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BUDGETARY ALLOCATION AND POVERTY INCIDENCE IN NIGERIA FROM 1980-2010

Egbide Ben-Caleb
Department of Accounting, School of Business
College of Development Studies
Covenant University
Ota, Ogun State

ABSTRACT

The paucity of public resources amid competing infinite national needs is the fundamental rationale for effective budgetary allocation in the public sector. Allocation is said to be effective when the resources of the government are channelled to national priority areas such as poverty reduction. This paper therefore set out to establish the short-term association between budgetary allocation and poverty incidence in Nigeria. Four sectors of the economy namely: agriculture, education, health, and transport and communication were selected purposively for investigation. Data relating to national poverty index and budgetary allocation to these sectors were obtained from official government publications for 31 years (1980-2010), and analysed using descriptive statistics, partial correlation and the Ordinary Least Square (OLS) regression techniques. The result revealed an insignificant negative association between budgetary allocation and the incidence of poverty in Nigeria in the short term. Although, the magnitude of the association is inconsequential at 95% confidence interval, the direction of the relationship is in tandem with the underlying theory. To this end, it was recommended that allocation to sectors of the economy with direct impact on the poor such as: agriculture, education, health and transport and communication should be increased. However, actual release of funds should be done promptly to allow for uninterrupted execution of projects, albeit, under watch in order to avoid misdirection of funds.

Key Words: Budget, budgetary allocation, poverty reduction, short-term, Nigeria.

INTRODUCTION

Budgetary allocation is one fundamental component of the budgetary process that influences economic management and impact on national wellbeing. The limitedness of resources in the midst of competing demands is the fundamental rationale for the need for effective budgetary allocation (Allen, 2004; Nguemegne, 2007). Effective budgetary allocation or allocative efficiency of the budgetary process means that the resources of the government are channelled to areas or sectors of the economy that will facilitate the achievement of government macroeconomic needs in consonance with citizens' priorities.

In Nigeria, like many other countries of the world, government budgetary allocations are undoubtedly one of the most used sources of capital for development (Kwanashie, 2013). This, by implication, presupposes that sufficient and effective budgetary allocation can go a long way to fast-track economic growth and development including poverty reduction. It is also opined that efficient or meaningful budgetary allocation to key sectors of the economy such as: agriculture, education, health, and transport and communication should among other things, bring government closer to the people, enhance equity and ultimately reduce poverty (Gupta, Clements, Guen-Sui & Leruth, 2001; Usman & Ijaiya, 2010). Putting it differently, effective budgetary allocation has the potential to eradicate disequilibrium in the economy, just like a

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repressed budget may condemn an economy to difficulties such as: unemployment, poverty and other crises situations (Saifullahi and Hassan, 2014).

Given this assertion, improvement in the living condition of citizens, including poverty reduction cannot be wished away, as it constitutes a major policy focus of the governments of many countries today, developed and developing. This places demand for efficiency in budgetary allocations. It is therefore not surprising that a lot of time and resources are expended by the government in the process of budgetary allocation every fiscal year. This is done partly to align budgetary allocations with budget objectives as well as national priorities of which poverty reduction is principal. The extent to which this objective is achieved using the instrumentality of budgetary allocation is a moot issue.

Available statistics reveal that about 70.2% of Nigerians live on less than $1 a day, while about 90.8% live on less than $2 a day (Agu & Evoh 2011, National Bureau of Statistics, 2011). This to a great extent suggests that this social menace has not been tamed in Nigeria despite huge budgetary allocations. Yet, the functional relationship between such allocations and poverty reduction has not yet been given sufficient empirical attention. Related studies on the subject are narrow either in scope or in methodology. For instance, Akpan and Orok (2009) concentrated only on two states in the south-south (Cross River and Akwa Ibom states), Anger (2010) did a qualitative study while Saifullahi and Abubakar (2013) as well Saifullahi and Hassan (2014) applied only descriptive statistics in their investigations. This paper is therefore aimed at investigating the short run association between budgetary allocation and poverty incidence in Nigeria. The main proposition is that allocative efficiency of the budgetary process has no significant effect on poverty incidence in Nigeria. The preference of short run over long run in this paper is premised on the fact that, short runs are easier to predict and hence plan for, than long run, even though short term are temporary and unsustainable (Koop, 2009).

The rest of the paper is organised as follows: section 2 reviews related literature, section 3 reveals the research method adopted; section 4 presents the data analyses and hypothesis testing while section 5 concludes the paper.

REVIEW OF RELATED LITERATURE AND THEORETICAL FRAMEWORK
Conceptual Clarifications: Budgetary Allocation; Poverty Reduction Budgetary Allocation
One fundamental component of the annual budget in the public sector is budgetary allocation. Budgetary allocation refers to the amount of funds assigned to each expenditure head. It indicates the amount of resources an organisation or government is willing to commit to or spend on a sector, ministry, department or agency of government for the purpose of implementing government programmes and or projects. It imposes limits on expenditures that are not expected to be exceeded by the budget holders in any Ministry, Departments and Agencies (MDAs) during the budget year or fiscal year. Budgetary allocation is usually, aligned with a nation's macroeconomic objectives or citizens' priorities. That is why it is sometimes referred to as budget effectiveness or allocative efficiency. That is, the degree to which the allocation of resources is in tandem with citizens' preferences or national priorities or government agenda. In Nigeria, public sector allocations are made to capital and recurrent, each of them divided into four major areas namely: Economic, Social, Administrative and Transfers (CBN, 2012).

Poverty and Poverty Reduction: The term poverty, because of its multifarious manifestations is sometimes safer to describe than define. Among the several manifestations of poverty are: hunger and malnutrition, ill health, lack of income, limited education, homelessness, social discrimination and exclusion among others (Anger, 2010). Poverty is both an economic and social problem, that portrays insufficiency of some essential elements of life, reduces the confidence and dignity of man as well as the social and psychological prestige of its victims (Adejo, 2006; Anger, 2010). Poverty can be described as either income poverty or non-income poverty, absolute or relative, case or insular, objective or subjective, individual or household to mention a few (UNCTAD, 2012).

For purposes of simplicity, this study chooses to define poverty in terms of income, and following the lead by Akinyede, et.al. (2010) that poverty is a condition of insufficient resources or income. By this view, people are living in poverty if their income and resources (material, social and cultural) are inadequate and this precludes them from having a standard of living which is regarded as acceptable by their society generally (Akinyede, et. al., 2010). Having provided a clue of what poverty is, we can proceed to explain poverty reduction. According to Dada (2005), poverty reduction refers to the lifting of the poor out of poverty either through reliance on direct or indirect measures. Direct measures relate to the redistribution mechanism such as budgetary allocation etc., while the indirect measures relate to reduction of poverty engendered by economic growth. In plain terms, poverty reduction comprises a set of deliberate measures adopted by government to significantly reduce the percentage of the population living below the poverty line. This connotes the degree of reduction in the poverty level. That is, the practical decreases in the number or percentage of the population living below an acceptable poverty line of say $1, $1.25 or $2 a day (Ben-Caleb, 2015).

The Influence of Budgetary Allocation On Poverty Reduction

The budget instrument in both private and public organisations is the most rational, most logical, most legal and most acceptable medium for raising and allocating resources to implement government programmes (Ben-Caleb, 2015). Conventionally therefore, budgetary allocations and the subsequent implementation of the budget should have a mitigating effect on poverty rate. This traditional expectation is anchored on the fact that the budget and how public funds are raised, allocated and managed are the main avenues through which governments channels resources for carrying out their functions, including poverty reduction (Overseas Development Institute (ODI), 2004). However, empirical findings are mixed with respect to the relationship between budget allocation and poverty index.

For instance, Oduro (2001) opined that public expenditure can have a mitigating effect on poverty through the provision of infrastructure and services to the poor, creating the conditions that will enhance the ability of the poor to accumulate assets, facilitating the creation of institutions that will reduce the incidence of risks facing the poor and reduce the impact of negative shocks through the provision of safety nets among others. Taking the case of Ghana, he specifically asserted that public sector spending is an important component of the Ghanaian poverty reduction strategy. He, however, warned that public expenditure programmes for poverty reduction must include a strategy on how finances will be raised to fund the programmes in order to prevent the emergence of large budget deficits that will create economic instability and dampen economic growth. He added that any poverty reduction package must be accompanied with an increase in economic growth as a core component. Olaniyan (2002) examined empirically the role of household physical and human asset endowments in determining poverty in Nigeria using data from the national consumer surveys of 1985, 1992 and 1996. He found education as a significant determinant of rural and urban

poverty. The implication of his empirical finding is that if expenditure on education is increased, there will be a likelihood of significantly reducing poverty both in the rural and urban areas in Nigeria, all things being equal. Lucien (2002) concluded that there is a link between public budgeting, economic growth and the level of poverty. In his paper on sound budget execution for poverty reduction, he contended that efficient and effective public spending programmes are critical to the promotion of economic growth and equitable access to economic opportunities. It was also his opinion that if a budget is well planned and implemented, it will engender technical and allocative efficiency as well as equity. In the same vein, a weak and poorly implemented public budget only translates to high level of poverty. While all the aspects of the budget should be vital to poverty alleviation, Lucien (2002) emphasised budget implementation, since a well designed budget can be undetermined by shortcomings in the actual spending of funds. Similarly, the Ghana-Canada Parliamentary Support project (2002) identified some of the key elements in any successful poverty reduction strategy to include among others, executive restraint in expenditure or financial discipline, parliament-based budget expertise and agricultural development.

In the same vein, Fan, Huong and Long (2004) studied government spending and poverty reduction in Vietnam and opined that government spending reaches the poor through many different ways, including spending on agriculture, infrastructure and education. Accordingly, government fiscal spending in agricultural research could improve agricultural productivity and increase rural wages which in turn reduces rural poverty. Also, government spending in infrastructure and education may promote growth through increase in employment and wages, thereby contributing to poverty reduction. In Indonesia, Birowo (2004) studied the relationship between government expenditure and poverty rate. Adopting both qualitative and quantitative methodology, and analysing data using Ordinary Least Square regression, he found the relationship between budget growth and poverty to be positive and insignificant. Also, his study found out that only education expenditure exhibited a stable negative relationship with poverty rate.

Wilhelm and Fiestas (2005) while exploring the link between public spending and poverty reduction; identified two main ways by which budgeting can affect growth: through raising the overall growth performance of the economy and through increase in the chances of the poor to contribute to the growth process by strengthening human capabilities and reducing transaction costs. These two ways can influence the poverty level. However, growth focus expenditure affects the poor indirectly through the trickle-down effect. They emphasize the critical challenge of striking the right balance between spending that focuses primarily on growth and spending that aims at reducing poverty. Their study revealed the main findings in literature using different econometric and statistical methods, that expenditure on agriculture, education and infrastructure has a positive effect on poverty reduction, with agriculture yielding the highest return. This, to a great extent, explains the poverty situation in Nigeria, with the concentration on the oil sector at the expense of other sectors, especially agriculture.

Chemingui (2007) assessed the impact of an increase in public spending in priority areas on economic growth and poverty reduction in Yemen. The study built a Dynamic Computable General Equilibrium model (DCGEM) to provide a baseline scenario of changes in the economy and poverty level in Yemen during the period 1998-2016. It also compared alternative scenarios to isolate the specific impact of several policies on poverty. The scenarios assumed an increase in public spending devoted to three priority areas, namely, agriculture, education, and health, which were considered to affect the economy through an increase in sectoral or economy-wide technical factor productivity. The study found that targeted budgeting which

increased the amounts of public spending towards education and health services generated more economic growth and poverty reduction than increasing public spending solely on the agricultural sector. It also found that when an oil sector is a prominent part of the economy, as in Yemen, additional public spending on health and education does not improve productivity in the oil sector, and hence, may not have significant impact on poverty reduction. The implication is that spending on agriculture becomes the most important channel for poverty reduction and economic growth.

Some studies have however posited that budget management and practice has constituted an obstacle to poverty reduction objectives. Studies with this line of argument include: Fozzard, Holmes, Klugman and Withers (2001); Rajkumar and Swaroop (2008); Akpan and Orok (2009) and Anger (2010), among others. Fozzard, et.al. (2001) asserted that the practice of public expenditure management in many countries is an obstacle to the achievement of poverty reduction objectives. They added that fragmented budgets and an exclusive focus on inputs are among the factors that have undermined the ability of budget systems to discipline policy making and to facilitate performance feedback that would improve outcomes. In a study of the link between public spending, governance and outcomes, Rajkumar and Swaroop (2008) found that public spending most times does not yield the expected improvement in outcome. They attributed this seeming anomaly to the quality of governance, explaining that public spending on health and education for instance can lower child mortality rates and increase education attainment more in countries with good governance, but in poorly governed countries such expenditure has virtually no impact on health and education outcomes. The reason for this is because poor governance is likely to engender inefficiency and ineffectiveness in the management of funds as well as indiscipline and corruption which are among the factors that stifle poverty reduction efforts in any society. The implication of this finding is that while public spending is important for the poverty reduction effort, the quality of governance determines the impact of such expenditure.

Akpan and Orok (2009) also studied the link between public sector spending and rural poverty reduction in the south eastern states of Nigeria, using descriptive techniques and the non-parametric statistics, on a 26 year-federal-government data (1980-2005). They found among others that budgetary provisions for the poverty reduction programme have been unsatisfactory and ineffective and that actual release of even the allocations is grossly delayed. This, according to them, had not only affected the implementation of the poverty reduction programmes of government but had translated to underdevelopment and high incidence of poverty in the country. This finding suggests that government expenditure or budget is a significant determinant of poverty reduction. The implication is that an increase in the provision or allocation to poverty reduction programmes of government coupled with sound management and efficient project implantation could mitigate the poverty crises in the Nigeria. Also, Anger (2010) in crafting a way out of the poverty crises in Nigeria, advocated increase in budgetary allocation for the provision of social services that are beneficial to the poor, fostering efficient macro-economic and sectorial policies and the provision of an enabling environment to facilitate the private sector economic framework. This recommendation emphasises the relevance of budgetary allocation or better still, the role of public expenditure on poverty reduction. It can also be deduced from Anger's (2010) recommendations that any expenditure that has direct bearing on poverty reduction must relate to social services (e.g. Education, Health, etc.) and infrastructures that will enable the private sector to thrive (e.g. roads, Power etc.).

Most recent studies have advocated increased budgetary allocation to specific sectors/regions of the economy as a way forward in improving the performance of the sector and for holistic

national development. For instance, Oseni (2012) called for adequate budgetary allocations to educational sector in addition to internally generated revenues to save the exploitative tendencies of bureaucrats. Saifullahi and Abubakar (2013), viewed the widespread poverty in northern Nigeria as a repercussion of inequitable budgetary allocation, and hence, called for increased allocation to the northern states of the federation. Adofu, et.al. (2012) recommended increased allocation to agriculture to guarantee food security, employment generation and economic growth and development. In the same vein, Olowa and Olowa (2014) advocated for strengthened public expenditure management and accountability especially the recording of data on agriculture and the assessment of its impact as part of the broad reforms in the agricultural sector.

Again Saifullahi and Hassan (2014), studied budgetary allocation dynamics and its impact on poverty spread among the geopolitical Zones of Nigeria. Applying only descriptive statistics, their study yielded a strong relationship between budgetary allocation and poverty rate among the zones.

Research Method and Model Specification
This paper employed an explanatory research design, which involves the collection of quantitative data and subjecting same to statistical analysis before drawing conclusion about the phenomena of interest (Osaze & Izedonmi, 2008; Otokiti, 2010). Subsequently, data were obtained for 31 years relating to budget allocations and poverty rate in Nigeria from 1980 to 2010. This period coincided with the period that poverty came to the fore in Nigerian developmental agenda (1980s) and when the last poverty survey was conducted in Nigeria (2010).

The dependent variable is poverty reduction measured by poverty incidence (POI). In Nigeria this was taken as the percentage of the population living below the relative poverty line as established by the National Bureau of Statistics (NBS) (2010). Budgetary allocation is the independent variable. This was represented by allocations to agriculture, education, health and transport and communication as provided by the CBN Statistical Bulletin (various issues). The selection of these aforementioned four sectors was premised on the belief that these sectors are central in the poverty reduction crusade, since they affect the poor directly, hence, the high premium placed on these sectors in Nigeria (Akpan, 2006; Abu and Usman, 2010).

The study employed the partial correlation (PC) and the Ordinary Least Square regression (OLSR) in estimating the strength, direction as well as the short term impact of budgetary allocations on poverty reduction. Partial correlation (PC) was preferred because it helps to control for any possible effect of other confounding variables so as to allow for a more accurate picture of the relationship between the predictor and the criterion variables of interest (Spiegel & Stephens, 2008; Pollant, 2011). OLS was used to measure the predictive ability of budgetary allocation on poverty index. Although OLS is based on correlation, it allows for a more sophisticated exploration of the interrelationship among a set of variables, which make it ideal for the investigation of more complex real-life, rather than laboratory-based research (Gujarati, 2004; Pollant, 2011). It was also preferred in order to avoid bias as well as obtain the appropriate association of values measured (Akpan, 2009)

Models Specification
The theoretical postulation that the allocation of the budget is a key instrument for government to promote economic growth and reduce poverty formed the theoretical underpinning of this study as well as the basis for the model configuration (Wilhelm and Fiestas, 2005). To this end,

the following two simple models were specified and thus, guided the analysis of data in this study.

Model 1A: Budget Allocation and Poverty Reduction

Model 1A was an attempt to estimate the extent of coherence between budgetary allocations and poverty reduction programmes of government. Poverty reduction was proxied by Poverty incidence (POI) while the budgetary allocations was captured by the trend of budgetary allocations to Agriculture, (AGR); Education (EDU); Health (HLT), Transport/communication (TCOM). This relationship was as depicted in equation 1.

$$POI = f(BAAGR, BAEDU, BAHLT, BATCOM, INF) \dots\dots 1$$

Expressing equation (1) in an explicit form yielded equation (2) while assuming linearity of the variables under consideration.

$$POI = a_0 + a_1 BAAGR + a_2 BAEDU + a_3 BAHLT + a_4 BATCOM + a_5 INF + \varepsilon \dots 2$$

However, equation (2) could not survive the preliminary diagnosis, since some variables violated normality criteria required for parametric statistical analysis; hence was transformed into its log-linear form in consonance with the recommendation of Gujarati (2004). Besides, a log linear form allows a direct estimation and interpretation of the coefficient of the model (Akpan, 2006). However, according to Gujarati (2004), both a linear model and the log-linear model produce similar results if the multiple regression restrictions are met and the structural stability of the data set is guaranteed. Equation (3) is the log-linear version of model one 'A'.

$$LPOI = a_0 + a_1 LPBAAGR + a_2 LPBAEDU + a_3 LPBAHLT + a_4 LPBATCOM + a_5 LPINF + \varepsilon \dots 3$$

Where LPOI = Poverty Index/incidence; LPBAAGR = Allocations to Agriculture; LPBAEDU = Allocation to Education; LPBAHLT = Allocation to Health; LPBATCOM = Allocation to Transport and Communication; LPINF = Inflation Rate; ε = stochastic error term, a_0 represents the intercept, $a_1, a_2 \dots a_5$ = the parameter to be estimated .

It was expected a priori that LPBAAGR, LPBAEDU, LPBAHLT, LPBATCOM would bear an inverse relationship with LPOI. This is because increase in expenditure of these sectors is expected to translate to the reduction in the percentage of the poor. Similarly, the control variable, LINF was expected to bear a direct relationship with POI as persistent inflation erodes the value of money, thereby worsening the welfare situation and increase poverty. Consequently therefore, the coefficients of the regression are expected to be as follows;

$$a_1, a_2, a_3, a_4 < 0 \text{ and } a_5 > 0$$

Model 1B: Combined Effect of Budgetary Allocation to key Sectors and Poverty Reduction

Model 1 B was used to complement model 1 A. It combines the four main independent variables of model one 'A' to form a new variable called PBAKS (budgetary allocation to the key Sectors), then added inflation (LINF) and RGDPPCP (Real GDP Per Capita) as control Variables. This is presented in equation 4:

$$LPOI = \beta_0 + \beta_1 LPBAKS + \beta_2 LRGDPPCP + \beta_3 LPINF + \varepsilon \text{ -------- 4}$$

The rationale was to determine the combined effect of budget allocation to the four selected sectors on poverty reduction in Nigeria.

The *a priori* expectation was that RGDPPCP and LPBAKS will be negatively signed and statistically significant, while the sign of LPINF was expected to bear a direct relationship with LPOL. This is shown symbolically as: $\beta_1, \beta_2, < 0 \text{ and } \beta_3 > 0$

DATA PRESENTATION, ANALYSES AND DISCUSSION OF FINDINGS

The data used in this study relating to the dependent variable (POI), the independent variables (PBAEDU, PBAAGR, PBAHLTH, PBATCOM), as well as the control variables (INF, RGDP) are presented in the appendix section of this paper. The analysis proceeded from the descriptive statistics to inferential statistical analysis.

Descriptive Statistic of Poverty Index and other Economic Indices in this Study

Table 4.1 shows the descriptive statistics of poverty incidence (POI), Real Gross Domestic Product Per Capita (RGDPPC), Growth in Real GDP (GRGDP) and Inflation (INF).

Table 4.1: Descriptive statistics of Poverty Index and other Economics Indices

	POI	RGDPPC	GRGDP	INF
Mean	54.25806	2930.764	3.542581	20.90323
Median	54.00000	2635.108	4.200000	13.90000
Maximum	88.00000	4895.377	10.60000	72.80000
Minimum	27.00000	417.6166	-13.13000	5.400000
Std. Dev.	15.25913	922.0959	5.026649	17.82166
Observations	31	31	31	31

The statistics reveal that the average poverty index (POI) in Nigeria within the period under consideration was 54.3% with a standard deviation of 15.3%. It also shows that POI grew from a minimum of 27% to a maximum of 88% within the last three decades. Also, the statistics show that the minimum and maximum RGDPPC in Nigeria for the period under consideration were respectively ₦417.6166 and ₦4895.377, while the mean and standard deviation were respectively ₦2930.764 and ₦922.0959. The rate of inflation (INF) in the past three decades has also shown some interesting characteristics. The minimum and maximum inflation rates during the period are 5.4% and 73% respectively, while the mean rate is about 21% with a standard deviation of 17.8%.

Descriptive Statistic of Budgetary Allocation to Key sectors of the Economy

Table 4.2 and figure 4.1 gives a brief and interesting insight into the trend of budgetary allocation to four key sectors of the Nigerian economy, namely: Agriculture (BAAGR), Education (BAEDU), Health (BAHLT) and Transport and Communication (BATCOM).

Table 4.2: Descriptive Statistic of Budgetary Expenditure and Allocation to Four Key Sectors of the Economy (1980-2010)

	BAAGR	BAEDU	BAHLT	BATCOM	TBEXP
Mean	29769.60	55889.60	33664.81	21130.58	672286.4
Median	5574.000	12728.70	4851.500	4690.300	153495.6
Maximum	176549.1	271251.3	164915.0	183157.9	3381000.
Minimum	285.3000	653.5000	190.2000	304.2000	11081.80
Std. Dev.	48890.83	79320.60	51610.65	38813.61	912923.4
Observations	31	31	31	31	31

The Table reveals that the minimum allocations to these four sectors are ₦0.285b, ₦0.654b, ₦0.190b and ₦0.304b respectively out of a total minimum budgetary expenditure of ₦11.081b. The maximum budgetary allocations within the period were ₦176.5b, ₦271.3b, ₦164.9b and ₦183.2b respectively out of a total maximum budgetary estimate of ₦3.4trillion. Also, the average allocations from 1980-2010 are ₦29.8b, ₦55.9b, ₦33.7b and ₦21.1b for BAAGR,

BAEDU, BAHLTH and BATCOM respectively. Figure 4.1 reveals that the aggregate total allocation to these four sectors in 31 years (1980-2010) was 21%, made up of agriculture 5%, education 8%, health 5% and transport and communication 3%.
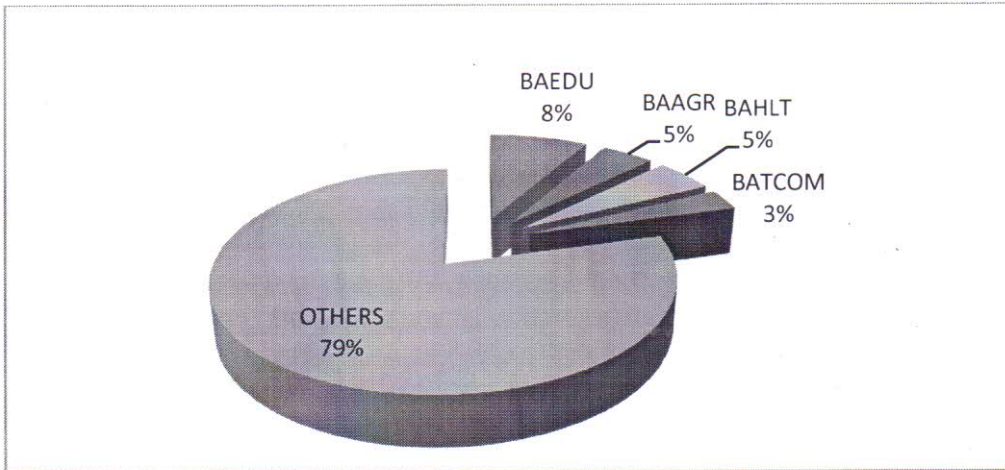
Figure 4.1: Budgetary Allocation to key Sectors in 31 years (1980-2010)

Partial Correlation Analysis: Model One 'A'

Table 4.3 presents the partial correlation matrix of model one; That is the relationships in terms of strength and direction between budget allocations to agriculture (LPBAAGR), education (LPBAEDU), health (LPBAHLT), transport and communication (LPBATCOM) and the dependent variable poverty incidence (POI). The result indicates that the relationships between three explanatory variables (LPBAAGR, LPBAEDU and LPBATCOM) and the incidence of poverty (POI) are negative but not significant, while LPBAHLT bears a positive and significant relationship with POI. More explicitly, the result reveals that the proportion of budget allocated to agriculture (PBAAGR) (R = -0.0127, Sig. = 0.9500), the proportion of budget allocated to education (PBAEDU) (R = -0645, Sig. = 0.7491) and the proportion of budget allocated to transport and communication (PBATCOM) (R = -0.1452, Sig. = 0.4700) are inversely associated with the incidence of poverty in Nigeria. Although, their coefficients are not statistically significant, their directions are in consonance with our a priori expectation. The implication of these observed directions, judging from their negative signs, is that increase in budgetary allocation to these key sectors can lower the rate of poverty in Nigeria.

Table 4.3 Partial Correlation Matrix for Model One

Partial and semipartial correlations of LPOI with					
variable	Partial Corr.	Semipartial Corr.	Partial Corr.^2	Semipartial Corr.^2	Significance value
LINF	0.0663	0.0463	0.0044	0.0021	0.7426
LPBAAGR	-0.0127	-0.0088	0.0002	0.0001	0.9500
LPBAEDU	-0.0645	-0.0451	0.0042	0.0020	0.7491
LPBAHLT	0.6026	0.5266	0.3631	0.2773	0.0009
LPBATCOM	-0.1452	-0.1023	0.0211	0.0105	0.4700

Also, Table 4.3 reveals that both the proportion of budget allocated to health (LPBAHLT) (R= -0.6026, Sig. = 0.0009), and inflation rate (LINF) (R = 0.0663, Sig. = 0.7426) are directly associated with poverty reduction in Nigeria. While the sign of LINF was expected, the direction of LPBAHLT contravenes our a priori expectation. Expenditure on health is expected to reduce ill-health and mortality and increase wellness, vitality and longevity which should translate into

the prosperity of the people and nation. For the period under consideration, however, the reverse was the case. The likely explanation to this, is that allocation to health has not been channelled to achieve the purpose for which it was meant, hence, it is moving in the same direction with poverty. Inflation on the other hand, theoretically has a direct relationship with the poverty rate. This is because inflation posed additional burden on the disposable income of individuals and communities and reduced their purchasing power.

The partial correlation result when the four sectors' allocations were combined did not change significantly (see Table 4.4). The result in Table 4.4 indicates that LPBAKS is negatively associated with LPOI. Although the coefficient (-0.0768 or 7%) is not statistically significant, judging from its sig value (0.6920) which is greater than 0.05, the direction of this relationship is of practical significance. It implies that increase in the proportion of budgetary allocations to agriculture, education, health and transport and communication will lead to a decrease in the incidence of poverty in an insignificant rate.

Table 4.4: Partial Correlation Model One 'B'

Partial and semipartial correlations of LPOI with					
Variable	Partial Corr.	Semipartial Corr.	Partial Corr.^2	Semipartial Corr.^2	Significance Value
LPBAKS	-0.0768	-0.0632	0.0059	0.0040	0.6920
LRGDPPCP	0.5686	0.5665	0.3233	0.3210	0.0013
LINF	-0.0890	-0.0732	0.0079	0.0054	0.6462

The coefficients of LRGDPPCP and LINF are 0.5686 and -0.0890 respectively, indicating that LRGDPPCP is positively related with LPOI, while LINF is negatively related with LPOI contrary to our a priori expectation.

Ordinary Least Square (OLS) Regression Analyses
Table 4.5 and 4.6 presents the regression results of model 1 and 2.
Table 4.5: Least Square Regression Result for Model One 'A'

```
. reg LPOI LINF LPBAAGR LPBAEDU  LPBAHLT LPBATCOM
```

Source	SS	df	MS		
Model	1.29882189	5	.259764378		
Residual	1.22991754	25	.049196702		
Total	2.52873943	30	.084291314		

Number of obs = 31
F(5, 25) = 5.28
Prob > F = 0.0019
R-squared = 0.5136
Adj R-squared = 0.4163
Root MSE = .2218

LPOI	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
LINF	.0181289	.0545872	0.33	0.743	-.0942956	.1305534
LPBAAGR	-.0053496	.0843825	-0.06	0.950	-.1791386	.1684394
LPBAEDU	-.0320806	.0991928	-0.32	0.749	-.236372	.1722107
LPBAHLT	.3918204	.1037799	3.78	0.001	.1780817	.6055591
LPBATCOM	-.0548904	.0748259	-0.73	0.470	-.2089972	.0992163
_cons	3.817984	.2159879	17.68	0.000	3.373149	4.26282

Table 4.5 shows an R^2 of 0.5136 and an adjusted R^2 of 0.4163, indicating that about 42% of the variance in the dependent variable (poverty incidence-POI) is accounted for by the explanatory variables in this model, namely LPBAAGR, LPBAEDU, LPBAHLT, LPBATCOM and LINF. In other words, about 42% of the variability in the incidence of poverty (POI) is determined by the model variables. This also indicates that the model is statistically significant in explaining the endogenous variable as exemplified by the F statistic which is significant at 1% level (F = 5.28, P-value = 0.0019)

Specifically, the result indicates that LPBAAGR, LPBAEDU and LPBATCOM have negative effect on the incidence of poverty, while LPBAHLT and LINF are directly associated with the incidence of poverty (POI). The coefficients indicate that a 100% increase in budgetary allocation to agriculture (LPBAAGR), education (LPBAEDU) and transport and communication (LPBATCOM) will reduce the poverty rate (POI) by about 0.53%, 3.2% and 5.5%, respectively. On the other hand, a 100% increase in budgetary allocation to health (LPBAHLT) will explode the poverty rate by about 39.2%, while a 100% increase in inflation rate (LINF) will increase poverty by about 2%.

Although only the coefficient of LPBAHLT is statistically significant at 1%, 5% and even 10% levels, the direction of the relationships is of practical significance. More plainly, the revelation of the signs is that increase in budgetary allocation to agriculture, education and transport and communications has the capacity to slow down the incidence of poverty in Nigeria. However, that can only happen if allocations are properly managed and monitored to ensure that resources are not misspent. For allocation to health, the direction is a violation of a priori expectation. Expenditure on the health sector is expected to increase the wellness of citizens which should translate into prosperity for the people. But the reverse is the case as exemplified by this result, and then it suggests that something is practically wrong that needs to be investigated. Nevertheless, this result is in consonance with prior studies, particularly Akpan (2006).

In table 4.6 the result indicates that the relationship between LPBAKS and LPOI is negative and insignificant since only about 6% change in LPOI will be actuated by a 100% change in LPBAKS, hence the 't' value is less than 2 (-0.40; p-value 0.692). This is a further confirmation of the partial correlation result discussed in the previous section. The relationships between LPOI and the control variables (LRGDPPCP and LINF) also confirm the result of the partial correlation and negate our a priori expectation.

Meanwhile, the adjusted coefficient of determination of the model (Adj.R^2) indicates that about 25% of the variation in the dependent variable (LPOI) is explained by the combined effect of the explanatory variables. The model is also significant at 5% (F-value = 4.40, Prob.= 0.0121).

Table 4:6: Least Square Regression Result for Model One 'B'

```
. regress LPOI LPBAKS LRGDPPCP LINF
```

Source	SS	df	MS		
Model	.830192475	3	.276730825		
Residual	1.69854695	27	.062909146		
Total	2.52873943	30	.084291314		

Number of obs =	31
F(3, 27) =	4.40
Prob > F =	0.0121
R-squared =	0.3283
Adj R-squared =	0.2537
Root MSE =	.25082

LPOI	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
LPBAKS	-.0562489	.1404519	-0.40	0.692	-.3444324	.2319346
LRGDPPCP	.3926236	.1093066	3.59	0.001	.1683449	.6169023
LINF	-.0285777	.0615539	-0.46	0.646	-.154876	.0977205
_cons	.7492802	1.023638	0.73	0.470	-1.351051	2.849611

Hypothesis Testing

At the outset of this paper, it was conjectured that in the short term, there is no significant functional relationship between budgetary allocations and poverty reduction in Nigeria. From the partial correlation in Table 4.3 and Table 4.4, it was observed that only budgetary allocation to health (LPBAHLT) has a significant positive relationship with poverty reduction (LPOI) at 1% level. Allocations to other three sectors namely, agriculture (LPBAAGR), education (LPBADU) and transport and communication (LPBATCOM) showed negative but insignificant association with poverty rate. When the proportion of budget allocated to these four sectors were combined and transformed into one variable (LPBAKS), the partial correlation also indicated a negative and insignificant association with LPOI (-0.0768; P-value of 0.6920) (Table 4.4).

Furthermore, the OLS regression analysis (Table 4.5) indicated that the proportion of budget allocated to agriculture, education and transport and communication negatively relate and affect poverty incidence in Nigeria. However, the relationship is not significant since their p-values are greater than the 0.05 benchmark. Only allocation to the health sector manifested a significant positive relationship with poverty given its p-value of 0.001. Again, the combined effect of the four sectors' allocation (LPBAKS) as presented in Table 4.6 also indicated that LPBAKS possess an insignificant negative relationship with poverty rate in Nigeria.

From the results, it was unsafe to reject the null hypothesis. The paper retained the proposition that budgetary allocation does not significantly affect poverty reduction in Nigeria in the short term.

CONCLUSION AND RECOMMENDATIONS

The aim of this paper was to determine the short term impact of budgetary allocation on poverty reduction in Nigeria. Given the delimitation of the study, the objective was achieved. Hence, it can reasonably be concluded that in the short term budgetary allocation does not have significant influence on poverty reduction in Nigeria. Although, the main finding in this study is consistent with some prior studies notably that of Bariwo (2004), Akpan (2006); Rajkumar and Swaroop (2008) and Akpan and Orok (2009), yet it contravenes theoretical and conventional wisdom. Some studies whose findings differ from the outcome of this study include: Chemingui (2007), Oseni (2012), Adofu, Abula, and Agama (2012), Saifullahi and Abubakar (2013), Olowa and Olowa (2014), Saifullahi and Hassan (2014).

The likely explanations to this variance in outcome as gleaned from literature and the empirical examination include but are not limited to, insufficient allocations, delay in release of the

allocated funds, the quality of government as well as poor management of allocations. For instance, a situation where only 21% of total budget is allocated to four important sectors (agriculture, education, health and transport and communication) in 31 years as in the case of Nigeria will only require a miracle for these sectors to make a dent on poverty (see Figure 4.1).

However, it is important to note that the sign of the coefficients of the explanatory variables is of practical significance. Among other things it portends that budgetary allocation and poverty index move in opposite directions. This to a great extent justifies the convergence of opinions of prior studies in calling for increase in budgetary allocation to these sectors. It is to this end that this study makes the following recommendation: There should be conscious effort by government to increase allocations to key sectors of the Nigerian economy as a policy matter. In doing so, preference should be given to the productive sector and the social services sector because of their direct impact on the poor. This will bring about reduction of hunger, increase in health, cheaper transportation and increase in literacy rate. The end results of these will be national prosperity and poverty reduction. However, the most efficient plan of budget-making may be of no avail unless the budget, after it is passed, is efficiently administered. More plainly stated, budgetary allocations without adequate arrangement to enforce implementation of the budget as well as monitoring of the budget performance will render allocations inconsequential. Therefore, the budget monitoring unit of the budget office of the federation should be strengthened with adequate and qualified personnel and equipment to carry out this all important function. In addition, the oversight function of the National Assembly should not only be heard, it should be seen. They should ensure that, for all budgetary allocations, funds are promptly released as well as ensure that those funds are spent to add value to the citizens.

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Appendixes

Appendix 1: Budgetary Allocation to Agriculture, Education, Health and Transport and Communication. Four Sectors of Nigeria Economy (1980-2010)

YEAR	1980	1981	1982	1983	1984	1985	1986	1987
BAAGR	468.1	809	1069.2	1214.5	285.3	1018.1	925.4	394.3
BAEDU	1549.8	984.6	1135.1	967.4	861.2	850.2	1094.8	653.5
BAHLT	302.5	248.2	286	279.6	190.2	223.9	360.4	236.4
BATCOM	2407.8	1684.8	1337.7	1144.1	304.2	366.7	641.9	489.3
TBEXP	26342.1	11410.9	12857.5	12086.1	15966.3	17754.2	11081.8	15508.6

YEAR	1988	1989	1990	1991	1992	1993	1994	1995
BAAGR	650	1042.6	1966.6	672.3	924.5	2835.3	3719.1	6927.7
BAEDU	1084.1	1941.8	2294.3	1554.2	2060.4	7999.1	10283.8	12728.7
BAHLT	443.2	452.6	658.1	757	1025.4	2684.5	3027.8	5060.9
BATCOM	846.5	854.2	1109.8	598.8	981.6	1786.8	1674.9	4690.3
TBEXP	20290.8	27119.4	36264	35171.6	52035.9	112100.5	110201	153495.6

YEAR	1996	1997	1998	1999	2000	2001	2002	2003
BAAGR	5574	7929.6	11840.4	38259.8	10596.4	64943.9	44803.8	16045.2
BAEDU	15351.8	15944	26721.3	31563.8	67568.1	59744.6	109455.2	79436.1
BAHLT	4851.5	5803	11984.3	16179	18181.8	44651.5	63171.2	39685.5
BATCOM	11003.3	8437.9	8196.9	9191.3	5336.6	53176.1	53662.6	29309.4
TBEXP	189000	276723.2	367917.1	358103.5	664733.3	1018026	1188735	1225957

YEAR	2004	2005	2006	2007	2008	2009	2010
BAAGR	59773.4	90798.2	33916.6	38300	131680.9	166924.3	176549.1
BAEDU	93767.9	120035.5	165213.7	185771.8	218032.7	224676.9	271251.3
BAHLT	59787.4	71685.4	105590	122400	143919.3	154567.5	164915
BATCOM	14343	27763.3	16000	45610.04	183157.9	62988.1	105952.2
TBEXP	1302232	1799938	1900010	1940395	2112723	2445700	3381000

Source: CBN Statistical Bulletin (2008) and Budget Speeches and Appropriation Acts (Various years).

Appendix 2: Poverty Index, Real Gross Domestic product and Inflation (1980-2010)

YEAR	1980	1981	1982	1983	1984	1985	1986	1987
POI	27	30	34	37	41	44.2	44	44
RGDPPC	417.5979	2644.472	2507.864	2273.497	2193.326	2342.296	2339.057	2266.464
RGDPPCP	1.323743	1.288591	1.255908	1.224957	1.194863	1.165111	1.135622	1.106636
GRGDP	0.053385	5.505329	-0.02698	-0.07055	-0.01097	0.09519	0.024549	-0.00566
INF	9.9	20.9	7.7	23.2	39.6	5.5	5.4	10.2

YEAR	1988	1989	1990	1991	1992	1993	1994	1995
POI	44	43.9	43.8	43	42.7	49	54.7	60
RGDPPC	2371.105	2488.394	2742.638	2654.159	2648.896	2619.167	2563.46	2557.908
RGDPPCP	1.078384	1.051154	1.025094	1.000139	0.976136	0.953002	0.930643	0.90897
GRGDP	0.073577	0.076652	0.130192	-0.00811	0.022558	0.012779	0.002246	0.021626
INF	38.3	40.9	7.5	13	44.5	57.2	57	72.8

YEAR	1996	1997	1998	1999	2000	2001	2002	2003
POI	65.6	65.5	69.5	72	74	83.1	88	71.2
RGDPPC	2608.327	2620.16	2635.033	2584.634	2661.352	2817.529	3336.635	3588.663
RGDPPCP	0.887955	0.867538	0.847577	0.827921	0.808482	0.789237	0.770223	0.751501
GRGDP	0.043844	0.028178	0.029361	0.00416	0.05444	0.0845	0.213475	0.102329
INF	29.3	8.5	10	6.6	6.9	18.9	12.9	14

YEAR	2004	2005	2006	2007	2008	2009	2010
POI	54.4	54.4	54	54	60	65	69
RGDPPC	3867.875	4018.867	4156.732	4316.058	4461.549	4653.934	4895.279
RGDPPCP	0.733141	0.715188	0.697647	0.680497	0.663721	0.647299	0.631221
GRGDP	0.104795	0.065119	0.06031	0.064498	0.059837	0.069584	0.078651
INF	15	17.9	8.2	5.4	15.1	13.9	11.8

Source: CBN statistical Bulletin (2012), National Bureau and Statistics (2010) and author's computations.