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## MONEY SUPPLY, GOVERNMENT EXPENDITURE AND POVERTY ALLEVIATION IN NIGERIA

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### ABSTRACT

The study focused on effect of money supply and government expenditure on poverty reduction in Nigeria from 1981 to 2019 (30 years span). The study acquired statistical data on government expenditure on health, agriculture, transportation, education, and broad money supply from the Central Bank of Nigeria's annual statistical bulletin for the year 2019. Poverty reduction was regressed as the dependent variable in the model to represent the degree of influence the independent factors have on poverty reduction. The empirical results reveal that there is no long-run link between them, hence we offer the estimated results in their differenced forms. The study also determined that government expenditure on agriculture has a tendency to reduce poverty in the country. The study concludes that increase in government agricultural expenditure would result in poverty reduction in Nigeria. The study therefore, recommended that government at various levels in the country should increase agricultural financing because of its effect on poverty reduction; and that government facilitate educational expenditure and implement education related expenses in the country.

**Keywords:** Poverty reduction, education, agriculture, transport, broad money supply, health

### INTRODUCTION

Poverty has become a household word around the world, serving as a tool in the hands of the educated elite to keep political ambitions alive, while the masses bear the responsibility of political involvement. In Nigeria, however, hunger, rural crisis, terrorism, corruption, decaying infrastructure, and government apathy toward poverty alleviation projects continue to be the most prevalent trends. Furthermore, approximately 500 million people worldwide live in poverty and lack access to basic essentials. Their source of income is self-employment as micro entrepreneurs or labor in tiny firms. Poverty alleviation has emerged as the most difficult task for the world's developing countries (Aderibigbe, 2017).

To address these concerns, the size of government spending and its impact on poverty reduction, has been a topic of discussion for decades. Scholars argue that a relationship exists between government spending and poverty reduction. However, only few empirical studies have been conducted to validate this argument. This study therefore joined the discourse by examining the effects of money supply and government expenditure on poverty reduction.

**Concept of Money Supply**

Money supply is the total amount of all forms of money in circulation in a given country at a given period of time, including near money (*M1*) and broad money (*M2*) (CBN, 2013). *M1* indicates currency in circulation plus current account deposits with commercial banks while *M2* is *M1* plus savings and time deposits. According to Anyanwu (2011) and Ahuja (2010), money supply is the total amount of money (e.g. currency and demand deposits) in circulation in a country at any given time. Currency in circulation is made up of coins and notes, while demand deposits or current account are those obligations which are not related with any interest payment and accepted by the public as a means of exchange drawn without notice by means of cheque.

Two important points about money supply are that, first, money supply refers to the entire amount of money available to the general population in the economy at any given time. That is, money supply is a stock concept, but national income is a flow indicating the value of goods and services generated per unit of time, often a year; and second, money supply refers to the total amount of money in circulation (Ahuja, 2010; Umeora 2010). There are two criteria employed in measuring money supply. The first criteria define the stock of narrow money (usually designated by *M1*) as currencies and coins in circulation in the hands of the non-banking public and the demand deposit (of the non-banking public) with commercial bank (Ajakaiye, 2014).

**Poverty**

According to the UNDP (2010), there are three perspective to the definition of poverty. The first is income perspectives which views poverty as a situation where a person is poor if the income level is below the defined poverty line. Second, is the basic need view which see poverty as deprivation of material requirements for minimal acceptable fulfilment of human needs, including foods, basic health, education, and essential services. The third is lack of capacity which represent the absence some basic capabilities to function.

Poverty is a foremost issue in the socio-political discusses of most third world countries as well as it is an issue of global concern. This notwithstanding, a concise definition of poverty remains quite problematic as its shapes and shades have assumed very dynamic dimensions, over the years. Hence, Nnoyelu (2005) is of the opinion that the term has become deeper and broader, in recent times. This notwithstanding Omotola (2008) insists that poverty is by all standards a condition of deprivation that impedes human development. As clear and straightforward as this position may seem, it is important to note that the answer to the question of what poverty is, needs to be prefaced by the fact that poverty has economic, social and environmental dimensions.

The question of what poverty is indeed is a complex one because there are numerous ways of defining and measuring poverty Money, Wilkinson (2000) cautions, is obviously a part of it but those who live in poverty also keenly feel the lack of equality of opportunity and the lack of the respect of others; these of cause are issues beyond the mere lack of money. There is therefore an attempt at fashioning a distinction between subsistence or absolute poverty and relative poverty. The former refers to the lack of basic requirement to sustain a physically healthy existence i.e. sufficient food and shelter to make possible the physically efficient functioning of the body.

**Public Spending**

Public spending represents the annual expenditure by government to achieve some macro-economic objectives which may include poverty reduction, increase in national productivity and macro-economic stability in the system. Government spending have direct and indirect effects on poverty. The direct effects arise in the form of benefits the poor receive from expenditures on employment and welfare programs. The indirect effects arise when government investments in rural infrastructure, agricultural

research, and the health and education of rural people, stimulate agricultural and non-agricultural growth, leading to greater employment and income earning opportunities for the poor, and to cheaper food.

Until the 19th century, public expenditure was limited as laissez faire philosophies believed that money left in private hands could bring better returns. In the 20th century, John Maynard Keynes argued the role of public expenditure in determining levels of income and distribution in the economy. Since then government expenditures has shown an increasing trend. In the 17th and the 18th centuries public expenditure was considered as a wastage of money. Thinkers said government should stay with their traditional functions of spending on defence and maintaining law and order.

### **Theoretical Framework**

The study is anchored on public expenditure theory which posits that at low levels of per capita income, demand for public services tends to be very low, because such income is devoted to satisfying primary needs and that when per capita income starts to rise above these levels of low income, the demand for services supplied by the public sector such as health, education and transport starts to rise, thereby forcing government to increase expenditure on them. The theory argue that at the high levels of per capita income, typical of developed economics, the rate of public sector growth tends to fall as the more basic wants are being satisfied.

### **Empirical Review**

Okulegu (2013) examined effect of government spending in agriculture on poverty reduction in Nigeria for the period 1980 to 2009, and observed that government spending had significant effect on poverty reduction in Nigeria. Specifically, the study observed that a one per cent increase in Agricultural Credit Guarantee Scheme Fund (AGCSF) decrease poverty rate by 0.06%. Similarly, Nazar and Mahmoud (2013) examined the relationship between government spending and poverty rate in Sistan and Baluchestan Province of Iran for the period 1978 to 2008. The study observed that constructive expenditures have positive effect on poverty reduction while current expenditure of government had negative effect on poverty reduction.

Also, Mehmood and Sadiq (2010) examined the relationship between government expenditure and poverty rate in Pakistan for the 1976 to 2010, and observed that negative relationship between government expenditure and poverty rate in Pakistan. Relatedly,

Amassoma et al. (2017) investigated the upshot of money supply on inflation in Nigeria using annual time series data spanning from 1970 to 2016. Co-integration and Autoregressive Dynamic Error Correction Model (ADLECM) approach was utilized. The results showed that money supply does not considerably influence inflation both in the long and short run possibly because the country is in recession.

Several theoretical and empirical studies have associated government expenditure to poverty alleviation in different economic settings, with empirical findings providing significant positive correlation between government expenditure growth and poverty reduction in most cases, but the beauty of this article is the incorporation of money supply which influences and predates government expenditure growth over time, thereby giving a glimpse on the pattern of government expenditure in relations to money supply, expenditure and poverty alleviation in Nigeria.

## **METHODOLOGY**

This study employed the ex-post facto research design. According to Onwumere (2009), ex-post facto design is a sort of research that involves events that have already occurred. Ex-post facto research design is a systematic and empirical investigation in which the researcher does not have direct control over independent variables because their manifestations have already occurred or because they cannot be

modified inherently (Akuezuiilo, 1990). This method was chosen because the study wants to use what is already available and then go back to explain why. This type of research is based on an in-depth assessment of dependent and independent factors. Furthermore, independent factors are investigated in retrospect in order to identify probable and reasonable relationships as well as the likely consequences that changes in independent variables have on a dependent variable. This research is based on Nazar and Mahmoud's (2013) Wagner's Law idea. Thus, based on the study's aims, this research follows the model of Nazar and Mahmoud (2013), which is as follows:

*In functional form*

$$PGI = f(M2, GEDU, GHTH, GAGWR, GTRCM,) \quad (1)$$

*Expressing equation equ (1) in linear form;*

$$PGI = \beta_0 + \beta_1 M2_t + \beta_2 GEDU_t + \beta_3 GHTH_t + \beta_4 GAGWR_t + \beta_5 GTRCM_t + \mu_t \quad (2)$$

*Where;*

<b>Proxy</b>	<b>Variables</b>	<b>A - priori expectations</b>
M2	Money supply	(-) negative
GEDU	Government expenditure on education	(-) negative
GHTH	Government expenditure on health	(-) negative
GAGWR	Government expenditure on agriculture and water resources	(-) negative
GTRCM	Government expenditure on transport and communication	(-) negative

The study employed quarterly (high frequency) time series data, sourced mainly from the Central Bank of Nigeria (CBN) Statistical Bulletin (various issues) for the period, 1981 to 2020. The choice of high frequency data is informed by the fact that stock market activities are performed on daily basis.

**Broad money supply (M2):** is a measure of the money supply that includes more than just physical money such as currency and coins (also known as narrow money). It generally includes demand deposits at commercial banks, and any monies held in easily accessible accounts. Components of broad money are still very liquid, and non-cash components can usually be converted into cash very easily.

**Government expenditure on education (EDU):** public expenditure on education consist of general government expenditure on education (current, capital and transfer) is expressed as a percentage of GDP. It includes education administration as well as subsidies for private entities.

**Government expenditure on health (HTH):** Total health expenditure is the sum of public and private health expenditure. It covers the provision of health services but does not include provision of water and sanitation.

**Government expenditure on agriculture and water resources (AGWR):** Total spending on resilient and sustainable agriculture sector, and by supporting the sustainable and productive management and use of rivers and water resources.

**Government expenditure on transport and communication (TRCM):** Spending on factors that influence public investment in transportation and communication infrastructure. They access the influence of government objectives, nature of domestic economy, and the external assistance flow on public infrastructure spending.

## RESULTS

**The Augmented Dickey Fuller (ADF) Unit Root Test** was utilized in this study to test for the stationary of the variables. The null hypothesis is that the variables under consideration have a unit root, as opposed to the alternative that they do not. If the ADF statistics value is greater than any of the Mackinnan critical values in absolute terms at a selected level of significance, the null hypothesis of non-stationary is rejected; otherwise, do not reject.

**Table 1: Unit Root Test**

Variable	Level	1 <sup>st</sup> difference				
	Form	Adf Statistics	5%Critical Value	Adf Statistics	5% Critical Value	Order of integration
<i>PGI</i>		-2.02	-2.95	-5.76	-2.95	1(1)
<i>GAGWR</i>		-1.34	-2.95	-6.19	-2.95	1(1)
<i>GTRCM</i>		-2.45	-2.95	-3.35	-2.95	1(1)
<i>GEDU</i>		-1.14	-2.97	-3.31	-2.95	1(1)
<i>GHTH</i>		-1.46	-2.97	-3.52	-2.95	1(1)
<i>M2</i>		7.41	-3.61	-5.1	-3.5	1(1)

The unit root test result in the Table 1 shows that all the variables are non-stationary after first difference. At 5 percent significant level, the null hypothesis is accepted for all series. Hence we conclude that the variables under investigation are integrated of order one I(1). **Cointegration Test Result:** Because the variables are integrated in the same order (1), a cointegration test was performed to determine if the variables have a long-run relationship. The Engel-Granger two-step technique was used to test for this. This requires performing the ADF test on the regression residuals using the same decision procedure as the unit root test. The null hypothesis states that the variables are not cointegrated, but the alternative admits cointegration.

**Table 2: ADF Statistics**

Variable	Adf Stat Value	5% Critical Value	Integration
Residual	-2.2159	-2.9511	1(1)

In Table 2, since the ADF statistics is less than the 5% Mackinnan critical values, we accept the null hypothesis that the Variable under investigation are not cointegrated. Hence there is no long-run relationship between them and we proceed to present the estimated results in their differenced forms.

**Table 3: Effect of money Supply, Government Expenditure and poverty Alleviation**

Variable	Coefficient	Std Error	t-statistics	prob
<i>C</i>	11.32187	6.475554	1.748402	0.0897
<i>GAGWR</i>	-1.04E-05	1.54E-05	-0.676961	0.5031
<i>GEDU</i>	-0.017408	0.031276	-0.556610	0.5815
<i>GHTH</i>	0.079054	0.100236	0.788676	0.4359
<i>M2</i>	9.39E-05	0.000285	0.330004	0.7435
<i>GTRCM</i>	0.375902	0.977540	0.384539	0.7030

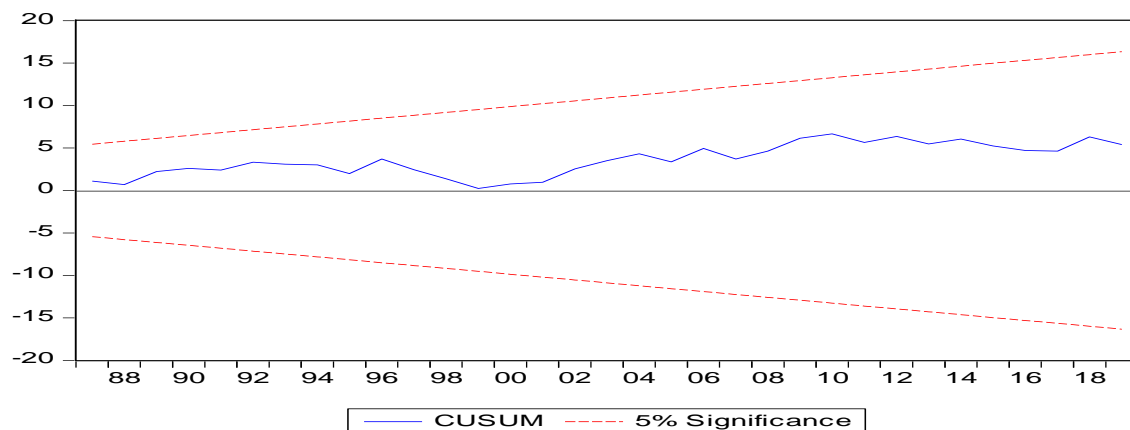
$R^2=0.026470$     F-stat =0.96    DW-stat =2.77

Poverty reduction was the dependent variable. The poverty reduction constant coefficient was positive and statistically insignificant throughout the study period, which indicates that, when the independent variables are held constant, poverty reduction efforts in Nigeria will succeed. The results corroborate that of Okulegu (2013), who, looking at the impact of government spending in agriculture on poverty reduction in Nigeria from 1980 to 2009, found that one per cent increase in Agricultural Credit Guarantee Scheme Fund (AGCSF) resulted in a reduction of poverty rate of 0.06%. The findings give statistical proof that a 1% increase in agricultural spending by the government would reduce poverty in Nigeria by 10.4%.

The findings showed an inverse relationship between government spending on education and poverty reduction, suggesting enhanced educational infrastructure lowers poverty levels. In particular, one percentage point increase in total government spending on education mirrors 17.40% drop in poverty rate, while the coefficients of government spending on health, broad money supply, and transportation are collectively positively related to poverty reduction efforts in the country during the time frame of this

study. This finding is consistent with the findings of Ogunmuyiwa and Ekone (2010) that, while money supply is positively related to growth, the result is insignificant in the case of GDP growth rates depending on the choice between contractionary and expansionary money supply.

A model's coefficient of determination measures how much of the variation in the dependent variable can be attributed to changes in the model's regressors; in this case, a coefficient of determination of 26.47% indicates that annual changes in the level of poverty reduction in the country can be attributed to spending on agriculture, health, education, the transport sector, and broad money supply. Moreover, the coefficient are not the only and all adequate characteristics to capture the specific causes of changes on poverty reduction in the country over time because of the shallow explanatory power of the regressors over the regressed. The methodology used to regress the impact of Nigeria's monetary policy and government spending on poverty reduction was chosen after careful consideration of its potential global importance. Further evidence that the model is not a good fit is provided by the 0.96 values. Given that 2.77 is not equal to zero, it follows that our model is completely devoid of auto-correlation.



The model was tested for stability using a recursive estimate for ordinary least square, and since the trend line was shown to be contained within these bounds, the test was considered successful.

## CONCLUSION

For the past 38 years (1981-2019), researchers in Nigeria have examined how change in money supply and government spending affect the country's efforts to reduce poverty. This research looked at the relationship between money supply and poverty reduction in Nigeria, as well as the relationship between government spending and poverty reduction. Government spending on agriculture and education has a reducing effect on poverty rate in the country over time, as shown by empirical data. The study concluded that government should invest more in agriculture because the sector has a higher propensity to reduce poverty during the time frame of the investigation, and that government should make it easier to pay for and implement education. The research found that increasing public investment in sectors like agriculture and education can help the economy grow, create jobs and lower poverty rates. The following recommendations are made in line with the findings of the study:

- 1) Government at various levels should increase agricultural financing, since it has a greater potential to reduce poverty in the country.
- 2) Government should facilitate educational expenditure and implementation of educational related expenses in the country.

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