

A Parametric Debate of Value Added Tax, Economic Growth and Poverty Reduction in Nigeria

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Abstract

Nigerian tax authorities have continued to collect huge sums of funds in form of revenue from Value Added Tax (VAT) and plans have been concluded to extend this source of revenue to financial services sector.

Meanwhile, empirical study that investigates the relationship that exists among VAT, Economic Growth and Poverty is rather scarce. This paper examines whether VAT revenue could be used to maintain social cohesion needed for sustainable long- run growth in Nigeria. Two Ordinary Least Squares (OLS) regressions, are conducted using time series data from 1994-2012.

The study however found that VAT revenue has positive and significant ($p < 0.05$) impact on economic growth and that economic growth has negative but insignificant ($P < 0.05$) impact on poverty reduction.

Keywords: Value Added Tax, Economic Growth, Poverty, Government Revenue

1.0 INTRODUCTION

Poverty reduction remains one of the main goals of developmental effort as evidenced by the adoption of Millennium Development Goals (MDG) by most countries. There has been ongoing debate about the elements that should be at the centre of any poverty reducing strategy as no consensus is arrived yet on the best strategy to adopt. Consequently, Government of both developed and developing countries have tried to adopt government expenditure and revenue approach as poverty reduction strategy but due to high expenditure, most of the developing countries are facing problem of fiscal deficit. Fiscal deficit leads to inflation in the economy. In many developing countries, high fiscal deficit crowd- out private investment that reduces employment and output and this can aggravate poverty.

In an attempt to overcome these challenges, Nigerian government have concluded plans to increase VAT revenue in order to provide a wide range of services that reduce poverty level. The Federal Inland Revenue Service (FIRS) disclosed on Tuesday 3rd, 2014 that it has begun plans to improve its revenue collection from VAT especially with financial services sector.

Despite the global financial and economic Crisis that impeded revenue generation, VAT revenue in Nigeria has remained resilient, Between 2007 and 2012, VAT revenue increased by N380.0bn (N301.7bn, N404.5, N468.4, N562.9 N649.5bn and N681.7bn) respectively. It is an undisputable fact that VAT revenue as a ratio of GDP has been increasing in Nigeria, it was highest in 2010, with a ratio of 1.92 percent. However, the GDP per capital was 18.87 per cent, total revenue as ratio of GDP recorded 25 per cent and capital expenditure as ratio of GDP stood at 2.6 percent. Despite these revealing features, poverty rate stood at 50.2 percent, this seems to lend credence to the pessimistic view that VAT may widen inequality gap that could promote poverty. It therefore becomes imperative that empirical analysis on the relationship among VAT, GDP and poverty rate be conducted. In the context of Millennium Development Goals (MDG), the areas of need are poverty reduction, education, health care and access to finance, provision of these services cannot solely rely on oil export. Therefore, tax revenues are required, but because much of the taxation is based on household consumption, part of the burden on increased taxes falls on the consumption of poor people.

Tax as a source of government revenue can be used to render traditional functions of providing public goods, maintaining law and order, defend nations territorial integrity, regulate trade and business to ensure social and economic stability Azubuike (2009). VAT as a source of government revenue can correct income inequality and this is still being debated in the academia and policy circles.

Interestingly, some scholars like Ajakaiye (1999), Ruebling (2000), Gareth (2000) amongst other argued that VAT could be a bad instrument for poverty reduction. They concluded that since VAT burden falls more heavily on the poor household than the rich, it might increase poverty rate. In contrast, some researchers like Akinlabi (2011), Mecmood and Sadiq (2010), Onaolapo, Aworemi and Ajala (2013) argued that VAT revenue is beneficial to an economy. They argued that if more goods are taxed, the revenue of the country will increase. However, studies that investigate the linkage between government revenue and or expenditure on poverty reduction is scanty. Even though few studies on the government finance and poverty nexus such as

Akinlabi, Jegede and Kehinde (2011), conclude that public expenditure could promote growth and hence decline in poverty, they failed to capture poverty in their study.

This study is motivated by the desire to provide a first attempt in exploring whether VAT revenue led-growth could reduce poverty in Nigeria. The findings will contribute to the relatively under explored research area of VAT - poverty reduction nexus and provide insight into how public finances can be optimally utilized to maximize the welfare of the citizenry. The rest of the paper is organized as follows:

Section 2 summarizes previous studies, section 3 discusses the data, model formulation and methodology adopted to achieve the paper's objective, Section 4 presents the result and then discusses the findings, and finally, section 5 concludes.

2.0 LITERATURE REVIEW

There are diverse scholarly opinions to the impact of Value Added Tax (VAT) on economic growth and poverty reduction. Ajakaiye (1999) introduced the conceptual framework to analyze the macroeconomic effects of value Added Tax in Nigeria, using a computable general equilibrium analysis. Recently, Stephen (2013); Adereti, Adesina and Sanni (2011), and Umeora (2013) amongst others argued that VAT impact positively on economic growth and should therefore reduce poverty through their direct effect on recurrent expenditure of government and indirect effect through capital expenditure. There is lack of consensus among policy makers and academia about the macroeconomic impact of VAT on economic growth and poverty reduction in Nigeria. Perhaps, the choice of variables and methodology employed in these analyses account for these mixed results.

Ajakaiye (1999) found that when VAT is treated in a cascading manner by VAT organizations and injected into the economy, the price, consumption expenditure, output and income effects will be most deleterious.

Onaolapo, Aworemi and Ajala (2013) argue that if more goods and services are taxed, the revenue base of the country will increase.

Adreti, Adesina and Sanni (2011) descriptively investigated the impact of VAT on economic growth in Nigeria from 1994-2008 and found that VAT has positive and significant effect on economic growth in Nigeria.

Miki (2011) examined the effect of the VAT rate change on aggregate consumption and economic growth. The result showed that the trend of aggregate consumption on real GDP changed, when VAT was changed. They found that VAT revenue is positively correlated with gross domestic product.

Stephen (2013) examined the effect of VAT on output growth in Nigeria using Error Correction Methodology (ECM). He found a positive and significant relationship between VAT and output growth in Nigeria. The result from the study also indicate that past values of VAT could be used to predict the future behavior of output growth in Nigeria.

Gareth (2000) also found that if endogenous growth models are to be applied, then human capital investment. He concluded that tax effect on growth will be very weak.

Overall, none of these studies examined the impact VAT led- growth could have on poverty reduction which is the focus of this study. However, this study attempts to fill this gap. In addition, the study include government revenue and expenditure variables for which data were available as control variables. The potential importance of these variables was recognized by Aladejare (2013), Mehmood & Sadiq (2010) Akinlabi, Jegede and Kehinde (2011), Dollar (2000) amongst others.

Dollar (2000) used 2 stage least squares to examine whether growth is good for the poor. The finding of the study indicates that growth generally does benefit the poor as much as everyone else, so that the growth enhancing policies of good rule of law, fiscal discipline and openness to international trade should be at the center of successful poverty reduction strategies.

Kakwani (2000) analyzed how relation between growth and poverty can change with initial levels of economic development and inequality. The result from the study further showed that poverty rate will be higher as the initial level of mean income is higher.

The implication that emerges is that faster growth may lead to a slower reduction or even increase in poverty depending on how much inequality rises.

Roemer and Gugerty (1997) examined whether economic growth tends to reduce poverty. The result from their study indicates that an increase in the rate of per capital GDP growth translate into a one- for- one increase in the growth of average income of the poorest. They concluded that countries with better macro policies grow faster, and this growth tends to alleviate poverty.

Warr (2001) also found that the relationship between economic growth in the agric, industrial and services and poverty incidence for Thailand, Indonesia, Malaysia and the Philippines is positive using pooled data. Their result confirm that poverty reduction was related to growth of agric and services but not to growth of industry.

Aladejare (2013) analyzed the impact of government spending on economic growth in Nigeria using Vector Error Correlation Method (ECM) and granger causality but included government expenditure and capital expenditure as additional variables.

They found that growth in government recurrent expenditure does not bring about significant growth in the

economy. They also found that causal effect of economic growth on government capital spending is more significant than government recurrent expenditure.

Itriago (2011) examined the efficacy of using development taxation to fight poverty. Findings from the study indicate that developing countries have not made the most of tax policies as a tool for achieving poverty reduction.

3.0 METHOD OF ANALYSIS AND MODEL SPECIFICATION

3.1 Data and Data Sources

The data for Gross Domestic Product; Government Revenue, Capital expenditure was sourced from Central Bank of Nigeria Statistical Bulletin, 2012, while Value Added Tax data was sourced from Central Bank of Nigeria Annual Reports and Accounts various issues. Meanwhile Labour Force and secondary school enrolment data was sourced from World Development indicators (2012).

3.2 Methodology

The methodological framework adopted in this paper is the Log-Log specification model specified in equation (ii) and (iv)

The series used in the analysis are annual observation expressed in natural logarithms with sample period, from 1994-2012.

This study will use two regression analyses to evaluate the relationship between Value Added Tax (VAT), economic growth and poverty reduction in Nigeria.

Descriptive statistics in the form of mean, median, Skewness, Kurtosis etc will also be adopted. Ordinary Least Squares (OLS) is employed because of its Best Linear Unbiased Estimate (BLUE) properties

Correlation analysis will also be used to examine the nature of relationship among variables.

3.3 Model: Specification

The initial econometric model to estimate the growth from VAT is:

Growth = f(VAT, conditional set)

$$Y = f(K, L) = AK^{\beta_1} L^{\beta_2} L^{\beta_2} g(VAT);$$

$$\text{or}; f(K, L) = AK^{\beta_1} L^{\beta_2} KVAT^{\beta_3}$$

The production function will be

$$\ln GDP = \ln A + \beta_1 \ln(K) + \beta_2 \ln(L) + \beta_3 \ln(KVAT) \dots \dots \dots (1)$$

Where, $\ln(GDP)$ stands for the change in Gross Domestic Product, $\ln(K)$, $\ln(L)$ and $\ln(KVAT)$, stand for the change of Total Government Revenue, $\ln(K)$, change in VAT revenue, $\ln(L)$ change of human capital and $\ln(KVAT)$ stands for change VAT and a change in productivity. By adding the disturbance error term to the equation above, we have the growth accounting formulation. From the equation, it could allow us to run regressions estimating the GDP growth elasticity with different form of capital.

Thus, the growth equation used in this study is:

$$\log(GDP) = \alpha + \beta_1 \log(VAT) + \beta_2 \log(Cape) + \beta_3 \log(sece) + \beta_4 \log(POV) + \beta_5 \log(rev) + \beta_6 \log(LabF) + e \dots \dots \dots (ii)$$

The second model is adopted to test the effect of economic growth on the reduction of poverty. Additionally, the ratio of VAT to GDP is used to capture the direct effect of VAT on poverty reduction in the model. The functional form of the model is stated thus:

$$POV = f(GDPpercap, VAT/GDP, Cape/GDP, Rev/GDP, Sece, labf) \dots \dots (iii)$$

The econometric model of the equation

$$\log POV = \alpha + \beta_1 \log GDP + \beta_2 (VAT) + \beta_3 \log(Cape) + \beta_4 \log(rev) + \beta_5 \log(sece) + \beta_6 \log(LabF) + \mu \dots \dots \dots (iv)$$

Where POV = Poverty incidence of people living below poverty line in Nigeria

GDP = Gross Domestic Product at current basic prices as ratio population.

VAT = VAT revenue collected as ratio of GDP

rev = Government gross revenue as ratio of GDP

$sece$ = Secondary school enrolment

$Labf$ = Labour force

α = Constant term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = parameters to be estimated

μ = error term

4.0 EMPIRICAL RESULT AND DISCUSSION

4.1 Descriptive Statistics

Table 1

	GDP	Rev	VAT	CAPE	SECE	POV	LABF
Mean	9.7384	25.1052	1.2552	5.7842	29.4736	48.6315	53.7368
Median	5.9400	259700	1.3300	4.6000	26.6500	49.7000	54.0000
Maximum	24.6900	41.5900	1.9200	15.6000	44.0400	50.2000	54.0000
Minimum	1.30000	11.6200	0.5100	2.20000	23.2500	45.9000	53.0000
Std. Dev.	7.4138	8.9342	0.4164	3.6293	6.6312	1.9177	0.4524
Skewness	0.7215	0.06433	-0.07463	1.2309	1.0365	-0.7545	-1.0757
Kurtosis	2.2244	1.9436	3.8237	3.8237	3.0200	1.6245	2.1571

From table 1 above, the descriptive results shows the average growth of Gross Domestic Product (GDP), Government Revenue (REV), Value Added Tax (VAT), Capital Expenditure (CAPE), Secondary School Enrolment (SECE), Poverty Rate (POV) and Labour Force (LABF) at 9.7384, 25.1052, 1.2552, 5.7842, 29.4736, 48.6315, and 53.7368 respectively. Also the maximum values are GDP (24.6900), REV (41.5900) and LABF (54.0000) with the minimum values of 1.3000 (GDP), 11.6200 (REV), 0.5100 (VAT), 2.2000 (CAPE), SECE (23.2500) 45.900 (POV) and 53.000 (LABF)

Thus, it could be observed that there is no wide variance of the individual values from the mean values. The result of the Skewness and kurtosis of the values suggest a positively skewed distribution for GDP, REV, CAPE and SECE while VAT, POV and LABF indicates negatively skewed distribution.

4.2 Correlation Analysis

TABLE 2

	GDP	Rev	VAT	CAPE	SECE	POV	LABF
GDP	1.0000						
REV	0.3588	1.0000					
VAT	0.8490	0.4032	1.0000				
CAPE	-0.6551	-0.5270	-0.6003	1.0000			
SECE	0.9677	0.3305	0.7242	-0.6459	1.0000		
POV	0.1078	-0.3620	-0.0521	0.3697	0.6862	1.0000	
LabF	0.5658	0.7803	0.7566	-0.4797	0.4808	-0.3420	1.0000

SOURCE: Authors compilation 2014

From table two above, there is a weak positive correlation between Government revenue and Gross Domestic product. A strong positive correlation is observed between VAT revenue, secondary school enrolment, gross domestic product and Labour Force. While, a strong negative correlation is found between capital expenditure and economic growth in Nigeria.

4.3 RESULT OF GROWTH EQUATION

Table 3: Dependent variable: Economic growth

Explanatory Variable	Coefficient	probability values
Log Rev	37.2558	(0.6786)
Log VAT	0.0523	(0.3766)
Log CAPE	6.695***	(0.0006)
Log SECE	-0.0237	(0.8465)
Log POV	0.7854***	(0.0000)
Log LABF	0.2989*	(0.0891)
	-1.3917	(0.4052)

SOURCE: AUTHORS COMPILATION 2014

Diagnostic Test

R-squared	0.989
Adjusted R-squared	0.984
F-statistics (Prob)	193.307 (0.0000)
Durbin – Watson Stat.	2.14

NOTE: ***, **, * denotes significance at 1%, 5%, and 10% respectively

Probability values are in parenthesis.

Table 3 shows the regression results of equation 2 which are tested with the explanatory variables. The variables are in logarithm form to test the elasticity of the explanatory variables to the dependent variable. The combined impact of gross domestic product per capita and the VAT revenue, which is in ratio form to GDP, are estimated

as shown in table 3.

The result showed that 98.9% of the regressand are explained by the combined effect of the explanatory variables. This implies that that the model has a good fit, the results can be discussed as follows:

The partial regression coefficient of VAT revenue in Nigeria is positive and statistically significant at 1% level, it means that holding other variables constant, a one percentage increase in VAT revenue in Nigeria increases GDP by 6.6 percent. This result is consistent with previous findings by Adereti, Adesina and Sanni (2011), Bakare (2013), Umeora (2013) and Onaolapo, Aworemi and Ajala (2013) that VAT revenue have a statistically significant effect on output growth in Nigeria.

The partial regression coefficient of total government revenue is positive but insignificant at level. Holding other variables constant, a one percentage increase in government revenue increase GDP by 0.05 percent

The partial regression coefficient of capital expenditure is negative but insignificant. Holding other variables constant, a one percentage increase in government capital expenditure retards growth by 0.02 percent. This finding is inconsistent with the findings of Aladejare (2013) that finds a significant positive relationship between government capital spending with economic growth.

The partial regression coefficient of poverty is positive and statistically significant at 10%. This is surprising, as theory expects an inverse relationship between poverty and economic growth. This finding seems to lend credence to the finding of Itriago (2011) that government in developing countries have not made the most use of tax policies as a tool for achieving poverty reductions.

The partial coefficient of labour force has an inverse relationship but insignificant relationship with economic growth in Nigeria. This implies that labour has not been fully utilized in Nigeria.

The F-statistics of 193 and probability value of 0.000 shows that the model is statistically significant. Durbin Watson statistics of 2.14 denotes absence of serial auto correlation.

4.4 Result of poverty equation

Table 4 Dependent variable: Poverty rate

Explanatory variables	Coefficient	Probability Values
C	151,1147	(0.0296)
Log GDP	0.8328	(0.0381)
Log CAPE	0.3167	(0.2754)
Log SECE	-0.5656	-0.5656
Log CAPF	-14191	(0.1794)
Log VAT	-3.244	(0.2754)

SOURCE: AUTHORS COMPILATION 2014

Diagnostic Test

R-squared	0.6090
Adjusted R-squared	0.4587
F-statistic	4.0512
Deburine Waston Stat.	1.3025

The result of the poverty equation in table 4, shows that 60.9 per cent of the dependent variable are explained by the explanatory variables.

The partial coefficient of gross domestic product is positive and statistically significant with poverty rate at 5% level. Holding other variables constant, a one percentage increase in the GDP in Nigeria increase poverty buy 0.83 percent. Its positive sign shows that VAT – Led growth has not contributed to poverty reduction in Nigeria. This result is inconsistent with the findings of Dollar (2000), Kakwani (2000) and Roemer and Gugerty (1997) that finds growth to be poverty reducing. However, they concluded that countries with better macro policies grow faster, and this growth tends to alleviate poverty.

The coefficient of VAT is found to have an inverse but insignificant relationship with GDP, Holding other variables constant, a one percentage increase in VAT reduces poverty by 3.24 per cent.

The partial coefficient of capital expenditure is also positive and statistically significant at 5% level. Holding other variables, a one percentage increase in capital expenditure increases poverty by 0.31 per cent. The implication that emerges from this result suggest that most capital projects executed in Nigeria are not pro-poor.

The variable for human capital development (Secondary school enrolment) has an inverse relationship with GDP and statistically significant at 10% level. Holding other variables constant, a one percentage increase in secondary school enrolment reduces poverty by 0.56 per cent. Similarly, the partial coefficient of Labour Force is negatively and statistically insignificant. Holding other variables constant, a one percentage increase in labour force reduces poverty by 1.39 percent. This is consistent with the literature review, which indicates that human capital development has the potential to alleviate poverty.

5.0 CONCLUSIONS AND POLICY IMPLICATIONS

The study provides empirical evidence of Value Added Tax in both direct and indirect ways on the reduction of

poverty in Nigeria from the period 1994-2012.

Ordinary Least Squares (OLS) in the form of 2 two stage least squares regressions are represented in the growth model and poverty model in this study, and the findings of the regressions are discussed. The major findings from the study are:

- i. The VAT revenue collected in Nigeria are found to have a significant and positive effect on the economic growth of Nigeria.
- ii. The economic growth in Nigeria is found to have a positive and significant impact on the reduction of poverty.
- iii. The VAT revenue have an inverse but insignificant impact on the poverty reduction in Nigeria. The evidence provided in this study is consistent with the assumption of direct and indirect effect of VAT on poverty reduction.

The above findings highlight the importance of VAT revenue on the reduction of poverty level in Nigeria. Based on the findings, the Nigerian government should expand and encourage more VAT revenue but it should be mentioned that, for VAT revenue to make meaningful impact, goods consumed by the rich should be taxed more and those consumed by the poor should be reduced in order to reduce income inequality. Additionally, government is encouraged to spend more on capital expenditure that will have direct impact on the poor. Expenditure on human capital development should be given priority.

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