



MACRO ECONOMIC DETERMINANTS AND TAX REVENUE IN NIGERIA

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Abstract

This research aims to investigate how macroeconomic factors impact Nigeria's tax revenue. To be precise, the study looked at how Nigeria's tax income is affected by GDP, trade openness, and exchange rates. Ex post facto research design was used in the study, while the data came from Federal Inland Revenue (FIRS) and Central Bank of Nigeria (CBN) statistical records covering the years 1970–2023. Data collected were analyzed using auto regressive distribution lag model (ARDL) and the result revealed that Nigeria's tax revenue is not significantly affected by GDP in the near term and also over time, GDP has a negligible negative effect on tax income. It also showed that, in the near term, trade openness significantly increases Nigeria's tax revenue and over time it has a large positive effect on tax revenue. Finally, the exchange rate has a positive but slight impact on Nigeria's tax collection in the near term, but over time, it has a major positive impact. We recommend that, government officials should closely control macroeconomic factors like GDP and exchange rates to promote higher tax revenue; the Nigerian government should continue trade liberalization policies to improve trade openness in the country; new technologies, production innovation, and policies that support sustainable resources should be put into place to boost tax revenue bases.

Keywords: Gross Domestic Product (GDP); Trade Openness; Exchange Rate (EXR); Tax Revenue

Introduction

Taxes are an essential source of funding for a nation's government and its budget. It is a mandatory tax that government imposes on the earnings and assets of both individuals and businesses in her country without the tax payer anticipating a corresponding direct benefit from paying the tax. The revenue forms a critical component of government income, enabling the financing of public goods, infrastructure development, and socio-economic growth. Like in other developing nations, Nigeria

government capacity to generate adequate tax revenue is influenced by a range of macroeconomic determinants, including amongst others, gross domestic product (GDP), trade openness, and exchange rate (Adewumi & Adepoju, 2020; Okafor, 2012). These variables shape the tax base, and the overall fiscal capacity of the state. The gross domestic product (GDP) being a crucial macroeconomic indicator, calculates the total monetary value of all products and services generated in a nation over a certain time period (World Bank,

2024). It reflects the size and health of an economy and serves as a primary determinant of the capacity of a government to mobilize tax revenue. In Nigeria, fluctuations in GDP have a significant impact on tax revenue, as economic growth often broadens the tax base and enhances compliance, while economic contraction may shrink revenue streams (Iyoha et al., 2022). Ogbonna & Ebimobowei, (2012); Babatunde et al.(2020) note that in developing economies like Nigeria, tax revenue performance is strongly tied to macroeconomic fundamentals such as GDP growth, inflation, exchange rate and trade volumes.

The degree to which a nation participates in international trade in relation to its economic production is known as trade openness. Usually, it is calculated as the gross domestic product (GDP) divided by the total of imports and exports (Sachs & Warner, 1995; Yanikkaya, 2003). In Nigeria, trade openness has been influenced by globalization, trade liberalization reforms, oil price fluctuations, and economic integration policies such as participation in the Economic Community of West African States (ECOWAS) and the World Trade Organization (WTO). These dynamics have implications for government tax revenue, especially given

Nigeria's heavy reliance on trade-related taxes and oil exports for public finance (Olawale & Ayodele, 2021). Exchange rate have profound implications for the fiscal health of nations, particularly in developing economies like Nigeria where trade, external debt servicing, and capital flows are highly sensitive to currency fluctuations. Exchange rate refers to the price of one currency in terms of another, and in Nigeria's case, it largely reflects the naira value against major currencies such as the US dollar, euro, and British pound (Akinlo & Lawal, 2012). As an open economy with significant reliance on crude oil exports and substantial import dependence, Nigeria exchange rate stability is critical for revenue generation, especially tax revenue (Okonkwo & Chukwudi, 2020). Tax revenue comprising oil and non-oil taxes remains a major source of government income in Nigeria. However, fluctuations in the exchange rate influence the real value of imports and exports, which in turn affect customs duties, value-added tax (VAT) collections, and corporate income taxes from import-dependent firms (Onakoya et al., 2020). A depreciating naira tends to raise the domestic currency value of import duties and export earnings, potentially boosting nominal tax revenue. Conversely, exchange rate volatility can

discourage trade and investment, reduce taxable economic activity, and increase inflationary pressures, which erode real revenue gains (Adeniran, et. al, 2014).

Hence, understanding the relationships among these macro-economic variables with tax revenue is critical for designing effective fiscal policies aimed at enhancing revenue mobilization, ensuring macroeconomic stability, and promoting sustainable economic growth. This research therefore examines macroeconomic determinants and tax revenue in Nigeria. The following hypotheses are hereby formulated

H01: Gross Domestic Product has no significant effect on tax revenue in Nigeria.

H02: Trade openness has no significant effect on tax revenue in Nigeria.

H03: Exchange rate has no significant effect on tax revenue in Nigeria.

2.0 Conceptual Discussion

Tax Revenue

Government authorities impose taxes as a mandatory payment on the earnings, profits, assets, services, trusts, and settlements of both individuals and

corporations. When such taxes are collected, they are utilized to fund government operations like infrastructure development, law enforcement, citizen health and education, and fiscal management (ICAN, 2021). The money that a government makes by charging taxes to people, companies, and other organizations is known as tax revenue. For public goods and services like national defense, education, healthcare, and infrastructure, it is an essential source of revenue (Mankiw & Taylor, 2014). Tax revenue is a critical aspect of government finance, representing the income generated by a government through the imposition and collection of taxes. Tax revenue serves as a primary source of funding for government activities, including public services, infrastructure development, and various welfare programs. The concept involves the assessment and collection of taxes from individuals, businesses, and other entities within a jurisdiction (Rosen & Gayer, 2010).

Gross Domestic Product (GDP) and Tax Revenue

GDP represents the overall level of economic activity, and a higher GDP generally expands the tax base through increased incomes, consumption, and

corporate profits (Afonso & Furceri, 2010). In Nigeria, where the economy is highly dependent on oil and agriculture, fluctuations in GDP growth directly affect government revenue generation, particularly from corporate income tax, value-added tax, and petroleum profit tax (Ojong et al., 2016).

Trade Openness

The degree to which a nation participates in international trade, including import and export transactions, in relation to its total economic activity is known as trade openness. It is frequently calculated as the ratio of a nation's total trade (imports and exports) to its GDP, demonstrating the ease with which capital, goods, and services can flow across international borders (Sachs & Warner, 1995; Yanikkaya, 2003). As such, it is basically a gauge of how well a nation has integrated into the world economy. A freer flow of products and services is made possible by a highly open economy, which has few trade restrictions including tariffs, quotas, and stringent regulations. On the other hand, a comparatively closed economy restricts international trade in order to safeguard its own sectors.

Exchange Rate

Exchange rate is the price of one nation currency represented in terms of another. It determines how much of one currency you can obtain with a unit of another, and it plays a crucial role in international trade, investment, tourism, and overall economic stability. Ezu (2016) defined as the degree at which one currency is exchanged for another. In open economies, fluctuations in exchange rates can influence the volume and value of international trade, foreign investment flows, and ultimately, the level of tax revenue collected by the government (Edwards, 2020). Since many developing economies, including Nigeria, depend significantly on trade-related taxes such as customs duties, value-added tax (VAT) on imports, and corporate income tax from export-oriented firms, changes in exchange rates directly affect the tax base and tax yield (Aizenman & Jinjark, 2009).

Theoretical Framework

Our study is based on the optimal tax theory by American economists Richard Musgrave (1980). This theory is based on the theoretical framework in the empirical investigation carried out in the works of Dilante (2018). The optimal tax theory is a concept in macroeconomics that seeks to

determine the most efficient tax structure that maximizes social welfare while minimizing distortions in economic behaviour. The theory takes into account the impact of taxes on incentives, efficiency, and equity, and suggests that taxes should be designed with these factors in mind to achieve the desired social outcomes. The optimal tax theory has been widely debated in academic circles, with many studies providing empirical evidence to support its principles. According to a study by economists Michael and Kelvin (1985) and Richard (1989), the optimal tax theory suggests that taxes should be designed to minimize distortions in economic behaviour, with a focus on taxes that are efficient (minimize deadweight losses) and equitable (fairly distributed).

Another study by economist Mirrless (1971) suggested that taxes should be designed with a focus on incentives (promoting efficient behaviour) rather than equity (fairness). The study proposed a system of progressive taxation that increases tax rates as income levels increase to promote efficient behaviour among high-income earners while still providing some degree of equity for low-income earners. In practice, many countries have implemented tax policies based on optimal tax theory principles. For example, in 1986, President

Ronald Reagan signed into law a significant tax reform bill that reduced marginal tax rates for individuals while increasing payroll taxes for social security purposes (Keen, 2002). The bill was based on optimal tax theory principles that suggested that tax rate reductions would lead to increased economic activity while still providing some degree of equity through social security payments (Mirrlees, 1971).

In conclusion, the optimal tax theory is a valid concept in macroeconomics which seeks to determine the most efficient tax structure that maximizes social welfare while minimizing distortions in economic behaviour. The theory suggests that taxes should be designed with a focus on efficiency, equity, and incentives to achieve the desired social outcomes. Policymakers should consider optimal tax theory principles when designing tax policies to maximize social welfare and minimize negative economic impacts.

Empirical Review

The function of trade openness in emerging countries and the connection between tax revenue and economic growth were examined by Thuy et al. (2023). The World Bank's World Development Indicators (WDI) provided 609 observations for the years 2000–2020 from twenty-nine (29)

poor countries, which were employed in the study. The presented hypotheses were evaluated using the Fixed Effect Model (FEM) and the Generalized Least Squares (GLS) estimation method. The study concluded that tax income had a positive and noteworthy effect on economic growth. Additionally, trade openness reinforces the favorable correlation between economic growth and tax revenue; yet, excessive trade openness might weaken this correlation. Etoama (2023) looked into how tax income and Nigeria's economic growth are related. The study looked at secondary data from the Federal Inland Revenue Service (FIRS) online reports and the Central Bank of Nigeria (CBN) annual report from 1994 to 2021. Per capita and the immediate past value of petroleum profit tax receipts were the only factors that significantly influenced economic development over the long run, according to the analysis.

The relationship between tax revenue and economic growth was studied by Ezekwesili and Ezejiofor (2022). Secondly, the Central Bank of Nigeria (CBN) and the National Bureau of Statistics' (NBS) Statistical Bulletin and Annual Statistics provided the study's data. For this study, an ex-post facto study design was employed. The study's findings

demonstrated that tax revenue had no appreciable effect on Nigeria's interest rate or inflation rate at a 5% significance level. According to the study, all tiers of government should enhance tax administration and promote public financial management in order to combat tax evasion. Nigeria's tax revenue were analyzed by Atolagbe and Abiodun (2021) in relation to trade liberalization and a few other macroeconomic factors. Secondary data from the statistical bulletin's annual time series for 1981–2019 was used in the analysis. The analysis's findings demonstrated that trade liberalization has a markedly positive impact on domestic tax revenue when all other variables are held constant. In order to boost and sustain tax revenue, the government should introduce comprehensive trade liberalization policies and control shifts in macroeconomic factors, the report concludes.

The Economic Community of West African States (ECOWAS) tax income and macroeconomic factors were studied by Gideon et al. (2021). The research focused on West African nations for fifteen years (15) from 2005 and 2019. Data was taken from the statistics bulletins of the chosen West African nations and World Bank indicators, and it was then analyzed. The outcome showed that there is a significant

and positive correlation between tax revenue and GDP, trade openness, inflation, and currency rates. According to the study, ECOWAS nations ought to think about implementing policies that examine their macroeconomic surroundings in order to increase tax collections. Zewude (2021) conducted research on Ethiopia's tax revenue collecting determinants. Self-administered questionnaires and interviews were the sources of the data. The results demonstrated that illegal financial outflows are thought to be important factors influencing tax revenue collection. The study found that tax revenue collection is positively and significantly impacted by tax authority organizational strength and technology. Political unrest and rising tax delinquencies reduce the likelihood of collecting large amounts of tax income. According to the report, all tiers of government should improve tax administration by providing cutting-edge technology that facilitates accurate tax collection.

In Southeast Asian countries, Prianto and Gustofan (2021) looked at the macroeconomic factors that affect tax income and tax effort. The study was conducted in six (6) countries in Southeast Asia, including Malaysia, Indonesia, the Philippines, Thailand, Cambodia, and

Singapore, between 2008 and 2019. The World Bank's World Development Indicators (WDI) provided secondary data for the study. The results of the analysis showed that trade openness has a considerable and positive impact on both the actual tax-to-GDP ratio and the tax effort per capital income. The factors influencing Nigeria's tax revenue were examined by Ishola et al. (2019). The study employed an ex post facto research design, and the Central Bank of Nigeria (CBN) Statistical Bulletin was the secondary source of data during the 1984–2017 timeframe. Data analysis showed that tax revenue, political stability, and the absence of violence were significantly correlated. In order to sustain tax revenue through voluntary tax compliance, the report recommended that governments at all levels address political instability and violence

Methodology

The ex-post-facto research design was adopted in this study making use of the thirty-six (36) states and the federal capital territory, Abuja to form the population of the study. Secondary data was collected from Federal Inland Revenue Service (FIRS) Statistical Books and Central Bank Nigeria (CBN) Statistical Bulletin covering

the period 1970 to 2023. The model for this study is hereby specified as:

$$TXR = F(GDP, TOPNS, EXR)$$

$$TXR = \alpha + \beta_1 GDP + \beta_2 OPNS + \beta_3 EXR + \epsilon_t$$

Where, TXR is tax revenue, GDP = Gross Domestic Product, TOPNS = Trade Openness, EXR = Exchange Rate, α is intercept, $\beta_1 - \beta_4$ are coefficients and ϵ = Error variable.

Data Presentation, Analysis and Discussion of Findings

The data gathered for this research is presented, analyzed, and interpreted.

Table 1: Descriptive Analysis

	TREV	GDP	TOPEN	EXR
Mean	2391075.	30060.01	7.153518	84.06254
Median	2105828.	22782.62	2.761422	21.89000
Maximum	6178036.	73382.77	86.11676	398.9000
Minimum	276727.0	0.000000	-26.48768	0.540000
Std. Dev.	1667663.	24052.66	16.57961	110.2278
Skewness	0.465495	0.468010	2.483338	1.334442
Kurtosis	2.079505	2.029699	11.74810	3.832153
Jarque-Bera	3.713784	3.938176	219.2604	16.93342
Probability	0.156157	0.139584	0.000000	0.000210
Sum	1.24E+08	1563121.	371.9829	4371.252
Sum Sq. Dev.	1.42E+14	2.95E+10	14019.05	619658.5
Observations	52	52	52	52

The variables involved in the study are described in Table 4.1 above. The means of the following variables are 2391075, 30060.01, 7.153518, and 84.06254 respectively. The variables with had maximum values of 6178036 for TREV, 73382.77 for GDP, 86.11676 for TOPEN, and 398.9000 for EXR. Additionally, 6178036, 1667663, 24052.66, 16.57961 and 110.2278 are their respective standard

deviations. For each of the following: 0.156157 for TREV, 0.139584 for GDP, 0.000000 for TOPEN and 0.000210 for EXR are the p-values for the Jarque-Bera test for individual normality. This demonstrates the normal distribution of all the data for each individual variable. Furthermore, table 4.1 above displays the number of each observation for each variable as well as the median, minimum,

skewness, kurtosis, total, and sum square of deviation.

4.2 Unit Root Test

For co-integration analysis and the consistent and legitimate inference of time series models, a stationary test is required. The presence of a unit root indicates non-stationarity in the time series data, whereas

its absence indicates stationarity. When nonstationary time series are used, the outcomes could be erroneous. It could provide the impression that there is a relationship between the variables when there isn't one. Since practically all of the variables at this level are non-stationary, we must take the first differences.

Table 4.2 Unit Root Test

Variables	ADF STAT	5% Critical Value	Level of Integration	Remark
LOGTREV	-0.093988	-2.918778	I(0)	Non-Stationary
D(LOGTREV)	-2.378987	-2.018778	I(1)	Stationary
LOGEXR	-1.947643	-3.496960	I(0)	Non-Stationary
D(LOGEXR)	-6.328315	-3.498692	I(1)	Stationary
LOGTOPEN	-1.096621	-2.976263	I(0)	Non-Stationary
D(LOGTOPEN)	-4.300114	-2.998064	I(1)	Stationary
LOGGDP	-1.496012	-3.529758	I(0)	Non-Stationary
D(LOGGDP)	-3.886117	-3.529758	I(1)	Stationary

The ADF test statistics are shown in Table 4.2 above for each variable at each level. The table shows that various order of integration is used for the variables. I(0) and I(1). This suggests that the variables'

order of integration is confused. As indicated in Table 4.3 below, this implies that we may use the limits test for co-integration to confidently assess the long-term relationship between the variables.

4.3: Bounds Test to Co-integration

Table 4.3: Bounds Test to Co-integration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	5.188763	10%	2.26	3.35
K	5	5%	2.62	3.79
		2.5%	2.96	4.18
		1%	3.41	4.68

As indicated in Table 4.3 above, the study used the ARDL F-Bounds to determine whether there were long-term correlations between the variables and how many delays to include in the model. At the 1%, 2.5%, 5%, and 10% levels of significance, the F-statistic of 5.188763 in the F-Bounds result

was greater than the $I(0)$ and $I(1)$ limit value, proving the null hypothesis (H_0), which states that there were no long-term connection, to be rejected. This suggests that the variables have a persistent association with one another.

Test of Hypotheses

Table 4.4 ARDL Regression Result

Dependent Variable: LOGTREV

Method: ARDL

Dynamic regressors (1 lag, automatic): LOGGDP LOGTOPEN LOGEXR

Fixed regressors: C

Selected Model: ARDL(2, 0, 0, 1, 0, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGTREV(-1)	0.861529	0.160145	5.379677	0.0000
LOGTREV(-2)	-0.355299	0.154153	-2.304856	0.0315
LOGGDP	-0.007045	0.048378	-0.145621	0.8856
LOGTOPEN	0.035790	0.010766	3.324299	0.0032
LOGEXR	0.021432	0.025380	0.844441	0.4079
LOGEXR(-1)	0.035944	0.025131	1.430226	0.1674
C	6.522057	1.524331	4.278635	0.0003
R-squared	0.996080	Mean dependent var	14.63710	
Adjusted R-squared	0.994400	S.D. dependent var	0.483144	
S.E. of regression	0.036155	Akaike info criterion	-3.546314	
Sum squared resid	0.027451	Schwarz criterion	-3.083738	
Log likelihood	64.96787	Hannan-Quinn criter.	-3.395526	
F-statistic	592.9149	Durbin-Watson stat	2.133679	
Prob(F-statistic)	0.000000			

*Note: p-values and any subsequent tests do not account for model selection.

As demonstrated in Table 4.4 above, the model's R-Square value was 0.996080, suggesting a favorable goodness of fit. This means that the model accounts for 99.6% of the outcomes, while the error term accounts for 0.4%. With an adjusted R-squared of 0.994400, 99.4% of the data appear to be corrected for the degrees of freedom. At

2.133679, the Durbin-Watson statistic was larger than 2 but less than 2.5, suggesting that serial correlation problems won't affect the model's residuals.

Table 4.4 above, in particular, demonstrates that Tax Revenue (TREV) is negatively and negligibly impacted by GDP. Accordingly, a 1% short-term increase in Nigeria's GDP

will, *ceteris paribus*, result in a considerable drop in tax income of 0.007045%. This implies that Nigeria's GDP is not conducive to the expansion of tax collection. Therefore, it is believed that GDP has no discernible impact on Nigeria's tax income. Additionally, Nigerian tax income is positively and significantly impacted by trade openness (TOPEN) ($\beta = 0.035790$, *p*-value = 0.0032). Accordingly, Nigeria's tax revenue will rise by 0.035790 for every unit increase in trade openness, and vice versa. As a result, the null hypothesis is disproved and the alternative hypothesis is supported, suggesting that trade openness significantly

increases Nigeria's tax collection in the near term.

The exchange rate at one period lag, EXR (-1), has a statistically small positive impact on Nigeria's tax income ($\beta = 0.035944$, *p*-value = 0.1674). A 1% increase in the exchange rate will result in a corresponding increase in the tax rate, according to the positive coefficient value. A *p*-value above the 5% level of significance, however, suggests that the exchange rate has no discernible impact on Nigeria's tax collection. The null hypothesis, according to which the exchange rate has no appreciable short-term impact on Nigerian tax collection, is thus accepted.

Table 4.5: Long Run ARDL Regression Estimate

Levels Equation Case 3: Unrestricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGDP	-0.014267	0.099477	-0.143424	0.8873
LOGTOPEN	0.072484	0.029121	2.489058	0.0213
LOGEXR	0.116199	0.028086	4.137296	0.0005

$$EC = LOGTREV - (-0.0143*LOGGDP + 0.0725*LOGTOPEN + 0.1162*LOGEXR - 0.0648*LOGINF + 0.0929*LOGTDEBT)$$

In the long run, GDP has a negative insignificant effect on tax revenue ($\beta = -0.014267$, *p*-value = 0.8873), while trade openness (TOPEN) has a positive

significant effect ($\beta = 0.072484$, *p*-value = 0.0213) and the exchange rate (EXR) has a positive significant effect on tax revenue in Nigeria (Table 4.5 above).

Diagnostic Tests of the Model

Heteroskedasticity Test

Table 4.6: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.843818	Prob. F(9,21)	0.5858
Obs*R-squared	8.233274	Prob. Chi-Square(9)	0.5108
Scaled explained SS	1.977973	Prob. Chi-Square(9)	0.9918

The results show that the null hypothesis (Ho) of homoskedasticity cannot be ruled out because the probability of the residual diagnostic tests, or Breusch-Pagan-

Godfrey (0.5858), is greater than 0.05, or 5%. This suggests that there is no heteroskedasticity in the residuals of the model we selected.

Table 4.7: Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.578927	Prob. F(3,18)	0.6363
Obs*R-squared	2.727915	Prob. Chi-Square(3)	0.4355

The null hypothesis (Ho), according to the results of the Breusch-Pagan-Godfrey serial correlation test, that there is no serial correlation up to one lag in the study, is not

rejected. This is indicated by the probability ChiSquare of 0.4355. As a result, we can say that the residual from the model used in the study does not exhibit serial correlation.

Figure 4.1 Cusum Test

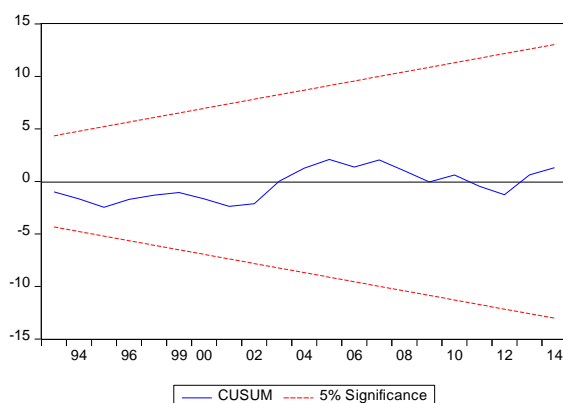
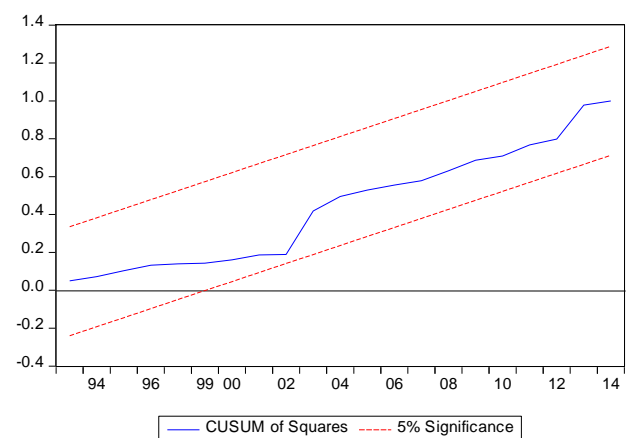


Figure 4.2 Cusum of Squire Test



As seen by the blue lines that fall inside the 5% important zones in figures 4.1 and 4.2 above, the CUSUM and CUSUM square test results show that the model is stable. The blue line trend in Figures 4.1 and 4.2 wanders both upward and downward without going above the 5% (red lines), suggesting that the residuals were stable across the period under study. This simply means that the model we employed for the study is stable and reliable.

4.6 Discussion of Findings

Based on the macroeconomic factors of GDP, trade openness, and exchange rate, the study used a multivariate equation to examine the factors affecting tax revenue in Nigeria. The ADF, the ideal lag length criterion, and the ARDL Bounds test to cointegration were all used in the study. The objective was accomplished by analyzing the short- and long-term relationships between the variables using the ARDL model. The reliability of the model and its residual diagnostics were assessed using the CUSUM, Ramsey RESET, Jarque-Berra normalcy, heteroskedasticity, and serial correlation tests. All of the model's characteristics were preserved, according to the study, so the conclusions are suitable for policy making.

According to the ARDL model, Nigeria's tax revenue is not significantly impacted negatively by GDP in the near term. Over time, GDP has a negligible detrimental impact on tax income as well. This suggests that a rise in GDP will, over time, result in a negligible drop in Nigeria's tax collection. These findings are comparable to those of Ishola, et. al (2019), who found that there may be a negative correlation between GDP and tax revenue. These unfavorable correlations might result from a surge in small-scale, mostly tax-exempt businesses and some subsistence farming techniques. Second, in the near term, trade openness significantly increases Nigeria's tax collection. Over time, TOPEN also has a large positive impact on tax collections. This indicates that, over the short and long terms, increased trade openness will result in a large rise in Nigeria's tax collection. According to Ishola et al.'s (2019) research, trade openness may have a negative correlation with tax revenue.

Thirdly, in the short term, the exchange rate positively but marginally affects Nigeria's tax revenue. Conversely, over time, Exchange rate (EXR) has a large positive impact on Nigeria's tax collection. This argument supports the idea that an increase in exchange rates will boost tax income in Nigeria, but not significantly so in the near

term. Atolagbe and Abiodun (2021) looked at how several macroeconomic factors affected Nigeria's tax collection. According to the report, Nigeria's tax revenue is significantly impacted positively by exchange rates.

Conclusion

A variety of macroeconomic factors, including as the GDP, trade openness, and exchange rate, affect the government's capacity to collect sufficient tax income. Determining the impact of these macroeconomic factors on Nigeria's tax income was the aim of the study. Macroeconomic factors have a considerable impact on Nigeria's tax income, according to the overall findings. Therefore, by carefully managing the macroeconomic climate, the study offered an empirical foundation for achieving strong tax revenue. GDP, trade openness, and exchange rates are examples of macroeconomic variables that, when well controlled and adhered to, can significantly improve Nigeria's tax revenue performance over time. Therefore, Nigeria should continuously act to improve the performance of all economic sectors and guarantee the effective transformation of the economy. The introduction of new technologies, the promotion of production innovation, and the implementation of

policies that promote sustainable resources are all necessary to improve the welfare of society overall and the tax base. To raise tax income, it is advised that government officials closely control macroeconomic factors like GDP and exchange rates. The Nigerian government should also continue trade liberalization initiatives to increase the country's trade openness.

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