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Impact of Trade Openness on Tax Revenue in Nigeria

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Abstract
Following recent financial shocks and turbulence, many economies, including developing ones, have reviewed their fiscal policies in an effort to draw foreign direct investment, boost their revenue generation, and enhance the economic and sociocultural well-being of their citizens. In this study, during the ten-year period (2011–2021), the effect of trade openness on tax revenue collection in Nigeria is evaluated. It was discovered that trade openness had significant effects on tax revenue performance. The analysis was done using descriptive statistics, multiple regression, and data for the time under examination. To estimate the ratio of Trade openness, multiple regressions was also combined with OLS. According to the findings, nations with high export to GDP ratios typically generate more tax revenue than those with restricted trade. Therefore, it is necessary for the government to support export-based activity, most likely non-oil such as agriculture, and to ensure that all business-friendly legislation is in place.
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1.0 Introduction

Revenue generation of every government is basically categorised into either tax or non-tax revenue. Taxation have been a major source of government revenue from the time immemorial, hence compliance to tax payment is as old as the tax itself. Tax revenue derived from international trade forms a significant part of total tax revenue. However, trade restrictions reduce the level of international trade and have a tendency to foster the growth of import alternative businesses that are always at the bottom of the ladder due to their inability to compete with the imported goods. Similarly, consumption of the locally manufactured goods will be improved because of these restrictions, hence improve the performance of our local firms thereby increasing their competitive capabilities.

The impact of trade openness on public revenue has led to rising trepidations among researchers in countries that believing that trade openness would reduce an important source of income. There are also concerns that trade openness would undermine countries capacities to use their financial resources to provide for their needs in areas of goods and services (Brautigam, Fjeldstad, & Moore, 2008). There are some empirical researchers who confirm to this view and posit that these concerns are valid. (Khattry,2003) posits that unless direct and indirect taxes are used to mitigate the potential losses in trade tax revenue, trade openness policies would invariably lead to lower revenue and higher fiscal discrepancy. In the same vein, (Cagé & Gadenne, 2018) have analysed the financial impact of trade openness in developing countries and developed countries at their early stages of development and concluded that trade openness has caused higher fiscal expenses for developing countries.

There are some empirical evidences that suggest that government income costs are related to more trade openness, they include (Hisali, 2012; Longoni, 2009; Baunsgaard & Keen, 2010; Khattry & Rao, 2002; Berg & Krueger, 2003; Moller, 2016; Bevan, 1995; Waglé, 2011; Castanheira, Nicodème, & Profeta, 2011; Cagé & Gadenne, 2018; Keen & Ligthart, 2002). Therefore, Global societies like the International Monetary Fund (IMF), The International Bank for Reconstruction and Development, and the United Nations (UN) have counselled legislators in emerging economies to participate in restructuring policies, whereby revenue from tax gotten from trade will gradually be phased out and replaced by domestic tax revenue.

However, countries can effortlessly generate income from taxes at their borders. Hence, Trade openness can lead to increased income for workers in trade enterprises, thus increasing direct and indirect taxes. Trade openness shows an increase in imports and could lead to higher trade taxes. In the same vein, the relative fall in prices resulting from the trading environment is passed from local manufacturers to consumers. Consumers in these countries will experience an increase in their income and, therefore, both in internal utilization and their importation will increase. Therefore, income from excise taxes and import tariffs will rise (Bornhorst, Gupta, & Thornton, 2009; Drummond, Daal, Srivastava & Oliveira, 2012).

Nigerian government in 2016 declared closure of its boarders resulting from international trade restrictions. The federal government decision was based on the premise that there is connection between insecurity and

boarder porosity, hence the need for boarder closure. This act indirectly affected international trade and subsequently resulted in so many macro-economic crises. Even though previous studies argued in favour of trade restriction in order to improve tax revenue others argue against it. Hence, this study is aimed at examining the impact of trade openness on total tax revenue in Nigeria from 2011 to 2020.

The remainder of the article is divided into the following sections: (II) literature review, (III) methodological framework, (IV) results and discussion, and (V) Conclusion and Recommendations.

2.0 Literature Review

2.1 Theoretical Review

Several Researchers have exploited a variety of theoretical frameworks to prove the relevance of trade theories. On the one hand, there are several theories related to taxation such as Benefit Received Theory, Expediency Theory, The Cost-to-Service Theory and Ability to Pay Theory. On the other relevant trade theories that were on complete specialisation, Theory of Absolute Advantage, Comparative Advantage theory, Gain from Trade Theory. This part provides a comprehensive explanation of how this trade theories work.

2.1.1 Benefit Received Theory

This theory proceeds on the assumption that there is basically an exchange relationship between tax-payers and the state. The state provides certain goods and services to the members of the society and they contribute to the cost of these supplies in proportion to the benefits received Bhartia, (2009). Anyanfo, (1996) argues that taxes should be allocated on the basis of benefits received from government expenditure. This theory holds the individuals should be taxed in proportion to the benefits they receive from the governments in public services and that taxes should be paid by those people who receive the direct benefit of the government programs and projects out of the taxes paid.

2.1.2 Expediency Theory

This theory asserts that every tax proposal must pass the test of practicality. It must be the only consideration weighing with the authorities in choosing a tax proposal. Economic and social objectives of the state and the effects of a tax system should be treated irrelevant Bhartia, (2009). Anyafo, (1996); Bhartia, (2009) explained that the expediency theory is based on a link between tax liability and state activities in this case, provision of good public health care system. It assumes that the state should charge the members of the society for the services provided by it. This reasoning justifies imposition of taxes for financing state activities by inferences, provides a basis, for apportioning the tax burden between members of society. This proposition has a truth in it, since it is useless to have a tax which cannot be levied and collected efficiently.

2.1.3 The Cost-of-Service Theory

This theory suggests that the cost incurred by the government in providing public goods to satisfy social wants should be regarded as the basis of taxation. The theory implies that the government should tax the citizens according the cost of service rendered. The government rends certain services and the cost of such services should be collectively met by the citizens. Some economists were of the opinion that if the state charges actual cost of the services rendered from the people, it will satisfy the idea of equity or justice in taxation. The cost-of-service principle can no doubt be applied to some extent in those cases where the services are rendered out of prices and area bit easy to determine, e.g., postal, railway services, supply of electricity, etc. But most of the expenditure incurred by the state cannot be fixed for each individual because it cannot be exactly determined. For instance, how can we measure the cost service of the public, armed forces, judiciary, etc., to different individuals? Dalton has also rejected this theory on the ground that there is no quid pro qua in a tax. Saleemi, (2005).

2.1.4 Ability to Pay Theory

According to the theory, taxes should be based upon the amount of money people earn. For example, those who earn more money are expected to pay a higher rate of taxes which means a higher portion of their income than people who earn less money. The ability to pay theory of taxation does not take into consideration the amount of these services that taxpayers usually use. The ability to pay theory requires that the total tax burden will be distributed among individuals according to their capacity to bear it, taking into account all of the relevant personal characteristics. The most suitable taxes from this stand point are personal levies (income, net worth, consumption and inheritance taxes).

2.1.5 Theory of Absolute Advantage

In the illustration of absolute advantage theory, Adam Smith showed that a country will have absolute advantage over another country if its production capacity in goods and services is greater when using same amount of resources or it produces a good using fewer resources (lower opportunity cost). Adam Smith also says that a country should produce goods where its production capacity is the most efficient and trade those goods where its production is not efficient. In additional, absolute advantage theory can also apply in the regions, cities and firms and tariffs and quotas should not restrict international trade.

Adam Smith says the labour is fixed and homogeneous within a country. In additional, he also considers the

labour is the only factor of production (input) and technology and production costs are constant in absolute advantage theory. He also illustrates that transportation cost are zero and countries use barter trade system in trading.

2.1.6 Theory of Comparative Advantage

It seems obvious that if one country is better at producing one good and another country is better at producing a different good (assuming both countries demand both goods) that they should trade. What happens if one country is better at producing both goods? Should the two countries still trade? This question brings into play the theory of comparative advantage and opportunity costs.

The everyday choices that we make are, without exception, made at the expense of pursuing one or several other choices. When you decide what to wear, what to eat for dinner, or what to do on Saturday night, you are making a choice that denies you the opportunity to explore other options. The same holds true for individuals or companies producing goods and services. In economic terms, the amount of the good or service that is sacrificed in order to produce another good or service is known as opportunity cost.

In an economic model, agents have a comparative advantage over others in producing a particular good if they can produce that good at a lower relative opportunity cost or autarky price, i.e., at a lower relative marginal cost prior to trade. Comparative advantage describes the economic reality of the work gains from trade for individuals, firms, or nations, which arise from differences in their factor endowments or technological progress. The law or principle of comparative advantage holds that under free trade, an agent will produce more of and consume less of a good for which they have a comparative advantage. Finlay, (1987).

David Ricardo developed the classical theory of comparative advantage in 1817 to explain why countries engage in international trade even when one country's workers are more efficient at producing every single good than workers in other countries. He demonstrated that if two countries capable of producing two commodities engage in the free market, then each country will increase its overall consumption by exporting the good for which it has a comparative advantage while importing the other good, provided that there exist differences in labor productivity between both countries Bernhofen & Brown, (2016)

2.1.7 Gains from Trade Theory

Gains from international trade are the benefits a country derives from trade over time (short and long term). Thus, welfare gains from international trade play an important role in improving economic growth. The static gains from international trade are the short-term benefits to a country when they enter into trade with other countries, while the dynamic gains from international trade are long-term benefits to the state, often in the form of an increase in trade openness. The static gain is related to the benefits that a country earns directly after opening their market to the international trade relations. In addition, static gains from international trade are linked to the principle of comparative advantage and Heckscher-Ohlin theorem Anderson and Babula (2008), Cruz (2008). As a result, when countries allow their governments to trade, their efficiency and profitability reach the highest levels. After all, trade liberalization will encourage countries to utilize their available resources by investing in and comparing them.

2.2 Empirical Review

Alberto Galasso et al, (2013) study how the market for innovation affects enforcement of patent rights. They demonstrate that whereas trades motivated by benefits in patent enforcement decrease litigation, deals driven by comparative advantages in commercialization increase it. They found the causal relationship between trade and litigation using data on trade and litigation of privately owned patents in the United States, as well as variance in capital gains tax rates among states. They discovered that trade generally lowers litigation and taxes have a significant impact on patent transfers, while the effects are uneven. Patents with more trade-related profits are more likely to change ownership, and this has a significant impact on the nature of the transaction.

Okoli, Njoku and Kaka, (2014) investigated the impact of taxation on economic growth in Nigeria using Granger causality approach. The study covered the period 1994-2012. The independent used were Value Added Tax, Personal Income Tax, Company Income Tax and Petroleum Profit Tax, while the dependent variable Gross Domestic Product was used as a parameter for measuring economic growth in Nigeria. The data collected were analyzed using the Granger Causality Approach and regression analysis. The result of the analysis revealed that a significant positive relationship exists between Taxation and economic growth in Nigeria. The study also found significant relationship between the disaggregated tax revenue (Value Added Tax, Personal Income Tax, Company Income Tax and Petroleum Profit Tax) and gross domestic product.

Lababatu, (2014) examined the relationship between tax revenue and economic growth in Nigeria for the period of 1981 to 2010. The study used petroleum profit tax, company income tax, custom and excise duty and value added tax as the independent variables while gross domestic product was employed as the dependent. Multiple linear regression analysis was used to analysed the data by employing the use of Vector Error Correction Model. The findings revealed that petroleum profit tax, company income tax and value added tax have a positive impact on Nigeria’s economic growth while custom and excise duties impacted negatively but

overall, a significant relationship between tax revenue and the Nigeria economic growth exists. The study recommended that only skilled professional and trustworthy hands be responsible for tax administration.

Chigbu and Njoku, (2015) examined taxation and the Nigerian economy using time series data from 1994 to 2012. The dependent variables used in the model included Gross Domestic Product (GDP) as a parameter for measuring economic growth, inflation and unemployment. The study attempted to determine how taxation affects these macroeconomic variables. Ordinary least square analysis was employed to analyse the data. The results of the statistical analysis revealed that positive relationships exist between the explanatory variables (Custom and Excise Duties, Company Income Tax, Personal Income Tax, Petroleum profit tax and Value Added Tax) and the dependent Variables (Gross Domestic Product, Unemployment). The individual explanatory variables have not significantly contributed to the growth of the economy; also, the explanatory variables have not significantly contributed to the reduction of the high-rate unemployment and inflation in Nigeria for the period under review.

Ojong C. Anthony and Felix, (2016) examined the impact of tax revenue on the Nigerian economy between the period of 1986 and 2010. The objectives of the study were to examine the relationship between petroleum profit tax and the Nigeria economy, the impact of company income tax on the Nigerian economy and the effectiveness of non-oil revenue on the Nigerian economy. The data were sourced from Central Bank Statistical Bulletin and Ordinary least squares of multiple regression models was used to establish the relationship between dependent and independent variables. The finding revealed that there is a significant relationship between petroleum profit tax and the growth of the Nigerian economy. It showed that there is a significant relationship between non-oil revenue and the growth of the Nigerian economy. The finding also revealed that there is no significant relationship between company income tax and the growth of the Nigeria economy. Hence, they recommended that government should endeavour to provide social amenities to all nooks and crannies of the country. Also, that government should engage in a complete re-organization of the tax administrative machineries; in order to reduced tolerable problems of tax evasion and avoidance and finally, to enhance the tax base of government, employment opportunities should be created and a good environment for entrepreneurship and innovation to thrive made using tax proceeds.

Ogbonna and Appah, (2016) study examined the effect of tax administration and revenue on economic growth of Nigeria. Data was collected from primary and secondary sources. The secondary sources were from scholarly books and journals while the primary source involved a well-structured questionnaire of three sections of sixty-five items with an average reliability of 0.78. The data collected from the questionnaire and secondary data were analyzed using relevant regression analysis. The results reveal that there is a significant relationship between Personal income tax revenue (PITR) and per capita income, Company income Tax Revenue and Gross Domestic product of Nigeria, VAT revenue and PCI of Nigeria, Petroleum Profit Tax revenue and GDP of Nigeria and tax administration and Gross domestic product of Nigeria. Hence, the study concludes that tax administration and revenue does affect the economic growth of Nigeria for the period under study. They recommended amongst others that more reforms in the tax administrations and collection is needed so as to eliminate, if possible, the areas that can cause revenue leakage as a result of loopholes in tax collection and remittances from the authorities, and this is capable of limiting the economic growth of the nation.

According to Marcel Olbert and Ann-Catherin, (2018) Consumption taxes are a primary source of tax revenue and, against the common intuition, firms might bear the respective tax burden. However, it is largely unknown how firms respond to consumption taxes. They investigate whether service companies in Europe react to consumption taxes and whether managing sales as the appropriate tax base is connected to ensuing profit shifting driven by income taxes. The researchers use 72 staggered and logically exogenous changes in the corporation income tax rate as well as company affiliate-level panel data for the period 2007–2015 in a unique scenario in Europe. They discover that businesses, on average, show a semi-elasticity of reported sales with a negative value added tax rate of about 0.5. The effect is bigger for enterprises having greater discretion over the jurisdiction of value-added tax responsibility (firms in the digital service sector), and firms facing greater demand elasticity, which is consistent with theory and incentives from the European value-added tax system. They then go on to demonstrate that the degree and the pathways of profit shifting rely on how sensitive businesses are to consumption taxes, which is consistent with sales management in reaction to consumption taxes placing a restriction on manipulating transfer prices for intra-group trade. Thus, their research offers fresh perspectives on how to create multidimensional tax systems.

Alexander, Keyi and Alpha, (2019) examined the effect of taxation on economic growth in Nigeria over a period of 1980 to 2018 annual time series data. Data were collected from the Central Bank of Nigeria (CBN) statistical bulletin, and the annual data publication of Federal Inland Revenue Services (FIRS). The dependent variable is Gross Domestic Product (GDP) while the independent variables were Petroleum Profit Tax (PPT), Value Added Tax (VAT) and Personal Income Tax (PIT). The data were analysed using autoregressive distributed lag (ARDL) model. The findings revealed that Petroleum Profit Tax, Personal Income Tax and Value Added Tax have significant effects on economic growth process. The effect of these taxes on economic growth in Nigeria is

even more pronounced in the long-run than in the short-run. The study recommended that the level of tax evasion and avoidance in the petroleum profit tax should be reduced to achieve sustainable growth in Nigeria.

Felix and Ijeoma, (2020) examined the influence of tax revenue on economic development of Nigeria. The specific objectives were to determine the influence of petroleum profit tax, company income tax and value added tax on economic development proxy by human development index (HDI) where annual time series data from CBN and FIRS from 1997 to 2018 was used. The study used regression analysis. The result showed that petroleum profit tax and company income tax have significant effect on economic development while value added tax does not significantly influence economic development. The implication of the finding was that the higher the amount of tax revenue generated, the higher the level of economic development experienced by the economy which implied that taxes that have positive effect on economic development are direct taxes, thus direct taxes exert more significant influence on economic development of Nigeria than indirect taxes. The study recommended that tax policy makers such as federal inland revenue services and other tax regulatory bodies should strengthen their regulation on tax compliance mostly on tax that are direct based to curb tax evasion and tax avoidance by tax payers, adopt strategies to improve system of tax administration, by training and re- training of tax administrators through seminars and conferences to be abreast of modern trend in tax administration in order to generate more income for development.

Enenche E. and Stephen, (2021) examine the relationship between Tax Revenue and Nigeria Economic Growth. The data was gathered through secondary means. Tax Revenue was proxied by Petroleum Profit Tax, Value Added Tax and Companies Income Tax, while Economic Growth was proxy by Gross Domestic Product. The study revealed that Petroleum Profit Tax (oil tax revenue) has a positive but no significant relationship with Nigeria Economic Growth, while Value Added Tax and Companies Income Tax (non-oil Tax Revenue) have significant relationship with Nigeria Economic Growth. The study recommended that government should minimize the wide spread corruption and leakages prevalent in tax administration in Nigeria, and transparently and judiciously account for tax revenue generated through the provision of more quality public goods and services, and need not to increase the rates of Value Added Tax and Companies Income Tax in the short run, but to closely monitor the operations of companies engaged in petroleum operations to minimize tax evasion, and as well as support the development of entrepreneurial activities in order to significantly increase Tax Revenue so as to sustain the significant relationship of VAT and CIT (non-oil tax) revenue with Nigeria Economic Growth

Chaves, (2010) examined the effect of taxes on international trade in products and FDI. The four taxes under investigation in this analysis are average effective tax rates, which roughly represent the taxes imposed on capital income, combined labour and consumption, consumption and labour income, and consumption. The researcher creates an international gravity model of commerce and, based on this model's predictions, hypothesizes that for all four taxes, higher rates result in lower exports. The researcher further hypothesizes that lower inward FDI is a result of increased taxation. The researcher calculated the impact of each of these four levies on bilateral trade and FDI using a panel study.

Nwosa et al, (2012), examined the relative contribution of trade liberalization on trade tax revenue in Nigeria for the period 1970 to 2009. The period's annual secondary data were used. Data on trade tax receipts, the Gross Domestic Product (GDP), trade openness, currency rates, and state debt were taken from the Central Bank of Nigeria's yearly Statistical Bulletin. The results of the study showed that, while the exchange rate had a negative impact on trade tax revenue, trade liberalization, public debt, trade openness, gross domestic product, and labour force had positive impacts. The Wald test showed that labour, state debt, and exchange rates had a substantial impact on trade tax revenue, however the Beta coefficient showed that trade liberalization policy was the key determinant of trade tax revenue in Nigeria. The study found that in order to increase the success of Nigeria's trade liberalization strategy, suitable macroeconomic policy is required.

Seymore R. et al, (2013) evaluated the impact of an electricity generation tax on the international competitiveness of South Africa. Specifically, different scenarios are assessed to establish whether the loss of competitiveness can be negated through an international, multilateral electricity generation tax. The paper firstly considers the beneficial impact of environmental taxation on the competitiveness of a country. The Researchers subsequently apply the Global Trade Analysis Project (GTAP) model to evaluate the impact of an electricity generation tax on the competitiveness of South Africa, given multilateral taxes on SACU, SADC and European Union economies. It has been established that a tax on power production will harm South Africa's ability to compete. Furthermore, the widespread application of SACU and SADC will only slighlty amplify these adverse effects. A multilateral power generation tax spanning SACU or SADC nations will nevertheless reduce emissions, albeit at a slower rate than a unilateral electricity generation tax. However, if the European Union were to adopt a similar policy and impose an electricity generation tax, the cost to the South African economy might be kept to a minimum. Considering that this will ensure that participating countries experience the fewest adverse consequences on their ability to compete, one can argue in favor of worldwide regulations for environmental fees.

Sebastian Eichfelder and Mona Lau, (2017) focused on the impact of the French 2012 financial transaction tax (FTT) on trading volumes and volatility. The researchers extend the empirical research by identifying FTT

announcement and short-run treatment effects, which can distort difference-in-differences estimates. The researchers also take into account market reaction diversity, the transfer of trading volumes to prospective replacement equities, and long-run volatility measures that better fit the French FTT's legislative structure. They discover that while there is a significant short-term impact on trading volume (announcement effects and short-run effects), the long-term treatment effect is much weaker and only significant for stocks that are less liquid and do not participate in NYSE Euronext's Supplemental Liquidity Provision program. Additionally, the researchers discover a sizable increase in the trading volume of potential substitute stocks traded at NYSE Euronext as evidence for a migration of trading volumes and a significant decrease in long-term volatility measures following the FTT effective date as evidence for a market-stabilizing effect.

Asghar F, and Bilal Mehmood, (2017) examines the relationship between the trade openness and tax revenue collection along with other non-tax determinants affecting the tax revenue of Pakistan, by using time series data from 1980 to 2015. ARDL bound testing approach has been used to estimate co-integration. The findings show an unfavorable relationship between trade openness and tax revenue growth. Trade openness may result in a decrease in tax revenue if a reduction in tariffs is implemented after it, else the results may be different. In terms of policy implications, the report advises that in light of the uncertainty surrounding foreign aid and acceptance of a global free trade policy, the government should place the correct priority on revamping the entire tax system for internal tax revenue mobilization. Additionally, it should enhance the collection of property tax revenues in metropolitan areas and reform the system for capital value tax on the sales of moveable property.

Sena Kimm Gnangnon's, (2019) used a measure of tax transition reform (tax reform) to determine if countries that implement tax reform experience better trade openness. The empirical analysis, which spans the years 1980 to 2014 and examines 92 developing nations, demonstrates that trade openness and tax reform are positively correlated. It's interesting to note that LDCs seem to benefit more from tax reform's impact on trade openness than non-LDCs do. A broader picture that illustrates how less developed developing nations benefit more favourably from tax reform on trade openness than more advanced developing countries does confirms this.

Wang L, (2020). Stability test and regression analysis of EU carbon tax on coastal trade. This paper focus on the current situation of Sino-European trade, and is expected to discuss the impact of EU carbon on Sino-Europea trade by qualitative and quantitative analysis. The empirical research demonstrates that since the recent implementation of a carbon tax in EU countries, the tax has been rising and has been included in the price of commodities, directly enhancing export trade. This result slightly deviates from conventional trade theory. The volume of export trade may grow because the drop in trade volume brought on by the decline in export trade volume may be less than the increase in trade volume brought on by the price increase as a result of the EU's introduction of the carbon tax.

Adarov A, Jovanović and Vukšić, (2021) paper investigated how corporate income taxes affect international trade, and identifies the underlying channel. Using data on 33 NACE sectors, for 34 EU and OECD economies, over the period 2005-2014, we find that corporate income taxes reduce exports and imports only when the stock of foreign direct investment (FDI) is high. The effect is present primarily in the service sector and in countries with low corporate taxes. We interpret these findings as evidence that multinational enterprises reduce their operations in countries that raise their corporate taxes. The effect has been found to be small on aggregate, implying that the expected increase in corporate taxes in the future, arising from the global minimum tax, is unlikely to hurt international trade.

Finally, Sèna Kimm Gnangnon, (2022) investigates the effect of the Internet on tax revenue instability (TRI), notably through the international trade channel. It used a sample of 142 countries over the period 1995-2017 and relied primarily on the two-step system generalized method of moments estimator. According to the research, increased Internet access has a detrimental impact on TRI, and this impact manifests itself as a reduction in trade openness. Particularly, countries with more open trade practices face a bigger negative impact of the Internet on TRI. Internet connectivity also lowers TRI in nations where export product concentration and tax reform have been more extensive. As a result, our findings provide further potential advantages of Internet adoption by demonstrating that it may also assist in stabilizing tax income, particularly through nations' involvement in international trade.

It is worthy to note that most of the positive impact are reported with the developed nations while the developing nation reports negative impact.

2.3 Theoretical Framework

This research is anchored on the theories of Complete Specialisation and Multilateral Resistance to Trade. As a based to this research, one would not do without the consideration of the theory of complete specialization which has become very essential and conspicuous to international trade as the concept reinforces why international trade occurs in the first place; when each country completely input much of its resource and specialises on the production of that which it has comparative advantage and exchange same with that which it has very less comparative advantage, usually produced by another country with higher comparative advantage. Precisely, there

are two schools of thoughts underpinning the theory of complete specialisation which would worth giving attention to.

On one hand, the Ricardian trade model, developed in early nineteenth century, and which laid the ground work for the interpretation of complete specialisation. The Ricardian trade model reasoned that in the world with no existence of trade barriers but accustomed with homothetic and identical preferences, each country ought to produce and export those goods that is has comparative advantage Ricardo, (1963). In other words, a country has comparative advantage on a specific good or product when she produces such goods or product with the lowest opportunity cost and therefore will need to export such goods in exchange for the one which she has higher opportunity cost to produce. Hence, it is reasoned that 'trade between two countries can benefit both if each country exports the goods in which it has a comparative advantage'. The Ricardian trade model shaded lighter on the crucial role of technological difference among economies as key factor that fashions the pattern for which international trade flows across the world.

On the other hand, setting aside the Ricardian model, Armington, (1969) did suggest a different insight in international trade flow with product differentiation theory. The model contended that in the world market, an identical product is differentiated by the country of origin. The assumption is based on the fact that consumers will tend to view an identical product that is being produced in different countries as being different. For instance, such products as wine could be distinguished by country for which it is originally manufactured product thus; French wine is not the same as American or Australian wine. Furthermore, from the demand side, these differentiated products are imperfect substitutes, meaning that a country will wholly produce differentiated goods to supply in the international market. While in early eighties, Armington's assumptions were less relevant to the market structure in the real-world situation except for consideration in a small number of sectors, Deardorff, (1984) thought the theory has been the best in analysing international trade in imperfect markets.

However, the work of Anderson, (1979) has been credited to pioneering the framework for which most empirical gravity analyses rests their economic foundation. The contribution of Anderson mainly considered an expenditure framework to generate gravity equation with three (3) specific cases in relation to international trade; viz (i) pure expenditure system; (ii) trade share expenditure system; and (iii) model of many goods, tariffs and distance. This expenditure system is used to equate demand and supply side to find the equilibrium trade volume. The equilibrium of the international trade system was derived directly from Cobb-Douglas expenditure function and constant elasticity of substitution (CES) utility function while adopting Armington's assumptions as well. It assumes that prices are constant and generalized to unity. The major concerns of the analysis of Anderson, (1979) were mostly on; (i) the share of traded goods expenditure on total national expenditure; and (ii) the share of a specific traded good expenditure on the total traded goods expenditure. These elements are important because they put constraints on the expenditure system.

3.0 Methodology

This study adopted ex-post facto research design. It covered the period of 2011-2021. The major source of data was from the World Bank Development Indicators (WDI). The data on tax revenues was extracted from International Monetary Fund (IMF) database and Federal Inland Revenue Service. The study used the multiple regression method to investigate the model. The parameters of the model were estimated using the OLS estimation technique.

3.1 Model specification and data source

The model to be estimated is as follows:

$$TTR = \alpha_0 + \alpha_1 EXP\_GDPt + \alpha_2 IMP\_GDPt + \alpha_3 AGR\_GDPt + \alpha_4 EASE\_BUSt + e_t$$

Where:

TTR = Total Tax Revenue
EXP_GDP = Export to GDP ratio
IMP_GDP = Import to GDP ratio
AGR_GDP = Agric. to GDP ratio
EASE_BUS = EASE of doing business index

4.0 Results and discussions

Table 1 presents the result of diagnosis test on the nexus between tax openness and tax revenue in Nigeria. Specifically, Breusch-Pagan/Cook-Weisberg test for heteroskedasticity was conducted; the results as shown in Table 1 reveal the absence of heterokedasticity in the model with a prob value of 0.8813. In order to test the normality of data and the paper employed the use of Shapiro-Wilk W test for normal date; the coefficient of the value shows a p-value of 0.6326. This implies that the data is normally distributed. Thereafter, we tested for auto and serial correlation and the result shows an insignificant value of 0.4135 and 0.2313 as presented in Table 1. Hence it's indicated that the data are not serially correlated.

Table 1: Diagnostic Checks

Test	Prob > chi^2	Decision
Breusch-Pagan/Cook-Weisberg test for heteroskedasticity	0.8813	No heteroskedasticity
Shapiro-Wilk W test for normal data	0.6326	Normal Data
Durbin's alternative test for autocorrelation	0.4135	No serial correlation
Breusch-Godfrey LM test for autocorrelation	0.2313	No serial correlation

Source: Author's computation using E-views

Table 2: Multiple Regression Model

TTR	Coef.	Std.	T	P>|t|	[95% Conf. Interval]	
EXP_GDP	0.0486	0.0052	9.35	0.000	0.0352	0.0619
IMP_GDP	-0.0453	0.0157	-2.88	0.035	-0.0858	-0.0048
AGR_GDP	0.0007	0.0002	3.37	0.020	0.0002	0.0013
EASE_BUS	0.0003	0.0000	8.55	0.000	0.0002	0.0004
Constant	-0.0220	0.0036	-6.19	0.002	-0.0312	-0.0129
	Rsquared	0.9695				
	Adj-Rsquared	0.9452				
	Prob > F	0.0006				

Source: Author's computation using E-views

The study examined the impact of trade openness on tax revenue in Nigeria. The findings as presented in Table 2 revealed that EXP_GDP has a positive and significant impact on Tax Revenue Performance ($\beta 1$ = 0.0486<0.05). This means that an increase in EXPORT_GDP ratio will lead to increase in Tax Revenue. This finding support prior studies who established the impact of trade openness on tax revenue performance (Micah, Bbaale, & Hisali, 2017). The results therefore suggested that a country with high export to GDP ratio tend to have more tax revenue.

The result also established that IMP_GDP has a negative and significant influence on tax revenue in Nigeria. This suggests that importation of goods and services reduces the magnitude of tax revenue in Nigeria. Hence, the justification for regulators to reduce the level of import to the barest minimum in order to improve revenue and welfare of the citizenry. This is consistent with prior scholars such as

While the relationship between AGR_GDP on tax revenue reveals to have significant positive effect on tax revenue. This finding aligns with empirical works of (Gaalya, et. al, 2017) and (Nadeem, Naveed, Zeeshan, & Sonia, 2014) on trade openness and tax revenue performance in East Africa countries for the period who reveal that trade openness (AGR_GDP) positively influences total tax revenue. Likewise, the coefficient of EASE_BUS indicate that ease of doing business has a positive significant influence on Tax revenue with a coefficient value of (0.0003, <0.05). This suggests that EASE_BUS served as good indicator for revenue generation since many countries will be interested to invest and thereby increasing the level of tax revenue. This supported the findings of (Pinheiro-Alves & Zambujal-Oliveira, 2012) who found that EASE_BUS is fundamental in influencing the level of tax revenue and FDI.

Table 3: Correlation Matrix

	TTR	EXP_GDP	IMP_GDP	AGR_GDP	EASE_BUS	VIF
TTR	1.00					**-**
EXP_GDP	0.3788	1.00				**4.17**
IMP_GDP	0.5574	0.4941	1.00			**4.41**
AGR_GDP	0.5998	-0.0042	0.7223	1.00		**3.49**
EASE_BUS	0.3125	-0.7338	-0.0523	0.3809	1.00	3.20

Source: Author's computation using E-views

Table 3 represents the Pearson correlation matrix for the model. The result shows that the highest correlation coefficient is 0.5998 between EXP_GDP and TTR. However, this is less than the value of 0.8 suggested by Hair et al. (2014), indicating the absence of multicollinearity problem. The correlation between EXP and GDP is positive. Likewise, evidence from Table 3 also indicates that IMP_GDP is negative and significant with TTR. Conversely, the coefficient of AGR_BUS is positively related with TTR. Finally, the result of VIF indicates that absence of variance inflation factor since none of the VIF value is greater than 10.

5.0 Conclusion and Recommendations

This study examines if Trade Openness plays any role in influencing the Tax revenue in Nigeria. This is motivated by the demand of the Government to increase its revenue generation especially tax revenue.

The study evidenced that trade openness (EXP_GDP, AGR_ GDP and EASE_BUS) plays a significant role

in increasing the level of tax revenue in the country. Conversely, the coefficient IMP_BUS signifies that importation in relation to GDP reduces the level of tax revenue. Thus, there is need for government to encourage export-based activity, agriculturally based and ensure ease of doing business for business. There is also needed to discourage import based in order to enhance the level of tax revenue thereby saving Nigerian currency.

The result of this study to a great extent would assist tax authorities to curb corruption such as tax evasion and avoidance, within the domestic and multinational corporation in Nigeria.

The study also avails the policy makers opportunity to focus and take appropriate action on the need to create enabling and conducive environment in order to attract more FDI inflow as well as attain improvement in tax revenue performance which is expected to have positive effect on the social and economic welfare of the citizenry. The study recommends that the government at all levels should prioritize export-oriented initiatives and economic diversification to increase the amount of tax income that will be available to the Nigerian economy.

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