But research in the area of investigating the effect of government consumptions on the performance of annual capital expenditure is rare, hence; the motivation to undertake the study.

1.1 OBJECTIVES

The objectives of the study are:

1. To investigate the effect of administrative consumption on performance of annual capital expenditure in Nigeria.
2. To investigate the effect of economic services consumption on performance of annual capital expenditure in Nigeria.
3. To investigate the effect of social and community services consumption on performance of annual expenditure in Nigeria.
4. To investigate the effect of transfers consumption on performance of annual capital expenditure in Nigeria.

1.2 HYPOTHESES

The hypotheses of the study formulated are as follows:

- H₀₁: Administrative consumption has no significant effect on performance of annual capital expenditure in Nigeria
- H₀₂: Economic services consumption has no significant effect on performance of annual capital expenditure in Nigeria
- H₀₃: Social and community services consumption has no significant effect on performance of annual capital expenditure in Nigeria.
- H₀₄: Transfers consumption has no significant effect on performance of annual capital expenditure in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Government Consumptions

Government consumptions could be described as all government current spending on purchases of goods and services, and compensation of employees. According to Central Bank of Nigeria (CBN), government consumptions are classified under the headings of administration; social and community services; economic services and transfers (Aluthge *et al.*, 2021). Government consumptions includes expenditure measured indirectly (imputed), such as spending by government on such items as administration (overhead cost and payment of salary; infrastructure repairs/maintenance; and social amenities, national security and defense; healthcare delivery; and education; amongst others. On the other hand, government spending on health and education in such areas as building new hospitals or acquiring some hospital equipment, or building new schools; infrastructure and social amenities, such construction of new roads, bridges etcetera, is classified as capital expenditure.

2.1.2 Administrative Consumption

Administrative consumption is the amount spent to keep the mechanisms of government functioning. It includes consumption by government on general administration, defense, internal security and national assembly (Udochukwu & Chukwu, 2019)

2.1.3 Economic Services Consumption

Economic services consumption is expenditure incurred by government on conservation of productive sector of the economy like, agriculture, natural resources, mining, housing and infrastructure that provides an enabling environment for business to thrive (John, 2017).

2.1.4 Social and Community Services Consumption

Government consumption in social and community services refers to government spending on such items as education, health, and other social and community services (Babatunde, 2018). Social and community consumption includes government spending on such item as educational materials, health care supplies, and others for societal wellbeing.

2.1.5 Transfers Consumption

Transfers consumption refers to obligations of government as a result of external financing, employee compensations, contingencies and subventions, and other related expenditure. Transfers consumption includes public debt servicing, pensions and gratuities, contingencies/subventions, among others (John, 2017).

2.1.6 Annual Capital Expenditure

Generally, annual capital expenditures are payments made twelve-monthly for goods or services that are recorded or capitalized on an organization's statement of financial position instead of being expensed in the statement of financial performance. On a more specific government perspective, annual capital expenditure refers to spending by government on project(s) whose benefits are derived beyond a year. In other words, annual capital expenditure focuses on expenses on capital projects and infrastructure development of an economy. In Nigeria, the government annual capital expenditure covered major infrastructures in the economic within a period, such as construction of roads, dams, provision of agricultural equipment, power supply, industrialization, building of hospitals, schools, et cetera. (John, 2017) posited that the federal government capital expenditure is another means of stimulating economic growth of Nigeria.

2.2 Empirical Review

Nwaeze and Avoaja (2022) examined the impact of government recurrent expenditure on economic growth of Nigeria for the period 1981–2020. They employed Augmented Dickey-Fuller (ADF) unit root stationarity test of the variables and Johansen Co-integration test to test the long run relationship among the variables. All variables in the model became stationary at I(1), thus the Vector Error Correction Model (VECM) was used to estimate the short run and the long run analysis of the study. The findings of their study revealed, among others, that government recurrent expenditure on administration, health, agriculture and pensions and gratuities had negative and

insignificant impacts on economic growth in the short run while government recurrent expenditure on education had a negative and insignificant impact on economic growth of Nigeria in both the short run and the long run. The study therefore, recommended amongst others that Government recurrent expenditure on administration especially in the area of security should be sustained to improve the enabling environment and hence economic growth. The educational and health sectors require increased funding to take care of the workforce of the sectors in terms of salaries, allowances and other welfare packages in order to enhance productivity.

Jideofor *et al.*, (2021) investigated the Impact of Public Capital Expenditure on Economy Growth of Nigeria. Unit root test, using the Augmented Dickey fuller (ADF) method was employed to determine its time series characteristics. The variables' socio-economic characteristics were obtained via the use of descriptive statistics. Co-integration and regression analysis were carried out utilizing the ARDL-Autoregressive Distributed Lag (ARDL) method. The findings showed that public capital investment has a negative and statistically significant impact on the Nigerian economy. The study, thus, recommended that the government should manage capital spending in an appropriate manner in order to enhance the nation's productive capacity and accelerate economic development.

Aluthge *et al.*, (2021) investigated the impact of Nigerian government expenditure on economic growth in Nigeria, 1970-2019. The paper employs Autoregressive Distributed Lag (ARDL) model. To ensure robustness of results, the study accounts for structural breaks in the unit root test and the co-integration analysis. The key findings revealed that capital expenditure has positive and significant impact on economic growth both in the short run and long run while recurrent expenditure does not have significant impact on economic growth both in the short run and long run. The study recommended that government should increase the share of the capital expenditure especially on meaningful projects that have direct bearing on the citizen's welfare. Government should also improve the spending patterns of recurrent expenditure through careful reallocation of resources toward productive activities that would enhance human development in the country.

Awode (2019) examined the rising government expenditure in Nigeria: Any influence on growth? Whether government expenditure in Nigeria has had any influence on growth in the economy. The study focuses primarily on capital and recurrent types of government expenditure, and these were regressed against the real gross domestic product. Secondary time series data ranging from 1981 to 2016 obtained from the CBN Statistical Bulletin were used. Having

established that the series were co-integrated in the long run through the Co-integration technique of Johansen, the study then used the error correction and Granger causality techniques to achieve its objectives. Results indicated that recurrent expenditure exerts a significant positive influence on real GDP, while the influence of capital expenditure on real GDP turned out negative. The Granger causality test revealed that both capital and recurrent expenditures Granger cause real GDP. The study, therefore, advocates for a strong monitoring and evaluation system of the way in which government funds, especially those intended for capital projects, are being used, so as to bring about a meaningful influence on the economy.

Nyarko-Asomani *et al.*, (2019) examined public expenditure and their relationship with economic growth in Ghana from 1980-2017. Stock-Watson Dynamic OLS estimation was employed to analyze the government expenditure-economic growth relationship, and Granger Causality test to determine the direction of causality among these expenditure variables and economic growth. The findings confirmed capital expenditure as a growth-enhancing variable while non-interest and interest-payments recurrent expenditures are detrimental to the growth of the economy. Hence, the study suggested amongst others that government should step-up its capital expenditure especially on projects with significant linkages to other sectors,

Babatunde (2018) studied the effect of government spending on infrastructure and economic growth in Nigeria for the period 1980-2016. Unit root and co-integration tests conducted used Augmented Dickey-Fuller and Phillip-Perron model while weighted least square regression and vector error correction model used to analyze the data. The findings indicated that government spending on transport and communication, education and health infrastructure had significant effects on economic growth; while spending on agriculture and natural resources infrastructure recorded a significant inverse effect on economic growth in Nigeria. An element of fiscal illusion was observed in the government spending on agriculture and natural resources which indicated that government is not contributing as much as the private sector in spending on agriculture and natural resources infrastructure in Nigeria.

John (2017) examined the effect of Federal Government Capital Expenditure on the Nigerian Economy Growth for the period 1985-2014. The study adopted ex-post facto research design. The analysis was carried out using multiple regression approach. Results of the analysis showed that federal government capital expenditures on administration and social community services had a positive relationship with GDP while the federal government capital expenditure on economic services and transfers have negative relationship with GDP. The study concluded that federal government

capital expenditure on administration; economic services, social community services and transfers have effect on the economic growth in Nigeria. Consequently, the study recommended more allocation to the federal government capital expenditures.

Mulinge (2016) studied the effect of recurrent public expenditure on economic growth in Kenya from 1980-2014. The study employed Augmented Dickey Fuller test for unit root tests and autoregressive distributed lag approach to test for co-integration. The study findings indicated that; there was a long-term relationship between recurrent public expenditure and economic growth in Kenya; recurrent public expenditure on government social services and government expenditure on debt showed a positive relationship towards growth while government recurrent expenditure on administration showed a negative relationship. However, government expenditure on debt and administration were statistically insignificant while government recurrent expenditure on social services was statistically significant in driving economic growth. The above finding should be used by the policymakers to ensure more funds are allocated in recurrent budgets to the social sectors.

Ackah and Adu (2014) investigated government expenditure and economic growth in Ghana. Using an ARDL model with annual data spanning from 1970 to 2010 they concluded that government capital expenditure has a significant negative impact on economic growth but recurrent expenditure has a positive effect on economic growth in both the long run and short run periods. They however suggested a fiscal discipline and efficiency in the disbursement of capital expenditure to trigger positive benefits in the future.

Danladi *et al.*, (2015) examined government expenditure and its implication for economic growth in Nigeria. The ARDL methodology was employed to examine the relationship between the variables. From the analysis and findings, government spending significantly and positively explained the economic growth of the country. In comparing the results of the total government expenditure in the capital and recurrent expenditure, the result shows that they are positively related to economic growth however the recurrent component of expenditure significantly explained more. This study attests to the Keynesian model (1936) of government intervention in the economy.

2.3 Theoretical Framework

2.3.1 Wiseman-Peacock Hypothesis

This hypothesis was advanced by Peacock and Jack Wiseman by their study on the growth of public expenditure at Great Britain during the period 1890-1955. The hypothesis focused on the pattern of public

expenditure and stated that public expenditure does not follow a smooth or continuous trend but the increase in public expenditure takes place in jerks or steps. The occurrence of extraordinary circumstances could lead to huge jumps in government spending and revenues, therefore; government spending may not increase steadily but in phases to meet special needs like displacement effect in natural disasters, epidemics, and others. Even if there is no new disturbance to increase public spending, there is no strong motivation to return to lower level of taxes as the increased revenue can be used to support a higher level of public expenditure. When an economy is experiencing economic growth, there is a tendency of central government's economic activities to grow at a disproportionate rate than that of the state and local government's activities – concentration effect. This hypothesis portrays that natural course of advancement and structural changes in an economy lead to constant and systematic expansion of public expenditure. Thus, an increase in public expenditure can be attributed to urbanization, population growth, awareness of civil rights, awareness of duties by the State government, and so forth.

2.3.2 Public Expenditure Theory

The Public expenditure theory (PET), also known as the law of increasing state spending; was propounded by Adolph Wagner (1835–1917). The theory provides that in the process of economic development, the share of the public sector in gross domestic product (GDP) increases over time. In other words, for any country, public expenditure constantly rises as income growth expands. Accordingly, the theory is premised on four principles: that growth results in increased complexity due to new and continuing increases in public expenditure; that public expenditure increases result in urbanization and externalities; that the goods supplied by the public sector should have a huge income elasticity of demand; and that growth results in an increase in demand with a resultant increase in public expenditure. This infers that the role of the public sector in society is to ensure the smooth running of economic activities. As the goals of government are numerous so also its stakeholders, thus, to avoid chaos, efficiency and equity should guide public spending. Efficiency connotes smooth running of public activities, and is concerned with the coordination, collection and monitoring of government revenue and expenditure towards the provision of services to the stakeholders. Equity, on the other hand; focuses on fair sharing of public gains among stakeholders (Magazzino *et al.*, 2015; Cosimo *et al.*, 2015; Babatunde, 2018). Practically, this theory expects growth in expenditure to match economic growth, and in return translates into economic development. However, the reverse has been the case in reality, particularly; in developing climes like Nigeria sometimes occasioned by elements of fiscal illusion in government activities.

2.3.3 Stakeholder Theory

The stakeholder theory was put forward in 1984 by Freeman (Stieb, 2009). The stakeholder theory recognizes that there are parties involved in management, such as employees, customers, contractors, financiers, communities, public agencies, political groups, trade associations, competitors, and trade unions, who sometimes scrutinize government spending. The philosophy is based on the assumptions that morals and values in managing an organization should be addressed. Stakeholder theory is relevant as a critical-diagnostic tool to identify the points at which stakeholders are vulnerable to breakdowns in the spending process in the absence of moral constraints on the part of government spenders. For instance, stakeholders such as electorates, taxpayers or simply citizens are interested in what the government offers from spending taxpayers' money. They expect a business-like approach to governance in the areas of utmost good faith, transparency and accountability, as enshrined in new public management theory

This study is underpinned by the Stakeholder theory, used in the diagnose and critically scrutiny of government consumptions, so as to highlight areas of consumption that shrink capital expenditure without corresponding positive effect on the wellbeing of the citizenry. For government meet the yearnings of its population, it is obligatory to approach its spending with a business-like attitude bearing in that it owes the citizens a duty of care and accountability.

3. METHODOLOGY

The ex-post factor research design was employed this study. Annual secondary time series data on government consumptions and capital expenditure were obtained from the Central Bank of Nigeria's (CBN) Statistical Bulletin, the National Bureau of Statistics (NBS) journals, World Bank and other pertinent sources. The period 1982-2021 was purposively selected as the sample size based on availability of data. The statistical tool for analysis used was econometric views (E-Views) 10.

3.1 Model Specification

The dependent variable, annual capital expenditure was regressed in the equation on the explanatory variables - government consumption. The model for this study was adapted from Nwaeze and Avoaja (2022), which specified a model as represented below:

$$RGDP = f(READM, REED, REHLT, REAGR, REDGR)$$

Where; RGDP represents real gross domestic product, READM represents recurrent expenditure on administration, REED means government recurrent expenditure on education, REHLT goes for government recurrent expenditure on health, REAGR stands for government recurrent expenditure on agriculture, and

REPGR represents government recurrent expenditure on pensions and gratuities

To fit the objective of this study, the model was modified as represented below;

$$AACE_t = f(ADMC_t, ECSC_t, SCSC_t, XFRC_t) \dots\dots\dots (i)$$

Where

AACE = Aggregate annual capital expenditure

ADMC = Administrative consumption

ECSC = Economic services consumption

SCSC = Social and community services consumption

XFRC = Transfers

Transforming equation (i) into its econometric form, it is represented as below:

$$AACE_t = \beta_0 + \beta_1 ADMC_t + \beta_2 ECSC_t + \beta_3 SCSC_t + \beta_4 XFRC_t + \varepsilon_t \dots\dots\dots(ii)$$

Where;

β_0 = Constant (intercept) term

β_{1-4} = Coefficient parameters of independent variables.

ε = Stochastic or error term

t = time series

The above equation (ii) is, thus, expressed in its log form in order to bring the series to a common base as follows;

$$LAACE_t = \beta_0 + \beta_1 LADMC_t + \beta_2 LECSC_t + \beta_3 LSCSC_t + \beta_4 LXFRC_t + \varepsilon_t \dots\dots\dots (iii)$$

A priori expectation is;

$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0,$ and $\beta_4 > 0$

4. RESULTS AND DISCUSSION

4.1 Data Presentation

The data used to study the effect of government consumptions on performance of annual

capital expenditure in Nigeria are categorized into independent variables and dependent variables.

The explanatory variable is government consumptions proxied by;

- (1) Administrative consumption (ADMC) measured as the totality of spending on general administration, defense, internal security, and national assembly.
- (2) Economic services consumption (ECSC) measured as the aggregate of spending on agriculture, construction, transportation, and communication.
- (3) Social and community services consumption (SCSC) measured as total of government spending on education, health care and other related social services
- (4) Transfers (XFRC) measured as the summation of government spending on debt servicing, pensions, gratuities, contingencies and subventions.

The dependent variable is performance of annual capital expenditure proxied by; Aggregate of annual capital expenditure (AACE), measured as sum of government spending on infrastructure, construction of roads, dams, and other related capital projects for the period of forty-one (41) years (1981-2021).

4.2 Data Analysis and Results

4.2.1 Descriptive Statistics

The descriptive statistics explains whether the sample is normally distributed or there are outliers in the series. It provides justifications for the data being used but is not the basis for conclusion.

Table 1: Descriptive Statistics

	AACE	ADMC	ECSC	SCSC	XFRC
Mean	702.6392	544.4800	334.6963	143.5049	758.7078
Median	309.0156	183.6400	84.00000	53.01000	225.1500
Maximum	5760.000	2294.720	1519.020	562.7500	5043.300
Minimum	4.100100	0.900000	0.290000	0.170000	3.390000
Std. Dev.	1226.463	676.6447	455.8771	177.8054	1140.077
Skewness	3.148976	1.139703	1.256890	0.965909	2.114045
Kurtosis	12.81591	3.236072	3.356558	2.564764	7.262391
Jarque-Bera	232.3612	8.971182	11.01229	6.698977	61.57639
Probability	0.000000	0.011270	0.004062	0.035102	0.000000
Sum	28808.21	22323.68	13722.55	5883.700	31107.02
Sum Sq. Dev.	60168418	18313919	8312959.	1264590.	51990978
Observations	41	41	41	41	41

Source: E-views 10 Output, 2022

Table 1 shows that the variables, capital expenditure (AACE), administrative consumption (ADMC), economic service consumption (ECSC), social and community service consumption (SCSC) and transfers consumption (XFRC) have average (mean) values of 702.639, 544.480, 334.696, 143.505, and

758.708 respectively. The highest values (median) of the series are 309.016, 183.640, 84.000, 53.010, and 225.150 respectively for AAEC, ADMC, ECSC, SCSC, and XFRC. The range (maximum and minimum) values for AAEC, ADMC, ECSC, SCSC, and XFRC are 5760.000 and 4.100, 2294.720 and 0.900, 1519.020 and

0.290, 562.750 and 0.170, and 5043.300 and 3.390 respectively. The skewness recorded the values of 3.148, 1.140, 1.257, 0.966, and 2.114 for the series: AACE, ADMC, ECSC, SCSC, and XFRC Kurtosis values for AACE, ADMC, ECSC, SCSC, and XFRC are 12.816, 3.236, 3.357, 2.565, and 7.262 respectively. For the Jacque-Bera, the variables recorded the values: 232.361, 8.971, 11.012, 6.699, and 61.576 for AACE, ADMC, ECSC, SCSC, and XFRC respectively. The probability values recorded by AACE, ADMC, ECSC, SCSC, and XFRC are 0.000, 0.011, 0.005, and 0.000 respectively, from 41 observations.

4.2.2 Correlation Analysis

Correlation measures the level of relationship between the dependent variable and the explanatory variables, and among the independent variables; measured by a correlation coefficient of between -1 and 1. A measures extremely closed to one of these values indicates a linear relationship and highly associated with each other. This implies that a change in one variable is related with a significant change in other variables.

Table 2: Correlation Matrix

Correlation					
Probability	AACE	ADMC	ECSC	SCSC	XFRC
AACE	1.000000				
ADMC	0.823804	1.000000			
	0.0000				
ECSC	0.816735	0.989746	1.000000		
	0.0000	0.0000			
SCSC	0.747895	0.926472	0.892340	1.000000	
	0.0000	0.0000	0.0000		
XFRC	0.920185	0.937085	0.939882	0.816382	1.000000
	0.0000	0.0000	0.0000	0.0000	

Source: E-views 10 Output, 2022

Table 2 above shows the strength of the association between the variables. AACE and the explanatory variables ADM, ECO, SOC, and XFR. Table 2 shows AACE has a strong positive relationship of 0.824, 0.817, 0.748 and 0.920 with ADMC, ECSC, SCSC, and XFRC respectively. Among the explanatory variables, ADMC has a strong relationship of 0.990, 0.924 and 0.937 with ECSC, SCSC and XFRC respectively; ECSC has a a strong relationship of 0.892

and 0.940 with SCSC and XFRC; likewise SCSC has a strong relationship of 0.816 with XFRC.

4.2.3 Unit Root Test

Unit root test is used to investigate the non-stationarity of the variables used in this study. If the mean and the variance of the variables are constant, they are said to be stationary, but if either of them changes it means the data has a unit root. The study used the conventional Augmented Dickey-Fuller (ADF) test.

Table 3: Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	β	ADF-Test Statistic	t-Statistic	p-value	Level	Comments
LCAPX	-1.434	-9.561	-3.53	0.000	I(1)	Stationary
LADMC	-1.713	-6.598	-3.533	0.000	I(1)	Stationary
LESCC	-2.841	-5.419	-3.540	0.001	I(1)	Stationary
LSCSC	-1.246	-7.726	-3.530	0.000	I(1)	Stationary
LXFRC	-1.359	-8.722	-3.530	0.000	I(1)	Stationary

Source: E-Views 10 Output, 2022

Table 3 above showed that the series were stationarity at first differencing, I(1) even with Trend and intercept at a critical value of 5% level of significance. This depicts that they are all integrated at I(1). Since all the variables are integrated of order 1, Johansen co-integration test is more appropriate and the study, therefore, performed Johansen co-integration test.

4.2.4 Johansen Co-integration Test

Johansen Co-integration is data testing technique that finds if there's a relationship between two or more time-related variables. It is to determine whether regression can be performed on two or more variables. Co-integration can reduce the possibility that variables have a relationship that looks correlated but is not.

Table 4: Johansen Co-integration Test

Date: 11/18/22 Time: 07:59				
Sample (adjusted): 1983 2021				
Included observations: 39 after adjustments				
Trend assumption: Linear deterministic trend				
Series: LAACE LADMC LECSC LSCSC LXFRC				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.582019	78.17252	69.81889	0.0093
At most 1	0.407819	44.15207	47.85613	0.1068
At most 2	0.273537	23.71827	29.79707	0.2126
At most 3	0.23105	11.25512	15.49471	0.1963
At most 4	0.025532	1.008671	3.841466	0.3152
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.582019	34.02045	33.87687	0.0481
At most 1	0.407819	20.4338	27.58434	0.3119
At most 2	0.273537	12.46315	21.13162	0.5026
At most 3	0.23105	10.24645	14.2646	0.1962
At most 4	0.025532	1.008671	3.841466	0.3152
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
Source: E-Views 10 Output				

The result from table 4 above showed that None* Hypothesized Co-integration Equation, the Trace Statistic value of 78.173 is greater than the Critical Value of 69.819 at 5% level of significance. Also, the Maximum Eigen Statistic value of 34.020 is greater than the Critical Value of 33.877 at 5% level of significance. Likewise, the P-value 0.009 is less than 0.05. All the three results revealed that there is 1 Co-integrating Equation among the five variables. The study, therefore, conclude that there is a long run relationship among AACE, ADMC, ECSC, SCSC and

XFRC. Since, the Johansen Co-integration test showed a long run association among the series, estimation of vector error correction model (VECM) is appropriate. Hence, the study estimates the VECM.

From the Wald test results, table 5 above, the Chi-square probability value of 0.0303 is less than 5% significance level, indicates that the explanatory variables (ADMC, ECSC, SCSC and XFRC) have significant effect on the dependent variable (AACE).

Table 5

Dependent Variable: D(LAACE)				
Method: Least Squares (Gauss-Newton / Marquardt steps)				
Date: 11/18/22 Time: 09:18				
Sample (adjusted): 1983 2021				
Included observations: 39 after adjustments				
D(LAACE) = C(1)*(LAACE(-1) + 20.4448599857*LADMC(-1) - 14.6073412955*LECSC(-1) - 5.84727148561*LSCSC(-1) + 0.822865437671*LXFRC(-1) - 29.8082464683) + C(2)*D(LAACE(-1)) + C(3)*D(LADMC(-1)) + C(4)*D(LECSC(-1)) + C(5)*D(LSCSC(-1)) + C(6)*D(LXFRC(-1)) + C(7)				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.023465	0.025630	0.915520	0.3668
C(2)	-0.437744	0.163898	-2.670830	0.0118
C(3)	-1.133760	0.626815	-1.808764	0.0799
C(4)	0.325422	0.293636	1.108248	0.2760
C(5)	0.342877	0.284038	1.207150	0.2362
C(6)	0.339022	0.400089	0.847368	0.4031
C(7)	0.274753	0.131428	2.090519	0.0446

R-squared	0.270308	Mean dependent var	0.174352
Adjusted R-squared	0.133490	S.D. dependent var	0.654103
S.E. of regression	0.608882	Akaike info criterion	2.006763
Sum squared resid	11.86358	Schwarz criterion	2.305351
Log likelihood	-32.13188	Hannan-Quinn criter.	2.113894
F-statistic	1.975683	Durbin-Watson stat	2.037836
Prob(F-statistic)	0.098593		

Source: E-Views 10 Output, 2022

The above result from table 5 comprises the short run and the long run effect. The vector error correction model (VECM), a re-parameterization of the vector autoregressive (VAR) model, specifically is designed for analyzing both the long run and short run dynamics driving the underlying variables. The result of a coefficient/C1 of 0.023 (not negative and not significant), indicates that there is no long run effect/causality from ADMC, ECSC, SCSC and XFRC to AACE. This implies that the explanatory variables have no long run effect on the dependent variable. Wald test was used to measure whether all the explanatory variables have short run effect of the dependent variable. Durbin-Watson of value of 2.038 is found to be close to 2, which indicates that there is no serial correlation in them. The diagnostic tests using Breusch-Godfrey Serial Correlation LM Test result shows that Obs*R-squared Prob. Chi-square value of 0.6897 is greater than 0.05. The study concludes that the regression model is free from Serial Correlation problem. Also, based on the Breusch-Pagan-Godfrey Heteroskedasticity test conducted, Obs*R-squared Prob. Chi-square value of 0.4463 is greater than 0.05 significance level. The study concludes that the regression model is free from Heteroskedasticity issue. The regression model stability was tested using Recursive Estimates-CUSUM. The CUSUM test result shows that the blue line falls within the 5% boundary, thus the study concludes that the regression model is stable.

4.3 RESULTS AND DISCUSSION

The behavior of the variables of the study was examined using the diagnostic tests as presented in tables 1 and 2 above. Next, unit root and co-integration status of all the variables, dependent and explanatory; were checked with the use of Augmented Dickey-Fuller (ADF) test as shown in table 3 above. Then, the bound tests were conducted with the aid of Johansen Co-integration test, vector error correction estimates (see appendices II-VI), and based on the outcomes, long run and short run restrictions of the model were assessed and post-estimation diagnostic test performed using Breusch-Godfrey Serial Correlation LM Test for serial correlation, Breusch-Pagan-Godfrey Heteroskedasticity for Heteroskedasticity problem. The Recursive Estimates-CUSUM test was used for regression model stability. The results revealed that the regression model was free from serial correlation and Heteroskedasticity problems and was stable as well.

H₀₁: *Administrative consumption has no significant effect on annual capital expenditure in Nigeria.*

The results showed that annual capital expenditure has a statistically significant inverse relationship with government administrative consumption. An increase in government spending on administrative consumption by 1% will on the average decrease the annual capital expenditure by -1.13. This implies that 1% rise in administrative consumption decreases the performance of annual capital expenditure by -113%. The study, therefore, has no reason not to accept the null hypothesis that states: Administrative consumption has no significant effect on performance of annual capital expenditure in Nigeria. Similar findings were reported by Nwaeze and Avoaja (2022); and Mulinge (2016).

H₀₂: *Economic services consumption has no significant effect on annual capital expenditure in Nigeria.*

The results revealed that annual capital expenditure has a statistically significant positive relationship with economic services consumption. An increase in economic services consumption by 1% will cause a 0.33 decrease in annual capital expenditure. In other words, 1% increase in economic services consumption, on the average, reduces the performance of annual capital expenditure by 33%. The study, thus, has no reason not to accept the alternate hypothesis that states: Economic services consumption has significant effect on annual capital expenditure in Nigeria. This finding upholds the findings reported by Nwaeze and Avoaja (2022); and John (2017)

H₀₃: *Social and community services consumption has no significant effect on annual capital expenditure in Nigeria.*

The results showed that government spending on social and community services has a statistically significant positive relationship with annual capital expenditure. Also, an increase in social and community services consumption by 1% will cause a 0.34 decrease, on the average, in annual capital expenditure. Meaning that on the average, 1% increase in social and community services consumption will cause a 34% decrease in the performance of annual capital expenditure in Nigeria. So, the study has reason not to accept the alternate hypothesis that states: Social and community services consumption has significant effect

on annual capital expenditure in Nigeria. The finding attests to related findings reported by Nwaeze and Avoaja (2022); John (2017); and Mulinge (2016)

H₀₄: *Transfers consumption has no significant effect on annual capital expenditure in Nigeria.*

The results revealed that transfers consumption has a statistically significant positive relationship with annual capital expenditure. The regression output showed that 1% increase in transfers' services consumption will cause a 0.34 decrease in annual capital expenditure. Specifically, 1% increase in transfers' consumption, on the average, will amount to 34% reduction in the performance of annual capital expenditure in Nigeria. The study, therefore, has no reason not to accept the null hypothesis that states: Transfers' consumption has significant effect on annual capital expenditure in Nigeria. The finding supports the findings reported by John (2017)

5. CONCLUSION AND RECOMMENDATIONS

The study focused on effect of government consumptions on performance of annual capital expenditure in Nigeria for the period 1981 to 2021. Evidences suggest that economic services, social and community services and transfers' consumptions have significant positive effect on capital expenditure except administrative consumption that recorded significant negative effect. The study, hence, conclude that changes in the performance of annual capital expenditure in Nigeria are explained by changes in government consumptions. Consequently, the study recommends as follows:

- 1) Government should put in place mechanisms, such as adequate internal control system; to check wastages in administrative consumption.
- 2) Government should tackle anti-economic activities such as illegal mining, constructions on right of ways, and other related illegal activities so as to reduce government spending on economic services consumption.
- 3) Government should increase funding to the social and community services in order to maintain a healthy and enlightened population.
- 4) Government to be rational in borrowing and, also to cut down on deficit budgeting so as reduces spending on transfers.

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