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The Impact of Tax Policy on Economic Growth in Nigeria

S.A. ADUDU
The Fedral Polytechnic Nasarawa,General Studies Department,P.M.B. 01, Nasarawa
E-MAIL: otuldudu@yahoo.co.uk

OJONYE, M. SIMON
Federal College of Statistics,(National Bureau of Statistics)Manchok,P.M.B. 2043Kaduna State
E-MIAL: ojonyesimon@yahoo.com

Abstract
In contemporary economic literatures, there exist, considerable disagreement about how tax policies influence economic growth and development. While the traditional schools of thought advocated the theory of low income tax rates as major factor influencing economic development, the modern schools propagated the theory of higher income tax rates that is capable of developing nations. Using time series data between 1990 and 2011, this study attempts to justify these lines of thinking by making Nigeria as a case study with the main objective of identifying the impact of tax policy on economic growth in the country. Applying the Granger – causality co integrations framework, this study finds statistical evidence that efficient tax reforms are necessary conditions for enhanced sustainable economic growth. On the basis of the findings, the study recommends among other issues that improvement in tax regimes, removal of distortions in taxation, discouragement of tax holidays to MNCs and diversification of revenue base as necessary catalysts for sustained economic growth and development.

1.0 INTRODUCTION

Taking their point of departure from the mainstream traditional economics' orthodoxy, the modern school of economics propagated the theory of higher income tax rates as necessary conditions for a sustained economic growth. This philosophy is in contrast to the traditional economics' views that low income taxes are capable of influencing economic development. However, it is important to realize that an optimal tax rate is one which comprises a synthesis between the state's revenue and its economic development. A higher tax rate deters saving and development, while a lower tax rate would lead to less revenue to the government. In order to justify this dichotomy, an attempt is made in this paper, taking Nigerian economy as a case study, to address the economic effects of both low and high tax policy regimes on economic growth with the main objective of examining the economic impact of tax policies on growth and development.

This paper is divided as follows: section 1, is the main introduction of the paper, section 2 presents the review of relevant literatures that are necessary for an understanding of the subject matter. Section 3 gives the model specification and estimation procedures. In section 4, an empirical analysis of the data collected is carried out with a view to shaping the policy options necessary for an effective tax administration in Nigeria. Section 5 concludes the study and presents some policy recommendations.

2.0 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 LITERATURE REVIEW

The socio-political and economic development of any nation depends more fundamentally on the amount of revenues generated through taxation for the provision of infrastructures for economic growth. Conceptually, tax is a compulsory levy imposed on the citizens (and their property) by the government for the purpose of providing infrastructures for economic growth development. According to Appah (2004), Anyanfo (1996), Anyanwu (1997), Appah and Oyandonghan (2011), Ogbonna and Appah (2012), tax is a compulsory levy imposed on a subject or upon his property by the government to provide security, social amenities and create conditions for the economic well-being of the society. Usually, taxes are imposed to regulate the production of certain goods and services, protect infant industries, control business, curtail inflation and reduce income inequalities amongst others. Operationally, taxes are the most essential instruments of fiscal policy used to managing the economy. As an instrument of fiscal policy, Tosin and Abizadeh (2005) outlined five possible mechanisms by which taxes can affect economic growth. Firstly, taxes can inhibit investment rate through such taxes as corporate and personal income and capital gain taxes. Secondly, taxes can slow down growth in labour supply by disposing labour – leisure choice in favour of leisure. Thirdly, tax policy can effect productivity growth through its discouraging effect on research and development expenditures. Fourthly, taxes can lead to a flow of resources to other sectors that may have lower productivitely. Fifthly, high taxes on labour supply can distort the efficient use of human capital. For taxes to play its critical role in an economy, Nzolta (2007) outlined four key issues that must be understood in taxation.

Firstly, a tax is a compulsory contribution made by the citizens to the government for the common use of citizens. Secondly, a tax imposes a general obligation on the tax payers. Thirdly, there is a presumption that the contribution to public revenue made by the tax payer may not be equivalent to the benefits received. Fourthly, a tax is not imposed on a citizen by the government because it has rendered specific services to him or his family.

Thus, the foregoing views on taxation imply that a good tax system plays a multiple role in the process of economic development. Such a tax system presents an opportunity for the government to collect additional revenue needed to discharge its obligations. Under such a tax system, the nation's economic resources are efficiently mobilized towards the promotion of economic growth and development. Within the Nigerian context, the fiscal operations of government are divulged into a three – tiered tax structures between the Federal, State and Local governments, with each tier of government possessing and coordinating a separate tax jurisdiction. Unfortunately, tax systems in Nigeria is being dominated by oil revenues which accounts for at least 70 percent of total federally collected revenues for about four decades now. Consequently, the traditional tax system and tax revenue in the country has never assumed any strong role in fiscal policy management. As Ogbonna and Ebimobowei (2011) opined, instead of transforming the existing revenue base, fiscal management has merely transited from one primary product-based revenue to another, making the economy susceptible to fluctuations of the international market.

sHowever, following the dwindling level of revenue generated from taxation over the years, the use of tax as an instrument of fiscal policy have been hampered by ineffectiveness of government officials. As Kiabel and Nwokah (2009) argued, the increasing cost of running government coupled with the dwindling revenue has left all tiers of government in Nigeria with formulating strategies to improve the revenue base. Given the dynamic nature of taxation, Ola (2001) argued that tax reforms are necessary to effect the required changes in the national economy.

2.2 THEORETICAL FRAMEWORK

Understanding the impact of taxation on economic growth can be viewed from two major schools of thought – the traditional economic school and the modern school. In the traditional economic school, Robert Barro (?), views summarized in the work of Slemrod (2003) is that while holding other determinants of growth constant, low tax rates and low government spending were associated with higher growth. This means that the higher the marginal tax rate, the greater the chances of higher income tax payers diverting extra time from productive operations to leisure activities. On the other hand, the modern school revealed that higher marginal tax rates leads to greater economic development in the long-run because government would secure a greater revenue which when invested in the country's education and infrastructure development will boost the economy.

From the point of view of economic theory, marginal tax rates are particularly important because they affect the incentives of individuals to earn more income. Consequently, as marginal tax rates increases, individuals to get to keep less of their additional earnings. While economic theory predicts a negative relationship between marginal tax rates and economic growth, it also suggests several factors that will complicate measurement of the linkage. According to Gwartney and Lawson (2006), such factors includes the following: Firstly, there is the difference between the short-run response to charge in marginal rates so much so that an increase in marginal tax rates reduces the supply of labour and capital which will tend to slow the growth of real gross domestic product (RGDP). As this reaction is expected to take time, short-run response may be a misleading indicator of what will happen in the long-run. In this way, the labour supply response will be smaller in the short-run in the long-run. Secondly, the linkage between marginal tax rates and GDP growth may be weakened because GDP figures often fail to register the negative impact of the price distortions accompanying high marginal tax rates. Essentially, GDP register the expenditures and costs of goods and services produced even if these costs exceeds the value derived by the consumer. Thirdly, the linkage between marginal tax rates and GDP growth may also be weakened by the pattern of government expenditures. In most countries, high marginal tax rates are imposed in order to derive revenues that are utilized to subsidized social safety nets such as child – care services, retirement benefits and payment to the unemployed.

Generally, the impact of tax policies is greater in the highest tax brackets – where changes in tax rates will exert their largest effect on both labour supply and tax – avoidance activities. Furthermore, as the Laffer curve analysis indicates, marginal tax rates can be pushed so high that they will actually reduce the revenues derived from the tax. Obviously, marginal tax rates above the level that generals maximum revenues are highly inefficient and counter productive as they reduce both aggregate output and the revenue derived by the government. On the other hand, tax rates near the revenue maximum level are also extremely inefficient because as rates increases towards the revenue maximum point, the higher tax rates will squeeze out large quantities of gains from trade relative to the additional revenue generated. Thus, measured in terms of lost output, these additional revenues are very costly because the most severe side effects of taxes will be exerted by the higher marginal tax rates. The empirical findings on this study will conform this.

1. Curve used to show that increase in tax rates will, after a point, result in reduced tax revenues.

3.0 SPECIFICATION OF THE MODEL

The identified relationship between tax policy and economic growth can be investigated in a number of ways. However, a number of recent studies have adopted the use of an endogenous growth models[2] to stimulate the impact of a fundamental tax reforms on economic growth. As Ogbonna and Ebimobowei (2012) remarked, all these studies conclude that reducing the distorting effects of current tax structure – being a representative of the fiscal structure – of a modern economy, it can be shown that income growth can affect different taxes differently.

To demonstrate the transmission effects of tax Policy changes on economic growth and in line with Tosun and Abizadeh (2005), assume that there are two tax structures (tax A and tax B) that enhance income growth. Consequently, the share of these taxes in total tax revenues can be written as:

$$t^a = t^a\ A(Y) / T \quad \ldots\ldots 1$$

$$\text{and } t^b = t^b\ B(Y) / T \quad \ldots\ldots 2$$

where: $t^a = t^b$ represent the share of taxes A and B on the level of income (Y); A,B are bases of tax A and B; t^a, t^b are the average tax rates for tax A and tax B; are functions of the level of income. Since: t^a and t^b sum up to unity (i.e : $t^a + t^b = 1$), it means that the total tax revenue (T) equal to $t^a A(Y) + t^b B(Y)$. Consequently, it could be seen that both tax shares will depend on the tax rates, tax bases and income, which can be written as:

$$T = f[(t^a, t^b, A(Y), B(Y)] \quad \ldots\ldots 3$$

Recall that for a given tax rates, change in tax share will depend on the relative change in the tax bases. As a result, income growth will change the tax structure when it affects the bases of different taxes. Although, tax rates can changed exogenously through major tax reforms, it can also change endogenously.

2. A new growth theory which provides a theoretical framework for analyzing economic growth that is determined by system governing (or within) a production processes rather than by forces outside of economic system.

through a political process. In line with the OECD (2001) revenue statistics, total tax (T) is defined by eight major tax classifications as follows:

$$T = PT + CT + SST + PAYT + PROPT + GST + IT + OT \quad \ldots\ldots 4$$

Where PT = personal taxes on income, profits and capital gains; CT = corporate taxes on income, profit and capital gains; SST = social security contributions from both employees and the employers; PAYT = payroll and workforce taxes; PROPT = property taxes (including estate, inheritance, gift taxes, taxes on financial and capital formation); GST = goods and services taxes (including VAT, general sales and excise taxes, license fees and taxes imposed on Federal, State and Local governments excluding international trade Tax IT = international trade taxes (such as customs and import duties as well as expect taxes) and OT = other taxes.

To examine the relationship between economic growth and changes in the tax mix of Nigeria, this study uses the fixed effect model[3] so that the regression equation becomes:

$$TAX = \beta\square + \text{In}\,(GDP_{cap})\,\beta_1 + Z_n + f_i + \Phi_i + \sum_1^4 \quad \ldots\ldots 5$$

Where; Tax = share in total tax revenues for each category shown in equation (4); GDP_{cap} = GDP per capita, β_1 + the indicator of the response of tax share to economic growth; f_1, ϕ_i = unobservable time invariant effects, $\sum_1$ = time invariant asymmetric effect; $Z_{1\ =\ \text{matrics of major}}$ conditioning variables while n = vector of coefficients.

Given these specifications, the estimating equation therefore, becomes.

$$Tax = \propto + \beta_i GDP_{cap} + \sum \quad \ldots\ldots 6$$

Variable are defined in terms of logarithms.

3. A model which characteristically removes bias from the estimation caused by a possible correlation between explanatory variables and time invariant country – specific effects.
4. Bearing in mind that the choice of explanatory variables is some what arbitrary so that the robustness of the results is in most cases, sensitive to model specification.

3.1 DATA AND ESTIMATION PROCEDURE

The data used in this study to examine the impact of tax policy on economic growth in Nigeria were obtained from National bureau of statistics, the Central Bank of Nigeria and Federal Inland Revenue Service. The time period under investigation is from 1990 to 2011. Annual data on per capital Gross Domestic product and total tax revenues were used.

4.0 EMPIRICAL ANALYSIS

4.1 Model Estimation Stationarity and Cointegration

For a guide to an appropriate specification (6), the characteristics of the time series data used for estimating the models were examined in order to avoid spurious regression which emanate from the regression of too many explanatory variables on a single dependent variable. In this study, a cointegration test is performe to ascertain

whether (or not) long-run equilibrium relationship exists between or among the non-stationary dependent variables. The works of Granger (1977), Granger and Newbold (1977), Davidson et al (1978), Granger and Engle (1985) have all shown that the existence of co integration is a sufficient condition for formulation of model that allows for the incorporation of an error correction mechanism (ECM). According to Ogiogio (1995), the inclusion of an ECM in a model ensures that the long-run relationship is preserved.

To conduct a co integration test in this study, the Engle-Granger (1987) procedure which ignores the possibility of co integration amongst the independent variables was employed. The model includes the leads of the regression which is associated with the augmented-by-leads autoregressive distributed lag (ARDL) equation described by a (I, I, I,) model, the causality between GDP per capital and tax components exist if.

$$gdP_{capt} = U_{i} + \beta_{1i} \text{ tax } com_t + \beta_{2i}\, gdP_{capt-1} \quad \ldots\ldots 7$$

$$\text{and } taxcom_t = U_{2i} + \propto_{1i} gdP_{capt} + \propto_{21} \text{ x } com_{t-1} \quad \ldots\ldots 8$$

Where: gdP_{cap} = GDP per capita; tax com = Tax components $\propto$, β = parameter estimates; U_{1i} and U_{2i} are serially uncorrelated with zero mean and finite covariance matrix. The causalities are tested for, using the standard F-test computed from the unrestricted version of equations (7) and (8). Symbolizing "cause" by an arrow ($\rightarrow$), the decision rule is that:

i) Tax components "Granger cause" per capital GDP if its overall significance defined by F – test is greater and
ii) Per capital GDP "Granger cause" tax components if its F-test greater
iii) Both GDP per capital and tax components are independent of each other (i) and (ii) hold;
iv) Both are independent if (i) and (ii) are not rejected.

Throughout this paper, variables are defined in logs. Results are contained in the tables below:

Table 1.1 REGRESSION RESULTS FOR THE RELATIONSHIP BETWEEN TAX REVENUE AND GDP PER CAPITA. Dependant Variable: Tax Revenue

S/N	VARIABLE	COEFFICIENT	STD ERROR	T-VALUE
1.	Constant	1.664	0.226	7.363
2.	GDP_{cap}	0.898	0.908	9.147
	R^2 = 0.81, $\bar{R}^2$ = 0.797, F = 83.66 D-W = 0.794			

Source: own computation, using SPSS version 19.0

The regression results presented in table 1.1 above are plausible in that the coefficient of determination as defined by R^2 reveals that over 81 percent of the total variation in the dependent variable (Tax revenues) is explained for, by the predictor of the model (GDP per capita). As a matter of fact, the result shows that Tax Revenues will increase by about 90 percent (0.898) for every one unit change in the per capita GDP. This means that as per capita GDP improves, taxable incomes and property (tax bases) equally improves and vice versa.

To show the direction of causality between per capital GDP and tax components, a Granger – causality co integration test is performed. The results are presented in the table below:

TABLE 1.2 RESULTS OF THE GRANGER-CAUSALITY TEST FOR THE RELATIONSHIP BETWEEN GDP PER CAPITA AND TAX COMPONENTS BASED ON F-TEST

GDP_{cap}	Tax = 46.787	Tax = GDP	38.436
VAT	GDP = 80.030	GDP VAT	44.032
PPT	GDP = 89.946	GDP PPT	35.609
CIT	GDP = 94.306	GDP CIT	66.753
C/EDT	GDP = 101.006	GDP C/EDT	73.203

Source: Own computation, using SPSS version 19.0

Results in table 1.2 above are quite interesting in that, they clearly show how improvements in tax bases (value – added Tax, VAT; petroleum profit Tax, PPT; companies income Tax, CIT; and customs and Excise duties Tax, C/EDT) are necessary conditions for the improvement in economic will being as proxied by GDP per capita. As a matter of fact, these tax components are seen to "Granger- cause" per capita GDP while the revise is not upheld by this study. This finding is consistent with many other studies like Ogbonna and Ebimobowei (2012) amongst others. This shows that a long-run relationship exists between tax components and GDP per capita.

5.0 CONCLUSION AND RECOMMENDATIONS

This study has been carried out with the main objective of investigating into the relationship between tax policy (reforms) and economic growth in Nigeria. Using time-series data from 1990 to 2011, the study finds statistical evidence that long-run relationship exists between economic growth and tax components. To capture this effects, a Granger – causality co integrations test in performed with the results firmly supporting the hypothesis that improvement in tax bases are necessary conditions for enhance economic growth and development in Nigeria. To ensure an efficient tax system that guarantee sustained economic growth, there should be an improved tax

regime that is capable of generating funds for the Government to provide basic social services. This can be achieved through transparency and accountability in governance and in the administration of tax reforms. Secondly, efforts should be made to address all complexities involving effective tax system such as multiplicity of tax payment by individuals and organizations. Thirdly, government should discourage tax holidays to multi-national corporations (MNCs) in the name of attracting foreign direct investments (FDIs). Tax holidays are serious leakages out of an income stream of the country. By so doing, Nigeria would avoid over reliance on "unreliable" foreign aid and other external revenue inflow. Finally, efforts should be directed towards diversifying the economic base to reduce over dependence on oil revenue. A situation in which oil revenue constitute the bulk of government revenue is unacceptable. When the economy is diversified, sustained growth in per capital income can be guaranteed.

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DATA FOR REGRESSION

YEAR	TAX REV (₦'M)	GDP_{cap}	VAT(₦' M)	PPT (₦' M)
1990	26,215.3	1,042.0	0	26,909.0
1991	18,325.2	1,069.0	0	28,615.9
1992	26,375.1	1,066.0	0	51,476.7
1993	30,667.0	1,069.0	0	69,207.6
1994	41,718.4	1,060.0	5,026.00	42,802.7
1995	135,439.7	1,041.5	6,256.90	42,857.9
1996	114,814.0	1,051.8	11,286.00	76,667.0
1997	166,000.0	1,056.1	13,905.30	68,574.1
1998	139,297.6	1,051.0	16,206.30	68,000,000.0
1999	224,765.4	1,075.9	23,750.50	184,300,000.0
2000	314,483.9	39,851.5	30,643.80	525,100.000.0
2001	903,462.3	44,228.0	44,912.90	639,200,000.1
2002	500,986.3	45,317.8	52,632.00	392,213,001.6
2003	500,815.3	57,992.3	65,887.60	682,267,023.4
2004	565,700.0	87,845.3	96,195.60	1,182,281,672.0
2005	785,100.0	109,155.1	87,449.80	1,304,300,000.4
2006	677,535.0	132,604.3	110,566.80	2,008,300,001.6
2007	1,200,800.0	142,957.1	144,372.90	1,500,810,531.2
2008	1,335,960.0	159,906.8	198,056.80	6,530,630.0
2009	1,652,654.3	165,633.9	229,323.20	3,191,937.98
2010	1,907,580.5	185,759.5	275,574.63	5,396.031.05
2011	1,271,053.8	194,276.4	161,081.0	876,746,600.5

Source: CBN (2011) Statistical Bulletin
CBN (2011) Annual Statement of Accounts
FIRS: Revenue Statistics various issues

DATA FOR REGRESSION

YEAR	C.I.T (₦' M)	C/E DT (₦' M)
1990	2,997.3	8,640,0
1991	3,827.9	11,458.9
1992	5,417.2	16,054.8
1993	9,554.1	15,456.4
1994	12,274.8	18,254.6
1995	21,878.3	37,364.0
1996	22,000.0	55,000.0
1997	26,000.0	63,000.0
1998	38,300,000.0	57,761,110.0
1999	48,200,000.0	87,925,345.1
2000	51,100,000.0	101,519,413.2
2001	68,701,000.0	170,684,610.5
2002	89,100.000.0	181,497,821.6
2003	114,800,000.0	196,533,246.7
2004	113,081,361.0	217,274,189.1
2005	140,300,011.7	232,564,218.5
2006	244,901,261.8	177,735,182.9
2007	275,323,661.1	241,481,012.8
2008	2512,310,772.5	352,187,6139.
2009	1256,523,111.5	473,890,822.3
2010	1944,711,851.9	495,876,321.5
2011	151,393,721,311.6	531,401,565.9

NBS (Various Issues): Annual Abstracts of statistics.
FIRS (Various Issues): Federally Collected Revenues.

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