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## **ECONOMIC DETERMINANTS OF TAX REVENUE IN NIGERIA**

### **GROUP RESEARCH PROPOSAL**

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#### ***Abstract***

Generating adequate fiscal revenue is highly influenced by a number of socio-economic and political variables that are likely to have different, either positive or negative, impacts on tax revenues. The exploratory impact of tax revenues on economic performance depends on the degree to which the factors influencing tax revenue are certain. We can achieve the best determinants of tax revenue by recognizing the justification for low tax revenue. The research examines relevant factors in tax revenue generation that examine the situation in Nigeria. After carrying out various regression assumptions, we used the Ordinary Least Square (OLS) technique to estimate the study model. We found out that only GDP and the total trade volume of transaction positively and significantly affects tax revenue in Nigeria. This study concluded that, the economic determinant of tax revenue in Nigeria are gross domestic product and total trade volume of transaction.

## Introduction

Tax revenue contains all the monetary value that the tax system operated by tax administrators may predict through a fiscal reform policy that improves taxpayers' enforcement level (Ayanilo, 2016). Tax revenue can be seen as government-generated funds from taxation of its taxable population and is a method used by any government to raise and receive government receipts from various sources, excluding loans and borrowing (Oyetunji, 2012). Taxation can be called the necessary levy imposed by the government on the taxable population via the movement of funds to the public sector from the private sector. Though, there are others like creating more money, charging for or borrowing goods and services provided. According to Gupta (2007) and Pessino and Fenochietto (2010), the factors affecting tax revenue in tax pressure were found to differ in nature, the degree of growth is a function of the per capita gross domestic product (GDP).

Past studies attributed the impact of the level of education, calculation of public spending on the population's level of education or illiteracy as determinants of tax revenue (Bahl & Wallace, 2005; Pessino & Fenochietto, 2010; Piancastelli, 2001). The determination of tax revenue is significantly influenced by certain legal, political and socio-economic variables, such as per capita income, a large supply of capital, political stability and manufacturing, services are important determinants of tax attempts in Nigeria (Oyetunji, 2012). The capacity to produce sufficient fiscal revenue can be calculated either positively or negatively by social and political variables that have various effects on tax revenue. Consequently, the effect on economic performance of the tax revenue generated depends explanatorily on the degree of determination of factors affecting tax revenues. Workineh (2016) states that the optimal determinants of tax revenue can be achieved by identifying the reason revenue from tax will be low which will include helpful measures to reduce the existing tax revenue problems. Flowing from the above, The aim of this study is to bridge the literature gap by using more current data and using

Nigeria's total trade transactions as a variable to adjust apart from circulating money to determine Nigeria's economic tax revenue determinants.

### **Statement of the Problem**

Taxes have been used since introducing the Structural Adjustment Program (SAP) to adjust the size and efficacy of business projects. Accordingly, attention was focused on promoting the export of manufactured goods and raising the tax rate of both organizations and individuals. Several measures were attempted in line with adjustment in policy focus. These include, inter alia, customs and excise duties, wages, progress with the reduction in business and income taxes, the implementation of capital allowances, the extension of the scope of tax exemptions and deductions, the expansion of the duty drawback program and the creation of bonds, the presentation of capital allowances, the monetization of alternative benefits, the use of value added tax and the increase of tax relief for low income. In no small way all of the measures have contributed to poor tax collections. The sources of tax revenue are also the tax structure that is not adequately buoyant or money-elastic, the long gap between the time the government receives revenue and the time of expenditure, the incapacity of the government to monitor its expenditure, the lack of fiscal discipline and the lack of knowledge about the determinants of tax revenue. Against this context, this study is motivated to assess the economic determinants of tax revenues produced in Nigeria and their economic effects.

The following research questions were introduced to guide this study;

- (i) What is the relationship between exchange rate and tax revenue in Nigeria?
- (ii) In what way does foreign direct investment affect tax revenue in Nigeria?
- (iii) To what extent does monetization factor affect tax revenue in Nigeria?
- (iv) What is the effect of gross domestic product on tax revenue in Nigeria?

## Goals and Objectives

The broad objective of this study is to examine the influence of economic determinants on tax revenue in Nigeria. Specifically, the objectives are to:

- (i) determine the relationship between exchange rate and tax revenue in Nigeria;
- (ii) ascertain the influence of foreign direct investment on tax revenue in Nigeria;
- (iii) examine the effect of gross domestic product on tax revenue in Nigeria; and
- (iv) investigate the impact of political factors on tax revenue in Nigeria.

## Hypotheses of the Study

Flowing from the objectives above, we stated the hypotheses of the study in a null form. They are:

- (i) Exchange rate has no significant influence on tax revenue in Nigeria.
- (ii) There is no significant influence between Foreign direct investment and tax revenue in Nigeria.
- (iii) Gross domestic product has no significant effect on tax revenue in Nigeria.
- (iv) Political factor has no significant impact on tax revenue in Nigeria.

## Scope of the study

This study examines the influence of economic determinants on tax revenue in Nigeria. Secondary data will be used and it will be gotten from the annual statistical bulletin of the Central Bank of Nigeria. The study covers a period of seventeen years (17) years, that is, from 1990 to 2017. The rationale for choosing this period is to have a robust and clear explanation of the study and the period is relevant.

## Significance of the Study

The study aimed at providing an understanding as well as information on the components of tax revenue determinants in Nigeria. It is due to the growing importance of the tax revenues and their effect on economic growth. Five (5) macroeconomic variable components was used as

our indices to analyze the determinants of the tax revenue. Economic volatility, gross domestic product, foreign direct investment, per capita income and exchange rates are the components to be analyzed. This work aims to relate to shareholders, tax authorities, partners, future investors and management awareness.

## **Review of Literature**

Developing nations such as Nigeria have limited capital and sales, with unrestricted spending and disbursement criteria. Through single administration should produce no less than two forms of revenue; non-tax and tax, that is to say, debt relief and grant. Tax collection forms the critical fiscal policy capability and is the main source of government revenue. These are considered to be notable sources of income or revenue for the government in order to fulfill its commitments to the country's development. Taxes are sources of revenue exchange between individuals and governments (Hafiz, Shabbir, Mansoor & Muhammad, 2016). It is an overlooked yet fundamental issue of an enhanced growth strategy. Tax is regarded as the basis for the collection of revenue by each government. It is one of the enormous equipment required to build the capacity needed for government success in order to fund social programs and pay for external loans.

Any country's revenue generation is superior because of its ample tax collection ability. At the development stage, a government may take various steps, such as deficit financing, foreign assistance, debt and customer charging, but tax has reduced inefficiency and expenditure compared to other measures (Chaudhry & Munir, 2010). Improvement of the taxation system is important for numerous reasons. First of all, the governments of less developed countries need to carry out countless development programs, such as in the fields of education and training, people's health, open parks, infrastructure and well-being etc. The people who have insufficient income to lead better lives will benefit from these advantages. Second, by creating

the desired sectors with adequate arrangements, the State will be able to carry out its activities with an effective tax structure to improve the economy. Second, counter-recurring tax reforms may act as a counterbalance to income and business cycle variances. Fourthly, on top of that, taxes can be used to redeploy the country's resources among residents and individuals receiving public assistance. Fifthly, due to the lack of a well-organized and productive financial market and monetary framework, the majority of the less developed countries must generally depend on fiscal measures to manage their economies (Todaro&Smith, 1993). Bearing in mind the need to achieve the ultimate goal of a desirable long-term, sustainable financial growth, every nation's program must strive to be successful and effective. A good fiscal position is necessary if a government is to increase its financial growth to a fair and stable position. In any event, through a proper tax arrangement, the country can achieve a sound fiscal approach.

### **Determinants of Tax Revenue**

Tax revenue is claimed to be the after result of the tax rate being applied to a tax base. An increase in the tax base result is more economically acceptable for wage growth than an increase in the tax rate, which may also backfire under some macroeconomic conditions. Taxes are ranked according to tax rate (Piana, 2003; OECD, 2010).

- (i).proportional taxes, the tax rate is constant whether there is an increase or decrease with the tax base;
- (ii).progressive taxes, the percentage of the tax rate increases with the amount taxed;
- (iii). lump sum taxes, it has a fixed absolute value of the tax, irrespective of whether the tax base increases, decreases or is constant;
- (iv).regressive taxes, the tax rate decreases with an increasing tax base.

Given the above, tax transfers and tax base components are main determinants of income from proportional, incremental and regressive taxation, while they are explicitly irrelevant for lump sum taxation. Monetary systems vary widely worldwide and yet individual income taxes

are generally complex, corporate income tax relates to tax collection for local and universal economic activities. In addition, the tax rate for the wealthy is typically proportional or proportionate, with some taking advantage of the lump sum tax (Qayyum, Nasir, Hussain, Khan & Butt, 2011).

Lump sums to tax a small absolute value are extremely significant. Progressive taxes have the advantages of a few taxpayers, who are a political minority, delivering large-scale revenue. That way, narrow-minded voters' political recognition can be strong. Taxes on what is considered bad, for example, liquor consumption, smoking, pollution are often said to be more valid from an ethical point of view and an offer to "healthy habit" individuals the possibility of quitting the tax, so they are politically viable more often than not. Be that as it may, dependent on the atmosphere of politics and the position of the party, an increase in taxes collected might be lethal electorally.

GDP flow is an important macroeconomic determinant of tax revenue, that is, the higher the GDP, the higher the tax base and the higher the tax revenue. The efficient ability to raise tax revenue until the debt principal is completely met, and the interest of the creditors is a primary indicator of public debt management (Agbeyegbe, Stotsky & WoldeMariam, 2006). The legitimacy of being able to collect enough tax revenue at this stage is directly related to the total GDP sum as tax levels that are too high are deemed unlikely and affect GDP itself and the political adequacy of taxes depressingly. This analysis is therefore focused on the degree to which the electorate considers the tax system and whether a majority of voters believe that they benefit more from public funding than they pay in taxes (Piana, 2003).

The more generous the tax scheme, the higher the average sum is because only a few rich people actually bear the weight of giving away more than they get. Government officials who claim that tax avoidance is adequate undermine the legitimacy of the tax power to allow them to put a nation on the precarious edge of insolvency, no matter how large the debt is in relation to it.

Global rivalry through fiscal structures may reduce a state's likelihood of taxing mobile goods, whilst offering a clear motivator, for example, toward tax havens for global coordination. Fiscal systems differ in terms of consistency, accountability, approaches to deducting bills, use of the deduction threshold, and so on, so that the work of a tax bookkeeper in many nations is vital to the final and efficient collection of taxes. Due to Nigerian governance, fiscal accountability has not built credibility as corrupt practices have become the agreed norms in practice (Piana, 2003).

### **Monetization and Tax Revenue**

The amount of money circulating may have an effect on a nation's direct and indirect taxes. To a large degree, a taxpayer's ability to pay tax depends on how much money he / she receives within a given period. Monetization of the economy defined by vector M2 is depended on to be positively linked to the collection of tax revenues. As the theory indicates, a rise in inflation (an agent for an expansionary financial approach) is expected to have a negative effect on tax revenues (Hinricks, 1966). Work on tax-determinants in Oyetunji (2012) finds an important relationship between monetization and tax revenue.

According to Nzotta (2004), this model ensures that the exchange rate is influenced by changes in the money supply in one direction or the other. The model is designed to explain exchange rate adjustments with respect to demand and cash supply changes between different currencies (Olisadebe, 1991). While an expansion of real income given a fixed nominal money supply leads to a decline in price, and ultimately triggers exchange rate appreciation.

On the other hand, an increase in demand for money gives rise to price increases which lead to a depreciation of the exchange rate in the long run. The fiscal model mainly deals with the conventional theory of money in quantities. As Fisher has stated, the model communicates the relationship between the cash supply and the different price rates. The assumption is that advancing the actual level of cash flow depends on real production, inflation rate, fiscal extension and growth. Obaseki (1990) held the same view as above, and further stated that the



rate of output growth was finally accepted as infringing the actual level development and the rate of inflation. The exchange rate shifts as inflation rates rise. The model adopts the flow rate or commitment exchange rate in a simplistic perspective. By and large, interest rate comparisons and yield effects on exchange rate determinations.

### **Foreign Direct Investment**

Foreign aid is used to meet the impact of relying on foreign aid and mobilization of domestic income via tax revenue. Chaudhry and Munir (2010) thought that nations dependent on revenue from natural assets, international assistance or further income not gained by political attempts to force their citizens to pay taxes may be more reluctant to establish captivating and democratic institutions. If aid weakens the "tax initiative," Gupta et al. (2003) may also undermine the transparency of expenditure, contributing to the possibility of reckless spending by governments, further undermining the motivating forces used to collect domestic revenue (Cassuo, 1997). In this sense, as the increase in the inflow of foreign aid makes it easier for developed nations to manage their attempts to build internal income flows, and the effect of foreign aid on tax revenues will be negative. This is measured as share of GDP in the "Official Development Assistance" (ODA). This is because ODA is the most commonly known indicator of international aid (Teera, 2003).

### **Exchange rate**

The exchange rate is the price of the currency (the local currency) of a given country as compared with the currency of another country (the international currency). The exchange rate plays a major role in financial transactions worldwide, and due to the changing factor endowment, no nation can remain in autonomy. Exchange-rate disparities have a broad impact on other economic indicators, such as unemployment, inflation, cash supply, interest rates (Anifowose, 1994).

Economic theory notes that the periodic devaluation of the exchange rate caused by competing monetary policies would have to have a positive effect on the general economic movement along these lines and increase tax revenue, and that an overvaluation of the exchange rate normally carried out by expanded budgetary policies will have to adversely affect subsequent lower tax revenues and the general economic activity (Gupta & Mitra, 2003).

### **Political factor and Tax Revenue**

Ehrhart (2009) analyzed the link between democracy and local taxes in developed countries, using a panel of data from 66 developing nations over a period of 16 (1990-2005) years. In achieving and mobilizing higher domestic taxes, he found that democracy matters. It is imperative that the executives be especially concerned with the administration's considerable willingness to collapse uncommon priorities and be welfare-minded in an effective way. Similarly, In particular, resource-rich nations need policy factors to make the lease of natural resources lead to higher domestic taxes and no longer obstruct a properly funded tax system. Bird, Jorge and Torgler (2008) examined fiscal initiative in developed and high-income countries by analyzing the voice and accountability of corruption. They concluded that a more real and sensitive state is a key component of a more satisfactory level of tax collection effort in developing and high-income countries. Although giving these advice to poor nations seeking to improve their tax ratios at first glance may not seem of any benefit other than encouraging them to find oil, it is generally more practical for individuals to strengthen their governing institutions than to revisit nature's abundance.

Oyetunji (2012) showed that a stable political system with a specific democratic regime can raise the level of tax revenue. It may not take long or be much harder to tackle corruption and accountability issues than changing the opportunities for economic structure and taxation. The study also showed that high-income countries also have the potential to improve their tax productivity by improving their institutions. John (2006) examines the context for tax and fiscal

reform policies in developed countries and the relationship between the political and tax elements.

### **Gross Domestic Product and tax Revenue**

Gupta (2007) examined the influence of tax determinants on tax revenue implementation across developing nations by making use of a broad dataset and accounting for some econometric issues that were overlooked in previous studies. The results indicated that structural variables, such as share of GDP in agriculture, per capita GDP, foreign aid and trade openness ultimately influence an economy's revenue output. Certain components include corruption, direct and indirect tax sharing, political stability and so forth. Furthermore, the study uses a list of revenue implementation and points out that while some Sub-Saharan African nations perform well beyond their potential, some Latin American nations lack the mark on their potential profits.

Similarly, the study by Kunli and Pablo (2010) analyzed the effect of tax-reduction events in which tax revenue fell sharply to GDP proportions and studied the relationship between tax revenues and imports. The researchers have said that downturn scenes of at least one percent (1%) of GDP in one year are normal. For these episodes the types of taxes reported are diverse and advanced, oil supply, and developed and emerging nations. They find that declines in tax revenues and withdrawals from imports have a significant de facto relationship with GDP. Finally, they show that import fluctuations are a statistically significant determinant of tax revenue adjustments that are unable to withstand when controlling shifts in production differences and in trade terms.

### **Theory of Tax Structure Development**

Development of the tax structure theory explains the relationship between the economic development and growth structure on the one hand, the tax handle, and tax bases available to collect revenue, on the other. Throughout the economic growth cycle a tax system goes through various stages. It holds true for both developed economies and emerging ones. Without a

question, it has been argued that economic growth has a significant effect on the tax base of the economy of a country(Hinricks, 1966; Musgrave, 1969).

Improvement of the tax structure theory suggests that the financial structure imposes major restrictions on the structure of the system at the early stages of economic development. In this step, there is only a limit on the use of direct taxes. This is based on the fact that, at this stage, people living in the provincial zones are engaged in subsistence farming, and what they earn is difficult to survey. Tax assessment at this level depends on expectations that are susceptible of large margins of error. Therefore, individual income tax must be based on highly precise criteria and available on unmistakable sources of income to the degree that it cannot be synonymous with some stretch of imagination. For example, effective personal income taxation is usually strictly related to the wage income of government employees and various company employees. Since of the large variety of self-employed people in total jobs, quite a number of company profits actually avoid taxation.

### **Review of dependent and independent variables**

Karagoz (2013) suggested that earlier work looked at tax as a percentage of GDP, expressed primarily as the dependent variable sideways with the combination of other independent variables. This work examines total tax revenues as a tax revenue measure that includes direct and indirect taxes in Nigeria. Multiple variables which are related to it influence tax revenue. The impact level varies depending on the intensity of the relation between variables. Whether the various factors influence the tax revenue with a fluctuation in the effect over a specific period or a similar variable over several periods can have an influence with a different intensity.

Public spending per capita and public debt are indicators of the Government's financial situation. Wherever government needs more money to finance its spending and pay its debts, government

needs to plan more tax incentives. Accordingly, a positive relationship is generally predicted between tax revenue and both public debt and per capita spending.

An additional factor that affects tax revenue is the degree of urbanization which is determined by the number of people residing in urban territories. Urbanization is important in terms of its political, social and cultural implications as well as its financial consequences. Urbanisation brings new public service needs and interest. Again, the capacity of government to collect various tax sources is enhanced by structural changes linked to urbanization (Al-Hakami, 2008).

Any economy's monetisation is closely correlated with an industry market. Industrial sector growth is crucial to productivity, to the expansion of income rates and also to the actualisation of economic monetization, whereas in the agricultural sector, where self-consumption is very strong, tax capability is low. The proportion of money supplied to GDP is incorporated in the experimental models to deliberate on the effect of monetization on tax revenues.

The degree of openness is calculated as the share of global trade in GDP, which is likely to result in a major tax revenue impact. This may also be used as a sign of economic level deregulation. Such areas of foreign trade make tax collection more convenient than other domestic operations. The division of international trade among developing nations is the most monetized segment of the economy. Entry and departure from these nations happens at different locations. Import and export shares are thus tracked, and are vital determinants of tax revenue (Stostsky & WoldeMariam, 1997).

This is the assumption that the sectoral production structure is of equal significance on the grounds that it is easier to tax other segments of the economy than others. The agricultural sector is also expected to not generate massive tax revenue, and may also be difficult to tax, especially if it is dominated by countless subsistence farmers. Again, a productive manufacturing sector dominated by a few large companies engaged in manufacturing would yield significant

and taxable surpluses(Gupta, 2007). Consequently, we expect the share of the farming sector to be positively associated with the tax revenue as in relation to the share of the industrial sector.

### **Empirical Literatures**

Saibu and Olatunbosun (2013) research examine macroeconomic tax revenue determinants in Nigeria. Their study used secondary data from the Nigerian economy for the period 1970 to 2011 and adopted the model of error correction to create long-term and short-term relations between the factor variables. Findings from Saibu and Olatunbosun (2013) indicate that income tax elasticity shows a percentage-unit change in income level will most likely result in a 0.63 percent rise in tax revenue in the quick and 0.33 percent in the second year. Saibu et al. (2013) concluded that macroeconomic instability and the degree of financial exercises are the key drivers of tax buoyancy and taxation efforts in Nigeria.

However, Agbeyegbe, Stotsky and WoldeMariam (2004) used the data-set panel of 22 sub-Saharan nations to examine the relationship between tax revenue, trade growth and exchange rate changes. Their findings indicate that trade liberalization, agricultural share, industrial share, government consumption and conditions of trade have a positive impact on aggregate tax revenues and inflation has a negative impact. They explained the incredible positive result of the agricultural share by offering a tax treatment through the effect of the exports. On the other hand, where the independent variable is income tax revenue, the agricultural sector's share indicator swings to negative while the industrial sector's share remains the same.

Research by Gupta (2007) takes into consideration the revenue output of a large collection of developed nations over the course of 25 years ago. He found that few auxiliary variables are important and powerful determinants of income efficiency, such as per capita GDP, share of GDP agriculture and trade openness. He has also taken a gander on the effect of foreign aid and foreign debt on revenue output. His findings support a strong negative and critical relationship between agribusiness share and revenue output. An expansion of one per cent in the

agricultural segment share is expected to be able to reduce sales output by as much as 0.4 per cent. Results suggest that while foreign aid essentially improves revenue efficiency, debt is not. He has discovered corruption among the institutional elements that has a fundamentally negative effect on revenue performance. Some viable considerations are political and monetary stability but only fundamental determinations. Then again, better-performing nations that put greater emphasis on taxing wages, profits and capital gains similar elements are considered essential for all income groups when evaluating the level of income across the sub-samples.

Hafiz, et al. (2016) investigated the socio-economic determinants of tax revenue in Pakistan empirically, and found low tax revenues. Their research adopts time series data from 1975-2012. We used the ARDL (Auto Regressive Distributed Lag) method to check the long- and short-term observer coefficients of these determinants. Hafiz et al. (2016) used the tax-to - GDP ratio to explain tax revenue while the independent variables include narrow tax base, economic activity, tax enforcement, informal economy and government administration. They find that GDP per capita and fiscal stability among socioeconomic determinants are positive and statistically significant determinants of tax revenues. As a result, they see the informal economy and low tax base as negative and notable determinants of Pakistan's tax revenues. The study suggests that by archiving the informal economy, broadening the tax base, improving institutional and political governance, and exempting any specific pressure group from tax exclusion, Pakistan will increase its tax revenues.

Begum (2007) analyzed tax policies for 11 low-wage economies, including Burma, Bolivia, India , Indonesia, Jordan, Mongolia, Morocco, Nicaragua, Pakistan , Sri Lanka, and the Philippines; From 1991 to 2005 the researcher adopted the data panel method for a long frame. The OLS approach was used, and the Hausman test was concerned with choosing between fixed effects and random effects models. Tax-to - GDP ratio was used as the dependent variable while the explanatory variables were the sectoral GDP share, large supply of capital, public debt-to -

GDP ratio, per capita GDP and population growth rate. The study highlighted that, due to two notable factors, these developing countries did not have an adequate level of tax to-GDP ratio. Firstly, small tax base system and, respectively, structural and political problems such as lawlessness, corruption, lack of transparency and political instability. Results of the study showed that cash supply, public debt, trade openness and the pace of population growth had a huge impact on the proportion of tax to GDP among these emerging economies. The contribution Industry made to GDP had no connection with raising tax revenue.

The study of Ahmed, and Mohammed (2010) however examined tax buoyancy determinants using emerging economies. Their research adopts a survey of 25 emerging economies using data from 1998 to 2008 from a cross section. For the study, they apply a pooled least square methodology. The researchers show that significant determinants of tax levies are imports, production, utilities, monetization, and budget deficits. Our findings show that, in the case of developed countries, the agricultural sector has no significant fiscal relationship because they are not regulated or regulated under. Because of the growth in the 1990s, their study found a major positive effect between the service sector and tax buoyancy. Their research also shows that the increase in monetary growth affects the successful collection of tax revenue, as the increase in monetization induces an increase in the amount of transactions that increases buoyancy. Their report suggests that the budget deficit has a substantial positive impact on the governments' tax collection. Nevertheless, growth in grants is inversely linked to tax collections as governments in developed economies resist controversial measures to increase taxes for mobilization of domestic capital.

### **Theoretical Framework**

A large number of theoretical studies have been done on the determinants of tax collection effort in both developed and developing economies, and a few components have been identified. These include; the general level of development that reflects per capita income and



educational levels, urbanization, communication, etc. The managerial and political constraints on the fiscal system, socio-political principles, indigenous institutional structures, common preferences for government spending, as well as the various components that condition the general eagerness to pay taxes (Taiwo, 1999). Hinrick (1966) said that the general theoretical basis for taxation is based on the capacity of individual nations, the tax assessment goals set by the authorities and the ability of governments to raise taxes in practice.

### **Theory of Laffer Curve**

This study adopts the Laffer curve as used by Okoye and Gbegi (2013), Professor Arthrun Laffer has asserted the Laffer curve theory; the theory shows the statistical proof of the relationship between tax-raised government revenues and all possible tax rates. The theory was based on a curve built on experimental tax expenditure and revenue observation. The effect of the high tax rate on taxpayers is the calculation of tax revenue collected at an insane tax rate between 0 per cent and 100 per cent, he concluded that a tax rate between 100 per cent does not raise revenue in the same way that a tax rate of 0 per cent does not raise revenue. This is on the grounds that, at a rate of 100 percent, a discerning taxpayer no longer has the driving power to gain money, the income earned would be 100 percent of nothing along those lines. It takes no less than one rate after that, in the middle of which tax revenue will be a limit. Laffer credited Ibn Khaldun and Keynes with the idea that extending tax rates above a certain point would prove counter-beneficial in increasing more tax revenue as a result of lower returns (Laffer, 2004).

### **Methodology**

#### **Study Design**

The study will source its data from the Central Banks Statistical bulletin from on time series. Many prior researches use percentage of GDP as tax revenue and it is expressed mainly as the dependent variable and compared with other variables (independent). Although, this analysis would take overall tax revenue as a metric for tax revenue as an independent variable, which in

Nigeria is inclusive of indirect and direct tax. By combining currency, political stability factor and GDP as well as explanatory or controllable variables such as circulating capital, monetization factor, foreign direct investment and total transaction volume.

### **Source of Data Collection**

The study will use both primary and secondary sources of data due to the nature of the report, which is an overview of Nigeria's economic determinants of tax income, political instability, gross domestic product, foreign direct investment, tax revenue and exchange rates, as proxies. For this type of study archival data is mostly required. The data from the time series will span 26 years, from 1990-2017. The purpose of choosing this period is to empirically test the extent or significance to which tax revenue, exchange rate, foreign direct investment, gross domestic product (GDP) and the political stability factor induce tax revenue. The data will be gathered from Central Bank of Nigeria Statistical Bulletin as at the end of 2017.

### **Data Analysis Method**

The data analysis method used to estimate the relationship between the components of foreign trade and Nigerian economic development. The Ordinary Least Square (OLS) technique is used to obtain the statistical estimates of various equations coefficients. The Ordinary Least Square method is selected because of it is an essential component of other analysis techniques, it's fairly simple, and it's computational process and its optimal properties. The approximate duration is for the period 1970 to 2015.

### **Model Specification**

The model for the study is given below. First, the model will be specified in its functional form as given below:

$$\text{TAXREV} = f(\text{EXCR}, \text{FDI}, \text{GDP}, \text{DPOL}, \text{MS}, \text{TTVALUE})$$

Expressing the model econometrically is given below;

$$\text{TAXREV} = \beta_0 + \beta_1 \text{EXCR} + \beta_2 \text{FDI} + \beta_3 \text{GDP} + \beta_4 \text{DPOL} + \beta_5 \text{MS} + \beta_6 \text{TTVALUE} + \varepsilon_n$$

Where:

TAXREV = tax revenue

EXRT = exchange rate of return

GDP = gross domestic product used to proxy economic growth

DPOL = Political instability where civilian regime is assigned '1' while a military regime is assigned '0'.

MS = money in supply which takes into account market responses to stock price movement

TTVALUE = Total trade volume of transactions

= $\beta_0$  the intercept term

= $j\beta$  the estimated betas from the time series analysis

= $\varepsilon_n$  the disturbance term

#### 4. Data Analysis, Interpretation and Discussion of findings

**Table 1: Correlation Matrix**

	TAXREV	EXCR	FDI	GDP	DPOL	MS	TTVALUE
TAXREV	1						
EXCR	0.7392	1					
FDI	0.7314	0.6147	1				
GDP	0.6299	0.8749	0.8550	1			
DPOL	0.7061	0.8202	0.3733	0.5791	1		
MS	0.7602	0.8691	0.8445	0.9863	0.5164	1	
TTVALUE	0.5425	0.4584	0.5966	0.4692	0.6585	0.4752	1

Source: Authors' computation, 2020

The results of the correlation analysis are presented in Table 2. The correlation statistics exhibited positive coefficients (EXCR and TAXREV (0.7392); FDI and TAXREV (0.7314); GDP and TAXREV (0.6299); DPOL and TAXREV(0.7062) and MS and TAXREV (0.7602) The strength of the relationship between variables measured by the Pearson product moment correlation showed that the association between the variables is relatively small and were below

the threshold of 0.80, suggesting the absence of the problem of multicollinearity in the predictor variables (Aifuwa&Embele, 2019; Saidu&Aifuwa, 2020; Studenmund, 2000).

**Table 2: Multicollinearity**

Variance Inflation Factors

Date: 03/12/20 Time: 10:21

Sample: 1990 2017

Included observations: 27

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1039891.	14.78287	NA
EXCR	0.110007	11.06791	6.164049
FDI	1.857235	11.69692	4.150741
GDP	0.003786	10.01049	3.137126
DPOL	0.277652.	12.80349	4.557140
MS	0.162241	13.09374	5.115190
TTVALUE	0.000421	14.24124	3.906038

Source: Authors' computation, 2020

To further strengthen the results from the correlation matrix on multicollinearity, the inflation factor test for variance was done. As a result, as shown in the table above, none of the variables tested indicate the presence of multicollinearity as the centered VIF of the variables were all below 10 as indicated by (Aifuwa&Embele, 2019; Studenmund, 2000).

**Table 3: Model Misspecification Test**

Ramsey RESET Test

Equation: UNTITLED

Specification: TAXREV C EXCR FDI GDP DPOL

MS TTVALUE

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.480196	19	0.2054
F-statistic	0.013255	(1, 19)	0.1054
Likelihood ratio	1.159722	1	0.1487

Source: Authors' computation, 2020

The Ramsey RESET Test was conducted to test for model Specification. The result of the analysis revealed the absence of model Misspecification,  $F(1, 19) = 0.4802$ ,  $p > .05$ . This implies that our model was correctly specified (Studenmund, 2000).

**Table 4: Serial Correlation**

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.171787	Prob. F(2,18)	0.1429
Obs*R-squared	1.248780	Prob. Chi-Square(2)	0.0725

Source: Authors' computation, 2020

Table 5 reveals the serial correlation result, using the Breusch-Godfrey serial correlation (LM) test. The null hypothesis of no serial correlation was accepted at  $F(2,18) = 0.1718$ ,  $p > .05$

**Table 5: Constant Residual Error Test**

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.580265	Prob. F(6,20)	0.2045
Obs*R-squared	8.683486	Prob. Chi-Square(6)	0.1922
Scaled explained SS	11.39084	Prob. Chi-Square(6)	0.0770

Source: Authors' computation, 2020

The Breusch-Pagan-Godfrey heteroskedasticity test was conducted for checking the serial correlation of the error word. The study results showed a lack of heteroskedasticity,  $F(6,20) = 1.5803$ ,  $p > .05$ . This suggests that the residual error is constant in the series (Studenmund, 2000).

**Table 6: Ordinary Least Squares**

Dependent Variable: TAXREV  
Method: Least Squares  
Date: 03/12/20 Time: 10:17  
Sample: 1990 2017  
Included observations: 27

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	115.2451	1019.750	0.113013	0.9111
EXCR	-9.221077	29.47882	-0.312803	0.7577
FDI	0.127354	1.362804	0.093450	0.9265
GDP	0.191752	0.061526	3.116579	0.0054
DPOL	2586.372	2697.712	0.958728	0.3491
MS	-0.646184	0.402792	-1.604263	0.1243
TTVALUE	0.043719	0.020510	2.131597	0.0456
R-squared	0.893471	Mean dependent var	4233.713	
Adjusted R-squared	0.861512	S.D. dependent var	3703.313	
S.E. of regression	1378.150	Akaike info criterion	17.51328	
Sum squared resid	37985924	Schwarz criterion	17.84924	
Log likelihood	-229.4293	Hannan-Quinn criter.	17.61318	
F-statistic	27.95701	Durbin-Watson stat	1.467860	
Prob(F-statistic)	0.000001			

Source: Authors' computation, 2020

The result of the Ordinary Least Squares Regression as presented in Table 6 shows that there exist a negative relationship though insignificant between exchange rate and tax revenue, Quality  $t(1, 27) = -0.3128$ ,  $\beta_1 = -9.922$ ,  $p = 0.7577$ . This implies that a unit increase in exchange rate will not reduce tax revenue by -9.922. The result, therefore, accepts the null hypothesis that there is no significant relationship between exchange rate and tax revenue in Nigeria. This finding is dissonance with the work of Agbeyegbe et al (2004), that exchange rate positively affects tax revenue. Slightly similar to the first result, there exist a statistical insignificant but positive relationship between Foreign direct investment and tax revenue,  $t(1, 27) = 0.093$ ,  $\beta_2 = 0.1274$ ,  $p = 0.9265$ . This implies that a unit increase in foreign direct investment will not increase tax revenue by 0.1274. The study, therefore, accepts the null hypothesis that there is no significant relationship between foreign direct investment and tax revenue in Nigeria.

Thirdly, we found gross domestic product had a significant and positive relationship with tax revenue,  $t(1, 27) = 3.116$ ,  $\beta_3 = 0.1918$ ,  $p = 0.3491$ . This implies that a unit increase in gross domestic product will increase tax revenue by 0.1918. Therefore, we failed to accept the null hypothesis that there is no significant relationship between gross domestic product and tax revenue in Nigeria. This result is in contrast with the work of Hafiz, et al., (2016) and Gupta (2007) that per capita GDP, share of GDP in agriculture and open trade are significant and solid determinants of revenue output.

Contrary to the third hypothesis above, there exist an insignificant positive relationship between political factors and tax revenue,  $t(1, 27) = 0.958$ ,  $\beta_4 = 2586.372$ ,  $p = 0.3491$ . The result, therefore, accepted the null hypothesis that there is no significant relationship between political factor and tax revenue in Nigeria. Also, money had no significant relationship on tax revenue,  $t(1, 27) = -1.6043$ ,  $\beta_5 = -0.646$ ,  $p = 0.1243$ . Lastly, we discovered that total trade volume of transaction had positive and significant relationship on tax revenue,  $t(1, 27) = 2.132$ ,  $\beta_6 =$

2586.372,  $p = 0.3491$ . This finding is in line with the work of Agbeyegbe et al (2004), that terms of trade have a positive effect on aggregate tax revenue.

The Adjusted R-squared stood at 0.862, suggesting that about 86% of the systematic variation in the dependent variable was explained by the independent variables, while remaining 14% of the systematic variation were caused by variables not considered in the study, however were captured by the standard error (1378.15) of the regression. Furthermore, the F statistics value of 27.95 was statistically significant at 5%, consequently implying that all slope coefficients except the constants are zero, this simply implies the joint significance of our model in the study.

### **5. Conclusion, Recommendations and Suggestions for Future Research**

The study's specific objective was to investigate Nigeria's economic determinant of tax revenue, and its effect on the general economy. Some economic determinants such as the exchange rate, foreign direct investment, gross domestic product, political factors, money supply and total transaction volume were considered. Based on the findings of the study, we concluded that the economic determinant of tax revenue in Nigeria are gross domestic product and total trade volume of transaction. This was justified as a result of other variables studied having no significant relationship on tax revenue.

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