



E-TAXATION ON REVENUE GENERATION IN NIGERIA: A PRE AND POST E- TAXTION ANALYSIS

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Abstract: The study examined the effect of E-Taxation on Revenue generation in Nigeria. The investigation applied ex-post facto research design. Secondary data were sourced from Central Bank of Nigeria Statistical Bulletin and Quarterly Economic Reports. The taxation data were sourced from Federal Inland Revenue tax report (FIRS). The study period was on a quarterly bases and the period for the pre-e-taxation (before the introduction of e - taxation) covered 13 quarters, spanning from the first quarter of 2012 to the first quarter of 2015 while the period for the post e taxation (after the introduction of e taxation) covered 19 quarters spanning from the second quarter of 2015 to the 4th quarter of 2019. Regression analysis was used to analyze the equation. The result shows that CIT revenue during the pre- electronic tax regime has slightly significant influence on revenue generation while the relationship has shown some inconsistency after the electronic tax system was introduced. This result implies that the structural adjustment in post e taxation has resulted in a slight variation in the relationship between CIT and FCR. The result also reveals that the relationship between VAT in the pre-electronic tax regime and the post electronic tax collection regime has inconsistencies. While the relationship was positive and significant in the pre-e-tax period, it was found to be positive but insignificant in the post-tax period. Suggesting that the introduction has impacted on the collection of value added tax contribution to total revenue accruable to Nigeria. Results also reveal that the relationship between CGT and FCR is consistent across the two tax collection regimes. CGT showed a consistently negative and insignificant relationship with FCR showing that the structural adjustment in the tax collection regime had no impact on CGT contribution to total federally collected revenue in Nigeria. Result of further tests shows the presence of structural break in Q2 of 2015 which the introduction of electronic tax collection. This implies that the introduction of e tax collection has resulted in a change in relationship between taxation and revenue generation in Nigeria has impacted on the collection of value added tax contribution to total revenue accruable to Nigeria.

Key words: Federally generated Revenue, E-Taxation, company income tax, capital gain tax, value added tax.

INTRODUCTION

The creation of income has always piqued the curiosity of developing nations, particularly Nigeria. According to Ofurum, Amaefule, Okonya, and Amaefula (2018), many sophisticated nations rely on taxes as a main source of revenue production, with other sources being viewed as supplemental. They believe that other sources of money are secondary and that Nigeria primarily relies on oil income as a main source of income. According to Alade, B. P. (2018), taxing has historically served as the primary

method of generating money worldwide. The major means by which the government fulfills its duties to its constituents is through tax income. As explained by Umenweke and Ifediora,(2016) tax income was formerly collected manually, which was fraught with a number of difficulties (2016). They discussed how tax e-filing is progressively replacing manual tax filings throughout the world.

According to Cobham (2010), the administration of taxes in Nigeria uses an electronic platform called electron-

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taxation. The federal Inland Revenue department implemented the computerized taxes system in Nigeria in 2015. (FIRS)

The introduction of e-taxation is anticipated to increase tax income, which will therefore increase the amount of money earned nationwide. (2017)Ofurum et al.

The government's financial plan relies heavily on tax income. Despite the fact that e-tax administration has been in place since 2015, there is still no empirical proof that the implementation of computerized-taxation has changed how corporate income tax, value-added tax, and capital gain tax are calculated. For this reason, the work was necessary.

Statements of the problem

It is frightening how poorly taxable income affects the overall national income in Nigeria (Okauru, 2011).Tax revenue makes up a sizable portion of the total income of African nations including Ghana, Morocco, Tunisia, and others. As compared to these countries, Nigeria, the economic powerhouse of Africa, has a significant low tax to total revenue ratio (Ofurum et al, 2018).

OECD(2014), revealed that 27% of Ghana's total income are the only sum attributable to income outside tax revenue, while 66.7% of the total income in Tunisia is generated outside tax income and Morocco creates 28.5% from tax income respectively.Even still, Nigeria's tax to total income ratio in 2014 was 5.2%. (Federal inland revenue service 2015 and CBN,2016).

From 2001, the percentage has stayed below 13%, and tax income has not yet made up to half of the total income made by the federal government (Ofurum et al, 2018). Several research have looked into how e-taxation affects income creation. Ofurum et al. (2018), Okoye and Ezejiolor (2014), Onuselogu and Onuoha (2021), Alade (2018), Olaoye and Atilola, and others are among them. No study, however, has compared the Pre and Post e-taxation periods using the Chow test analysis to establish the impact of the structural break point and test whether or not the regression coefficients of each regression line are similar.

The objectives of the study

The main goal of this study is to determine how e-taxation affects Nigeria's ability to generate income. The particular goals are to;

1. to analyze the impact of electronically collected company income tax on revenue generation in Nigeria before and after the introduction of E- taxation
2. To ascertain the impact of electronically collected capital gain tax on revenue generation in Nigeria before and after the introduction of E- taxation
3. To determine the impact of electronically collected value added tax on revenue generation in Nigeria before and after the introduction of E- taxation

Research Questions

This study will be carried out to answer the following questions;

- a. To what extent does company income tax affect revenue generation in e tax payment system before and after the introduction of E- taxation
- b. How will value added tax impact on revenue generation in e tax payment system before and after the introduction of E- taxation
- c. What will be the impact of capital gain tax on revenue generation in e tax payment regime before and after the introduction of E- taxation

Research Hypothesis

Ho₁ Company income tax payment has no significant effect on revenue generation before the introduction of e-tax payment system (pre) and no significant effect after e tax payment regime was introduced.

Ho₂ Value added tax (VAT) has no significant effect on revenue generation pre-e-tax payment regime and post e tax payment regime.

Ho₃ Capital gain tax (CGT) has no significant effect on revenue generation in pre-e taxation regime and in post e tax payment regime.

The significance of the study

The survey's findings will help tax-paying citizens and the authorities understand the value of utilizing a digital system of taxation or technology when it comes to paying taxes. It will also educate the authorities on how digitalized-taxation may be used to generate income efficiently and effectively.

2.Review of Related Literature



Conceptual framework

E-taxation: The technique of taxation and collecting via digital means is known as e-taxation. It is an internet platform whereby the taxpayers have the ability to access the system using the online in order to register for a tax identity number and file tax returns electronically, among other services offered by the tax professional (Olaoye & Atilola, 2018).

The utilization of technological innovations by governments around the globe to promote government service and disseminate knowledge regarding public governance to citizens is demonstrated through the digitalized payment platform.

In way to sustain a tight proximity in line with the global movements regarding computerized payment services, for digitalized government, the Federal Inland Revenue Service (FIRS) in Nigeria launched an e-tax platform in 2015. They did this in conjunction with the Nigeria Inter-Bank Settlement System (NIBSS) (Olaoye & Atilola, 2018).

3. Research Methodology

Research design

The study examined the effect of E-Taxation on Revenue generation in Nigeria. The investigation applied ex-post facto research design. Secondary data were sourced from Central Bank of Nigeria Statistical Bulletin and Quarterly Economic Reports. The taxation data were sourced from Federal Inland Revenue tax report (FIRS). The study period was on a quarterly bases and the period for the pre-e-taxation (before the introduction of e - taxation) covered 13 quarters, spanning from the first quarter of 2012 to the first quarter of 2015 while the period for the post e taxation (after the introduction of e taxation) covered 19 quarters spanning from the second quarter of 2015 to the 4th quarter of 2019.

Operational measures of variables

Independent variable is the Federally collected revenue (FCR) while the Dependent variables are the Companies Income Tax, (CIT), Value Added Tax (VAT) and Capital Gains Tax (CGT).

Data analysis and techniques

In analyzing the data gathered, regression model was employed to determine the empirical relationship between dependent and independent variables. Chow Test was also adopted to test the effect of the breakpoint between the pre and post e-taxation in Nigeria.

The A-Prior Expectations

The A-Prior expectation is that is that the research will conform to theory

Model specification

The model as specified by Nnubia, Okafor, Chukwunwike, Asogwa & Ogan (2020) was adopted in this work. This was modified by including a Chow- Test to test the effect of the structural change on the revenue generations from the pre and post adoption of e-taxation in Nigeria. This model confirm to theory as this research as the model has the introduction of technologies in revenue generation through electronic taxation especially with the introduction of Chow test.

The Ordinary Least Square OLS is explicitly stated as

$$FCR = f(CIT, VAT, CGT)$$

And rendered stochastic by adding the error term to the OLS model for the above expression as stated below, thus stated implicitly as

$$FCR = a_0 + B_1CIT + B_2VAT + B_3CGT + e_t$$

Where;

FCR = Federally Collected Revenue

CIT = Company income tax

VAT = Value added tax

CGT= Capital gain tax

e_t = error term

a_0 = Intercept

B_1-B_3 = the independent variable coefficient

4. Data presentation and Analysis

The data for the research variables are presented with the aid of tables below. Empirical results and chow of the regression analysis are also presented in tables.

TABLE-COMPANY INCOME TAX, VALUE ADDED TAX, CAPITAL GAIN TAX

Periods	FEDERALLY COLLECTED REVENUE	Company Income Tax	Value Added Tax	Capital Gain Tax
Pre-Electronic Tax	N'BILLION	N'BILLION	N'BILLION	N'BILLION
Q1-2012	1172.470	121.3382	135.714	0.5878
Q2-2012	1267.230	289.0805	138.9604	2.7694
Q3-2012	1366.060	253.6656	130.6012	4.1602
Q4-2012	1201.860	156.4812	140.644	1.3992
Q1-2013	1206.730	154.2939	154.6382	0.1667
Q2-2013	1436.510	400.6694	140.548	16.7834
Q3-2013	2748.740	240.6726	160.4477	0.1395
Q4-2013	2204.550	167.8149	174.0302	2.5663
Q1-2014	2495.740	174.1639	171.101	0.7838
Q2-2014	2613.300	556.2703	146.8929	0.2094
Q3-2014	2783.460	266.2126	143.3141	1.5191
Q4-2014	2210.810	176.8439	155.5772	0.0565
Q1-2015	2055.640	164.2464	148.8804	0.2502
Post-Electronic Tax	FEDERALLY COLLECTED REVENUE	Company Income Tax	Value Added Tax	Capital Gain Tax
Periods	N'BILLION	N'BILLION	N'BILLION	N'BILLION
Q2-2015	1397.200	538.2939	161.3451	12.0074
Q3-2015	1911.710	301.1177	150.7901	4.2449
Q4-2015	1547.960	265.3192	136.3968	0.2995
Q1-2016	1276.380	166.0176	160.2964	0.228
Q2-2016	1118.560	305.3955	162.2415	72.5931
Q3-2016	1848.520	297.3369	153.1997	24.1888
Q4-2016	1434.480	164.7873	174.6063	2.3935
Q1-2017	778.1935	152.4191	174.9718	0.1106
Q2-2017	1004.180	364.2424	197.6187	0.8258
Q3-2017	1115.330	384.9345	197.2282	1.8449
Q4-2017	1130.250	313.4608	200.5292	0.399
Q1-2018	1173.610	199.1143	219.796	0.3142
Q2-2018	1334.300	421.8009	210.3445	6.1663
Q3-2018	2465.2300	348.097	187.4632	5.8435
Q4-2018	2489.6600	371.3172	241.4146	0.2707
Q1-2019	2403.4900	229.828	236.0305	0.0964
Q2-2019	2298.8300	506.9519	246.4666	0.9752
Q3-2019	2910.4400	513.3815	213.7428	1.2986
Q4-2019	2602.2900	354.5373	249.224	3.6068

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Figure4.1: Trend of federally collected revenue 2012 to 2019

Table 4.2: Results for Pre electronic tax regime

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3026.618	1729.244	-1.750256	0.1140
CIT	2.898806	1.247983	2.322792	0.0453
VAT	29.16005	10.96821	2.658598	0.0261
CGT	-49.37865	33.98847	-1.452806	0.1802
R-squared	0.586735	Mean dependent var		1904.854
Adjusted R-squared	0.448980	S.D. dependent var		643.9119
S.E. of regression	477.9802	Akaike info criterion		15.42468
Sum squared resid	2056186.	Schwarz criterion		15.59851
Log likelihood	-96.26039	Hannan-Quinn criter.		15.38895
F-statistic	4.259271	Durbin-Watson stat		1.899666
Prob(F-statistic)	0.039421			

Source: E-views output, 2021

Dependent Variable: FCR

Table 4.3: Results of post electronic tax regime

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-147.6891	851.6945	-0.173406	0.8647
CIT	1.595719	1.267089	1.259358	0.2271
VAT	6.946785	4.452107	1.560336	0.1395
CGT	-2.647397	8.794338	-0.301034	0.7675
R-squared	0.310698	Mean dependent var		1696.874
Adjusted R-squared	0.172837	S.D. dependent var		646.4700
S.E. of regression	587.9547	Akaike info criterion		15.77584
Sum squared resid	5185360.	Schwarz criterion		15.97467
Log likelihood	-145.8705	Hannan-Quinn criter.		15.80949
F-statistic	2.253712	Durbin-Watson stat		1.068507
Prob(F-statistic)	0.124081			

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F-statistic	3.079782	Prob. F(4,24)	0.0352
Log likelihood ratio	13.25730	Prob. Chi-Square(4)	0.0101
Wald Statistic	12.31913	Prob. Chi-Square(4)	0.0151

Source: Eviews output, 2021

Chow Breakpoint Test: (Q2-2015)

sNull Hypothesis: No breaks at specified breakpoints

Equation Sample: 1 32

Table 4.4: CHOW TEST RESULTS

F-statistic	3.079782	Prob. F(4,24)	0.0352
Log likelihood ratio	13.25730	Prob. Chi-Square(4)	0.0101
Wald Statistic	12.31913	Prob. Chi-Square(4)	0.0151

Source: Eviews output, 2021

4.2 Data Analysis

Table 4.2 presents the regression results of the pre-electronic tax regime. The adjust R-square value of 0.448 shown that 45% of the variations in the dependent variable are explainable by the independent variables in the model. The F-statistic value of 4.25 with p-value of 0.39 showed the overall significance of the model at 5% level.

The Durban-Watson statistics of 1.89 approximates to 2 showing the absence of auto correlation.

Table 4.3 presents the results of the post electronic tax regime. The adjusted R-square value of 0.17 shows that only about 17% of the variations in the dependent variable FCR in the post electronic tax regime is explainable by the independent variables of the model. The F-statistic value of 2.25 with p-value of 0.12 shows that the overall regression is not statistically significant

The Durbin Watson statistic value of 1.06 shows the presence of autocorrelation.

4.3 Hypothesis testing

4.3.1 Test of hypothesis one

H_0 -1 Company income tax (CIT) has slight significant effect on revenue generation in pre-e tax payment regime and no significant effect in post (after the introduction of e tax payment regime).

From table 4.2, we see that the coefficient of CIT in the pre (before the introduction of) electronic tax regime is positive (2.89) and significant ($p=0.045$) at 10% level of significance while table 4.3 shows that the coefficient of CIT in the post (after the introduction of) electronic tax regime is positive (1.595) and insignificant (0.2271). This

result implies that e collection of company income tax has no significant impact on revenue generation in Nigeria.

4.3.2 Test of hypothesis two

H_0 -2 Value added tax (VAT) has a significant effect on revenue generation in pre e taxation regime and no significant effect in post e tax payment regime.

From table 4.2 we see that the coefficient of VAT is positive (29.16) and significant (0.0261) in the pre (before the introduction of) electronic tax regime while table 3 shows that the coefficient of VAT is positive (6.94) but insignificant ($p=0.139$) after the introduction of e tax payment system.

4.3.3 Test of hypothesis three

H_0 -3 Capital gain tax (CGT) has a significant effect on revenue generation in pre- e- taxation regime and no significant effect in post e tax payment regime.

From table 4.2 the coefficient of CGT is negative (-49.37) and not significant ($p=0.1802$). Table 4.3 shows that the coefficient of CGT is negative (-2.647) and insignificant ($p=0.767$).

This result suggests that the relationship between CGT and total federally collected revenue is consistently negative and insignificant in both pre-electronic tax collection regime and after e tax collection was introduced.

Further tests:

We test for structural break in the times as a result or introduction of electronic tax collection. To test for structural break, we used chow test.

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From the graph in 4.1, we see some sharp changes in the trend or the series.

We further did a Kusum or s square test as presented in figure 4.2, T-test for digression from the 5% significance boundary. We however, see from figure 4.2, that there is no digression as the model is within the 5% significance boundary. This implies that the model is stable irrespective of the structural break as a result of the introduction of the e-tax collection.

From the data, we saw that e-tax was introduced from Q2 in 2015

4.3.4 Chow test

In order to perform the chow- test, we state the hypothesis of no structural breaks as follows

H₀₁: There are no breaks at the specified breakpoint date.

H₀₂: There are breaks at the specified breakpoint date.

Decision Criteria:

When the value of F statistics is significant,

Reject H₀₁: If the value of F statistics is significant

Do not reject H₀₂: If the value of F statistics is not significant

From table 4.3, we the F statistic or the chow breakpoint test as (3.07) with p-value of (p=0.035<0.05). Therefore, we reject null hypothesis or no structural break and conclude that there exist structural break at the specified breakpoint date i.e second quarter Q2-2015)

The model is not specified since there is no digression from the 5% significance level boundary as shown in the cusum of squares

4.4 Discussion of findings

The result shows that CIT revenue during the pre-electronic tax regime has slightly significant influence on revenue generation while the relationship has shown some inconsistency after the electronic tax system was introduced. This result implies that the structural adjustment in post e taxation has resulted in a slight variation in the relationship between CIT and FCR.

The result is similar to findings by Nubia & Ola for (2020) it is however in disagreement with the results by Olurakinse & Olajide (2018).

The result also reveals that the relationship between VAT in the pre-electronic tax regime and the post electronic tax collection regime has inconsistencies. While the relationship was positive and significant in the pre-e-tax period, it was found to be positive but insignificant in the post-tax period. Suggesting that the introduction has

impacted on the collection of value added tax contribution to total revenue accruable to Nigeria

From table 4.2, we see that the coefficient of CIT in the pre (before the introduction of) electronic tax regime is positive (2.89) and significant (p=0.045) at 10% level of significance while table 4.3 shows that the coefficient of CIT in the post (after the introduction of) electronic tax regime is positive (1.595) and insignificant (0.2271). This result implies that e collection of company income tax has no significant impact on revenue generation in Nigeria.

From the data, we saw that e-tax was introduced from Q2 in 2015

Result of further tests shows the presence of structural break in Q2 of 2015 which the introduction of electronic tax collection. This implies that the introduction of e tax collection has resulted in a change in relationship between taxation and revenue generation in Nigeria.

Summary, Conclusion and Recommendation:

1. There is a positive significant impact of pre (before the introduction of e-tax assessment) company income tax revenue on income generation in Nigeria and an opposing unimportant impact of post (after the introduction of e tax assessment) Companies Income tax on income generation in Nigeria. This implies that E-taxation has not contributed significantly to Revenue generation in Nigeria.

2. There is no significant impact of manually and electronically (pre and post) collected value added tax on revenue generation in Nigeria.

3. There is no significant impact on e collected capital gain tax on revenue generation in Nigeria meaning that e taxation has no impact in Nigeria's revenue generation.

4. There is a structural change in relationship between taxation and revenue generation.

Conclusion

Based on the findings, the researcher concludes that Company Income tax, Value Added Tax, and Capital Gain Tax have a significant effect on revenue generation but no significant impact on when E-taxation was introduced. Therefore, E-taxation has no significant impact on Nigeria's revenue generation.

Recommendations

Based on our findings, we recommend that the government should come up with robust policies that will strengthen e tax collection in Nigeria in order to boost tax contributions to overall revenue accruable to the federal coffers.

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