CAPITAL GAINS TAX AND ECONOMIC GROWTH IN NIGERIA

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Abstract

This study empirically examines the dynamic relationship between capital gains tax and economic growth in Nigeria. Using annual time series data covering the period 1986-2013 and a dynamic framework involving augmented Dickey-Fuller (ADF) unit root testing, Johansen cointegration technique, Error Correction Model (ECM) and Granger causality testing, the empirical results reveal that capital gains tax has a positive albeit not very significant impact on economic growth in the interim. This is possibly due to weak administrative, institutional and tax capacity of capital gains tax, arising from unwieldy scope of the Act, clumsy process of determining taxable gain, the inability to discount for inflation, and the inability of loss relief within transactions. Investment, openness and market liquidity on the other hand are found to be positively and significantly related to economic growth, while total tax revenue is positive though weak. Based on these findings, we recommend policy makers and government to institute considerable scope of overall tax reforms, in a manner that will promote growth without significantly compromising other social and economic objectives. Priority should perhaps be accorded the reform of the tax system, which is characterized by rigidity, narrowness of base, multiplicity and bedeviled by inefficient, corrupt and weak administration. Capital gains tax should be designed to evolve tax structures that increase revenue while minimizing distortions through simplicity in tax design. Complementary macroeconomic policies with respect to trade, investment as well as institutional and regulatory mechanisms should be put in place in order to propel rapid economic growth in Nigeria. JEL Classification: C22, C32, H24, H25.

Keywords: Capital Gain Tax, Growth Rate of GDP, Cointegration, Error Correction Model, Granger causality.

Introduction

Taxation is a major source of government revenue, and a veritable tool of fiscal policy, which is instrumental to the realization of macroeconomic objectives. For example, Musgrave and Musgrave (2004) asserted that the economic effects of tax include micro effects on the

distribution of income and efficiency of resources allocation/utilization, as well as macro effect, which relates to the effect of tax on the level of capacity output, employment, prices and growth. More so, tax is an integral component of the social contract between government and the governed. In Nigeria, taxes are collected at different levels of government, which include the petroleum profit tax (PPT), Company Income Tax (CIT), value added tax

(VAI), personal income tax (PIT), customs and excise duty capital gains tax (CGT) among others. The focus of this study is on capital gains tax and its relationship with economic growth in Nigeria, from 1986 to 2013 (due largely to data availability).

Capital Gains Tax (CGT) is a type of tax levied on capital gains arising from the disposal of chargeable assets. CGT was introduced in Nigeria through the Capital Gains Tax Act of 1967 which took effect on 1st April 1967. The provisions of this act are applicable to transactions effected by companies and individuals alike. At inception, CGT was chargeable at 20%, however, 1998, it was reviewed downward to 10%. We note that CGT has generated a lot of controversy in Nigeria, and the world over. The literature is replete with empirical evidence on the relationship between taxation (in broad terms) and economic growth. However, there is scarcity of empirical evidence on the relationship between CGT and economic growth in Nigeria. The motivation for this study is anchored on the need to fill this lacuna. Therefore, we address our minds to the following research questions:

(i) What is the relationship between CGT and growth rate of GDP in Nigeria?
(ii) What is the impact of CGT on the growth rate of GDP in Nigeria?
(iii) What is the direction of causation between CGT and the growth rate of GDP in Nigeria?

The general objective of this study is to investigate the dynamic relationship between CGT and economic growth in Nigeria, the specific objective includes: (i) to determine the relationship between CGT and growth rate of GDP in Nigeria (ii) to examine the impact of CGT on the growth rate of GDP (iii) to determine the direction of causation between CGT and the growth rate of GDP. The hypotheses for this study are stated in their null form and includes;

(i) CGT do not have any significant relationship with the growth rate of GDP in Nigeria,
(ii) CGT do not have any significant impact on the growth rate of GDP in Nigeria,
(iii) There is no significant direction of causation between CGT and growth rate of GDP in Nigeria.

The rest of the study is organised as follows; in section two, we present a review of related literature, in section three, we present the methodology for the study. Section four discusses the empirical findings for the study. Section five concludes the study, with policy recommendations.

Review of Related Literature

In general, studies of taxation suggest that higher taxes have a negative impact on output growth, although these results are not always robust to the tax measure used. Using reduced-form cross-section regressions, Koester and Kormendi (1989) estimated that the marginal tax rate—conditional on fixed average tax rates—has an independent, negative effect on output growth rates. Skinner (1988) used data from African countries to conclude that income, corporate, and import taxation led to greater reductions in output growth than average export and sales tax. Dowrick (1992) also found a strong negative effect of personal

income tax, but no impact of corporate taxes, on output growth in a sample of Organisation for Economic Co-operation and Development (OECD) countries between 1960 and 1985.

Easterly and Rebelo (1993) found some measures of the tax distortion (such as an imputed measure of marginal tax rates) to be correlated negatively with output growth, although other measures of the tax distortion were insignificant in the growth equations. Most empirical studies of taxation and growth are "reduced form" estimates in that they specify a linear model of output growth rates, with tax rates, labor resource growth, and investment rates on the right-hand side of the equation. However, taxes do not necessarily enter the growth accounting framework in a linear fashion. We explored this possibility in Engen and Skinner (1992), where the primary growth effect of tax distortions on production is hypothesized to a function of investment and productivity. McKinsey (1996) study points to the potential importance of the inter sectorial allocation of capital. The study observed that Japan and Germany both had much higher rates of investment. But because U.S. investment appeared to be allocated to more profitable (i.e., higher productivity) sectors, the net increment to the effective capital stock, and hence to national income, was. considerably greater in the United States, despite the lower investment rate. Similarly, King and Fulton (1984), in their study of tax systems in the United Kingdom, Sweden, West Germany, and the United States, found a strong negative correlation between economic growth and the inter sectorial variability n investment tax rates. Of course, nearly any tax will tend to distort economic behavior along some margin, so the objective of a well-designed tax system is to avoid highly distortionary taxes and raise revenue from the less distortionary ones. There is some evidence that how a country collects taxes matters for economic growth (Mendoza, Milesi-Ferretti, & Asea,1996). First, studies of taxation and growth may find negative growth effects resulting from taxation, but it is more difficult to measure the potential benefits of the spending financed by the revenue collected. The combined impact of distortionary taxes and beneficial government expenditures may yield a net improvement in the workings of the private sector economy (e.g., Barro, 1990,1991a,b). An example of the deleterious effects caused by the absence of government spending comes from the World Developme" Report (World Bank, 1988).

According to the Nigerian Industrial Development Bank (NIDB), frequent power outages a[r]f fluctuations in voltage affect almost every industrial enterprise in the country. To avoid production losses as well as damage to machinery and equipment, firms invest in electricity generating set and continue to incur fueling and maintenance cost daily. Typically, as much as 20 percent of the initial capital investment for new plants financed by the NIDB is spent on electric generators and boreholes. That is, when the government of Nigeria did not provide the necessary electricity supply, private firms were forced to generate electricity on their own, and presumably at much higher cost. Clearly, a tax in Nigeria earmarked for (new) government expenditures on improving the electrical system would be likely to enhance economic growth even if the taxes distorted economic activity. The problem is that taxes are not necessarily earmarked to those expenditures most conducive to economic growth, either because of political "inefficiencies" or because of re-distributional policies that may yield benefits for society but will not be reflected in robust GDP growth rates (Atkinson, 1995)

Methodology

Three processes of the analysis are performed in this section. The first stage is the preliminary unit root test which is conducted on the time series variables, in order to determine their stationary. This is because the regression of a non-stationary series on another may produce spurious results (Engle anc Granger, 1987). Next, we carry out the cointegration test to determine if a long-run relationship exists between growth rate of the economy and the explanatory variable. The associated error correction model is used to analyze the short run dynamic relationship between economic growth and capital gains tax. The Granger Causality test is also employed to determine the direction of causality among the variables. The choice for the granger procedure is because it consists of the more powerful and simpler way of testing causal relationship. In order to carry out the Granger causality test, the following multi-variate model has been estimated:

$$Q_{it} = \beta_0 + \sum_{k=1}^{m} \beta_k Q_{it-k} + + u_t \quad (3.1)$$

$$P_{it} = \gamma_0 + \sum_{k=1}^{m} \delta_k P_{it-k} + \sum_{l=1}^{n} \varphi_j Q_{it-j} + \vartheta_t \quad (3.2)$$

Where:

Q_i = Economic Growth series measured by growth rate of GDP.
P_i = Capital Gain Tax series and other explanatory variables.
u_t and ϑ_t = mutually uncorrelated error terms (i.e. zero mean white noise error terms) while 'k' and 'j'= the number of lags.

From the explanations of the variables P and Q, it is clear that four pairs of relationships will be determined from the Causality test.

The structural form of the model employed for this study is given as;

GRGDP = f(CGT, INV, TTR, OPN and ML) (3.3)

Where GRGDP is growth rate of GDP, CGT is capital gains tax, INV is investment, TTR is total tax revenue, OPN is openness and ML is market liquidity.

Following the tests for stationarity and cointegration, the above model is re-specified in its empirical form as;

$\Delta GRGDP = \alpha_0 + \beta_1 \Delta LCGT + \beta_2 \Delta LINV + \beta_3 \Delta LTTR + \beta_4 \Delta LOPN + \beta_5 \Delta LML + ECM(-1) + \varepsilon_t$ (3.4)

Where α_0 is the mean, β_1 to β_5 are the coefficients of the explanatory variables to be estimated, ECM is the error correction mechanism and ε_t is the stochastic term. The theoretical or a priori expectation of the signs of the explanatory variables is given as $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 > 0$ and $\beta_5 > 0$. Annual time series data for the study were sourced from the Central Bank of Nigeria (CBN) annual statistical bulletin and the National Bureau of Statistics (NBS). Also, all the models and equation for the study were estimated with the eviews 8 and microfit econometric soft wares.

Empirical Results and Analysis

Unit Root Analysis

As mentioned earlier, the nature of the study and the empirical tools employed suggest that the time series properties of the variables used are examined to ensure stability and time invariance in the estimated relationships through the unit rot test.

Generally, unit root test involves the test of stationary for variables used in regression analysis. The importance of stationarity of time series used in regression borders on the fact that a non-stationary time series is not possible to generalize to other time periods apart from the present. This makes forecasting based on such time series to be of little practical value. Moreover, regression of a non-stationary time series on another non-stationary time series may produce spurious and inconsistent parameter estimates (Engle and Granger, 1987).

The Augmented dickey Fuller (ADF) test is employed in order to analyze unit roots in this study, The results are presented in levels and first difference in table 1.

Table 1: Unit Root Test for Variables in Levels and First Difference

Variable	ADF Statistic (in Levels)	ADF Test Statistic (in First Difference)	Order of Integration	Remark
ΔGRGDP	-2.231	-4.477**	I(1)	Stationary
ΔCGT	-1.117	-5.101**	I(1)	"
ΔINV	-1.235	-3.812**	I(1)	"
ΔTR	-0.226	-4.575**	I(1)	"
ΔOPN	-1.447	-3.982*	I(1)	"
ΔML	-0.9883	-3.9669*	I(1)	"

***(**) denotes significance at 5% (1%) level Source: Author's Computation (2015).**

A cursory examination of the unit root test results indicate for aii the variables, the null hypothesis of no unit root cannot be rejected, implying that the variables are non-stationary at levels. We thereafter take the first differences of the respective variables and perform the unit root test on each of the resultant time series variables. The rationale behind this is that Box and Jenkins (1976) have argued that differencing non-stationary time series variables would make them attain stationarity. Thus, after taking the first differences, the variables became stationary. This implies that the variables are difference-stationary. They are thus integrated of order one (i.e. I [1]).

Cointegration Test

Having established that the series in the analysis are not stationary in their levels and are characterized by a unit root process, we move on to determine if they are cointegrated. The cointegration test is based on the argument that time series have a unit root and a relationship exist between a linear combination of such series. The Engle and Granger (1987) two stage method is employed in the cointegration test. The result of the Engle and Granger cointegration test is reported in table 2. In the table, the ADF test statistic value of (-7.3610) is greater than the 95percent critical ADF value of -3.2111 (in absolute values). This clearly indicates that the residuals are stationary. Indeed, there is cointegration between economic growth and the variables in the model. Thus, a long-run equilibrium relationship exists between economic growth rate, capital gains tax and other explanatory variables used in Nigeria.

Table 2.Results of Engle and Granger Residual Based Contegration Test

Variable	ADF Test Statistic	95% Critical ADF Value	Remarks
Residual	-7.3196	-3.2111	Stationary

Source: Author's Computation (2015).

The Short-Run Dynamic Model

The short-run dynamics of the behaviour of growth rate of real GDP (proxy for economic growth) due to short term movements in the explanatory variables is captured within an error correction model (ECM). We now turn to this analysis. The autoregressive distributed lags (ARDL) approach is used for the ECM. The error correction representations for the selected ARDL model is presented in table 3. The R-Bar squared criterion was used for the selection of the parsimonious equation.

The error correction mechanism result for the growth rate of real GDP model, as reported in 3 below, indicates that the model has impressive diagnostic statistics. The goodness of fit of the model is relatively high. The adjusted R-squared value of 0.932 indicates that over 93 percent of the systematic variation in growth of the Nigerian economy is explained by the explanatory variables and the ECM term. The overall performance of the model is determined by observing the F-statistic in the model. The F-statistic value of 148.23 is very high and easily passes the significance test at the conservative 1 percent level. Thus, we cannot reject the hypothesis of a significant linear relationship between growth rate of real GDP (GRGDP) and all the independent variables combined in the short run.

Table 3: Results of Engle and Granger Residual Based Cointegration Test

Variable	**ADF Test Statistic**	**95% Critical ADF Value**	**Remarks**
Residual	-7.3196	-3.2111	Stationary

Source: Author's computation (2015)

The Short-run Dynamic Model

The particular contribution of each variable to short term movements in economic growth is determined by observing the individual coefficients of the explanatory variables. A close investigation of the individual coefficients of the variables reveals that all the coefficients of the explanatory variable have the correct sign in line with economic theory.

In terms of statistical significance of the coefficients, it can be observed that capital gains tax (our main variable of interest) only passes the significance the significance test at the 10 percent level. This is an indication that although capital gains tax has impacted on the Nigerian economy positively, the impact is yet to be reasonably significant, possibly due to hindering problems such as the unwieldy scope of the Act, clumsy process of determining taxable gain, the inability to discount for inflation, and the inability of loss relief within transactions (Odusola, 2006). The coefficients of investment and market liquidity are both significant at the 5 percent level and that of openness is significant at the 1 percent level. This invariably shows that increased investment, market liquidity and openness of the economy to trade and financial investment will enhance economic growth in Nigeria. In particular, it underscores the critical role of investment as the channel through which capital gains tax impacts on economic growth. The coefficient of total tax revenue is positive though not

significant at the 5 percent level. Since the t-value of its coefficient exceeds unity we may conclude that total tax revenue contributes positively to economic growth but its effect is rather weak, possibly due to inefficient and weak administration. Administrative weaknesses also permit widespread tax avoidance and tax evasion with the effect of weak impact on economic growth. The error correction term has the correct negative sign and also passes the significance test at the 5 percent level. Thus, any short term disequilibrium (perturbation) in the system will be restored in the long run. The very high value of the error correction term (-0.69) means that adjustment to equilibrium in the long run is rather fast and rapid. Indeed, over 69 percent of the long run contemporaneous adjustment to equilibrium is completed within the first year. The DW statistic value of 1.85 is close to two and shows absence of autocorrelation in the model. The implication of this is that the short-run estimates are reliable for structural analysis and policy directions.

Granger Causality Testing

The relationship between the dependent variable growth rate of real GDP (GRGDP) and independent variables as well as the direction of causality is very important in this study. Hence, we employ the Grange causality test to determine the direction of causality between the dependent and independent. The results of the Granger causality tests are reported in table 5 below. As it is generally the case, the F-test is conducted on the null hypotheses in order to determine the direction of causality between each pair of variables. The rejection of each of the null hypothesis is based on the significance of the F-value for the particular relationship. We focus on the relationship that is of importance to the study. From the results, a feed-back relationship exists between capital gains tax and economic growth. Thus, while increase capital gains tax stimulates economic growth, increase in the rate of economic growth in turn stimulates capital gains tax, implying that rising economic growth reflected in real economic activities will generate increased asset accumulation which will invariably lead to increase capital gains tax. A bi-directional (feed-back) relationship is also seen to exist between total tax revenue and economic growth in Nigeria. This finding reinforces the earlier result, implying that increase in tax revenues enhances economic growth, while the resultant improved economic growth in turn induces greater tax revenue generating capacity. The test results further show that a uni-directional relationship exist between investment and growth rate of real GDP and between openness and growth rate of real GDP, implying that both investment and openness granger cause RGDP growth without a feed-back effect. Finally, unidirectional exist between market liquidity and economic growth, with the causation running from real GDP growth to market liquidity. This implies that increase economic growth stimulates greater stock activities, which invariably induces greater market liquidity in Nigeria.

Table 4. Granger Causality Test Results

Dependent Variable: GRGDP			
Null Hypothesis:	F-Statistic	Decision	Causality
CGT does not Granger Cause GRGDP	2.665	Reject	Feedback
GRGDP does not Granger Cause CGT	2.705	Reject	
INV does not Granger Cause GRGDP	2.669	Reject	Unidirectional
GRGDP does not Granger Cause LINV	0.159	Accept	

TTR does not Granger Cause GRGDP	4.989	Reject	Feedback
GRGDP does not Granger Cause TTR	4.865	Reject	
OPN does not Granger Cause GRGDP	2.833	Reject	Unidirectional
GRGDP does not Granger Cause OPN	1.499	Accept	
ML does not Granger Cause GRGDP	0.189	Accept	Unidirectional
GRGDP does not Granger Cause ML	5.121	Reject	

Source: Author's Computation (2015).

Conclusion and Policy Recommendations

This paper sets out to empirically examine the relationship between capital gains tax and economic growth in Nigeria. This is against the backdrop of the contribution of capital gains to resource generation (i.e. revenue generation) needed for critical public infrastructural investment, and overall economic growth in Nigeria. Using annual time series data covering the period 1986-2013 and a dynamic framework involving unit root testing, cointegration, error correction model and granger causality testing, the empirical results reveal that capital gains tax has a positive albeit not very significant impact on economic growth in the interim. This is possibly due to weak administrative, institutional and tax capacity of capital gains tax, arising from unwieldy scope of the Act, clumsy process of determining taxable gain, the inability to discount for inflation, and the inability of loss relief within transactions. Investment, openness and market liquidity on the other hand are found to be positively and significantly related to economic growth, while that of total tax revenue is positive though weak.

Based on these empirical findings, we recommend policy makers and government to institute considerable scope of overall tax reforms, in a manner that will promote growth without significantly damaging other social and economic objectives. Priority should perhaps be accorded the reform of the tax system, which is characterized by rigidity, narrowness of base, multiplicity and bedeviled by inefficient, corrupt and weak administration. Capital gains tax should be designed to evolve tax structures that increase revenue while minimizing distortions through simplicity in tax design. Complementary macroeconomic policies with respect to trade, investment as well as institutional and regulatory mechanisms should be put in place in order to propel rapid economic growth in Nigeria.

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