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Empirical Assessment of the Efficiency of the Nigerian Tax System

Bassey Eyo Bassey (B. Sc, MBA, M. Sc, Ph. D)[1*], Godwin Onyam Edom (B.Sc, M. Sc)[1]
Adanma Eyisi S. (Ph. D)[3]
1. Department of Accounting, Faculty of Management Sciences, University of Calabar, P.M.B. 1115, Calabar, Cross River State-Nigeria
2. Department of Accountancy, Faculty of Business Administration, University of Nigeria, Enugu Campus

Abstract
This study investigated the efficiency of the Nigerian tax system. In order to direct the job, two research hypotheses were formulated. The hypotheses were -stated thus, economic activities have no significant positive relationship on direct taxes (proxied by the Petroleum Profit Tax - PPT) and economic activities have no significant positive relationship on the amount of money taken in indirect taxes (mirrored by the Customs and Excise Duty-DUTY) of the Nigerian government. Ex-post facto research design was adopted for this study. Secondary data on the major variables were collected from the various issues of statistical bulletin of the Central Bank of Nigeria (CBN) spanning from 1970-2013**.** Data collected were analyzed using Ordinary Least square multiple regression analysis. Results of the findings revealed that there existed a significant difference between economic activities and direct taxes proxy PPT and there existed a significant relationship between economic activities and indirect taxes proxy customs and excise duties taxes. It was therefore recommended that the government should withdraw from several economic activities that the private sector is able and willing to provide more efficiently. There is also the need to streamline the quantum and sequencing of implementation of public sector projects. Finally, a significant reduction in public waste evidenced by the large number of abandoned projects all over the country will effectively contain the fiscal problems.
Keywords: Direct taxes, efficiency, indirect taxes, tax system

1. Introduction

A country's tax system is a major determinant of other macroeconomic indices. Specifically, for both developed and developing economies, there exists a relationship between tax structure and the level of economic growth and development (Hinricks, 1966; Musgrave, 1969; Oparaji, 1996; Ariyo, 1997). Indeed, the volume of collectible taxes has a direct relationship with the level of economic activities of a nation (Oparaji, 1996).

Evidence in Nigeria has shown that since political independence, government revenue has experienced tremendous growth (Ola and Adeyemo, 1998). In the 1960s, emphasis was on accelerated economic growth and development, and the main goal of tax policy was maximum tax generation to finance public sector programmes (Ekuarhare, 1980; Ariyo, 1997). Attention was directed towards increasing the existing tax rates (especially import duties) in the form of high protective tariffs, and as a consequence import duties provided the bulk of federal government revenue in the early 1960s (Ariyo, 1997).

Another major macroeconomic objective underlying the increase in tariffs was the desire to discourage imports and thereby curtail consumer demand. Excise duties were also introduced on several goods to broaden the revenue base. Given the low industrial base, the contribution of the later was insignificant (Ariyo, 1997).

Overall, the revenue from these sources accounted for about 73 per cent of total revenue. This makes the foreign trade sector the major source of revenue in the 1960s. Some structural changes emerged in the revenue profile in the early 1970s whereby indirect taxes gave way to direct taxes with the emergence of the oil boom (Egwakhide, 1988). The fall in non-oil tax revenue due to the neglect of the traditional (agricultural) sources was matched by an increase in import duties until 1973. Further, there was an appreciable increase in revenue from excise duties in the 1970s due to the enhanced performance of the industrial sector.

Thus, the relative and cyclical decline in the importance of import duties and hence indirect taxes was compensated by the rising importance of Petroleum Profit Tax (PPT), which emerged in the 1970s as the dominant tax source. Its relative contribution to the revenue increased steadily from 18.9 percent in 1970 to 78 per cent but fell to 49.8 percent in 1987 and to only 10.0 percent in 1991. The sharp fall in the importance of the PPT occurred from 1985 when the PPT law was amended to "net in" the earning of the Nigerian National Petroleum Corporation (NNPC) and rent and royalties. The impact of that amendment was the rise in the relative share of oil revenue source, which hitherto was experiencing a declining trend. Consequently, oil revenue source increased in relative importance to 81.9 per cent in 1991 and 84.1 per cent in 1993.

Criticisms of the Nigerian tax system have focused on two main aspects, namely: tax structure and its administration. At the structure level, it has been argued that the tax provision does not adequately reflect the peculiar socio-economic character, goals and problems of the nation. On the other hand, at the administration

level, it is argued that the machinery and procedures followed in implementing the tax system is inadequate and hence, accounted for the consistent low yield of some taxes and inter group inequities. For example, self-employed persons have hardly paid adequate taxes in Nigeria (Ndekwu, 1991)

The criticisms of the Nigerian tax system at the structure level as highlighted in Ndekwu (1991) included the fact that the tax structure as it currently operates in Nigeria is outdated and offers no meaningful relief to taxpayers. Government cannot justify tax collection in Nigeria because poor services are rendered in exchange for the taxes paid by the citizenry. All expenditure unnecessarily incurred by an individual taxpayer in the provision of amenities, which should have been provided by government such as road, security, water, Medicare, education, houses, but which are often not provided should have been fully deducted before the computation of tax liability.

Insert table 1.1

However, the relative and cyclical decline in the importance of import duties and hence indirect taxes was compensated by the rising importance of Petroleum Profit Tax (PPT), which emerged in the 1970s as the dominating tax source. Its relative contribution to the revenue increased steadily from 18.9 per cent in 1970 to 78 per cent but fell to 49.8 percent in 1987 and to only 10.0 per cent in 1991. The sharp fall in the importance of the PPT occurred from 1985 when the PPT law was amended in *"net in"* the earning of the Nigerian National Petroleum Corporation (NNPC) and rent and royalties. The impact of that amendment was the rise in the relative share of oil revenue source, which hitherto was experiencing a declining trend. Consequently, oil revenue sources increased in relative importance to 81.9 per cent in 1991 and to 84.1 per cent in 1993. This structural shift from indirect to direct taxes at the federal level resulted in the cyclical decline of non-oil sources from 81.1 per cent in 1970 to 18.1 per cent in 1991, rising to still a small proportion of 39.1 percent in 1995.

Apart from the observed dominance of direct taxes, it is shown that total lax revenue accounts for a relatively high proportion of the nation's GDP, a characteristic approximate to the situation in advanced economies such as the United Kingdom and the United States of America. This shows a deceptively advanced structure of the nation's tax system. Indeed, this deception is exposed by its external effective incidence and its high instability.

When it is viewed from the stance of tax revenue, one cannot fail to mention that fact that there is a multi-dimensional lopsidedness in Nigeria's Revenue Structure. Firstly, the FGN alone accounts for about 80 per cent of the annual recurrent revenue of all three levels of government. Secondly, about 70 per cent of federal revenue are now derived from crude oil taxes (the proportion was as high as 70 per cent annually during the middle to late 1970s). Thirdly, the bulk (about 80 per cent annually) of revenue from oil is derived from only two levies - Petroleum Profit Tax (PPT) and mining royalties. In addition, the state government derives 90 per cent of their annual revenues from federal source alone. Furthermore, it is only about 22 per cent of the revenue, which the federal government currently derives from non-oil activities.

In view of this, the researchers proposed to deal in this study with some of the specific theoretical, analytical and practical problems of the structure of tax-based revenue in Nigeria with a view to examining its efficiency, highlighting as much as possible, the various tax reforms and their underlying objectives and attempt to set out solutions, which will enhance accurate tax revenue projection and targeting of specific tax revenue sources given an unstable tax structure, such as Nigeria. To guide the researchers in achieving the objectives of this study, the following hypotheses are formulated:

H_{o1}: Economic activities have no significant positive relationship on direct taxes (proxied by the Petroleum Profit Tax - PPT).

H_{o2}: Economic activities have no significant positive relationship on the amount of money taken in indirect taxes (mirrored by the Customs and Excise Duty -DUTY) of the Nigerian government.

2.1 Literature review

There is paucity of comprehensive research on the efficiency of the Nigerian tax system. Rather, most research has focused only on a single aspect of the tax source (Ariyo, 1997). In fact, specific macro-econometric case studies on the efficiency of the Nigerian tax structure are almost non-existent.

Idachaba (1976) assessed the tax-to-base elasticity of import and export duties in terms of total imports and exports. Diejomoh (1976) estimated the income elasticity of import volume over the period of 1954 - 1964.

However, Hasen (1977) empirically reviewed the effect of the tax structure on investment 1922 - 1937 with a view to the elimination or modification of taxes tending to prevent the normal flow of private investment. Among the taxes used in his study are the Undistributed Profit Tax and the Capital Gain Tax. From his findings, it is evident that Business Enterprises rely relatively little upon the Capital Market for their investment funds. The role of the Capital Market as a source of funds has evidently been enormously exaggerated and this is at the decline. With respect to the cyclical aspect of the structure of taxation, problems relating to extreme fluctuations

in business income are important; and it is highly probable that taxes on consumption played a far greater role as a deterrent to full recovery in 1936 - 1937 than did Corporate and Personal Income Taxes. Hasen (1977) concluded that a major reform of our whole Federal, State and Local tax structure designed to reduce consumption taxes, would be of crucial importance in any program aiming to enlarge the outlets for private investment.

Omoruyi (1983) represents the most comprehensive assessment of the productivity of the Nigerian Tax System. He evaluated the buoyancy of the tax system for the period 1960 to 1979. He focused on both the indirect taxes such as Import, Export and Excise Duties as well as direct taxes such as Personal Income Tax (federally collected) and Petroleum Profit Tax. However, Ariyo's (1997) study improves upon Omoruyi's (1983) work in the following respects; firstly, his study covers the period 1960 - 1990. He, therefore, updated the analysis. Secondly, his study captured the impact of the structural changes in the macroeconomic management framework introduced since 1986. Thirdly, Omoruyi (1983) disaggregated his analysis in terms of decades (1960-1967; 1970-1980; etc). Ariyo (1997) believed that such disaggregation could not provide an adequate guide for policy decisions, which are of interest to his study. Hence, he disaggregated his analysis around notable economic events such as the pre- and - post oil boom era, as well as the impact of SAP on the buoyancy of Nigerian Tax System. The study concluded that the current revenue profile is sustainable, with little prospect for significant improvement in the short run. He also suggested that a significant reduction in public expenditure and prudent management of financial resources are the most feasible solutions to the problem of unsustainable fiscal deficit in Nigeria.

As for Kuewumi (1996), he reviewed the functions and technical aspects of Tax Structure Reform. As he reported, measures that constitute Tax Structure Reform vary in scope, significance, impact and purpose; but virtually every new development in taxation or anything purposefully done to the tax system is considered a reform. His study highlighted on the Structural, Administrative and Legislative Tax changes. Structural Reforms are changes administered to tax structure. They reflect or impinge on what the Canadian scholar, Carl Shoup, had described as 'tax architecture', that is, the choices a government makes in the design of a tax. Highlighting the qualities of a good Tax Structure Reform Programme, the study mentioned:

(a) Non-distortionary effects
(b) Sustainability
(c) Concurrence of Reforms
(d) Transportation cost
(e) Purpose and timing of reforms
(f) Stable government.

The study concluded that, the preferable approach to tax structure reform is that the major tax reforms be adopted only seldomly while minor adjustment may be carried on periodically on tax rate, exemption policy, reporting and accounting method, etc. The critical issues in taxation and tax management in Nigeria have been reviewed by Naiyeju (1997). The study concisely, pinpointed the objectives of the tax system, which involve a tripartite aspect, namely: the tax policy, the tax law, and the tax administration. The constraints besetting effectiveness of tax administration in the country at the moment were adequately reviewed. These include:

(a) Complete neglect of the tax authority
(b) Improper use of consultants
(c) Limited, or lack of, independence of the state tax authorities
(d) Inadequate funding.
(e) Lack of qualified and experienced tax officials at the state and local government levels; and
(f) Tax evasion

On recommendations on the way forward, the study discouraged the present pursuit of only the revenue generation objective 'at all cost' by most states and local government without considering the damage done to the economic fabric of the nation.

The conclusions of the JTB in the Board's Report (already circulated to states) on multiplicity of taxes and levies should be upheld in order to promote efficiency in the tax administration. The present tax policy, including low tax regime started in 1992 should continue into the future. The review of the tax laws and their codification should be done periodically, say, at an interval of between three to five years. Government must be prepared to fund the tax authority adequately for it to carry out its function. Some reasonable degree of autonomy must be given to tax authority.

The functions of a good tax system have been vigorously reviewed by Ojo (1999). This review was then compared to tax administration in Nigeria with a view to examining the success or failure of the Nigerian tax efforts. It is reported that whereas there might have been serious attempts at creating wealth through the use of taxation, there are too many instances where the drive for funds by the revenue authorities beclouded the more far-sighted objective of taxation. It is suggested by Ojo (1999) that, the drive for revenue by the Nigerian tax

administrative set up should be tempered with some milk of kindness.

Osakwe (1999) focused on recent reform in Personal Income Tax (PIT) in Nigeria. In his analysis of Income Tax Reforms, Osakwe (1999) reported that individual income taxation in Nigeria entails generous tax reliefs and allowances granted to taxpayers. The reform aims at increasing the disposable income of workers so that they can adjust to the impact of inflation and rising cost of living. Other objectives of the reforms, according to his findings, include alleviation of poverty, redistribution of income and promotion of economic development. His study examined in some detail the extent to which these objectives have been achieved by the reform and concluded that, the increase in the disposable income of workers particularly in the low income group was too insignificant to enhance their purchasing power to a level that will enable them to combat the rising cost of living or alleviate poverty. It was the recommendation of Osakwe (1999) study, that government should undertake an upward review of total emoluments particularly of the public sector employees.

Olowononi (1999) proceeded to describe, analyze and evaluate the Nigerian VAT System since its inception. His study examined issues related to the administration of Value Added Tax (VAT) with particular focus on the collection machinery. He outlined and examined the revenue profile of Federal, State and Local government with a view to determining the revenue significance of Value Added Tax (VAT). It was reported by Olowononi (1999) that Value Added Tax (VAT) has made significant contribution to the federally collected revenue as well as the current revenues of the State and Local governments. The study concluded that the great potential of the VAT as a source of revenue and as a fiscal weapon is due to its being controlled by the federal government.

As for Ezeugwu (1999), he concentrated on property taxes, as a little explored source of internally generated revenue for local governments in Nigeria. Ezeugwu (1999) traces the origin of property rating back to seventeenth century England; how rating was introduced by the British Colonial Administration first to Lagos and subsequently to other parts of Nigeria. His study justified property rating as a basis of taxation and showed how it met the standard characteristics of a good tax system. He defined a tax base, highlighted how the rate structure is formed, the acceptable methods of assessment of property and the different valuation methods.

Ezeugwu (1999) suggested that, to ease rating administration in local governments, each state should have an office for valuation of property in each local governments; such a method would pool together, the available experts in property valuation and rating of property. His study finally outlined ten different problems experienced presently in Rating Administration in Nigeria but concluded that even though property tax is regressive in incidence, it is easy to assess, hard to evade and can be distributed in an even manner. It remains an important but little explored source of local government internally generated revenue in Nigeria.

3.1 Research methodology

The research design adopted for this study is ex-post facto research design. Kerlinger (1986) posited that ex-post facto design method is aimed at investigating the extent to which variation in one factor corresponds with variations in one or more factors. Data for this study were mainly secondary data collected from the Central Bank of Nigeria's statistical bulletin and published articles and journals. In evaluating the productivity of a tax system, for this study two models were formulated and used. The models were thus stated as follows:

Log PPT $= h_0 + hi \log GDP + h_2 DEFY + h_3 RER$……1

Log DUTY - do + dj log GDP + d_2 DEFY + d_3 RER……..2

Where:

DUTY = Customs/Excise Duty to GGDP ratio
PPT = Petroleum Profit Tax
GDP = Gross Domestic Product
DEFY = Fiscal Deficit to GDP ratio
RER = Real Exchange Rate

4.1 Data Analysis and Discussion of Findings

The impact of economic growth (GDP growth), government's fiscal actions (DEFY) and real exchange rate (RER) on petroleum profit tax in Nigeria (1970 - 2013). The result is presented in Table 4.1

Insert table 4.1

The result in Table 4.1 shows the overall goodness of fit, an adjusted R^2 value of 0.84. This means that the explanatory variables, namely; GDP, DEFY, and RER were able to collectively explain about 84 percent of the observed variation that took place in the PPT receipt, given our data set. 16 percent of the total variation in PPT revenue remained unaccounted for either due to omissions from the model variable that are important, or specification error, or any other conventionally-known error in data specification.

In the same vein, and relaxing the details, the high F-statistic value of 62.43 confirms that the high explanation of the model did not occur by chance; and given the low standard error of regression, 0.856, the model could be said to be stable. In testing for the presence or otherwise of serial correlation among the

estimates, the DW value of 1.67 lies within the "no auto-correlation" region given as du and 4-du (i.e. 1.65 and 2.35) using 95 percent confidence level. It could be concluded that the estimates are not correlated among themselves; and that the estimates can be relied upon for prediction and economic forecasting.

Again, the result shows that GDP impacted positively on the model, implying that an increase in economic activity leads to an increase in the PPT revenue. The variables (GDP) has a high t-value of 7.0743 and is significant at 99 percent confidence level. Precisely, a 1 percent increase in economic growth will lead to a more than proportionate increase in PPT revenue, by 7.0743 (GDP coefficient). The economic meaning of this is that PPT is relatively elastic. The elasticity shows its buoyancy and response to economic activity. The DEFY was negative and insignificantly different from zero. It has a low t-value of -0.4926; implying that the fiscal actions of government did not determine PPT revenue. The RER is marginally, significantly negative in the model. Its t-value (in absolute term) is 3.3 415, thus making the variable significantly different from zero in the model. The economic prediction is that a 1percent fall in real exchange rate could boost the PPT receipt by 0.0144 percent, suggesting that the depreciation of the naira helped in boosting the PPT, albeit marginally, during the study period.

The impact of economic growth (GDP growth), fiscal deficit-GDP ratio (DEFY) and real exchange rate (RER) on custom/excise duty (DUTY) in Nigeria (1970-2013) the result is presented in Table 4.2

Insert table 4.2

Table 4.2 highlights the results for this relationship, and analyses are made based on the basic analytical criteria.

GDP impacted positively on custom/excise duty (DUTY); this implies that an increase in economic activity will transmit into an increase in DUTY during the study period, all thing being equal. Precisely, a 1 percent increase in the growth rate of GDP will lead to a more than proportionate increase in DUTY by 4.34 percent. This indicates buoyancy of the variable when there is economic growth. Because the variable is in log, then the estimate is the elasticity of tax buoyancy for the model. The GDP variable carries the correct *a* priori expectation. In the same vein, DEFY entered the model positively but is again unfortunately statistically insignificant in the model with an estimated t-statistic of 0.1556, which is too low. This portrays that the variable is not important in explaining the changes that may occur in our dependent variable, DUTY; and could as well be dropped from the model (Koutsoyiannis, 1977). The RER impacted on the model negatively, and is significant at 99 percent confidence level having a t-value of-4.3614. The negative impact implies that if the real exchange rate falls (i.e. depreciates, or is devalued especially if this policy option is deliberately done by the government), then there will be a boost to the collection of customs and excise duties (DUTY), owing to enhanced export that depreciation is believed theoretically to bring to an economy, *ceteris paribus.* To predict for policy, a depreciation of Nigeria's exchange rate by 1percent will lead to an increase in DUTY by 0.019 percent.

Using the student t-statistic to test for the statistical significance of the estimates; it shows that the t-statistic for GDP is 4.8061, and compared with a table value ($t_{0.01}$) of 2.750, then we can reject the null hypothesis of no significance and say that the estimate is significantly different from zero. The estimated t-statistic for DEFY is 0.1556 compared by table value at even 10% significance level of 1.697 (with 39 as the degree of freedom, N-K). We can conclude that the estimate is not statistically different from zero. The RER has a t-value of-4.3614. Compared with the table value of 2,750 (absolute term which becomes 4.3614), it shows that ^{t}cal.> $t_{0.01}$, that is, 4.36147 2,750, we conclude that the estimate is significantly different from zero.

On the goodness of fit, the adjusted R^2 is 0.8151 which shows a good fit of the regression line. This implies that the explanatory or independent variables i.e. GDP, DEFY, and RER explained 81.51 percent of the observed variations (changes) in the dependent variable, DUTY. While about 18.49 percent changes in the dependent or determined variable, DUTY, remained unexplained, either due to omissions or error in specification.

Using the ANOVA technique of analysis to test for the overall relevance of the R^2, the table F-statistic, $F^*_{0.01}(3,31)$ - 4.51 and the calculated F-statistic is 50.9507. Then $F^C > F^*_{0.01}$, i.e. 50.9507> 4.51, we conclude that the high adjusted R^2 did not arise by chance.

The test for serial correlation shows that there is no auto-correlation among the estimates. The DW is 1.8044. When compared with the "no auto-correlation" region of 1.65 and 2.35 (i.e. du and 4-du), we can conclude that the model is fantastic and the estimates are reliable.

5.1 Conclusion and Recommendations

This study evaluated the efficiency or productivity of Nigeria's tax system over a period spanning over four decades. Although the level of efficiency appears satisfactory overall considering the tax buoyancy, the results indicate wide variation in the level of productivity by tax source. This was attributable to laxity in the administration of non-oil tax sources during the oil boom periods.

In the context of the study's objectives, it appears the current revenue profile of the country is sustainable. Further, opportunities for improvement exist especially in DUTY collection. Better monitoring and transparency of operations within the petroleum oil industry will also ensure a significant increase in total government revenue. The government should also desist from revenue bursting activities such as unbridled granting of both the prohibition and duty waiver for public sector projects and few privileged individuals within the society.

Finally, the report once again confirms the low quality of the tax information system, which always hinders a comprehensive and objective appraisal of the performance of the Nigerian tax system. As noted in the literature, economic reform includes the restructuring of the fiscal stance, of which tax policy is a major component. The sharp fall in the importance of the PPT occurred from 1985 when the PPT law was amended in *"net in"* the earning of the Nigerian National Petroleum Corporation (NNPC) and rent and royalties. The impact of that amendment was the rise in the relative share of oil revenue source, which hitherto was experiencing a declining trend. Consequently, oil revenue sources increased in relative importance to 81.9 per cent in 1991 and to 84.1 per cent in 1993. This structural shift from indirect to direct taxes at the federal level resulted in the cyclical decline of non-oil sources from 81.1 per cent in 1970 to 18.1 per cent in 1991, rising to still a small proportion of 39.1 per cent in 1995.

Apart from the observed dominance of direct taxes, it is shown that total tax revenue accounts for a relatively high proportion of the nation's GDP, a characteristic approximate to the situation in advanced economies such as the United Kingdom and the United States of America. This shows a deceptively advanced structure of the nation's tax system. Indeed, this deception is exposed by its external effective incidence and its high instability.

When it is viewed from the stance of tax revenue, one cannot fail to mention that fact that there is a multi-dimensional lopsidedness in Nigeria's Revenue Structure. Firstly, the FGN alone accounts for about 80 per cent of the annual recurrent revenue of all three levels of government. Secondly, about 70 per cent of federal revenue are now derived from crude oil taxes (the proportion was as high as 70 per cent annually during the middle to late 1970s). Thirdly, the bulk (about 80 per cent annually) of revenue from oil is derived from only two levies - Petroleum Profit Tax (PPT) and mining royalties. In addition, the state government derives 90 per cent of their annual revenues from federal source alone. Furthermore, it is only about 22 per cent of the revenue, which the federal government currently derives from non-oil activities.

Finally, the study underscored the urgent need for the improvement of the tax information system to enhance the evaluation of the performance of the Nigerian tax system and facilitate adequate macroeconomic planning and implementation.

Anyanwu (1994) provided empirical evidence on the economic effects of taxes in Nigeria for the period 1981-1996. Using the Ordinary Least Squares (OLS) method of estimation, he proceeded to test the effects of taxes on Nigerian economic growth proxied by the GDP. The variables employed in his six-equations model include Company Income Tax (CIT), Customs and Excise Duties (DUTY), Petroleum Profit Tax (PPT), Personal Income Tax (PIT), other Direct Taxes (example, Capital Gains and Stamp Duties) and all Direct Taxes (DIRT). The conclusions drawn from his study was that Company Income Tax (CIT) positively and significantly affects GDP just as Customs and Excise Duties (DUTY) does. However, Petroleum Profit Tax (PPT) is positively but insignificantly related to GDP/Economic Growth. His analysis further revealed that Personal Income Tax (PIT), negatively and insignificantly affects Nigeria's GDP. The same is true for other Direct Taxes (Capital Gains and Stamp Duties). Nonetheless, all other Direct Taxes (DIRT) positively and significantly affects Nigeria's GDP.

Akpomerah (1996) examined the issues and challenges of Tax Structure Reform measures in Nigeria. His study adequately discussed important changes in the Tax Structure: Personal Income Tax (PIT) between 1994 - 1996, Corporate Income Taxes (CIT) between 1993 and 1996, Consumption Taxes (example, Value Added Tax - VAT) from 1994 when it was introduced to 1996, Custom Duties from 1995 - 1996. The study highlighted the problems of multiple levies/taxes, minimum payable tax, cost of shipment burden, environmental concern, etc as the major challenges of Tax Structure Reforms in Nigeria. Finally, he concluded that combining reforms of the Nigeria Tax Structure with a strong effort to improve the Tax Administration is very important. Reliable adequate tax- related information will therefore negatively affect the accuracy and adequacy of fiscal reforms. It is in view of this that one urges the Nigerian authorities to squarely address this problem to enhance the usefulness of tax policy as a tool for effective macroeconornic planning and programmes implementation. It is therefore recommended thus:

1. In the context of this study's objectives, the government should withdraw from several economic activities that the private sector is able and willing to provide more efficiently.
2. There is also the need to streamline the quantum and sequencing of implementation of public sector projects.
3. A significant reduction in public waste evidenced by the large number of abandoned projects all over the

country will effectively contain the fiscal problems.

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APPENDICES

Method of estimation = Ordinary Least Squares

Dependent variable: LDUTY

Current sample: 1970 to 2013

Number of observations: 43

Mean of dep. Var. = 8.70252	LM het. Test = 0.181302
[.670]	
Std. dev. Of dep. Var. = 2.04611	Durbin-Watson = 1.804409
[.000,.000]	
Sum of squared residuals = 24.0011	Jarque-Bera test = 3.01292
[.222]	
Variance of residuals = 0.774230	Ramsey's RESET2 = 21.0386
[.000]	
Std. error of regression = 0.879903	F (zero slopes) = 50.9507
[.000]	
R-squared = .831386	Schwarz B.I.C. = 50.1717
Adjusted R-squared = .845169	Log likelihood = -43.0610

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	-39.7660	10.4701	-3.79807	[.001]
LGDP	4.33690	0.92361	4.80611	[.000]
DEFY	0.192979	1.24022	.155601	[.877]
RER	-0.019230	0.440918E-02	-4.36140	[.000]

Method of estimation = Ordinary Least Squares
Dependent variable: LPPT
Current sample: 1970 to 2013
Number of observations: 43

Mean of dep. Var. = 9.61395 LM het. Test = 9.72797 [.002]
Std. dev. Of dep. Var. = 2.24198 Durbin-Watson = 1.67 [.000,.000]
Sum of squared residuals = 22.8020 Jarque-Bera test = 2.58511 [.275]
Variance of residuals = 0.735549 Ramsey's RESET2 = 3.66240 [.065]
Std. error of regression = 0.857641 F (zero slopes) = 67.1147 [.000]
R-squared = 0.876577 Schwarz B.I.C. = 49.2748
Adjusted R-squared = 0.835665 Log likelihood = -42.1641

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	-60.6386	10.2052	-5.94196	[.000]
LGDP	6.22211	.879540	7.07428	[.000]
DEFY	-.595428	1.20884	-.492560	[.626]
RER	-.014360	.429763e-02	-3.34145	[.002]

TABLE 1.1
Structure of Nigerian tax-based revenue 1970 - 2013 (million)

Year	(A) Total Government Duties (ID) Tax revenue (GTR)	(B) Import Duties (ID)	(C) Excise Duties	(D) Petroleum Profit Tax (PPT)	(E) Company Income (CIT)	(F) Gross Domestic Product (GDP)
1970	513.9	215.5	112.6	97.7	45.8	5,621
1971	942.1	284.8	168.5	383.1	67.5	7,098
1972	1,105.9	274.4	179.8	540.5	80.4	27.703
1973	1,369.1	307.9	196.0	769.2	80.8	10,991
1974	3,530.8	328.3	164.4	2,870.1	148.8	18,881
1975	3,750.9	629.4	125.5	2,707.5	261.9	21,779
1976	4,735.2	724.3	152.4	3,624.9	222.2	27,572
1977	5,981.6	902.2	236.0	4,330.7	476.8	32,520
1978	5,660.6	1,436.2	259.2	3,415.7	527.4	35,540
1979	6,897.6	870.6	273.1	5,164.3	575.1	43,151
1980	10,974.6	1,407.2	406.2	8,564.3	579.2	49,755
1981	9,362.8	1,880.9	654.6	6,325.8	483.0	52,255
1982	8,090.7	1,801.7	680.7	4,846.4	734.0	53,679
1983	6,316.1	1,114.8	869.3	3,746.9	561.5	552,760
1984	7,197.0	924.0	690.8	4,761.4	787.2	55,676
1985	9,973.3	1,199.0	978.9	6,711.0	1,004.3	65,467
1986	8,227.8	1,298.7	1,041.4	4,811.1	1,019.3	82,929
1987	17,315.9	2,722.9	814.4	12,504.0	1,235.2	107,040
1988	18.354.9	3,283.4	980.7	12,496.5	1,572.4	138,081
1989	32,110.4	4,581.7	1,368.5	24,161.7	1,977.42	258,212
1990	50,200.0	6,717.9	2,006.7	26,909.0	3,408.70	480,275
1991	634.0	166.6	97.7	68.9	45/8	370.0
1992	1,168.0	510.0	383.1	127.0	67.5	491.0
1993	1,405.1	764.3	540.5	223.8	80.4	481.1
1994	1,695.3	1,016.0	769.2	246.8	80.8	516.2
1995	4,537.4	3,724.0	2,870.1	853.9	148.8	498.3
1996	5,514.7	4,271.5	2,707.5	1,564.0	261.9	760.7
1997	6,705.9	5,365.2	3,624.9	1,740.3	222.2	882.7
1998	3,711.6	1,749.8	0.0	1,749.8	476.9	1,145.6
1999	7,371.0	4,555.8	2,415.7	1,140.1	527.4	1,698.2
2000	10,912.4	3,880.8	5,164.1	3,716.1	575.1	1,143.9
2001	15,233.5	12,353.3	8,564.3	3,789.0	679.2	1.813.5
2002	13,290.5	8,564/4	6,325.8	2,238.6	403.0	2.325.8
2003	11,433,7	7,814.9	4,846.4	2,968.5	550.0	2,336.0
2004	15,233.5	8,178.92	6,347.83	1,183.50	130.1	4102152
2005	13,290.5	8,725.63	6,738.48	1,275.56	142.87	4721547
2006	11,433.7	8,946.48	7,367.93	1,367.48	178.48	5472613
2007	8,726.83	9,264.78	8,287.89	1,478.45	278.93	5936475
2008	12,473.78	9,867.98	8,726.83	1,576.67	637.74	6124531
2009	12,827.67	10,378.87	9,473.78	2,684.37	732.89	4102152
2010	11,426.83	10,892.74	9,827.67	2,983.64	764.74	43837.4
2011	12,473.78	11,782.83	10,27.67	3,784.76	816.46	59331.8
2012	13,58178	10,568.90	10,438.08	4,432.5	956.46	54,845.5
2013	12,455.67	11,687.20	11,345.5	3,667.9	764.74	43837.4

Source: CBN Annual Report and Statement of Account (Various Issues)

TABLE 4.1
Regression results of the effect of economic growth, deficit/GDP ratio and the real exchange rate on petroleum profit tax
(1970-2013)

Variable	Estimated Coefficient	Standard error	t- statistic	p-value
C	-60.6386	10.2052	-5.9420**	[0.000]
LGDP	6.2221	0.8795	7.0743**	[0.000]
DEFY	-0.5954	1.2088	-0.4926	[0.626]
RER	-0.0144	0.4298	-3.3415*	[0.002]
R' = 0,883 R^{2a} = 0.84 F- statistic = 62.43 DW = 1.67 SER = 0.86				

Dependent variable: petroleum profit tax (PPT)
*Significant 0.1% level,** better than 0.1%

TABLE 4.2
Regression results of the effect of economic growth, deficit/GDP ratio and real exchange rate on custom/excise duty (DUTY): 1970-2013

Variables	Estimated coefficient	Standard error	t-statistic	p- value
C	-39.7660	10.4701	-3.7981*	[0.001]
LGDP	4.3369	0.9024	4.80618**	[0.000]
DEFY	0.1930	1.2402	0.1556	[0-877]
RER	-0.0192	0.4409	-4.3614**	[0.000]
R^2 =0.8314 R^{2a} = 0.851 F-statistic -50.95507 DW-1. 8044 SER =0.8799				

Depending variable: Custom/excise duty (DUTY)
*Significant 0.1% level,** better than 0.1%

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