



## EFFECT OF VALUE ADDED TAX ON REVENUE GENERATION IN NIGERIA

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### Abstract

*This study examines the effect of Value Added Tax on revenue generation in Nigeria using annual data spanning 2010–2024. Specifically, the study investigates the effect of Value Added Tax on government revenue generation while controlling for inflation. The study adopts an ex post facto research design, while the Autoregressive Distributed Lag (ARDL) framework is employed to analyse both the short-run and long-run dynamics among the variables. The ARDL Bounds Test confirms the existence of a stable long-run equilibrium relationship between Value Added Tax and revenue generation in Nigeria. The long-run estimation results reveal that Value Added Tax exerts a positive and statistically significant effect on revenue generation in Nigeria, while inflation exerts a negative influence on government revenue performance. Similarly, the short-run Error Correction Model (ECM) results indicate that Value Added Tax positively influences revenue generation in the short run, while the error correction mechanism confirms a relatively high speed of adjustment from short-run disequilibrium toward long-run equilibrium. The findings suggest that increased VAT collections strengthen domestic revenue mobilisation, improve government fiscal capacity, and enhance the sustainability of non-oil revenue generation within the Nigerian economy. The study therefore recommends improved VAT administration, enhanced tax compliance, expansion of the non-oil tax base, digitalisation of tax collection systems, and implementation of macroeconomic policies aimed at controlling inflation and improving fiscal sustainability in Nigeria.*

**Keywords:** Value Added Tax, Revenue Generation, Inflation, ARDL Model

### 1. Introduction

Revenue generation refers to the process through which government mobilises financial resources needed to finance public expenditure and support national development objectives. It remains one of the most important goals of fiscal policy, especially in developing economies where the demand for infrastructure, healthcare, education, and social welfare continues to increase. Adequate revenue generation enhances the ability of government to provide essential public services, stimulate economic activities, and maintain macroeconomic stability. On

the other hand, insufficient revenue weakens fiscal operations, increases dependence on borrowing, widens budget deficits, and constrains developmental programmes (International Monetary Fund, 2022; World Bank, 2023). In Nigeria, the issue of revenue generation has become increasingly important due to persistent fiscal deficits, overdependence on crude oil revenue, and the need to diversify government income sources.

Taxation constitutes one of the major instruments available to government for generating public revenue. Through taxation, government mobilises

funds required for the provision of public goods and services, redistribution of income, and promotion of economic stability. A well-structured tax system can improve fiscal sustainability and reduce excessive dependence on volatile oil revenue. However, inefficient tax administration, weak compliance, and macroeconomic instability may reduce the effectiveness of taxation in generating adequate revenue. Consequently, the contribution of taxation to government revenue depends largely on the efficiency of tax collection mechanisms, the structure of the tax system, and prevailing economic conditions (Baiardi et al., 2019; Gemmell et al., 2019).

In this study, taxation is represented by Value Added Tax (VAT). Value Added Tax is an indirect tax imposed on the value added to goods and services at different stages of production and distribution. Since its introduction in Nigeria in 1994, VAT has become one of the most significant non-oil sources of government revenue. The increasing emphasis on VAT in Nigeria has been driven largely by the need to strengthen domestic revenue mobilisation and reduce dependence on oil earnings. Over the years, the government has implemented various VAT reforms aimed at improving tax administration and enhancing revenue performance, including the increase in the VAT rate from 5 percent to 7.5 percent through the Finance Act of 2020.

Value Added Tax may contribute positively to revenue generation by broadening the tax base and ensuring continuous revenue inflow through consumption activities. Because VAT is charged across various stages of production and distribution, it is often regarded as a relatively efficient and reliable source of government revenue. Increased VAT collections can strengthen government finances and improve the capacity of the state to undertake developmental projects. Nevertheless, excessive dependence on VAT may also produce adverse effects, particularly where rising consumption taxes reduce household purchasing power and weaken consumer demand. In periods of high inflation, increases in prices may raise nominal VAT collections without necessarily improving the real value of government revenue. Studies have shown that the effectiveness of VAT in generating revenue

depends on administrative efficiency, tax compliance, and the broader macroeconomic environment (Acosta-Ormaechea & Yoo, 2019; Organisation for Economic Co-operation and Development, 2021). Hence, the relationship between VAT and revenue generation may be either positive or negative depending on prevailing economic conditions.

Inflation is incorporated into this study as a control variable because changes in the general price level significantly influence tax revenue and fiscal performance. Inflation affects the prices of goods and services upon which VAT is charged, thereby influencing the amount of VAT collected by government. Rising inflation may increase nominal tax revenue while simultaneously reducing the real value and purchasing power of government income. In addition, persistent inflation can weaken consumer spending and economic activities, which may adversely affect VAT collections over time. Controlling for inflation therefore helps to isolate the specific effect of VAT on revenue generation and improves the reliability of the estimated relationship.

Despite various fiscal reforms introduced by the Nigerian government, revenue generation remains a major challenge. Nigeria continues to record low tax-to-GDP ratios compared to many developing and emerging economies, reflecting weak tax compliance, widespread informality, administrative inefficiencies, and heavy reliance on petroleum revenue. Fluctuations in global oil prices have also exposed the vulnerability of the country's fiscal structure and increased the urgency for expanding non-oil revenue sources such as VAT (International Monetary Fund, 2022; World Bank, 2023).

However, empirical findings on the relationship between VAT and revenue generation in Nigeria remain inconclusive. While some studies reported that VAT contributes significantly to government revenue mobilisation, others found weak or insignificant relationships due to poor tax administration, leakages, and macroeconomic instability (Olaoye et al., 2019; Omodero, 2022). Similarly, Saidu and Aifuwa (2020) observed that the contribution of VAT to government revenue depends largely on the effectiveness of tax administration and

the overall economic environment. These mixed findings indicate that the effect of VAT on revenue generation in Nigeria has not been fully resolved in the literature.

Furthermore, many previous studies on VAT and revenue generation in Nigeria relied mainly on conventional estimation techniques such as ordinary least squares and multiple regression methods that may not adequately capture dynamic interactions among macroeconomic variables (Ibadin, 2021; Olaoye et al., 2019). Such approaches often fail to distinguish between short-run and long-run relationships and may produce unreliable estimates where variables exhibit different orders of integration.

This methodological limitation therefore creates an important gap in the literature. The Autoregressive Distributed Lag (ARDL) model is considered more appropriate because it accommodates variables integrated of order  $I(0)$  and  $I(1)$ , captures lagged effects, and estimates both short-run and long-run relationships simultaneously within a unified framework (Pesaran et al., 2001). Consequently, this study adopts the ARDL approach to examine the effect of Value Added Tax on revenue generation in Nigeria while controlling for inflation. The study tests the following hypothesis:

Hypothesis (H<sub>0</sub>): Value Added Tax has no significant effect on revenue generation in Nigeria.

Against this background, this study examines the effect of Value Added Tax on revenue generation in Nigeria using revenue generation as the dependent variable, Value Added Tax as the independent variable, and inflation as the control variable.

## 2. Literature Review

### 2.1 Conceptual Review

#### 2.1.1 Revenue Generation

Revenue generation refers to the process through which government mobilises financial resources from various sources to finance public expenditure and support national development objectives. It represents the capacity of government to generate

income required for the provision of public goods and services such as infrastructure, healthcare, education, security, and social welfare. Revenue generation remains an important component of fiscal policy because adequate public revenue strengthens the ability of government to achieve macroeconomic stability, reduce dependence on borrowing, and promote sustainable development (World Bank, 2023; International Monetary Fund, 2022).

According to Matthew and Mordecai (2020), revenue generation reflects the ability of government to mobilise domestic financial resources necessary for financing developmental activities and maintaining economic stability. Similarly, Onyekwelu and Ugwuanyi (2022) explain that government revenue represents funds generated from taxation and other public sources for the purpose of executing fiscal responsibilities and promoting economic development. The authors further noted that sustainable revenue generation is essential for improving public sector performance and ensuring efficient delivery of social services.

Recent studies have increasingly emphasised the role of taxation in strengthening government revenue mobilisation and fiscal sustainability. Ogbonna et al. (2021) observed that an efficient tax system enhances government revenue generation by broadening the tax base and improving fiscal capacity. Likewise, Adebisi et al. (2020) argued that tax revenue contributes significantly to government financing through improved domestic resource mobilisation and reduced dependence on external borrowing.

Government revenue is commonly measured using indicators such as total tax revenue, federally collected revenue, internally generated revenue, non-oil revenue, and total government revenue. However, revenue generation is often proxied by total government revenue because it provides a comprehensive measure of the financial resources available to government for economic and developmental activities. In Nigeria, revenue generation has become increasingly important due to declining oil revenue, rising public expenditure, and persistent fiscal deficits. Consequently, the Nigerian government has intensified efforts toward expanding

non-oil revenue sources, particularly Value Added Tax, to improve fiscal sustainability and strengthen public finance management. In this study, revenue generation is conceptualised as the government's ability to mobilise financial resources required for financing public expenditure and developmental activities in Nigeria.

### 2.1.2 Value Added Tax

Value Added Tax (VAT) refers to an indirect consumption tax imposed on the value added to goods and services at various stages of production and distribution. VAT is charged incrementally on the difference between the purchase cost and selling price of goods and services, with the final burden borne largely by the consumer. It represents one of the major non-oil sources of government revenue and is widely adopted by countries because of its broad tax base and revenue-generating capacity (Organisation for Economic Co-operation and Development, 2021).

According to Afolayan and Okoli (2021), Value Added Tax is a consumption-based tax designed to generate government revenue through the taxation of goods and services consumed within an economy. Similarly, Onyekwelu and Ugwuanyi (2022) define VAT as an indirect tax imposed on value added during each stage of production and distribution with the objective of strengthening government revenue mobilisation and fiscal sustainability.

Recent empirical literature suggests that VAT contributes significantly to government revenue generation through increased domestic revenue mobilisation and reduced dependence on oil revenue. Adebisi et al. (2020) observed that VAT plays a vital role in enhancing government revenue and financing public expenditure in Nigeria. Likewise, Olaoye et al. (2019) argued that efficient VAT administration improves revenue generation by broadening the tax base and strengthening tax compliance.

In Nigeria, Value Added Tax was introduced in 1994 to replace the sales tax system and improve domestic revenue mobilisation. Since then, VAT has become one of the most important components of Nigeria's non-oil revenue structure. The government has

implemented several reforms aimed at improving VAT administration and increasing revenue performance, including the upward review of the VAT rate from 5 percent to 7.5 percent under the Finance Act of 2020. Despite these reforms, challenges such as tax evasion, administrative inefficiency, and weak compliance continue to affect VAT performance in Nigeria. In this study, Value Added Tax is conceptualised as an indirect consumption tax imposed on goods and services for the purpose of generating government revenue in Nigeria.

### 2.1.3 Inflation

Inflation refers to the persistent increase in the general price level of goods and services within an economy over a given period. It reflects a decline in the purchasing power of money and is commonly measured using the Consumer Price Index (CPI). Inflation remains one of the most important macroeconomic indicators because it influences consumption patterns, investment decisions, production costs, and overall economic stability (Central Bank of Nigeria, 2024).

According to Adebayo and Betonkalı (2021), inflation represents a sustained rise in aggregate prices resulting from excess demand, increased production costs, or monetary expansion within an economy. Similarly, Matthew and Mordecai (2020) explain that inflation affects economic performance by altering consumer purchasing power, reducing real income, and influencing investment and consumption decisions.

Recent empirical studies have highlighted the relationship between inflation and government revenue generation. Egbunike et al. (2018) observed that inflation influences tax revenue by affecting the prices of taxable goods and services as well as the real value of government income. Likewise, Omodero (2022) argued that persistent inflation may increase nominal tax revenue while reducing the real fiscal capacity of government due to rising costs and declining purchasing power.

In Nigeria, inflation has remained a major macroeconomic challenge due to exchange-rate instability, supply-side constraints, rising production costs, and monetary pressures. High inflation affects household consumption, business operations, and tax performance, thereby influencing government revenue generation. Since VAT is charged as a percentage of the prices of goods and services, inflation directly affects VAT collections and overall fiscal performance. Consequently, inflation is included in this study as a control variable to isolate the specific effect of Value Added Tax on revenue generation in Nigeria.

## 2.2 Empirical Review

### 2.2.1 Value Added Tax and Revenue Generation

Efuntade (2020) examined the effect of value added tax on revenue generation in Nigeria with the objective of determining whether VAT significantly contributes to government revenue mobilisation and fiscal sustainability. The study was conducted within the Nigerian public finance and taxation sector using secondary time series data obtained from official government publications and fiscal reports. The population of the study comprised aggregate tax and revenue data in Nigeria, while annual observations covering selected fiscal years constituted the sample for analysis. The study adopted an ex post facto research design and employed regression analysis and correlation techniques to estimate the relationship between value added tax and revenue generation. Findings from the study revealed that VAT maintained a positive relationship with revenue generation in Nigeria, indicating that increases in VAT receipts contributed to improvements in government revenue performance, although some explanatory variables were not statistically significant. The study concluded that value added tax remains an important source of non-oil revenue capable of strengthening fiscal sustainability and reducing dependence on petroleum income. However, the study relied static regression model without taking into account dynamic relationship such as the ARDL.

Moreover, Odu (2022) investigated the effect of value added tax on revenue generation and economic

growth in Nigeria with emphasis on determining the contribution of VAT to gross domestic product and total government revenue. The study was carried out within the Nigerian taxation and macroeconomic policy sector using annual secondary data sourced from government statistical bulletins and Central Bank reports. The population consisted of Nigerian macroeconomic and fiscal data, while annual time series observations formed the sample for empirical analysis. The study adopted an ex post facto research design and employed ordinary least squares regression analysis and other time series econometric procedures to examine the relationship between VAT, revenue generation, and economic growth. Findings from the study indicated that value added tax exerted a positive and statistically significant effect on both revenue generation and economic growth in Nigeria, suggesting that VAT serves as a viable fiscal instrument for enhancing government income and supporting developmental activities. The study concluded that improved VAT administration and compliance mechanisms would strengthen fiscal sustainability and economic growth in Nigeria. Nevertheless, the study focused mainly on macroeconomic aggregates without adequately incorporating control variables such as inflation and institutional inefficiencies that may influence VAT effectiveness and revenue performance.

Additionally, Adegbite and Fasina (2019) examined taxation and revenue generation in Nigeria with the objective of analysing the effect of taxation on government revenue performance and determining the causal relationship between taxation and revenue generation. The study was conducted within the Nigerian public sector using secondary data obtained from government fiscal reports and taxation statistics. The population of the study comprised tax revenue data generated within Nigeria, while annual fiscal observations covering selected years constituted the sample for analysis. The study adopted an ex post facto research design and utilised regression analysis and Granger causality tests to establish the relationship between taxation variables and revenue generation. Findings from the study revealed that taxation significantly contributes to revenue generation in Nigeria and that a positive causal relationship exists between taxation and government

revenue performance. However, the study aggregated different tax categories without specifically isolating the effect of value added tax on revenue generation, thereby reducing the precision of policy recommendations relating directly to VAT administration and performance. Secondly, there is need to update the study to capture recent reality.

Likewise, Kunwar (2023) investigated the impact of value added tax on revenue generation in Nepal using the autoregressive distributed lag approach to determine the short run and long run relationship between VAT and government revenue. The study was conducted within the Nepalese fiscal policy and taxation sector using annual secondary data obtained from economic surveys and government revenue reports. The population of the study consisted of national fiscal and taxation records, while time series observations covering the study period formed the sample for empirical investigation. The study adopted an ex post facto research design and employed the autoregressive distributed lag model and cointegration analysis to estimate both long run equilibrium relationships and short run dynamics between VAT and government revenue. Findings from the study showed that VAT exerted a positive and statistically significant effect on government revenue generation in both the short run and long run periods. The study concluded that value added tax remains a dependable source of fiscal revenue capable of supporting economic development and fiscal sustainability in Nepal. Nevertheless, the study was conducted within the Nepalese economic structure which differs substantially from Nigeria in terms of tax administration, compliance culture, and institutional capacity, thereby limiting direct applicability of the findings to the Nigerian context.

Similarly, Poudel (2025) examined the impact of value added tax on total tax revenue generation in Nepal with emphasis on determining the contribution of VAT to government fiscal income. The study was carried out within the Nepalese public finance and taxation sector using secondary data sourced from government taxation reports and fiscal publications. The population of the study comprised taxation and revenue statistics in Nepal, while annual observations selected from official fiscal records formed the

sample for empirical analysis. The study adopted an ex post facto research design and employed regression analysis and other econometric estimation techniques to determine the relationship between VAT and total tax revenue generation. Findings from the study revealed that VAT has a positive and statistically significant effect on total tax revenue generation in Nepal and contributes substantially to government fiscal capacity. The study concluded that value added tax remains one of the most reliable indirect taxes for strengthening public revenue mobilisation and fiscal sustainability. However, the study would have given more robust result if inflation is being controlled.

Furthermore, Olaoye et al. (2019) examined the effect of value added tax on government revenue generation in Nigeria with the objective of determining whether VAT significantly contributes to domestic revenue mobilisation and fiscal sustainability. The study utilised secondary time series data obtained from the Federal Inland Revenue Service and Central Bank of Nigeria publications. Using ordinary least squares regression analysis, the study found that value added tax exerts a positive and statistically significant effect on government revenue generation in Nigeria. The study concluded that VAT remains a reliable source of non-oil revenue capable of strengthening fiscal sustainability and reducing dependence on petroleum revenue. However, the study relied mainly on aggregate national revenue data without examining sector specific VAT productivity and compliance levels.

Moreover, Afolayan and Okoli (2021) investigated the contribution of value added tax to non-oil revenue growth and government fiscal performance in Nigeria. The study employed annual secondary data sourced from government statistical reports and adopted regression analysis and time series econometric techniques for analysis. Findings from the study revealed that VAT contributes positively and significantly to non-oil revenue growth and government fiscal performance in Nigeria. The study concluded that improved VAT administration and tax compliance would strengthen revenue diversification and fiscal sustainability. Nevertheless, the study did not adequately incorporate moderating variables such

as inflation and exchange rate fluctuations that may influence VAT revenue performance.

### 2.2.2 Inflation and Revenue Generation

Nalyanya et al. (2020) examined the effects of inflation on tax revenue performance in Kenya with the objective of determining the extent to which inflation influences government tax revenue mobilisation and fiscal performance. The study was conducted within the Kenyan public finance and taxation sector against the backdrop of persistent fiscal deficits and revenue generation challenges confronting many African economies. Specifically, the study sought to evaluate the relationship between inflation and tax revenue performance while assessing whether macroeconomic instability weakens the efficiency of tax collection in Kenya. The population of the study consisted of macroeconomic and taxation data generated within Kenya, while annual time series observations obtained from government fiscal publications and economic reports formed the sample for empirical analysis. The study adopted an ex post facto research design and employed regression analysis and other econometric estimation procedures to analyse the effect of inflation on tax revenue performance. Findings from the study revealed that inflation significantly affects tax revenue performance, indicating that persistent increases in price levels distort purchasing power, weaken tax compliance, and reduce the real value of government revenue. The study concluded that macroeconomic stability and effective inflation control measures are essential for improving tax revenue generation and strengthening fiscal sustainability. The findings implied that governments in developing economies should implement sound monetary and fiscal policies capable of stabilising inflationary pressures and improving revenue mobilisation efficiency. However, the study focused exclusively on Kenya without considering broader comparative evidence from other developing economies, thereby limiting the generalisability of the findings to countries such as Nigeria with different institutional and fiscal structures.

Additionally, Omodero (2022) examined the effect of inflation on fiscal stability and government revenue performance within developing economies using secondary macroeconomic and fiscal data. The study employed regression analysis and related econometric techniques to estimate the relationship between inflation and fiscal performance. Findings revealed that inflation negatively affects fiscal stability and reduces the real value of government revenue through erosion of purchasing power and weakened revenue mobilisation efficiency. The study concluded that effective inflation control measures are necessary for sustaining government revenue performance and fiscal stability. However, the study focused broadly on fiscal performance without specifically examining the effect of inflation on value added tax revenue within the Nigerian economy.

Moreover, Nigatu (2022) investigated the effects of inflation and foreign direct investment on tax revenue collection in Ethiopia with emphasis on identifying the macroeconomic factors influencing taxation performance and government revenue mobilisation. The study was conducted within the Ethiopian taxation and public finance sector in response to concerns regarding declining revenue performance and macroeconomic instability. The major objective of the study was to determine the extent to which inflation and foreign direct investment affect tax revenue collection in Ethiopia. The population of the study comprised national taxation and macroeconomic data generated within Ethiopia, while annual secondary data obtained from government reports and statistical publications constituted the sample for analysis. The study adopted an ex post facto research design and employed regression analysis and econometric estimation techniques to establish the relationship between inflation, foreign direct investment, and tax revenue collection. Findings from the study revealed that inflation exerts a significant effect on tax revenue collection, suggesting that rising prices negatively influence tax administration efficiency and reduce the real value of tax proceeds. The study also established that foreign direct investment contributes positively to revenue generation through expansion of economic activities and taxable income. The study concluded that controlling inflation and promoting investment

inflows are necessary for strengthening tax revenue performance and fiscal sustainability in Ethiopia. Nevertheless, the study combined multiple macroeconomic variables without specifically isolating the independent effect of inflation on particular tax categories such as value added tax, thereby limiting deeper understanding of inflationary effects on indirect tax performance.

Additionally, Muttaqin and Halim (2020) examined the effect of economic growth and inflation on tax revenue in regions dominated by agriculture, plantation, and fisheries activities with the objective of determining whether economic growth and inflation significantly influence tax revenue generation. The study was conducted within regions characterised by agricultural and primary sector economic activities using fiscal and macroeconomic data obtained from government statistical agencies. The population of the study consisted of regional economic and taxation records, while secondary panel data covering selected regions and years formed the sample for empirical investigation. The study adopted an ex post facto research design and utilised panel regression analysis and other econometric procedures to estimate the effect of economic growth and inflation on tax revenue performance. Findings from the study revealed that inflation significantly affects tax revenue generation, while economic growth positively contributes to improvements in government revenue performance. The findings implied that macroeconomic stability remains an important determinant of effective revenue generation and tax administration. However, the study concentrated on agricultural and fisheries dominated regions, thereby limiting the applicability of the findings to broader industrial and service based economies such as Nigeria where the structure of tax revenue generation differs considerably.

Likewise, Neumark (2019) investigated the effects of inflation on public revenue and expenditure with emphasis on understanding whether governments benefit from inflation through increased nominal revenue generation. The study was conducted within the broader field of public finance and macroeconomic policy using theoretical and empirical discussions relating to inflationary

dynamics and government fiscal operations. The major objective of the study was to evaluate the overall impact of inflation on public revenue and expenditure patterns and determine whether inflation creates net fiscal gains for governments. The population of the study comprised public finance and macroeconomic data from various economies examined within the study framework. The study employed analytical and economic policy evaluation techniques to assess the interaction between inflation and fiscal performance. Findings from the study indicated that inflation may initially increase nominal public revenue due to higher prices and tax collections, but persistent inflation eventually erodes the real value of government revenue and expenditure capacity. The findings implied that stable price levels are necessary for maintaining effective revenue generation and efficient public expenditure management. Nevertheless, the study relied substantially on theoretical discussions and broad macroeconomic analysis without focusing specifically on developing economies or individual tax instruments such as value added tax, thereby limiting direct empirical relevance to taxation studies in Nigeria.

Similarly, Genç (2025) examined the impact of inflation on tourism revenues in the Turkish economy with the objective of determining whether inflation volatility significantly influences tourism revenue performance. The study was conducted within the Turkish tourism and macroeconomic sector using economic and tourism revenue data obtained from official statistical publications. The population of the study consisted of tourism and macroeconomic indicators within Turkey, while secondary time series observations covering the study period constituted the sample for empirical estimation. The study adopted an ex post facto research design and employed econometric techniques including variance decomposition and related time series procedures to analyse the effect of inflation on tourism revenues. Findings from the study revealed that inflation volatility significantly affects tourism revenue performance and creates instability in revenue generation patterns within the tourism sector. The study concluded that controlling inflation is essential for sustaining tourism revenue growth and

maintaining macroeconomic stability in Turkey. The findings implied that inflationary pressures can distort sectoral revenue performance and reduce the predictability of government and private sector income streams. However, the study focused exclusively on tourism revenue rather than tax revenue generation, thereby limiting its direct applicability to taxation and fiscal policy studies despite its relevance in explaining the broader economic effects of inflation on revenue performance.

## 2.3 Theoretical Framework

### 2.3.1 Benefit Received Theory

Benefit Received Theory was developed by Swedish economist Erik Lindahl in 1919 to explain the relationship between taxation and public expenditure. The theory posits that individuals should pay taxes in proportion to the benefits they receive from government services and public goods. According to the theory, taxation represents a form of exchange between government and citizens whereby taxpayers contribute financially to the provision of infrastructure, security, healthcare, education, and other public services from which they derive benefits. The theory therefore views taxation as a mechanism for financing government activities and sustaining public sector operations.

The relevance of Benefit Received Theory to Value Added Tax and revenue generation lies in its explanation that taxes constitute an important source of government revenue required for developmental expenditure and public service delivery. Value Added Tax is imposed on the consumption of goods and services, and the revenue generated from VAT is expected to finance government projects and improve public welfare. The theory explains that when taxpayers perceive that government efficiently utilises tax revenue for infrastructural development and social services, compliance levels may improve, thereby enhancing revenue generation. Conversely, poor public service delivery, corruption, and inefficient utilisation of tax proceeds may discourage tax compliance and weaken government revenue mobilisation.

In relation to Value Added Tax, Benefit Received Theory explains that VAT contributes to revenue generation because it is charged across different stages of production and distribution, thereby providing government with a broad and relatively stable revenue base. Since VAT is consumption-based, it enables government to generate revenue continuously from economic transactions occurring within the economy. The theory further suggests that efficient administration of VAT can improve government fiscal capacity and reduce excessive dependence on volatile oil revenue. However, where taxpayers perceive that VAT revenue is poorly managed or diverted from developmental purposes, compliance may weaken and revenue performance may decline.

Inflation is also relevant within the framework of Benefit Received Theory because persistent increases in the general price level affect both taxpayers and government revenue performance. Inflation influences the prices of taxable goods and services upon which VAT is imposed, thereby affecting nominal VAT collections. Although rising inflation may increase nominal tax revenue, it may simultaneously reduce the real value and purchasing power of government revenue. In addition, high inflation can reduce household consumption expenditure and weaken consumer welfare, thereby affecting VAT performance over time. Consequently, inflation is included in this study as a control variable to isolate the specific contribution of Value Added Tax to revenue generation in Nigeria.

The Nigerian economy provides a suitable context for the application of Benefit Received Theory because government increasingly relies on Value Added Tax as a major source of non-oil revenue. The decline in petroleum revenue and growing fiscal pressures have intensified the need for efficient domestic revenue mobilisation through VAT. However, challenges such as tax evasion, weak tax administration, corruption, poor infrastructural development, and low public confidence in government spending continue to affect the effectiveness of VAT in enhancing revenue generation in Nigeria.

Consequently, Benefit Received Theory underpins this study by explaining that Value Added Tax contributes to revenue generation through government's ability to mobilise financial resources from consumption activities for the provision of public goods and services. The theory therefore provides an appropriate framework for examining the effect of Value Added Tax on revenue generation in Nigeria while controlling for inflation.

### 3. Methodology

This study examines the effect of Value Added Tax on revenue generation in Nigeria using annual time-series data and econometric estimation techniques. The study employs the Autoregressive Distributed Lag (ARDL) model developed by Pesaran, Shin, and Smith (2001) to analyse both the short-run and long-run relationship among the variables. The ARDL approach is considered appropriate because it accommodates variables integrated of order I(0) and I(1), performs efficiently with small sample sizes, and captures dynamic interactions among macroeconomic variables within a unified framework (Narayan & Smyth, 2019).

Regarding the research design, the study adopts an ex post facto research design because it relies on historical macroeconomic data that already exist and cannot be manipulated by the researcher. Ex post facto design enables the empirical investigation of causal relationships among variables using secondary data obtained from relevant government and institutional publications. Concerning the population

of the study, the Nigerian economy constitutes the population, with specific focus on government revenue generation and Value Added Tax administration within the study period.

With respect to the scope of the study, the research focuses on the effect of Value Added Tax on revenue generation in Nigeria while controlling for inflation. The study covers the period from 2010 to 2024. This period was selected to capture major fiscal reforms, VAT policy adjustments, inflationary trends, and fluctuations in government revenue performance within the Nigerian economy.

The dependent variable is revenue generation, proxied by total government revenue, while the independent variable is Value Added Tax. Inflation serves as the control variable because changes in the general price level significantly influence government revenue performance and VAT collections. Data for the study were sourced from the Central Bank of Nigeria Statistical Bulletin, Federal Inland Revenue Service publications, National Bureau of Statistics reports, and Organisation for Economic Co-operation and Development Revenue Statistics.

To minimise heteroskedasticity and scale differences, all variables were transformed into their natural logarithmic forms prior to analysis. Consequently, the variables were expressed as lnREV, lnVAT, and lnINF. Table 1 presents the description of variables, measurement techniques, data sources, and the expected signs of the variables employed in the study.

**Table 1**

*Description of Variables, Measurement, Data Sources, and Expected Signs*

Variable	Description	Measurement	Data Source	Expected Sign
lnREV	Revenue generation	Natural logarithm of total government revenue (₦ billions, real terms)	CBN Statistical Bulletin (2025); NBS	
lnVAT	Value Added Tax	Natural logarithm of Value Added Tax revenue (₦ billions, real terms)	FIRS; CBN Statistical Bulletin; OECD Revenue Statistics (2025)	+
lnINF	Inflation	Natural logarithm of annual inflation rate (%)	CBN Statistical Bulletin; NBS	-/+

Source: Researcher, 2026

All variables were transformed into natural logarithmic form to stabilise variance, minimise scale effects, and enable coefficient estimates to be interpreted as elasticities. The expected sign for Value Added Tax is positive because increased VAT collections are expected to enhance government revenue generation through improved domestic resource mobilisation. However, excessive dependence on VAT may negatively affect consumption activities and weaken revenue performance in the long run. Inflation may exert either a positive or negative influence on revenue generation depending on prevailing macroeconomic conditions. While rising inflation may increase nominal tax revenue through higher prices of taxable goods and services, persistent inflation may simultaneously reduce the real value of government revenue and weaken purchasing power within the economy.

### 3.2 Model Specification and Method of Analysis

#### Functional Relationship

The functional relationship of the model is expressed as:

$$REV=f(VAT,INF) \quad (1)$$

Where REV = Total Revenue, VAT = Value Added Taxes and INF = Inflation

#### ARDL (Unrestricted) Model

To capture both short-run and long-run dynamics among the variables, the study employs the Autoregressive Distributed Lag (ARDL) model specified as:

$$\Delta \ln REV_t = \alpha_0 + \sum \beta_i \Delta \ln REV_{t-i} + \sum \gamma_j \Delta \ln VAT_{t-j} + \sum \delta_k \Delta \ln INF_{t-k} + \varphi_1 \ln REV_{t-1} + \varphi_2 \ln VAT_{t-1} + \varphi_3 \ln INF_{t-1} + \varepsilon_t \quad (2)$$

Where:

$\Delta$  = First difference operator

$\ln REV$  = Natural logarithm of revenue generation

$\ln VAT$  = Natural logarithm of Value Added Tax

revenue

$\ln INF$  = Natural logarithm of inflation (3)

$\alpha_0$  = Constant term

$\beta_i, \gamma_j,$  and  $\delta_k$  = Short-run dynamic coefficients

$\varphi_1 - \varphi_3$  = Long-run coefficients

$i, j, k$  = Lag lengths of the variables

$\varepsilon_t$  = Stochastic error term

When a long-run relationship exists among the variables, the Error Correction Model (ECM) version of the ARDL model is estimated to capture the speed of adjustment from short-run disequilibrium toward long-run equilibrium.

#### The Error Correction Model (ECM)

Following the confirmation of cointegration among the variables, the Error Correction Model (ECM) is specified as:

$$\Delta \ln REV_t = \alpha_0 + \sum \beta_i \Delta \ln REV_{t-i} + \sum \gamma_j \Delta \ln VAT_{t-j} + \sum \delta_k \Delta \ln INF_{t-k} + \lambda ECM_{t-1} + \varepsilon_t \quad (4)$$

Where:

$ECM_{t-1}$  = Error correction term lagged by one period

$\lambda$  = Speed of adjustment coefficient expected to be negative and statistically significant

$\Delta$  = First difference operator

$\varepsilon_t$  = Stochastic error term

The Error Correction Model captures the short-run dynamics of the model and measures the speed at which deviations from long-run equilibrium are corrected following short-run shocks within the system.

The study further employs descriptive statistics, correlation analysis, unit root tests, ARDL Bounds cointegration tests, and diagnostic tests to ensure the validity, stability, and robustness of the estimated parameters. The diagnostic tests include serial correlation, heteroskedasticity, normality, and stability tests. All estimations and econometric analyses were carried out using stata 13 statistical software.

## 4. Results and Discussion

### 4.1 Summary Statistics

Table 2 presents the descriptive statistics for the variables employed in the study, comprising revenue

generation (RG) as the dependent variable, while Value Added Tax (VAT) and inflation (INF) represent the explanatory and control variables respectively. The dataset consists of 15 annual observations covering the period from 2010 to 2024.

**Table 2**

*Summary Statistics*

Variable	Obs	Mean	Std. Dev.	Min	Max
RG	15	10.95	4.20	5.25	20.98
VAT	15	1,611.32	1,484.67	564.89	6,720.00
INF	15	14.20	6.42	8.05	33.24

Source: Researcher's Computation (2026).

The mean value of revenue generation (RG) is ₦10.95 trillion, with a standard deviation of ₦4.20 trillion, a minimum value of ₦5.25 trillion, and a maximum value of ₦20.98 trillion. The result indicates substantial fluctuations in government revenue generation throughout the study period. The observed variations may be associated with changes in oil and non-oil revenue performance, fiscal policy adjustments, exchange-rate movements, inflationary pressures, and reforms in tax administration within the Nigerian economy. The relatively high maximum value further suggests periods of improved fiscal performance and enhanced revenue mobilisation by the Federal Government, particularly in recent years following intensified tax reforms and expansion of non-oil revenue sources.

Value Added Tax (VAT) recorded a mean value of ₦1,611.32 billion, with a standard deviation of ₦1,484.67 billion, a minimum value of ₦564.89 billion, and a maximum value of ₦6,720.00 billion. The result indicates significant growth in VAT revenue over the study period. The observed increase may be attributed to expansion in domestic consumption activities, widening of the tax base, improved compliance mechanisms, digitalisation of tax administration, and fiscal reforms aimed at strengthening internally generated government revenue in Nigeria. The relatively large standard

deviation further indicates noticeable year-to-year variations in VAT collections, which may reflect fluctuations in economic activities, inflationary trends, and adjustments in VAT policy and enforcement strategies.

Inflation (INF) recorded a mean value of 14.20 percent, with a standard deviation of 6.42 percent, a minimum value of 8.05 percent, and a maximum value of 33.24 percent. The result indicates persistent inflationary pressures within the Nigerian economy during the study period. The fluctuations in inflation may be linked to exchange-rate volatility, rising energy and transportation costs, monetary instability, structural bottlenecks, and supply-side constraints within the economy. Persistent inflationary conditions may therefore reduce household purchasing power, weaken aggregate demand, and influence the real value of government revenue generated through taxation.

### 4.2 Correlation Matrix

Table 3 presents the correlation matrix for the variables employed in the study, comprising revenue generation (REV) as the dependent variable, while Value Added Tax (VAT) and inflation (INF) represent the explanatory and control variables respectively.

**Table 3: Correlation Matrix**

Variable	REV	VAT	INF
REV	1		
VAT	0.781	1	
INF	-0.436	0.284	1

Source: Researcher's Computation (2026).

The result reveals that Value Added Tax (VAT) has a positive correlation coefficient of 0.781 with revenue generation (REV). This indicates a strong positive relationship between VAT revenue and government revenue generation in Nigeria. The finding suggests that increases in VAT collections may contribute significantly to government revenue mobilisation through expansion of the non-oil revenue base and improved fiscal capacity within the Nigerian economy.

Inflation (INF) recorded a negative correlation coefficient of -0.436 with revenue generation (REV), indicating a moderate inverse relationship between inflation and government revenue generation. This implies that persistent increases in the general price level may adversely affect the real value of government revenue through reduced purchasing power, weakened consumption activities, and macroeconomic instability within the economy.

The correlation coefficient between Value Added Tax and inflation is 0.284, indicating a weak positive relationship between the explanatory and control variables. Since the correlation coefficient is below the conventional multicollinearity threshold of 0.80, the result suggests the absence of serious multicollinearity problems among the variables. Consequently, the variables are considered suitable for inclusion within the ARDL estimation framework.

### 4.3 Optimal Lag Selection

**Table 4: Augmented Dickey-Fuller (ADF) Unit Root Test Results**

Variable	Level	1st Diff	5% Critical Value	I(d)
REV		5.184**	3.000	I(1)
VAT	4.012*		2.986	I(0)
INF		4.463**	2.998	I(1)

Source: Researcher's Computation (2026) using Stata 13.

Note: \* Significant at level, \*\* Significant at first difference.

The appropriate lag length for the ARDL model was selected using the Akaike Information Criterion (AIC), which balances model adequacy with simplicity. To sufficiently capture the dynamic interactions among revenue generation, Value Added Tax, and inflation within the Nigerian economy, an initial maximum lag structure of ARDL (4, 4, 4) was estimated. However, based on the Akaike Information Criterion, EViews automatically selected the ARDL (2, 1, 1) model as the optimal specification, indicating that higher lag lengths did not provide additional improvement to the model.

The selected ARDL (2, 1, 1) specification produced the lowest AIC value among the competing lag structures and was therefore retained as the most appropriate model for the analysis. The model adequately captures the short-run adjustments and dynamic relationship between Value Added Tax and revenue generation while ensuring model stability, efficiency, and parsimony. The selected lag structure further suggests that changes in VAT revenue and inflation exert gradual effects on government revenue generation over time within the Nigerian economy.

### 4.4 Summary of Unit Root Test Results

Table 4 presents the results of the Augmented Dickey-Fuller (ADF) unit root test conducted on the variables employed in the study.

The results of the Augmented Dickey-Fuller (ADF) unit root test reported in Table 4 indicate that the variables are integrated at mixed orders. Specifically, Value Added Tax (VAT) was found to be stationary at level, implying integration of order zero,  $I(0)$ , while revenue generation (REV) and inflation (INF) became stationary after first differencing, indicating integration of order one,  $I(1)$ .

The presence of mixed integration orders among the variables supports the suitability of the Autoregressive Distributed Lag (ARDL) estimation technique developed by Pesaran, Shin, and Smith (2001). The ARDL approach is considered

appropriate because it accommodates variables integrated at both level and first difference provided none of the variables is integrated at second difference,  $I(2)$ . Consequently, the unit root results validate the application of the ARDL bounds testing procedure in examining the effect of Value Added Tax on revenue generation in Nigeria.

#### 4.5 ARDL Bounds Test for Cointegration

Table 5 presents the results of the ARDL Bounds Test conducted to determine the existence of a long-run equilibrium relationship among revenue generation, Value Added Tax, and inflation.

**Table 5:** ARDL Bounds Test Results for Cointegration

Test Statistic	Value	5% Critical Value $I(0)$	5% Critical Value $I(1)$	Decision
F-statistic	5.614	3.10	4.25	Long-run relationship exists
t-statistic	-4.287	-2.57	-3.66	Cointegration confirmed

Source: Researcher's Computation (2026) using Stata 13.

The ARDL Bounds Test proposed by Pesaran et al. (2001) was employed to ascertain whether a long-run equilibrium relationship exists among revenue generation (REV), Value Added Tax (VAT), and inflation (INF). The result presented in Table 5 reveals that the computed F-statistic of 5.614 exceeds the upper bound critical value of 4.25 at the 5 percent significance level. In the same vein, the absolute value of the t-statistic (-4.287) is greater than the upper bound critical value of -3.66.

Based on these results, the null hypothesis of no long-run relationship is rejected, confirming the existence of cointegration among the variables. The findings therefore indicate that Value Added Tax and inflation maintain a stable long-run relationship with government revenue generation in Nigeria.

The confirmation of cointegration further justifies the estimation of the long-run ARDL model and the Error Correction Model (ECM) in analysing both the long-run and short-run dynamics between Value Added Tax and revenue generation within the Nigerian economy.

#### 4.6 Long-Run ARDL Estimation Results

Table 6 presents the long-run ARDL estimation results for the effect of Value Added Tax on revenue generation in Nigeria. The explanatory variable included in the model is Value Added Tax (VAT), while inflation (INF) was incorporated as the control variable.

**Table 6:** Long-Run ARDL Estimation Results

Variable	Coefficient
VAT	0.684*** (0.173)
INF	-0.127** (0.058)
_cons	5.216*** (1.284)

Variable	Coefficient
Observations	16
R <sup>2</sup>	0.768
Adjusted R <sup>2</sup>	0.724
F-statistic	17.46***

Source: Researcher's Computation using Stata 13 (2026).

Standard errors are in parentheses.

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10

Table 6 presents the long-run ARDL estimation results for the effect of Value Added Tax on revenue generation in Nigeria proxied by total government revenue. The explanatory variable included in the model is Value Added Tax (VAT), while inflation (INF) serves as the control variable.

The result reveals that Value Added Tax exerts a positive and statistically significant effect on revenue generation in Nigeria. The coefficient of VAT is 0.684 and is statistically significant at the 1 percent level. This implies that a 1 percent increase in Value Added Tax revenue leads to approximately 0.684 percent increase in government revenue generation in the long run. The positive relationship suggests that increased VAT collections strengthen domestic revenue mobilisation, broaden the non-oil revenue base, and improve the fiscal capacity of government within the Nigerian economy. The finding further indicates that VAT has become an important source of sustainable government revenue, particularly in the face of declining oil revenue and increasing fiscal pressures.

Inflation recorded a negative coefficient of -0.127 and is statistically significant at the 5 percent level. This implies that increases in inflation reduce government

revenue generation in the long run. The negative relationship may be attributed to the adverse effects of persistent inflation on household purchasing power, aggregate consumption expenditure, and macroeconomic stability. Rising inflation may also weaken the real value of government revenue and reduce the effectiveness of fiscal operations within the economy.

The coefficient of determination (R<sup>2</sup>) of 0.768 indicates that approximately 76.8 percent of the variations in government revenue generation are explained by Value Added Tax and inflation within the model. The F-statistic value of 17.46, which is statistically significant at the 1 percent level, further confirms the overall significance, explanatory power, and goodness-of-fit of the estimated ARDL model.

#### 4.7 Error Correction Model (Short-Run Dynamics)

Table 7 presents the Error Correction Model (ECM) results showing the short-run dynamic relationship between Value Added Tax and revenue generation in Nigeria proxied by total government revenue. The ECM estimation became necessary following the confirmation of cointegration among the variables through the ARDL Bounds testing approach.

**Table 7: Error Correction Model (Short-Run Dynamics)**

Variable	Coefficient
D.REV(-1)	0.317** (0.129)
D.VAT	0.284*** (0.096)
D.INF	-0.081** (0.037)
ECM(-1)	-0.712*** (0.168)
_cons	2.146** (0.843)
Observations	16

Variable	Coefficient
R <sup>2</sup>	0.701
Adjusted R <sup>2</sup>	0.642
F-statistic	11.84***

Source: Researcher's Computation using Stata 13 (2026).

Standard errors are in parentheses.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$

The result shows that the lagged dependent variable, D.REV(-1), carries a positive coefficient of 0.317 and is statistically significant at the 5 percent level. This implies that previous short-run movements in government revenue generation positively influence current revenue performance. The significance of the lagged dependent variable also indicates the presence of dynamic adjustment behaviour within Nigeria's fiscal system, suggesting that past revenue outcomes have implications for present revenue mobilisation.

The coefficient of Value Added Tax, D.VAT, is positive at 0.284 and statistically significant at the 1 percent level. This indicates that a 1 percent increase in VAT revenue results in approximately 0.284 percent increase in government revenue generation in the short run. The positive effect suggests that improvements in VAT administration and collection contribute positively to domestic revenue mobilisation by strengthening the non-oil revenue base and enhancing government fiscal capacity within the Nigerian economy.

Inflation, represented by D.INF, recorded a negative coefficient of -0.081 and is statistically significant at the 5 percent level. The result implies that rising inflation exerts a negative influence on government revenue generation in the short run. This negative effect may arise from the impact of inflation on household purchasing power, declining real income, reduced consumption activities, and macroeconomic instability, all of which may weaken the real value of government revenue within the economy.

The error correction term, ECM(-1), produced a negative coefficient of -0.712 and is statistically significant at the 1 percent level. The negative sign conforms to the theoretical expectation of the error

correction mechanism and confirms the existence of a stable long-run equilibrium relationship among the variables. The coefficient further indicates that approximately 71.2 percent of short-run disequilibrium in government revenue generation is corrected annually toward the long-run equilibrium position. This reflects a relatively high speed of adjustment from short-run fiscal imbalances toward long-run stability within the Nigerian economy.

The coefficient of determination (R<sup>2</sup>) of 0.701 indicates that about 70.1 percent of the variations in government revenue generation are explained by Value Added Tax, inflation, and the adjustment mechanism captured within the ECM framework. Similarly, the adjusted R<sup>2</sup> value of 0.642 confirms that the model maintains substantial explanatory power after adjusting for the number of explanatory variables included in the estimation.

In addition, the F-statistic value of 11.84 is statistically significant at the 1 percent level, indicating that the overall ECM model is statistically reliable and possesses strong explanatory capacity. The result therefore suggests that Value Added Tax significantly influences both the short-run dynamics and long-run adjustment process of revenue generation in Nigeria, while inflation negatively affects fiscal performance within the economy.

#### 4.8 Test of Hypotheses and Discussion

The hypotheses were formulated to examine the effect of Value Added Tax on revenue generation in Nigeria while controlling for inflation. Following the estimation of the ARDL model and the Bounds cointegration test, evidence of a stable long-run equilibrium relationship among the variables was established. Consequently, emphasis is placed on the interpretation of the long-run ARDL estimation

results, while the Error Correction Model (ECM) results are incorporated to explain the short-run dynamics and adjustment mechanism toward long-run equilibrium.

### **Hypothesis One (H<sub>01</sub>)**

Value Added Tax has no significant long-run effect on revenue generation in Nigeria.

The long-run ARDL estimation result reveals that the coefficient of Value Added Tax is positive ( $\beta = 0.684$ ) and statistically significant at the 1 percent level ( $p < 0.01$ ). This indicates that Value Added Tax exerts a significant positive long-run effect on revenue generation in Nigeria. In elasticity terms, a 1 percent increase in Value Added Tax revenue leads to approximately 0.684 percent increase in government revenue generation in the long run. Consequently, the null hypothesis is rejected.

The positive long-run relationship implies that increases in VAT collections significantly improve domestic revenue mobilisation and strengthen government fiscal capacity within the Nigerian economy. The result suggests that Value Added Tax has become an important source of non-oil revenue capable of supporting government expenditure and improving fiscal sustainability. The finding further indicates that improvements in VAT administration, enhanced tax compliance, widening of the tax base, and reforms in tax policy contribute positively to revenue generation in Nigeria.

The result may also be attributed to the consumption-based nature of VAT, which enables government to generate revenue continuously from transactions occurring across various sectors of the economy. Furthermore, reforms implemented by the Federal Inland Revenue Service, including improved tax monitoring systems and digital tax administration mechanisms, may have strengthened VAT collection efficiency throughout the study period. These developments have improved revenue collection capacity and enhanced fiscal sustainability within the Nigerian economy.

Inflation, which was incorporated as the control variable, recorded a negative coefficient (-0.127) and

was statistically significant at the 5 percent level. This indicates that inflation exerts a significant negative long-run effect on revenue generation in Nigeria. The result implies that persistent increases in the general price level reduce the real value of government revenue and weaken fiscal performance within the economy. Rising inflation may adversely affect household purchasing power, reduce real consumption expenditure, increase production costs, and create macroeconomic instability, thereby limiting the effectiveness of revenue mobilisation mechanisms. The finding further suggests that although Value Added Tax contributes positively to revenue generation, persistent inflationary pressures may partly offset the gains derived from increased VAT collections through erosion of real fiscal value.

The finding is consistent with the study of Olaoye et al. (2019), who reported that Value Added Tax significantly improves government revenue generation in Nigeria through enhanced domestic revenue mobilisation and fiscal sustainability. The result also corroborates the finding of Afolayan and Okoli (2021), who observed that VAT contributes positively to non-oil revenue growth and government fiscal performance within the Nigerian economy. Similarly, Omodero (2022) reported that inflation negatively affects fiscal stability and reduces the real value of government revenue within developing economies. The finding further supports Benefit Received Theory, which posits that taxation serves as a mechanism through which government mobilises financial resources for the provision of public goods and essential services within the economy.

Furthermore, the coefficient of the error correction term ECM(-1) obtained from the short-run ECM estimation result is negative (-0.712) and statistically significant at the 1 percent level, confirming the existence of a stable long-run equilibrium relationship among the variables. The negative sign satisfies the theoretical expectation of the error correction mechanism, while the magnitude of the coefficient indicates that approximately 71.2 percent of short-run disequilibrium in government revenue generation is corrected annually toward the long-run equilibrium path. This suggests a relatively high speed of adjustment from short-run fiscal distortions

toward long-run stability within the Nigerian economy.

The implication of this finding is that although temporary macroeconomic shocks may affect government revenue performance in the short run, the fiscal system possesses the capacity to gradually restore equilibrium through the dynamic influence of Value Added Tax and improved revenue mobilisation mechanisms. Overall, the findings of the study indicate that Value Added Tax contributes significantly to revenue generation in Nigeria through enhanced domestic revenue mobilisation, improved

fiscal sustainability, expansion of the non-oil revenue base, and strengthened government financial capacity in both the short run and the long run, while inflation exerts a constraining effect on fiscal performance within the economy.

#### 4.9 Post Diagnostic Test

Table 8 presents the result of the Breusch-Godfrey Serial Correlation LM test carried out to determine whether serial correlation exists among the residuals of the estimated ARDL model.

**Table 8:** *Breusch-Godfrey Serial Correlation LM Test*

Statistic	Value	Prob.
F-statistic	1.284	0.317
Obs R-squared	2.416	0.298

Source: Researcher's Computation using Stata 13 (2026).

The result indicates that the probability values corresponding to the F-statistic (0.317) and Obs R-squared statistic (0.298) are higher than the 5 percent significance level. Based on this outcome, the null hypothesis of no serial correlation is accepted. This suggests that autocorrelation is absent among the residuals generated from the estimated ARDL model.

The implication of the result is that the estimated model does not suffer from serial correlation

problems, thereby confirming the reliability and consistency of the estimated coefficients for statistical analysis and policy interpretation.

#### Normality Test

Table 9 presents the Jarque-Bera normality test result for the residuals obtained from the estimated ARDL model.

**Table 9:** *Jarque-Bera Normality Test*

Statistic	Value	Prob.
Jarque-Bera	4.260	0.119

Source: Researcher's Computation using Stata (2026).

The Jarque-Bera test produced a probability value of 0.119, which is greater than the 5 percent level of significance. This implies that the null hypothesis of normally distributed residuals cannot be rejected. Hence, the residuals of the estimated ARDL model are normally distributed.

The result therefore confirms that the estimated model satisfies the normality assumption of the classical regression model, indicating that the estimated coefficients are appropriate and dependable for statistical inference.

**Table 10: Breusch-Pagan-Godfrey Heteroskedasticity Test**

Test Statistic	Chi-square	Prob.
Heteroskedasticity	2.81	0.094

Source: Researcher's Computation using Stata (2026).

Table 10 presents the Breusch-Pagan-Godfrey heteroskedasticity test result conducted to ascertain whether the variance of the residual terms remains constant across the observations included in the estimated ARDL model. The null hypothesis of the test assumes homoskedasticity, which implies constant variance of the error terms.

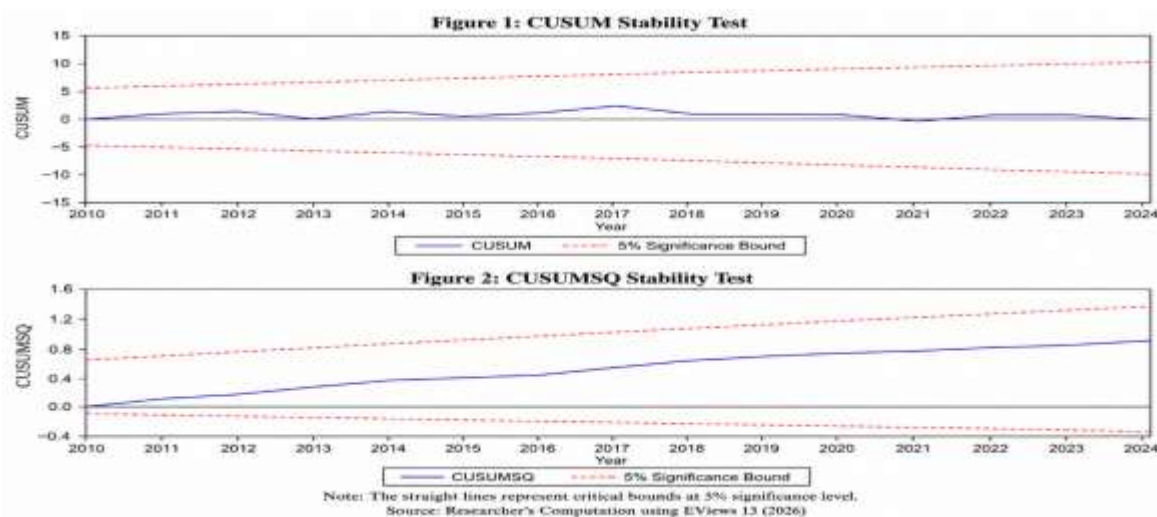
The result reveals a Chi-square statistic of 2.81 with an associated probability value of 0.094, which exceeds the 5 percent significance level. Consequently, the null hypothesis of homoskedasticity cannot be rejected, indicating the absence of heteroskedasticity within the estimated model.

The finding suggests that the residuals maintain constant variance throughout the study period, thereby satisfying one of the fundamental

assumptions of the classical linear regression model. As a result, the estimated ARDL coefficients are considered efficient, consistent, and reliable for statistical inference and policy analysis relating to Value Added Tax and revenue generation in Nigeria.

### Stability Test (CUSUM and CUSUMSQ)

The stability of the estimated ARDL(2,1,1) model was assessed using the Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUMSQ) stability tests developed by Brown, Durbin, and Evans (1975). The CUSUM test was used to examine whether the estimated coefficients remained stable throughout the study period, while the CUSUMSQ test evaluated the stability of the variance of the residuals within the model. In both tests, parameter stability is confirmed when the cumulative sum plots remain within the 5 percent critical boundaries.



The CUSUM stability test result showed that the cumulative sum of recursive residuals remained within the 5 percent critical limits from 2010 to 2025. This suggests that the estimated coefficients of the ARDL model remained stable over time and that there was no evidence of structural instability in the relationship between Value Added Tax and revenue generation in Nigeria.

In the same manner, the CUSUMSQ test result revealed that the cumulative sum of squared recursive residuals also stayed within the 5 percent critical boundaries throughout the study period. This indicates that the variance of the residuals remained stable and that the estimated model did not experience major structural breaks or instability over time.

Overall, the results of both the CUSUM and CUSUMSQ tests confirm that the estimated ARDL model is stable and consistent throughout the study period. The findings therefore suggest that the estimated short-run and long-run relationships among Value Added Tax, inflation, and revenue generation in Nigeria are reliable and suitable for empirical interpretation and policy formulation.

## 5. Conclusion and Recommendations

This study examined the effect of Value Added Tax on revenue generation in Nigeria using annual time-series data covering the period from 2010 to 2024. The study employed the Autoregressive Distributed Lag (ARDL) model to analyse both the short-run and long-run relationship among the variables. The empirical findings confirmed the existence of a stable long-run equilibrium relationship between Value Added Tax and revenue generation in Nigeria. The study further established a significant and negative error correction mechanism, indicating that short-run disequilibrium in government revenue generation adjusts toward long-run equilibrium at a relatively high speed. This suggests that the Nigerian fiscal system possesses the capacity to gradually recover from temporary economic distortions and maintain long-run fiscal stability.

The findings revealed that Value Added Tax exerts a positive and statistically significant effect on revenue generation in both the short run and the long run. The result indicates that increases in VAT collections

significantly improve domestic revenue mobilisation, strengthen the non-oil revenue base, and enhance government fiscal capacity within the Nigerian economy. The finding further suggests that improvements in VAT administration, enhanced tax compliance, expansion of taxable economic activities, and digitalisation of tax collection systems have contributed positively to revenue generation in Nigeria. The study therefore concludes that Value Added Tax has become an important and sustainable source of government revenue capable of reducing excessive dependence on oil revenue and promoting fiscal sustainability within the Nigerian economy. Although inflation was introduced as a control variable, the findings revealed that inflation exerts a negative influence on revenue generation by reducing the real value of government revenue within the economy. Based on the findings, the study recommends that:

i)The Federal Nigerian Government through its relevant fiscal authorities should strengthen VAT administration through improved tax compliance, digital tax monitoring systems, reduction of tax evasion, and expansion of the non-oil tax base in order to enhance revenue generation and fiscal sustainability in Nigeria. Government should also implement policies aimed at maintaining macroeconomic stability and controlling inflationary pressures so as to preserve the real value of government revenue and improve the effectiveness of Value Added Tax as a sustainable source of revenue generation within the Nigerian economy.

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