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EFFECTIVENESS OF FORENSIC ACCOUNTING IN CURBING FINANCIAL CRIMES IN THE NIGERIAN PUBLIC SECTOR

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ABSTRACT

The effectiveness of forensic accounting in curbing financial crimes in the Nigerian public sector is in this research undertaking examined. The study made use of the fully modified ordinary least squares method (FMOLS) approach for data analyses of the EViews 13 statistical software. The FMOLS method produces reliable estimates for small sample size and provides a check for robustness of the results The data used for this study were sourced from the Central Bank of Nigeria (CBN) statistical bulletin, Federal Inland Revenue Service and National Bureau of Statistic for various years; the method adopted for collecting data is secondary source of data collection. It is concluded that there is a significant role of forensic accounting in tax revenue to ensure fraud is curbed and subsequently eliminated to affect the performance of our public sector as reflected in the economic development of the Nigerian nation. This study proposes recommendation for internal control system which public sector organization can implement in order to reduce likelihood of fraudulent activities and strengthen the more efficacies of these services for the survival of public sector organizations in Nigeria.

Keywords: Forensic Accounting, Tax Revenue, Economic Growth, Financial Crimes, Nigerian Public Sector.

INTRODUCTION

Major types of fraud and corrupt activities were found in both private and public agencies, however, in public sectors these activities are more threatening. Particularly, in public sectors of Pakistan, the condition is verse (Yasin*et al.,* 2019; Ehiedu, 2020; Meteke, Ehiedu, Ndah, and Onuorah, 2022; Obaro, Onuorah, Evesi and Ehiedu 2022); Obi, and Ehiedu, (2020). Corruption and frauds are the fundamental reasons of low public sectors performance.

In the current decades, corporate/white-collar crimes scandals halted the pace of growth for economy as well as caused the collapse of the most world renowned and large scale companies such as WorldCom, Enron, Tyco, K-mart Corp and Global Crossing and also wiping out billions of dollars of shareholder value, and led to the erosion of investors and public confidence in the financial markets (Peterson &Buckhoff, 2004; Rezaee*et al.,* 2004).

Statement of the Problem

In recent years, cases of financial and economic fraud have been on increase. But the phenomenon of fraud is not static and every day new methods and methods of defrauding individuals, corporate bodies arise, even social habits and the environment as a whole.

Fraud has had severe negative consequences on Nigeria, ranging from negative economic impact to negative national image (Ribadu, 2003). Looking at the recent frauds in Nigeria, in each case the perpetrators are the people at the helm of affairs, for example the aviation scam of N5.6 billion in 2009 was perpetrated by the then Minister of Aviation (Ojeme, 2010). The N2 billion Bayelsa State frauds in 2010 were perpetrated by the then Bayelsa state Commissioner of Finance, the state accountant general, the state's Director of Treasury, and the Director of Finance (Ojeme, 2010). The Kogi State's N1.9 billion scam was committed by commissioners for Local Government and Chieftaincy Matters and Agriculture respectively, and Local Government Chairman (Ojeme, 2010). The capital market fraud (share cloning) which started in 2002 was perpetrated by the executives of Bankolans investment limited and so on (Ojeme, 2010).

A lot of the prior studies particularly in the developing countries such as we have it in Nigeria have not empirically assessed how financial crimes are curbed using forensic accounting/auditing services by companies and public establishments in Nigeria, thus creating gap(s) in literature. This study sought to bridge this gap by examining the effect of forensic accounting in curbing financial crimes in the Nigerian public sector.

Objectives of the Study

The study objectives include;

i. To ascertain the effect of forensic accounting in petroleum profit tax in the Nigerian public sector.
ii. To find out the role of forensic accounting in company income tax in the Nigerian public sector.
iii. To examine the impact forensic accounting in value added tax in performance of the Nigerian public sector.
iv. To ascertain the effect of forensic accounting in personal income tax in the Nigerian public sector.
v. To find out the role of forensic accounting in education tax in the Nigerian public sector.

Fraud Management Theory

Fraud Management Theory has to do with the effective Lifecycle of fraud. The advocates of this theory explained it in stages of cycle in order to create an awareness and understanding to all fraud management professionals (forensic accountants).

Webster's Dictionary refers to a lifecycle as "a series of stages in form and functional activity through which an organism passes between successive recurrences of a specified primary stage" (1997, 1976, &1941). Webster's refers to a FMT as "an interconnected or interrelated chain, group or system. He describes fraud management lifecycle as a combination of these two definitions: Network lifecycle (Wilhelm, 2004).

Concept of Forensic Accounting

Forensic accounting refers to the application of analytical and investigative skills for the purpose of resolving financial issues in a manner that meets standards required by court of law. Forensic accounting is also defined as the application of accounting concepts and techniques to legal problems (Abdulrahman, 2019).

This suggests however, that the term 'forensic' may cut across several areas of life for which evidences may be sought for litigation (Eliezer and Emmanuel, 2015). Accounting, on the other hand, according to Oluyombo (2016), is the process of collecting, recording, analyzing, presenting and interpreting financial information for the users of financial statements. This involves accurate book-keeping, records, measuring and interpreting the financial results of the business by the preparation of accounting ratios and communicating these results to management and other interested parties or users.

Concept of Tax Revenue

Tax revenue is the aggregate income generated by a country from taxation. In Nigeria, the tax revenue is mostly grouped into oil and non-oil tax revenue. The oil tax revenue can be referred to as the aggregate tax incomes generated from the petroleum sector in Nigeria. Crude oil has become Nigeria's most crucial non-renewable energy source. Currently, the sector accounts for more than 90% of the country's foreign exchange earnings and about 80% of recurrent and capital expenditure (Ilori, & Akinwunmi, 2020). Hence, this sector's revenues are significant for the country's economic growth "Nigeria has about 37 billion barrels of condensate reserve and produces about 2 million barrels of quality crude oil per day".

Petroleum Profit Tax

Petroleum profit tax is the tax levied by government on companies that engaged in petroleum operations in Nigeria. These companies are subject to tax under petroleum profit tax act (PPTA) of 1959 as amended. The winning or obtaining and transportation of petroleum or chargeable oil in Nigeria by or on behalf of a company for it account by any drilling, mining, extracting or other like operations or process, not including refining at a refinery in the cause of a business carried on by the company engaged in such operations, and all operations incidental thereto and any sale of or any disposal of chargeable oil by or on behalf of the company (PPTA, 1959). Evidence on record shows that the country has proven oil reserve of 36 billion barrels, condensate of 4 billion barrels, proven gas reserve of 187 trillion cubic feet and the present average daily production of oil is 2.6 million barrels (Ayeni&Afolabi, 2020).

Company Income Tax

Ehiedu (2021) stated that taxes are levied on individual, groups, businesses or corporate bodies, by constituted authorities for fund used by State in the maintenance of peace, security,

economic growth for the benefit of the citizenry. According to Egbunike (2018), the company income tax (CIT) was introduced in Nigeria in 1961. The original law (company income tax) has been amended many times and is currently codifies as the company income tax act 1990 (CITA). The Federal Board of Inland Revenue (FBIR) whose operational arm is the Federal Inland Revenue Service (FIRS) is empowered and given the mandate to administer the tax.

Value Added Tax

This is a form of indirect sales tax paid on goods and services at each stage of production or distribution, based on the value added at that stage and included in the cost to the ultimate consumer. According to Omodero (2019), a value-added tax (VAT), known in some countries as a goods and services tax (GST), is a type of tax that is assessed incrementally. VAT essentially compensates for the shared service and infrastructure provided in a certain locality by a state and funded by its taxpayers that were used in the provision of that product or service. Not all localities require VAT to be charged, and exports are often exempt. VAT is usually implemented as a destination-based tax, where the tax rate is based on the location of the consumer and applied to the sales price (Nasiru, Haruna & Abdullahi, 2016).

Personal Income Tax

Personal income tax is a tax imposed on income generated by individuals. The government adjusts the tax according to the jurisdiction of a country.For the government, income tax is a source of the government's revenue, which they spend on public goods and services. It is the most progressive tax; however, there are significant cross-country variations, and social security contributions, consumption taxes, and real estate taxes tend to be regressive in most countries. Also, the tax expenditures pertaining to personal income tax, that are tend to benefit the well-off, and the main exception being in-work tax credits (Ilori&Akinwunmi, 2020). Besides, the personal income tax is progressive and gross replacement rates are generally below 100%.

Education Tax

Education tax is the tax imposed on the assessable profits of all companies registered in Nigeria including companies subject to tax under petroleum profits tax act with the aim of generating revenue for the growth of the education sector (Ogba, Park and Nakah, 2018). According to Egbunike (2018), the education tax is regulated by the education tax act (2004). This Act regulates taxes imposed on every Nigerian resident company at the tax rate of 2% of all assessable profit for each year of assessment as provided by Section 1 of the Act. It is payable by the company within sixty (60) days of an assessment notice from Federal Inland Revenue Service (FIRS).

Economic Growth

Growth in the country's economy tracks monetary progress and looks at no other developmental factors (Okwara&Amori, 2017). Economic growth can either be negative or positive. Negative growth is associated with an economic downturn and stagnant wages. "Gross national product is sometimes used as an alternative to gross domestic product" (Ilori&Akinwunmi, 2020).

An economy without adequate infrastructures to drive its growth is really in jeopardy. Over the years, Nigerians have suffered a lack of infrastructural growth due to corruption and mismanagement of resources (Omodero, 2019). The sudden progressive switching of the economy from oil to non-oil revenue sources in Nigeria has desperately propelled this investigation. The apparent need to diversify the economy became very glaring during Covid-

19 pandemic when the Nigerian oil price was forced down from the estimated $57 per barrel to $30 per barrel (Nwagbara, 2020). It was an incident that led to Nigeria's 2020 budget adjustment, for which both the capital and the recurrent expenditure were reduced to 20% and 25% respectively (Nwagbara, 2020).

EMPIRICAL REVIEW

The relevance of forensic accounting in fraud detection and prevention in the public sector was examined by Okoye and Gbegi (2013), with particular reference to Kogi State. Both primary and secondary sources of data were appropriately used. 370 questionnaires were administered to staff of five (5) selected ministries in Kogi State of Nigeria, along with interviews conducted with those ministries out of which 350 were filled and returned. By employing Analysis Of Variance (ANOVA) for the purpose of data analysis, findings from the study revealed that the use of Forensic Accounting do significantly reduce the occurrence of fraud cases in the public sector, and that there is significance difference between Professional Forensic Accountants and Traditional External Auditors and therefore the use of Forensic Accountants can help better in detecting and preventing fraud cases in the public sector organizations.

Tahmina and Naima (2016); Odita and Ehiedu and Kifordu (2020); Odita, and Ehiedu, (2015); Onuorah, Ehiedu and Okoh, (2021 analyze the accounting data of 102 firms operating in Bangladesh between the years of 2010 and 2013 by using Beneish Model. They state that days' sales in receivable index (DSRI), asset quality index (AQI) and total accruals to total assets (TATA) differ significantly between manipulator firms and non-manipulator firms. They also found that overstating intangible assets, artificially inflating earnings and capitalizing expenditures can signal financial statement frauds.

Model Specification

The model specification for this research work was based on the theoretical framework stated in chapter two of this study and the model for this study is adapted from the works of Okwara and Amori (2017) which was expressed as follows:

$TFCR = \beta_0 + \beta_1(PIT) + \beta_2(PPT) + \beta_3(CIT) + \beta_4(VAT) + e$

Where:

TFCR = Total Federal Collected Revenue; PIT = Personal Income Tax; PPT = Petroleum Profit Tax; CIT = Company Income Tax; VAT = Value Added Tax; e = random error term which takes care of the effects of other factors which are not fixed in the model, on dependent variable

$\beta 0$ = Regression Constant

t = t… T refers to time period

$\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$ are the regression co-efficient associated with independent variables. T= RG ($\prod$).

For the purpose of achieving the objective of this study, the model stated above will be modified follows:

$RGDP = \beta_0 + \beta_1(PPT) + \beta_2(CIT) + \beta_3(VAT) + \beta_4(PIT) + \beta_5(ET) + \varepsilon$

Where:

RGDP = Real Gross Domestic Product; PPT = Petroleum Profit Tax; CIT = Company Income Tax; VAT = Value Added Tax; PIT = Personal Income Tax; ET = Education Tax; ε = random error term which takes care of the effects of other factors which are not fixed in the model on dependent variable.

β_0 = Regression Constant; β_1 = Regression co-efficient of petroleum profit tax; β_2 = Regression; co-efficient of company income tax; β_3 = Regression co-efficient of value added tax; β_4 = Regression co-efficient of personal income tax; β_4 = Regression co-efficient of education tax. Therefore, $\beta_1 - \beta_5$ are the regression co-efficient associated with independent variables.

A Prior Expectation

This describes the theoretical relationship between the parameters of the provided functions, their signs and magnitudes. The conceptual principle directing the economic relationship among the variables being researched determines apriori expectations. Following the theories that underpin this investigation, the apriori assumptions for this study predict a positive association between the independent variable and the dependent variable. As a result, it can be stated mathematically as:

$\beta_1 > \beta_2 > \beta_3 > \beta_4 > \beta_5 > 0$

Data Analysis Methods

The study made use of the fully modified ordinary least squares method (FMOLS) approach. The FMOLS method produces reliable estimates for small sample size and provides a check for robustness of the results. The FMOLS method has an advantage over the Engle-Granger (EG) procedure techniques in introducing appropriate correction to overcome the inference problem in EG method and hence, the t-test for long-run estimates is valid (Ogbonna, & Appah, 2017; Ehiedu, 2021).

Data Presentation

Descriptive Statistics

The descriptive statistics consists of mean, standard deviation, minimum and maximum values associated with the variables under consideration. The descriptive statistics are summarized on Table 1.3.1 below:

Table 1

Descriptive Statistics for the Independent and Dependent Variables

	LOGRGDP	LOGCIT	LOGPPT	LOGVAT	LOGEDT	LOGPIT
Mean	7.733688	2.690035	3.198627	2.649906	1.882089	1.641069
Median	7.748521	2.816820	3.230927	2.784708	2.115376	1.719690
Maximum	8.182794	3.205393	3.505329	3.185024	2.446164	2.033464
Minimum	7.402563	1.944976	2.593508	1.962843	1.000000	0.959041
Std. Dev.	0.201914	0.427553	0.242191	0.375420	0.500228	0.291888
Skewness	0.588029	-0.546199	-0.902043	-0.480397	-0.597237	-1.098726
Kurtosis	3.224454	1.819714	3.250100	1.902058	1.809410	3.366424
Jarque-Bera	1.194577	2.155341	2.764396	1.773834	2.370226	4.135882
Probability	0.550302	0.340388	0.251026	0.411924	0.305712	0.126446
Sum	154.6738	53.80070	63.97254	52.99813	37.64178	32.82139
Sum Sq. Dev.	0.774619	3.473229	1.114473	2.677869	4.754342	1.618770
Observations	20	20	20	20	20	20

Source: E-view 9.0 Output, 2022.

The result in Table 1.3.1 above provided some insight into the nature of the independent variables namely; company income tax (CIT), petroleum profit tax (PPT), value added tax (VAT), education tax (EDT) and personal income tax (PIT)and the dependent variable [real gross domestic product (RGDP)] used in this study.

Company Income Tax (CIT)

Company income tax (CIT) had a mean of 2.6900 within the period 2001 to 2020, with a maximum and minimum of 3.2054 and 1.9450 respectively while the standard deviation is 0.4276. This shows that company income tax (CIT) volatility is about 42.76%.

Petroleum Profit Tax (PPT)

Petroleum Profit Tax (PPT) had a mean of 3.1986 within the period 2001 to 2020, with a maximum and minimum of 3.5053 and 2.5935 respectively while the standard deviation is 0.2422. This shows that Petroleum Profit Tax (PPT) volatility is about 24.22%.

Value Added Tax (VAT)

Value added tax (VAT) had a mean of 2.6500 within the period 2001 to 2020, with a maximum and minimum of 3.1850 and 1.9628 respectively while the standard deviation is 0.3754. This shows that value added tax (VAT) volatility is about 37.54%.

Education Tax (EDT)

Education tax (EDT) had a mean of 1.8821 within the period 2001 to 2020, with a maximum and minimum of 2.4462 and 1.0000 respectively while the standard deviation is 0.5002. This shows that education tax (EDT) volatility is about 50.02%.

Personal Income Tax (PIT)

Personal income tax (PIT) had a mean of 1.6411 within the period2001 to 2020, with a maximum and minimum of 2.0335 and 0.9590 respectively while the standard deviation is 0.2919. This shows that Personal income tax (PIT) volatility is about 29.19%

Real Gross Domestic Product (RGDP)

Real gross domestic product (RGDP) had a mean of 7.7337 within the period 2001 to 2020, with a maximum and minimum of 8.1828 and 7.4026 respectively while the standard deviation is 0.2020. This shows that real gross domestic product (RGDP) volatility is about 20.20%.

Data Validity Test

Since the data are time series data, spanning for 2001-2020 (20years), the validity test was carried out using the Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test: Breusch-Pagan-Godfrey and Ramsey RESET Test in order to ascertain the validity of the data for the analysis. This is presented in Table 1.5.1 below

Table 2

Data Validity Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	7.380164	Prob. F(2,12)	0.1081
Obs*R-squared	21.03150	Prob. Chi-Square(2)	0.2040
		Durbin-Watson stat	1.775545
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.216901	Prob. F(5,14)	0.3517
Obs*R-squared	6.058905	Prob. Chi-Square(5)	0.3005
Scaled explained SS	7.466676	Prob. Chi-Square(5)	0.1882
		Durbin-Watson stat	1.971781
Ramsey RESET Test			
Equation: UNTITLED			
Specification: LOGRGDP C LOGCIT LOGPPT LOGVAT LOGEDT LOGPIT			
Omitted Variables: Squares of fitted values			

	Value	Df	Probability
t-statistic	1.935025	13	0.0750
F-statistic	3.744322	(1, 13)	0.0750
Likelihood ratio	5.062197	1	0.0845
Durbin-Watson stat	1.800950		

Source: E-view, 9.0 Outputs, 2022.

From the Table 1.4.1 above, the Durbin Watson stat shows that our data has no traits of autocorrelation. This indicates that the model is homoskendastic since the probability values of three parameters are greater than 0.05 level of significance. Ramsey test result reveals that our model is correctly specified and is stable.

Augmented Dickey-Fuller (ADF) Unit Root Test

Testing for the existence of unit roots is a principal concern in the study of time series models and co-integration. The rationale behind this test is to avoid the problem of spurious regression which is commonly associated with time series data. The presence of a unit root implies that the time-series data under investigation is non-stationary; while the absence of a unit root shows that the stochastic process is stationary. The unit root test was conducted using the Augmented Dickey-Fuller (ADF) Unit root test as presented in Table 1.5.1 below:

Table 3

Augmented Dickey-Fuller Unit Root Test

Test Variables	ADF Test Statistic Value	Mackinnon Critical Value @ 5%	Order of Integration	P-Value	Decision
LOGRGDP	-3.691649	-2.065585	1(1)	0.0369	**Stationary**
LOGCIT	-3.152795	-3.040391	1(1)	0.0404	**Stationary**
LOGPPT	-4.627427	-3.040391	1(1)	0.0021	**Stationary**
LOGVAT	-4.201104	-3.040391	1(1)	0.0124	**Stationary**
LOGEDT	-5.359206	-3.040391	1(1)	0.0005	**Stationary**
LOGPIT	-3.325512	-3.065585	1(1)	0.0310	**Stationary**

Source: E-VIEW, 9.0 Outputs, 2022

The summary of the ADF unit root test output in Table 1.5.1, above revealed that all the variables under investigation i.e. Real Gross Domestic Product (RGDP), Company Income Tax (CIT), Petroleum Profit Tax (PPT) , Value Added Tax (VAT), Education Tax (EDT) and Personal Income Tax (PIT) contain unit root test at their first difference 1(1). Evidence of this could be seen from the value of their respective ADF statistics which is more than the critical value at 5%. Moreover, additional evidence of stationary series could also be seen from the p-value for all variables which is less than 5% level of significance greater than 95% confidence level. They all attained stationarity at first difference i.e. at order one. The Durbin-Watson stat indicates that the data has no traits of autocorrelation problem

Correlation Matrix

Correlation matrix actually shows the relation between independent and dependent variables. This tells the degree of correlation between the independent and dependent variables, whether there is moderate or low degree of correlation.

Table 4

Correlation Matrix for the Independent and Dependent Variables

	LOGRGDP	LOGCIT	LOGPPT	LOGVAT	LOGEDT	LOGPIT
LOGRGDP	1.000000					
LOGCIT	0.591180	1.000000				
LOGPPT	0.496136	0.630021	1.000000			
LOGVAT	0.522804	0.987427	0.633850	1.000000		

LOGEDT	0.551240	0.972235	0.648125	0.961839	1.000000	
LOGPIT	0.564079	0.822992	0.714575	0.831656	0.786553	1.000000

Source: E-view 9.0 Output, 2022

The correlation matrix in Table 1.6.1 above, showed the coefficient of the type of relationship that exist between the independent and the dependent variables.

Company Income Tax (CIT) and Real Gross Domestic Product (RGDP)

Company income tax (CIT) has a coefficient of (r= 0.5912>0.05) which reveals that Company Income Tax (CIT) has a strong positive correlation with real gross domestic product (RGDP), this implies that an increase in company income tax (CIT) would have positive effects on real gross domestic product (RGDP) in Nigeria.

Petroleum Profit Tax (PPT) and Real Gross Domestic Product (GDP)

Petroleum profit tax (PPT) has a coefficient of (r= 0.4961>0.05) which reveals that petroleum profit tax (PPT) has a strong positive correlation with real gross domestic product (RGDP). This implies that an increase in petroleum profit tax (PPT) would have positive effects on real gross domestic product (RGDP) in Nigeria.

Value Added Tax (VAT) and Gross Domestic Product (GDP)

The coefficient of (r= 0.5228) was recorded for Value Added Tax (VAT) which shows that Value Added Tax (VAT) has a strong positive correlation with Real gross domestic product (RGDP). By implication an increase in value added tax (VAT) would have a positive effect on real gross domestic product (RGDP) in Nigeria.

Education Tax (EDT)and Real Gross Domestic Product (GDP)

Education tax (EDT) has a coefficient of (r= 0.5512>0.05) which reveals that education tax (EDT) has a strong positive correlation with real gross domestic product (RGDP). This implies that an increase in education tax (EDT) would have positive effects on real gross domestic product (RGDP) in Nigeria.

Personal Income Tax (PIT) and Real Gross Domestic Product (RGDP)

Personal income tax (PIT) has a coefficient of (r= 0.5641>0.05) which reveals that personal income tax (PIT) has a strong positive correlation with real gross domestic product (RGDP). This implies that an increase in personal income tax (PIT) would have positive effects on real gross domestic product (RGDP) in Nigeria.

Finally, the correlation matrix that is presented in Table 4.6.1 shows the absence of multi-co linearity among the variables since the correlation values are less than 0.7 (Asan, (2011); Ehiedu, Odita, and Kifordu, (2020); Ehiedu, Onuorah, and Owonye, (2022); Ehiedu and Okorie, (2022); Ehiedu, (2021)). Furthermore, the result shows the explanatory variables namely; Company Income Tax (CIT), petroleum profit tax (PPT), value added tax (VAT), education tax (EDT) and personal income tax (PIT) have strong positive correlation with real gross domestic product (RGDP)in Nigeria.

Test of Hypotheses

Table 5

Test of Hypotheses One to Five (Regression Result)

Dependent Variable: LOGRGDP
Method: Least Squares
Date: 10/21/21 Time: 12:46
Sample: 2001 2020
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	6.482586	0.386851	16.75733	0.0000
LOGCIT	-0.277071	0.320865	-0.863513	0.4024
LOGPPT	-0.128892	0.113033	-1.140310	0.2733
LOGVAT	0.937912	0.316926	2.959403	0.0104
LOGEDT	-0.087223	0.163984	-0.531897	0.6031
LOGPIT	0.053315	0.129014	0.413250	0.6857

R-squared	0.884635	Mean dependent var	7.733688
Adjusted R-squared	0.843433	S.D. dependent var	0.201914
S.E. of regression	0.079895	Akaike info criterion	-1.972891
Sum squared resid	0.089364	Schwarz criterion	-1.674172
Log likelihood	25.72891	Hannan-Quinn criter.	-1.914578
F-statistic	21.47073	Durbin-Watson stat	1.429596
Prob(F-statistic)	0.000004		

Source: E-view 9.0 Output, 2022

Table 1.7.1 above, showed the regression coefficients and the significance of the t-statistics for the independent variables: company income tax (CIT), petroleum profit tax (PPT), value added tax (VAT), education tax (EDT) and personal income tax (PIT); and the dependent variable, economic growth proxied with real gross domestic product (RGDP). These results serve as the basis of testing the hypotheses stated in chapter one of the study.

Test of Hypothesis One

$H0_1$: There is no significant relationship between company income tax (CIT) and economic growth proxied with real gross domestic product (RGDP) in Nigeria.

From the multiple regression results in Table 1.7.1 above, the coefficient of company income tax (CIT) is -0.2771 with a t-value of -0.8635 and an associated p-value (Sig. value) of 0.4024. This suggests that company income tax (CIT) has a negative effect on Real Gross Domestic Product (RGDP)in Nigeria. The effect is insignificant given the fact that the p-value of 0.4024 is more than that 0.05 (5%) level of significance.

Test of Hypothesis Two

$H0_2$: There is no significant relationship between petroleum profit tax (PPT) and economic growth proxied with real gross domestic product (RGDP) in Nigeria. Also, from the multiple regression results in Table 1.7.1; above, the coefficient of petroleum profit tax (PPT) is -0.1289 with a t-value of -1.1403 and an associated p-value (sig. value) is 0.2733. This suggests that petroleum profit tax (PPT) has negative insignificant effect on real gross domestic product (RGDP)in Nigeria. This relationship is not significant given the fact that the p-value of 0.2733 is greater than 0.05 (5%) level of significance.

Test of Hypotheses Three

$H0_3$: There is no significant relationship between value added tax (VAT) and economic growth proxied with real gross domestic product (RGDP) in Nigeria. More also, the multiple regression result in Table 1.7.1 above, the coefficient of value added tax (VAT) is 0.9379 with a t-value of 2.9594 and an associated p-value of 0.0104. This suggests that value added tax (VAT) has positive significant effect on real gross domestic product (RGDP)in Nigeria. This effect is significant given the fact that the p-value of 0.0010 is lesser than 0.05 (5%) level of significance.

Test of Hypotheses Four

$H0_4$: There is no significant relationship between education tax (EDT) and economic growth proxied with real gross domestic product (RGDP) in Nigeria. Furthermore, from the multiple

regression results in Table 1.7.1 above, the coefficient of education tax (EDT) is -0.0872 with a t-value of -0.5319 and an associated p-value (sig. value) is 0.6031. This suggests that education tax (EDT), has a negative insignificant effect on real gross domestic product (RGDP)in Nigeria. This relationship is insignificant given the fact that the p-value of 0.6031 is greater than 0.05 (5%) level of significance.

Test of Hypotheses Five

$H0_5$: There is no significant relationship between personal income tax (PIT) and economic growth proxied with real gross domestic product (RGDP) in Nigeria. Finally, from the multiple regression results in Table 1.7.1 above, the coefficient of Personal Income Tax (PIT) is 0.0533 with a t-value of 0.4133 and an associated p-value (sig. value) is 0.6857. This suggests that Personal Income Tax (PIT) has a positive insignificant effect on real gross domestic product (RGDP)in Nigeria. This relationship is insignificant given the fact that the p-value of 0.6857 is greater than 0.05 (5%) level of significance.

Discussion of Findings

Company Income Tax (CIT) and Real Gross Domestic Product (RGDP)

The p-value of company income tax (CIT) is 0.4024 which is greater than the significant value of 0.05 and the t-ratio value of -0.8635 is lesser than 2 which indicate the extent of significance to which company income tax (CIT) affects real gross domestic product (RGDP). The coefficient of company income tax (CIT) is -0.2771, which imply that company income tax (CIT) has a negative trend with real gross domestic product (RGDP). One percent (1%) movement in company income tax (CIT) would lead to 27.71% decreases in real gross domestic product (RGDP). Company income tax (CIT) has no significant influence on real gross domestic product (RGDP) in Nigeria. The finding is in agreement with the findings of Gwa and Kase (2018); Ehiedu, Odita, and Kifordu, (2020); Ehiedu, Onuorah, and Owonye, (2022); Ehiedu and Okorie, (2022); Ehiedu, (2021) but contradicts the findings of Ewa, Adesola and Essien (2020) and Awa and Ibeanu (2020).

Petroleum Profit Tax (PPT) and Real Gross Domestic Product (RGDP)

The p-value of petroleum profit tax (PPT) is 0.2733 which is greater than the significance value of 0.05 and the t-ratio value of -1.4031 is lesser than 2, which indicates the extent of significance to which petroleum profit tax (PPT) affects real gross domestic product (RGDP). The coefficient of petroleum profit tax (PPT) of -0.1289, which imply that petroleum profit tax (PPT) have a negative insignificant effect on real gross domestic product (RGDP). The implication is that a one percent (1%) increase in petroleum profit tax (PPT) would lead to 12.89% decrease in real gross domestic product (RGDP). This finding agrees with the findings of Gwa and Kase (2018), Ehiedu, (2022) but contradicts the findings of Edewusi & Ajayi, (2019) and Ojong, Ogar and Oka (2016).

Value Added Tax (VAT) and Real Gross Domestic Product (GDP)

The p-value of value added tax (VAT) is 0.0104 which is lesser than the significant value of 0.05 and the t-ratio value is 2.9594 is greater than 2 which indicates the extent of significance to which value added tax (VAT) affects real gross domestic product (RGDP). The coefficient of value added tax (VAT) is 0.9380 which imply that value added tax (VAT) has a positive trend with real gross domestic product (RGDP). One percent (1%) movement in value added tax (VAT) would lead to 93.80% increases in real gross domestic product (RGDP). Value added tax (VAT) has a significant influence on real gross domestic product (RGDP) in Nigeria.

The finding agrees with the findings of Mukolu and Ogodor (2021), Gwa and Kase (2018) and Bingilar and Angaye (2020), Ehiedu, (2022).

Education Tax (EDT) and Real Gross Domestic Product (RGDP)

The p-value of education tax (EDT) is 0.6031 which is more than the significance value of 0.05 and the t-ratio value of -0.5319 lesser than 2, which indicates the extent of significance to which education tax (EDT) affects real gross domestic product (RGDP). The coefficient of education tax (EDT) of -0.0872, which imply that education tax (EDT), have a negative insignificant effect on real gross domestic product (RGDP). The implication is that a one percent (1%) increase in education tax (EDT) would lead to 8.72% decrease in real gross domestic product (RGDP). This finding contradicts the findings of Amahi, & Onoh, (2019); Amahi, (2018); Amahi, Nwaokwa, & Ikonomwan, (2018); Amahi, Odimmega, & Nwosu, (2017), Afuberoh and Okoye (2014); Ehiedu, Onuorah, and Mbagwu (2022); Ehiedu,Onuorah, Anastasia and Owonye, (2022); Ehiedu and Olannye, (2014); Ehiedu and Brume-Ezewu (2022), Ehiedu and Imoagwu (2022); Ehiedu, (2022).

Personal Income Tax (PIT) and Real Gross Domestic Product (RGDP)

The p-value of personal income tax (PIT) is 0.6857 which is more than the significance value of 0.05 and the t-ratio value of 0.4133 lesser than 2, which indicates the extent of significance to which personal income tax (PIT) affects real gross domestic product (RGDP). The coefficient of personal income tax (PIT) of 0.0533, which imply that personal income tax (PIT), have a positive significant effect on real gross domestic product (RGDP). The implication is that a one percent (1%) increase in personal income tax (PIT) would lead to 5.33% increase in real gross domestic product (RGDP). This finding agrees with the findings of Chukwuka, & Amahi, (2021); Ama, AzihAmahi, (2018); Amahi, & Ogben, (2014); Amahi, (2014); Ogba, Park and Nakah (2018); Agbogun, and Ehiedu, (2022); Bayem, Ehiedu, Agbogun, and Onuorah, (2022); Ehiedu, and Obi, ; (2022); Ehiedu and Imoagwu (2022); Ehiedu, (2022); Ofoegbu, Akwu and Oliver (2016), who examined the contribution of tax revenue on the economic growth of Nigeria found that personal income tax has positive effect on the economic growth.

Summary

Generally, the co-efficient of determination (R^2) is 88% (i.e 0.8846) showing that 88% of variation in the dependent variable, real gross domestic product (RGDP)]has been explained by the independent variables: company income tax (CIT), petroleum profit tax (PPT), value added tax (VAT), education tax (EDT) and personal income tax (PIT). With an R^2 value of 88% showed that the strong positive relationship is further confirmed. While 12% remain unexplained in the model. The 12% left is known as the error term and other variables outside the mode. The adjusted R^2 measures the goodness or fit of the model. This shows the goodness of fit of the model and also explains the dependent variable in relation to the independent variables in 84ways. From the above, there is conclusive evidence of absence serial or autocorrelation since the Durbin Watson value is 1.4296, which is lesser than "2". The F-Statistics has a value of 21.4707 and a p-value of 0.000004, this showed that all the independent variables: company income tax (CIT), petroleum profit tax (PPT), value added tax (VAT), education tax (EDT) and personal income tax (PIT) jointly have effect on the dependent variable, real gross domestic product (RGDP) in Nigeria within the period under investigation.

Therefore this chapter exposes the relationship that exists between the independent variables and the dependent variable.

This study examined the impact of taxation on economic growth in Nigeria for the period of 2001-2020 (20years). The study made used of secondary data (time series) sourced from CBN statistical bulletin, CBN annual reports and Federal Inland Revenue Service Annual Report. The identified measures of taxation are; company income tax (CIT), petroleum profit tax (PPT), value added tax (VAT) and education tax (EDT) (independent variables) which were analyzed in relation to economic growth in Nigeria as proxy with real gross domestic product (RGDP). The findings revealed that value added tax (VAT) have significant effect on gross domestic product (GDP) while company income tax (CIT), petroleum profit tax (PPT), education tax (EDT) and personal income tax (PIT) does not have significant effect on economic growth proxy with real gross domestic product (GDP) and agrees with the findings of Ogben, & Amahi, (2014); Amahi, & Odigili, (2021); Amahi, & Ama, (2021); Amahi, & Ama, (2020); Nwosu, & Amahi, (2019), Therefore, the study concluded that taxation have insignificant effects on economic growth in Nigeria**.**

Recommendations

1. All company income tax should be remitted via e-payment system or through direct payment to the various tax authorities' account. This will reduce tax evasion, cheating and corruption that have marred the collection of CIT, and thus enhance support for the cashless economy.
2. Value added tax (VAT) had a significant effect on economic growth in our study. Therefore, government should intensify her effort in the collection of value added tax as they seem to be no seriousness on the part of government on the collection of this important tax and disbursement of the said tax to the local government as 85% of VAT revenue is supposed to be handed over to the local government for growth purposes.
3. Petroleum profit tax PPT should also be made to contribute to the highest level on economic growth in Nigeria.
4. Since personal income tax (PIT) had an insignificant effect on economic growth during the period under study, policies should be geared towards improvement of Personal income tax and a new way of providing flexible personal income tax should be adopted by the government so as to ensure that this tax significantly improves economic growth.
5. Government on its part should use education tax (EDT) proceeds to improve on the standard of living of the populace and improve on infrastructures such as power, communication and information technology in schools so as to strengthen the productive capacity and motivate taxpayers in paying their taxes.

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