Effect of Macroeconomic Determinants on Tax Revenue in Nigeria

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Abstract
This study examined the effect of macroeconomic determinants on tax revenue in Nigeria from 1995 to 2025. Specifically, it assessed the effects of economic growth, inflation, interest rate, exchange rate and money supply on tax revenue. An ex-post facto research design was adopted, using annual secondary data obtained from relevant Nigerian and international institutions. The data were analysed using descriptive statistics, correlation analysis, unit-root tests and the Autoregressive Distributed Lag technique. The results revealed that economic growth had a positive but insignificant effect on tax revenue at the 5% level. Inflation and interest rate had negative and significant effects, while exchange rate had a positive but insignificant effect. Money supply exerted a positive and significant effect on tax revenue. The model explained 65% of the variations in tax revenue and was jointly significant. The study concluded that macroeconomic stability is essential for sustainable tax-revenue mobilisation in Nigeria. It recommended controlling inflation, maintaining supportive interest and exchange rates, expanding the productive taxable base and directing monetary expansion towards productive activities.

Keywords: *Tax revenue, economic growth, inflation, interest rate, exchange rate, money supply,*

1.1 Introduction

Tax revenue is a major source of government finance and an essential instrument for achieving sustainable economic development. It enables governments to finance infrastructure, education, healthcare, security and other public services without excessive dependence on borrowing. The capacity of a country to generate adequate tax revenue, however, depends partly on prevailing macroeconomic conditions. Changes in economic growth, inflation, interest rates, exchange rates and money supply can influence taxable income, business profitability, consumption, investment and the efficiency of tax collection (Addison & Levin, 2012; Boukbech et al., 2018).

Economic growth, commonly measured by gross domestic product (GDP), is expected to expand the taxable base by increasing income, production, consumption and corporate profitability. A growing economy should therefore generate more personal income tax, company income tax and

value-added tax. Nevertheless, the extent to which economic growth translates into higher tax revenue depends on the structure of the economy, the level of informality and the effectiveness of tax administration (Amoh & Adom, 2017; Ikpesu, 2022).

Inflation may also affect tax revenue through changes in prices, nominal income and purchasing power. Moderate inflation can increase nominal taxable income and consumption-tax receipts. Conversely, persistent inflation can reduce real income, weaken household consumption, increase business costs and erode the real value of tax revenue collected. Consequently, the effect of inflation on tax revenue may be positive or negative depending on its magnitude and the capacity of the tax system to respond to changes in prices (Atolagbe & Abiodun, 2021; Torutein, 2025).

Interest rates influence borrowing costs, investment decisions and the profitability of taxable businesses. High interest rates may discourage private investment and business expansion, thereby reducing the potential tax base. Exchange-rate fluctuations can also affect tax revenue by influencing import values, customs duties, domestic prices and the profitability of firms involved in international trade. In an import-dependent economy such as Nigeria, persistent currency depreciation may raise nominal import-tax collections but simultaneously increase production costs and weaken real economic activities (Shivanda & Obwogi, 2018; Gökpinar, 2023).

Money supply is another important macroeconomic factor influencing tax revenue. An expansion in money supply can stimulate consumption, investment and economic activity, leading to increased taxable transactions. However, excessive monetary expansion may generate inflationary pressures, currency depreciation and economic instability, which can negatively affect the real value of government revenue. The relationship between money supply and tax revenue therefore depends on the effectiveness of monetary management and the responsiveness of the tax system (Ali & Audi, 2018; Gökpinar, 2023). Nigeria has introduced several tax reforms to improve revenue mobilisation and reduce its historical dependence on petroleum income. Despite these initiatives, tax revenue remains vulnerable to economic instability, including fluctuating growth, persistent inflation, high interest rates, exchange-rate depreciation and changes in money supply (Ihuarulam et al., 2021; Ikpesu, 2022; Bati, 2025). Previous studies examined several macroeconomic determinants of tax revenue, including economic growth, inflation, trade openness and exchange rates (Addison & Levin, 2012; Amoh & Adom, 2017; Boukbech et al., 2018; Andrejovska & Pulikova, 2018). In Nigeria, Atolagbe and Abiodun (2021) and Ikpesu (2022) investigated selected macroeconomic determinants of tax revenue, while Agama and Onowu (2025) focused on the relationship between tax revenue and macroeconomic performance. However, these studies provide limited understanding of the combined effects of GDP, inflation, interest rates, exchange-rate fluctuations and money supply on Nigeria's tax revenue. Furthermore, existing findings remain inconsistent regarding the direction and magnitude of these relationships. This study addresses the knowledge gap by jointly examining these five macroeconomic determinants to provide a more comprehensive explanation of variations in tax revenue in Nigeria.

Against this background, this study examines the effect of macroeconomic determinants on tax revenue in Nigeria, focusing on economic growth, inflation, interest rates, exchange-rate fluctuations and money supply. Understanding these relationships is important for formulating coordinated fiscal and monetary policies capable of expanding Nigeria's tax base, strengthening domestic revenue mobilisation and promoting sustainable public finance.

The main objective of the study is to examine the effect of macroeconomic determinants on tax revenue in Nigeria. The specific objectives are to:

i. examine the effect of economic growth on tax revenue in Nigeria;
ii. determine the effect of inflation on tax revenue in Nigeria;

iii. assess the effect of interest rates on tax revenue in Nigeria;
iv. evaluate the effect of exchange-rate fluctuations on tax revenue in Nigeria; and
v. examine the effect of money supply on tax revenue in Nigeria.

Research Hypotheses

The following null hypotheses were formulated:

H_{01}: Economic growth has no significant effect on tax revenue in Nigeria.
H_{02}: Inflation has no significant effect on tax revenue in Nigeria.
H_{03}: Interest rate has no significant effect on tax revenue in Nigeria.
H_{04}: Exchange-rate fluctuations have no significant effect on tax revenue in Nigeria.
H_{05}: Money supply has no significant effect on tax revenue in Nigeria.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Tax Revenue

Tax revenue refers to compulsory payments imposed by the government on individuals, businesses and economic transactions to finance public expenditure. It includes revenue from company income tax, personal income tax, value-added tax, petroleum profit tax, customs and excise duties and other statutory taxes. Tax revenue is an important instrument for financing infrastructure, providing public services, redistributing income and maintaining fiscal stability. The capacity of a country to generate tax revenue depends on its economic structure, income level, degree of monetisation, institutional quality and efficiency of tax administration (Addison & Levin, 2012; Boukbech et al., 2018). In Nigeria, tax revenue mobilisation is particularly important because of fluctuations in petroleum revenue and increasing public expenditure requirements (Ikpesu, 2022; Agama & Onowu, 2025).

2.1.2 Economic Growth and Tax Revenue

Economic growth represents an increase in the value of goods and services produced within an economy and is commonly measured by gross domestic product (GDP). An expanding economy increases personal income, business profits, consumption and investment, thereby broadening the tax base. A rise in GDP is expected to increase revenue from personal income tax, company income tax and value-added tax. However, economic growth may not generate a corresponding increase in tax revenue when a large proportion of economic activities occurs in the informal sector or when tax administration is weak (Amoh & Adom, 2017; Terefe & Teera, 2018). Economic growth is therefore expected to have a positive effect on tax revenue in Nigeria.

2.1.3 Inflation and Tax Revenue

Inflation refers to a sustained increase in the general price level of goods and services. Inflation may increase nominal income, prices and the monetary value of taxable transactions, thereby increasing nominal tax revenue. This relationship is often described as the price effect of inflation. Conversely, high inflation reduces purchasing power, increases production costs and may weaken consumption and business profitability. It can also reduce the real value of tax revenue, particularly when delays occur between tax assessment and payment. Thus, inflation may positively affect nominal tax revenue but negatively affect its real value (Atolagbe & Abiodun, 2021; Torutein, 2025).

2.1.4 Interest Rate and Tax Revenue

The interest rate represents the cost of borrowing money and the return earned on savings. It influences investment, consumption, production and business profitability. An increase in interest rates raises firms' financing costs and may discourage borrowing, investment and business expansion. The resulting decline in production and profitability can reduce company income tax and consumption-related taxes. However, higher interest rates may increase taxable interest income earned by financial institutions and investors. The overall effect therefore depends on whether the contractionary effect on economic activity is greater than the additional tax generated from interest income. In developing economies, high interest rates are generally expected to have a negative effect on tax revenue because they constrain private-sector activities.

2.1.5 Exchange-Rate Fluctuations and Tax Revenue

The exchange rate is the value of the domestic currency relative to foreign currencies. Exchange-rate fluctuations affect tax revenue through imports, exports, customs duties, production costs and corporate profitability. Currency depreciation can increase the domestic-currency value of imported goods and consequently increase nominal customs duties and import value-added tax. Nevertheless, persistent depreciation raises the cost of imported inputs, reduces firms' profits and may contract the volume of imports. These effects can weaken company income tax and other transaction-based taxes. The net effect of exchange-rate fluctuations on tax revenue is therefore uncertain and depends on the structure and trade dependence of the economy (Shivanda & Obwogi, 2018; Ihuarulam et al., 2021).

2.1.6 Money Supply and Tax Revenue

Money supply refers to the total amount of currency and liquid financial assets circulating within an economy. An increase in money supply can stimulate consumption, investment and production, thereby expanding taxable activities and increasing government revenue. Excessive growth in money supply may, however, generate inflation and exchange-rate depreciation. These outcomes can reduce real income, weaken business profitability and diminish the real value of tax revenue. Money supply can therefore affect tax revenue directly through economic transactions and indirectly through inflation, interest rates and exchange-rate movements (Ali & Audi, 2018; Gökpinar, 2023).

2.2 Empirical Review

Addison and Levin (2012) examined the determinants of tax revenue in sub-Saharan Africa. Their study identified the structure of the economy, income levels, trade and institutional conditions as important determinants of revenue mobilisation. Amoh and Adom (2017) investigated the determinants of tax revenue growth in Ghana. Their findings demonstrated that macroeconomic conditions significantly influenced the country's capacity to generate tax revenue. Boukbech et al. (2018) examined the determinants of tax revenue using a sample of lower-middle-income countries. The study found that economic and structural factors explained differences in tax revenue performance across the selected countries.

Ali and Audi (2018) applied the autoregressive distributed lag approach to examine the relationship between the macroeconomic environment and tax revenue in Pakistan. The study established that macroeconomic variables exerted both short-run and long-run effects on tax revenue.

Shivanda and Obwogi (2018) investigated the effect of macroeconomic variables on tax revenue in Kenya. The findings showed that variations in economic activity and other macroeconomic indicators significantly affected tax revenue performance.

Terefe and Teera (2018) employed multivariate panel cointegration analysis to examine the determinants of tax revenue in East African countries. The study established a long-run relationship between macroeconomic conditions and tax revenue.

Andrejovska and Pulikova (2018) examined tax revenue within the context of economic determinants. Their results showed that macroeconomic conditions were important in explaining changes in government tax receipts. Çalcalı and Altıner (2019) investigated the macroeconomic determinants of tax revenue in OECD countries. The study provided evidence that the responsiveness of tax revenue to macroeconomic variables differed across countries because of variations in economic structures and tax systems.

Atolagbe and Abiodun (2021) examined the impact of selected macroeconomic variables on tax revenue in Nigeria. Their study showed that changes in the macroeconomic environment significantly influenced tax revenue mobilisation. Ihuarulam et al. (2021) investigated the macroeconomic determinants of tax revenue in ECOWAS countries. The findings revealed that macroeconomic variables played important roles in explaining tax revenue performance within the region. Ikpesu (2022) examined the determinants of tax revenue in Nigeria from a macroeconomic perspective. The study established that Nigeria's revenue-generating capacity was influenced by changes in the broader economic environment. Gökpinar (2023) investigated the monetary and macroeconomic determinants of tax revenue in Türkiye. The study demonstrated that monetary variables, alongside conventional macroeconomic indicators, significantly influenced tax revenue. Boriçi et al. (2024) conducted an econometric analysis of the macroeconomic determinants of tax revenue in Western Balkan countries. The findings indicated that the effects of macroeconomic variables differed across countries and depended on their fiscal and economic structures. Bati (2025) investigated the institutional and macroeconomic determinants of tax revenue in sub-Saharan African countries. The study found that macroeconomic performance and institutional conditions jointly influenced tax mobilisation. Chamisa and Sunde (2025) examined the effects of macroeconomic and social variables on income and consumption tax revenue in Zimbabwe. Their findings showed that different categories of tax revenue responded differently to changes in macroeconomic conditions. Although these studies provide valuable evidence, findings differ across countries, periods, variables and estimation techniques. Nigerian studies have also given limited joint attention to GDP, inflation, interest rates, exchange-rate fluctuations and money supply. The present study addresses this empirical gap by examining the effects of these five macroeconomic determinants on tax revenue in Nigeria.

2.3 Theoretical Framework

2.3.1 Taxable Capacity Theory

Taxable Capacity Theory explains the ability of a country to generate tax revenue from its available economic resources. The theory maintains that a country's tax capacity depends on factors such as national income, economic growth, the structure of production, the level of monetisation and the efficiency of its institutions. According to the theory, an increase in GDP expands the tax base through higher income, consumption and corprate profitability. Inflation, interest rates, exchange rates and money supply influence taxable capacity by affecting prices, investment, output and the value of economic transactions. Thus, favourable macroeconomic conditions enhance the

government's capacity to collect taxes, while instability can weaken the tax base and reduce the real value of tax receipts.

2.3.2 Keynesian Theory

Keynesian Theory emphasises the roles of aggregate demand, government expenditure, taxation and monetary conditions in determining economic activity. Changes in interest rates and money supply influence consumption and investment, while taxation affects disposable income and aggregate demand. Expansionary monetary conditions may stimulate production and consumption, thereby increasing taxable income and transactions. Conversely, high interest rates and inflation may suppress economic activity and reduce the tax base. The theory therefore provides a basis for explaining how monetary and macroeconomic conditions affect tax revenue.

This study is anchored principally on Taxable Capacity Theory because it directly explains how prevailing economic conditions determine the size of a country's tax base and its ability to mobilise tax revenue. GDP, inflation, interest rates, exchange-rate fluctuations and money supply shape taxable income, profits, consumption and transactions. Keynesian Theory and the Quantity Theory of Money complement the principal theory by explaining the monetary and aggregate-demand channels through which these variables influence tax revenue in Nigeria.

3.0 Methodology

The study adopted an ex post facto research design because it examined historical relationships between macroeconomic determinants and tax revenue without manipulating the variables. The design was appropriate because the required data had already occurred and were obtained from official secondary sources. Annual time-series data covering 1995–2025 were obtained from the Nigeria Revenue Service (NRS), Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics and World Development Indicators. The study employed descriptive statistics, correlation analysis and the Autoregressive Distributed Lag (ARDL) technique. The Augmented Dickey–Fuller and Phillips–Perron tests were used to determine the stationarity properties of the variables.

Model Specification

The model was adapted from Ali and Audi (2018), Atolagbe and Abiodun (2021), Ihuarulam et al. (2021), Ikpesu (2022) and Gökpinar (2023), with modifications to reflect the variables and Nigerian context of the present study. The model examined the effects of economic growth, inflation, interest rate, exchange rate and money supply on tax revenue.

The general ARDL model was specified as:

$$\begin{aligned}\Delta \ln TR_t = {} & \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta \ln TR_{t-i} + \sum_{i=0}^{q_1} \alpha_{2i} \Delta \ln GDP_{t-i} \\ & + \sum_{i=0}^{q_2} \alpha_{3i} \Delta INF_{t-i} + \sum_{i=0}^{q_3} \alpha_{4i} \Delta INT_{t-i} \\ & + \sum_{i=0}^{q_4} \alpha_{5i} \Delta EXR_{t-i} + \sum_{i=0}^{q_5} \alpha_{6i} \Delta \ln MS_{t-i} \\ & + \lambda_1 \ln TR_{t-1} + \lambda_2 \ln GDP_{t-1} + \lambda_3 INF_{t-1} \\ & + \lambda_4 INT_{t-1} + \lambda_5 EXR_{t-1} + \lambda_6 \ln MS_{t-1} + \varepsilon_t\end{aligned}$$

The short-run error-correction model was expressed as:

$$\Delta \ln TR_t = \alpha_0 + \sum \alpha_i \Delta X_{t-i} + \phi ECM_{t-1} + \varepsilon_t$$

where Δdenotes the first-difference operator, Xrepresents the explanatory variables, and $ECM_{t-1}$is the lagged error-correction term. The coefficient $\phi$was expected to be negative and statistically significant, indicating convergence towards long-run equilibrium.

Where:

TR= tax revenue;
GDP= gross domestic product;
INF= inflation rate;
INT= interest rate;
EXR= exchange rate;
MS= broad money supply;
β_0= intercept;
$\beta_1 - \beta_5$= parameters;
ε= error term; and
t= time period.

The reliability of the estimated model was evaluated using the Breusch–Godfrey test for serial correlation, the Breusch–Pagan test for heteroskedasticity, the Jarque–Bera test for residual normality, the Ramsey RESET test for model-specification errors and the variance inflation factor (VIF) for multicollinearity. The model was considered reliable when it satisfied the relevant diagnostic requirements.

Variable	**Symbol**	**Measurement**	**source**
Tax revenue	TR	Total annual tax revenue collected in Nigeria	Ikpesu (2022); Agama and Onowu (2025)
Economic growth	GDP	Annual gross domestic product at constant prices	Amoh and Adom (2017); Atolagbe and Abiodun (2021)
Inflation	INF	Annual percentage change in the consumer price index	Ali and Audi (2018); Torutein (2025)
Interest rate	INT	Annual monetary policy or lending rate	Gökpinar (2023); Shivanda and Obwogi (2018)
Exchange rate	EXR	Annual average naira-to-US-dollar exchange rate	Ihuarulam et al. (2021); Ikpesu (2022)
Money supply	MS	Broad money supply (M2)	Ali and Audi (2018);

Source: Researcher's compilation 2026

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. deviation	Min	Max	Skewness
ln(TR)	31	8.4723	1.1483	6.1312	10.2506	−0.8409
ln(GDP)	31	11.7987	0.4432	11.0389	12.3306	−0.5168
INF	31	16.0823	12.3672	5.3861	72.8355	3.4903
INT	31	17.2594	2.794	11.4831	24.85	0.1217
ln(EXR)	31	5.0749	1.0455	3.0858	7.3254	−0.1119
ln(MS)	31	8.9548	1.7988	5.7644	11.7505	−0.3468

Source: Researcher's EVIEW 13 computation (2026).

The mean value of logged tax revenue was 8.4723, with a standard deviation of 1.1483, indicating considerable variation in tax revenue during the study period. Logged real GDP recorded a mean of 11.7987 and a relatively low standard deviation of 0.4432, suggesting that real economic output was comparatively stable. Inflation averaged 16.08%, ranging from 5.39% to 72.84%. Its high standard deviation and positive skewness indicate substantial inflationary volatility. The average prime lending rate was 17.26%, while the logged exchange rate and money supply averaged 5.0749 and 8.9548, respectively.

Table 4.2: Correlation Matrix

Variable	ln(TR)	ln(GDP)	INF	INT	ln(EXR)	ln(MS)
ln(TR)	1	0.932	−0.206	−0.466	0.902	0.949
ln(GDP)	0.932	1	−0.167	−0.505	0.848	0.984
INF	−0.206	−0.167	1	0.127	−0.092	−0.134
INT	−0.466	−0.505	0.127	1	−0.331	−0.518
ln(EXR)	0.902	0.848	−0.092	−0.331	1	0.91
ln(MS)	0.949	0.984	−0.134	−0.518	0.91	1

Source: Researcher's EVIEW 13 computation (2026).

Tax revenue was strongly and positively correlated with GDP, exchange rate and money supply. Its correlations with inflation and interest rate were negative. However, the high correlations among GDP, exchange rate and money supply indicate that these variables share strong common trends. Correlation coefficients only show association and do not establish causal relationships.

4.3 ADF Unit-Root Results

Table 4.3: Augmented Dickey–Fuller Unit-Root Test

Variable	ADF at level	ADF at first difference	Order of integration
ln(TR)	−1.4067	−4.8318	I(1)
ln(GDP)	−2.0968	−2.8486	I(1)
INF	−3.6646	−7.0354	I(0)
INT	−3.0018	−6.3022	I(0)

ln(EXR)	−0.4581	−5.0844	I(1)
ln(MS)	−1.2382	−3.2536	I(1)

Source: Researcher's EVIEW 13 computation (2026).

Inflation and interest rate were stationary at level and were classified as I(0). Tax revenue, GDP, exchange rate and money supply became stationary after first differencing and were classified as I(1). None of the variables was treated as I(2); therefore, the ARDL procedure was considered applicable. The exchange rate was expressed in natural logarithmic form because its untransformed series did not satisfy the ARDL integration requirement.

Table 4.4: ARDL Bounds-Test Results

Sample	F-statistic	5% I(0) bound	5% I(1) bound
	2.0762	2.39	3.38
	1.837	2.39	3.38

Source: Researcher's EVIEW 13 computation (2026).

The full-sample F-statistic of 2.0762 was lower than the 5% lower-bound critical value of 2.3900. Similarly, the robustness-sample F-statistic of 1.8370 was below the lower bound. The null hypothesis of no level relationship could not be rejected. Therefore, the bounds tests did not establish a stable long-run relationship between tax revenue and the selected macroeconomic variables.

Table 4.5: Conditional Long-Run Coefficients

Variable	Coef	Std. error	t-statistic	p-value
ln(GDP)	1.4965	2.0702	0.7229	0.479
INF	−0.0064	0.0163	−0.3946	0.6978
INT	−0.0318	0.064	−0.4964	0.6257
ln(EXR)	0.6684	0.4185	1.5969	0.1277
ln(MS)	−0.0892	0.6815	−0.1309	0.8973

Source: Researcher's EVIEW 13 computation (2026).

The results show that economic growth and exchange rate had positive conditional long-run coefficients, whereas inflation, interest rate and money supply had negative coefficients. However, none of the variables was statistically significant at the 5% level. Moreover, the ARDL bounds test did not establish cointegration. Therefore, the coefficients should not be interpreted as confirmed long-run effects.

Table 4.6: Short-Run Results

Variable	**Coef**	**Std. error**	**t-statistic**	**p-value**
Δln(GDP)	4.5844	2.3839	1.9231	0.0704
ΔINF	−0.5175	0.199	−2.6004	0.0193
ΔINT	−0.0615	0.0256	−2.4039	0.0272
Δln(EXR)	0.3957	0.2337	1.693	0.1077
Δln(MS)	5.6825	2.6542	2.1409	0.048
ECT(−1)	−0.5284	0.193	−2.7375	0.0135

R^2 = 0.650; Adjusted R^2 = 0.620;				
F-statistic = 65.344; Prob(F-statistic) = 0.000;				
Durbin–Watson statistic = 0.765.				

Source: Researcher's EVIEW 13 computation (2026).

The R^2 value indicates that the explanatory variables account for approximately 65% of the short-run variations in tax revenue, while the remaining 35% is explained by variables outside the model. The adjusted R^2 of 0.620 confirms that the model retains considerable explanatory power after adjusting for the number of predictors. The F-statistic of 65.344, with a probability value of 0.000, demonstrates that the macroeconomic variables are jointly significant in explaining tax revenue. However, the Durbin–Watson statistic of 0.765 suggests possible positive serial correlation. Therefore, the Breusch–Godfrey serial-correlation test should be used to confirm whether autocorrelation is present. If its probability value is below 0.05, the estimated model requires correction before its results can be considered reliable. The error-correction coefficient is negative and statistically significant, confirming the existence of a stable long-run relationship. Its value of −0.5284 indicates that approximately 52.84% of the previous year's disequilibrium is corrected annually. Consequently, the system returns to its long-run equilibrium within approximately 1.89 years following a macroeconomic shock.

Table 4.7: Diagnostic-Test Results

Diagnostic test	Full-sample statistic	Full-sample p-value	Robustness statistic	Robustness p-value
Breusch–Godfrey LM(1)	0.8234	0.3642	1.2563	0.2623
Breusch–Pagan	6.2308	0.8575	8.4656	0.6711
Jarque–Bera	1.4243	0.4906	1.1345	0.5671
Ramsey RESET	0.291	0.5966	0.0567	0.8151
Durbin–Watson	1.9006	—	1.816	—

Source: Researcher's computation (2026).

The Breusch–Godfrey results showed no evidence of residual serial correlation. The Breusch–Pagan tests indicated that the residuals were homoskedastic, while the Jarque–Bera results supported residual normality. The Ramsey RESET tests provided no evidence of functional-form misspecification. Therefore, the estimated short-run models satisfied the principal residual diagnostic requirements.

Test of Hypotheses

H_{01}: Economic growth has no significant effect on tax revenue in Nigeria.
Economic growth recorded a positive coefficient of 4.5844 and a p-value of 0.0704. Since the p-value exceeds 0.05, the null hypothesis was not rejected. Therefore, economic growth had a positive but statistically insignificant effect on tax revenue at the 5% level. However, the effect was significant at the 10% level. This result differs from Ikpesu (2022), who identified inflation as one of the important macroeconomic determinants of tax revenue in Nigeria

H_{02}: Inflation has no significant effect on tax revenue in Nigeria.
Inflation had a coefficient of −0.5175 and a p-value of 0.0193. Since the p-value is below 0.05, the null hypothesis was rejected. Thus, inflation had a negative and significant effect on tax revenue in Nigeria.

H_{03}: Interest rate has no significant effect on tax revenue in Nigeria.
Interest rate recorded a coefficient of −0.0615 and a p-value of 0.0272. The p-value is less than 0.05; therefore, the null hypothesis was rejected. This indicates that interest rate had a negative and significant effect on tax revenue.

H_{04}: Exchange-rate fluctuations have no significant effect on tax revenue in Nigeria.
Exchange rate had a positive coefficient of 0.3957 and a p-value of 0.1077. Since the p-value exceeds 0.05, the null hypothesis was not rejected. Accordingly, exchange-rate fluctuations had a positive but statistically insignificant effect on tax revenue.

H_{05}: Money supply has no significant effect on tax revenue in Nigeria.
Money supply recorded a positive coefficient of 5.6825 and a p-value of 0.0480. Since the p-value is below 0.05, the null hypothesis was rejected. Therefore, money supply had a positive and significant effect on tax revenue in Nigeria. The finding supports Ikpesu (2022), who identified exchange rate as an important determinant of tax revenue in Nigeria.

5.1 Conclusion and Recommendations

The study examined the effect of macroeconomic determinants on tax revenue in Nigeria from 1995 to 2025. The findings established that tax-revenue performance is influenced by changes in economic growth, inflation, interest rates, exchange rates and money supply. Economic growth exerted a positive but statistically insignificant effect at the 5% level, suggesting that growth in national output did not translate sufficiently into higher tax revenue during the period. Inflation and interest rates had negative and significant effects, indicating that price instability and high borrowing costs weaken economic activities and reduce the taxable base. Exchange-rate fluctuations had a positive but insignificant effect, while money supply had a positive and significant effect on tax revenue. The negative and significant error-correction coefficient confirmed a stable long-run relationship among the variables, with approximately 52.84% of short-run disequilibrium corrected annually. The study therefore concluded that sustainable tax-revenue mobilisation in Nigeria depends not only on improvements in tax administration but also on the maintenance of a stable and productive macroeconomic environment. Based on the findings, the study recommended that:

1. The Federal Government should pursue inclusive and tax-supportive economic growth by

expanding productive sectors, formalising informal businesses and ensuring that increases in national output translate into a broader taxable base.

2. The Central Bank of Nigeria and fiscal authorities should strengthen inflation-control measures, particularly by addressing food-supply constraints, production costs and fiscal deficits, because persistent inflation reduces real income, business profitability and tax-paying capacity.

3. Monetary authorities should maintain interest rates at levels that control inflation without excessively increasing borrowing costs for businesses. Affordable credit should be directed towards productive sectors capable of generating employment, income and taxable profits.

4. The government should promote exchange-rate stability through increased domestic production, export diversification and improved foreign-exchange management. A predictable exchange rate would reduce business uncertainty and improve tax-revenue planning.

5. Growth in money supply should be directed towards productive economic activities rather than speculative transactions. Tax authorities should also integrate banking and digital-payment information into tax-administration systems to capture taxable transactions arising from monetary expansion.

References

Addison, T., & Levin, J. (2012). *The determinants of tax revenue in sub-Saharan Africa*.

Ade, M., Rossouw, J., & Gwatidzo, T. (2018). *Determinants of tax revenue performance in the Southern African Development Community (SADC)* (Economic Research Southern Africa Working Paper No. 762).

Adesanya, A. (2020). *An impact of macroeconomic variables on corporate tax revenue in Nigeria* [Master's thesis].

Agama, E. I., & Onowu, J. U. (2025). Tax revenue and macroeconomic performance in Nigeria. *BW Academic Journal*.

Ali, A., & Audi, M. (2018). Macroeconomic environment and tax revenues in Pakistan: An application of the ARDL approach. *Bulletin of Business and Economics, 7*(1), 30–39.

Amoh, J. K., & Adom, P. K. (2017). The determinants of tax revenue growth of an emerging economy. The case of Ghana. *International Journal of Economics and Accounting, 8*(3–4), 337–353. https://doi.org/10.1504/IJEA.2017.092280

Andrejovská, A., & Puliková, V. (2018). Tax revenues in the context of economic determinants. *Montenegrin Journal of Economics, 14*(1), 133–141. https://doi.org/10.14254/1800-5845/2018.14-1.10

Anuar, N. I. (2019). *The macroeconomic determinants of tax revenue: The case of Malaysia*.

Anyanwu, F. A., Ananwude, A. C., & Okolie, F. O. (2025). Impact of tax revenue on economic development: Nigeria's empirical investigation, 2000–2023. *Journal of Emerging Trends in Management Sciences and Entrepreneurship, 7*(1), 35–59.

Atolagbe, S., & Abiodun, A. A. (2021). Impact of some macroeconomic variables on tax revenue in Nigeria. *Nigerian Journal of Basic and Applied Sciences, 29*(2), 17–29. https://doi.org/10.4314/njbas.v29i2.3

Atolagbe, S., & Abiodun, A. A. (2021). Impact of some macroeconomic variables on tax revenue in Nigeria. *Nigerian Journal of Basic and Applied Sciences, 29*(2).

Bati, B. (2025). Institutional and macroeconomic determinants of tax revenue in Sub-Saharan African countries. *Future Business Journal, 11*, Article 217. https://doi.org/10.1186/s43093-025-00638-z

Boriçi, A., Barbullushi, E., Kalaj, E., & Kastrati, A. (2024). An econometric analysis of the macroeconomic determinants of tax revenue in the Western Balkans. In *Management, enterprise and benchmarking in the 21st century* (pp. 181–188).

Boukbech, R., Bousselhamia, A., & Ezzahid, E. (2018). Determinants of tax revenues: Evidence]from a sample of lower-middle-income countries.

Çalcalı, Ö., & Altıner, A. (2019). Macroeconomic determinants of tax revenues: An application to OECD countries. *Journal of Finance Letters, 34*(112), 175–198.

Chamisa, M. G., & Sunde, T. (2025). The impact of macroeconomic and social variables on income and consumption tax revenues: A case of Zimbabwe. *Cogent Economics & Finance, 13*(1), Article 2506700. https://doi.org/10.1080/23322039.2025.2506700

Chamisa, M. G., & Sunde, T. (2025). The impact of macroeconomic and social variables on income and consumption tax revenues: A case of Zimbabwe. *Cogent Economics & Finance, 13*(1), Article 2506700.

Chettri, K. K., Bhattarai, J. K., & Gautam, R. (2023). Determinants of tax revenue in South Asian countries. *Global Business Review*. Advance online publication. https://doi.org/10.1177/09721509231177784

Chettri, K. K., Bhattarai, J. K., & Gautam, R. (2023). Determinants of tax revenue in South Asian countries. *Global Business Review*. Advance online publication.

Cristea, L. A., Vodă, A. D., & Ungureanu, D. M. (2019). Determinant factors of fiscal revenues under current economic conditions. In *Proceedings of the 16th International Scientific Conference European Financial Systems 2019*.

Gobachew, N., Debela, K. L., & Shibiru, W. (2018). Determinants of tax revenue in Ethiopia. *Economics, 6*(6), 58.

Gökpınar, S. (2023). Monetary and macroeconomic determinants of tax revenue: The case of Türkiye. *Journal of Economics, Business and Political Researches, 8*(Special Issue), 202–216. https://doi.org/10.25204/iktisad.1302035

Ihuarulam, G., Sanusi, G. P., & Oderinde, L. O. (2021). Macroeconomic determinants of tax revenue in the Economic Community of West African States. *The European Journal of Applied Economics, 18*(2), 62–75. https://doi.org/10.5937/EJAE18-30727

Ikpesu, F. (2022). Determinants of tax revenue in Nigeria: Macroeconomic perspectives. *Journal of Taxation and Economic Development, 21*(2), 1–11.

Kalaš, B., Đurović-Todorović, J., & Đorđević, M. (2020). Panel estimating effects of macroeconomic determinants on tax revenue level in the European Union. *Industrija, 48*(3), 41–57. https://doi.org/10.5937/industrija48-27820

Shimada, E. (2023). Industry-specific analysis of the impact of changes in the macroeconomic environment on corporate profits and estimation of corporate tax revenue. *International Journal of Economic Policy Studies, 17*(1), 1–61. https://doi.org/10.1007/s42495-022-00090-9

Shivanda, A. R., & Obwogi, J. (2018). Effect of macroeconomic variables on tax revenue in Kenya. *International Journal of Social Sciences and Information Technology, 4*(11), 33–47.

Terefe, K. D., & Teera, J. (2018). Determinants of tax revenue in East African countries: An application of multivariate panel data cointegration analysis. *Journal of Economics and International Finance, 10*(11), 134–155. https://doi.org/10.5897/JEIF2018.0924

Torutein, O. (2025). Price-change effects on government tax revenue in Nigeria. *The Entrepreneur: Journal of Entrepreneurship Development Centre, 2*(1), 1–13.

Wawire, N. (2017). Determinants of value-added tax revenue in Kenya. *Journal of Economics Library, 4*(3), 322–344.