



Value Added Tax and Macro-Economic Variables in Nigeria

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Abstract

This study analyzed the value added tax and macro-economic variables in Nigeria for the period of 1994-2024. The specific objectives were to: Examine the effect of value added tax on inflation rate in Nigeria. Assess the effect of value added tax on interest rate in Nigeria. Investigate the effect of value added tax on government expenditure in Nigeria. Determine the extent to which value added tax affect money supply in Nigeria. Ex-post factor research design was used in this study. Ordinary Least Squared (OLS) method of data analysis was used. The study also employed descriptive statistics, Unit root test, co-integration and correlation analyses. The variables were sourced from central bank of Nigeria statistical bulletin 2025. The variables were inflation rate, interest rate, government expenditure and money supply as the dependent variables, while the value added tax were dependent variable. The study found that, Value added tax has significant effect on Inflation rate in Nigeria ($=11.15879$, $p=0.0000$), Value added tax has significant impact on Interest rate in Nigeria. ($t=-3.925749$, $p=0.0005$), Value added tax has significant effect on Government spending in Nigeria. ($t=3.9411435$, $p=0.9971$), Value added tax significantly influence Money supply in Nigeria. ($t=7.609603$, 0.0000). The study concludes that inflation rate and money supply are the major macroeconomic determinants of VAT revenue in Nigeria, while interest rate and government spending play a less decisive role. The study recommended among others that; Government and monetary authorities should maintain inflation at a moderate and controllable level. Moderate inflation increases the prices of taxable goods and services, thereby boosting VAT revenue. Monetary authorities should pursue stable and growth-oriented interest rate policies. Lower and stable interest rates can encourage borrowing, investment, and consumption, which indirectly increases VAT-able transactions. Government spending should be channeled into productive sectors such as infrastructure, education, and industrial development that stimulate consumption and expand the VAT base.

Keywords: value added tax, interest rate, Inflation rate, Government spending, and Money supply



1.0 Introduction

Taxation is the central part of the economy of developed and developing nations. Its significance arises because it is an important part of government revenues (Enokela, 2022). The main objective of taxation is raising revenue. According to Eniola (2025) taxation is used as an instrument of attaining certain social objectives i.e. as a means of redistribution of wealth and thereby reducing inequalities. The need for an increased government spending necessitates the need for tax (Sowole, 2019). The pre-occupation of most countries in the world is to strive to achieve rapid overall development through optimum tax collection and expanded revenue base. In order to see that the government's objective is accomplished, many countries in the world introduce new form of tax to boost their revenue capacity with the aim of improving the socio-economic conditions of their citizens and achieving rapid economic development (Murray, 2019).

Increasing revenue through taxation is considered to be the best option for the government because revenue from taxes is more stable and precise than other sources. Taxation is one of the most reliable sources of revenue for governments across the world. Among the different forms of taxation, Value Added Tax (VAT) has gained prominence due to its relative efficiency in mobilizing revenue compared to direct taxes. VAT, introduced in Nigeria in 1994 to replace Sales Tax, is a consumption-based tax levied on the value added to goods and services at each stage of production and distribution. It is administered by the Federal Inland Revenue Service (FIRS) and shared among the three tiers of government. Value Added Tax (VAT) was introduced in Nigeria in January 1994 through Decree 102 of 1993, VAT was adopted to replace the sales tax system in order to broaden the tax base, reduce dependence on oil revenues, and improve government capacity to finance public expenditure (Owolabi & Okwu, 2023).

Over the years, VAT has become a major source of non-oil revenue, especially given the volatility in crude oil prices and the need to diversify Nigeria's revenue base. According to the Central Bank of Nigeria (CBN), VAT revenue has consistently increased, contributing significantly to the Gross Domestic Product (GDP) and government



expenditure. In 2020, the VAT rate was increased from 5% to 7.5%, reflecting government's effort to expand revenue amid declining oil earnings and increasing public debt. Chigbu, (2020) reported that in 1954 the Value Added Tax system was initiated by the then Joint Director of the tax authority of France, Maurice Laure. VAT came into effect for the first time on 10th April 1954; although, a German Industrialist Wilhelm Van Siemens proposed the concept in 1918 the value added tax system has been adopted by different nations across the world. VAT has become a major source of revenue in many developing countries.

Macroeconomic variables such as GDP growth, inflation, unemployment, investment, and government expenditure play critical roles in determining the direction of economic growth and development and are closely influenced by fiscal policies like VAT (Naiyeju, 2021). Since taxation has direct and indirect effects on production, consumption, and investment decisions, VAT as a form of consumption tax is expected to influence these macroeconomic indicators. For instance, an increase in VAT rates may lead to higher prices of goods and services, thereby affecting inflation, consumption patterns, and ultimately GDP. On the other hand, efficient VAT administration could enhance government revenue, provide resources for infrastructural development, and stimulate overall economic growth (Ebriill, et al., 2023).

In Nigeria, the role of VAT in macroeconomic management has been a subject of growing debate, especially as the country continues to grapple with challenges such as revenue shortfalls, inflationary pressures, high unemployment rates, and overdependence on crude oil earnings. Policymakers have often argued that VAT has the potential to diversify revenue sources and promote fiscal sustainability (Ajakaiye, 2023). However, its impact on macroeconomic performance remains contentious, as increases in VAT rates are often resisted by businesses and households due to their perceived inflationary and welfare-reducing effects. Given these dynamics, examining the effect of VAT on macroeconomic variables in Nigeria is both timely and important. Such a study provides



insight into whether VAT has served its intended purpose of supporting economic stability and growth or whether it has created distortions in the economy.

Since the establishment and full implementation of VAT in Nigeria in 1994, VAT has been seen as one of the most potential income streams for the government. It has undergone constitutional revision and re-enactments on many occasions and in various ways to serve as a stand-in for the nation's deficient revenue profile (Adebisi, et. al, 2020). Value Added Tax has been recognized as a vital means of generating proceeds that contributes to the economic development within the Nigerian government system (Federal, State, and Local Govt. level). Due to the increase in population in Nigeria, there is no proper accountability of revenue generation from VAT to cater to the social benefit and infrastructural project of the country. The accountability of VAT practice in Nigeria is very poor sometimes double taxes occur, corruption is still an issue in Nigeria as some Tax Authorities embezzle VAT Revenue funds or cheat the VAT system, which is initially allocated people/society, which (Owolabi & Okwu, 2023), would have contributed to the furtherance of the level of the value of life in Nigerians.

Mobilizing tax revenue to finance development activities in Nigeria remains a significant challenge due to widespread tax evasion, avoidance, and corrupt practices. These issues undermine economic progress and contribute to Nigeria's persistent underdevelopment. Governments are responsible for effectively collecting taxes from available economic resources and using them to drive prosperity by creating employment opportunities, improving infrastructure, and ensuring essential public services like law enforcement. Wilson, et al., 2018). However, resistance to taxation hinders the achievement of these developmental goals. Despite the potential benefits of taxation, Nigeria's tax system faces challenges such as inefficient administration, underassessment, and weak enforcement mechanisms (Krajňák, 2023; Umunnakwe & Amahalu, 2024). Ndiaye (2019) asserts that the success of any tax system depends on its effective management, proper interpretation of tax laws, and enforcement. However, Nigeria's tax framework suffers from poor



administration, corruption among tax officials, widespread tax evasion, high tax rates, and inefficient collection methods. Although tax authorities have introduced reforms such as the E-Payment system, Tax Identification Number (TIN), and Anti-Tax Avoidance legislation, major obstacles persist. (Omodero 2023; Ouma 2019). These challenges hinder the full realization of taxation's role in promoting economic growth. This study proposes to fill the gap in literature by analyzing the impact of taxation on Nigeria's economic growth, offering insights into improving fiscal policy and tax administration. The specific objectives of this study are to:

1. Examine the effect of value added tax on inflation rate in Nigeria.
2. Assess the effect of value added tax on interest rate in Nigeria.
3. Investigate the effect of value added tax on government expenditure in Nigeria.
4. Determine the extent to which value added tax affect money supply in Nigeria

2.0 Review of Related Literature

2.1 Conceptual Review

2.1.1 Inflation

According to Umaru and Zubairu (2022), inflation is the steady rise in the average price level of a wide range of goods and services over time in a nation. The adage "inflation is too much money chasing too few commodities" sums up how closely money has always been linked to inflation. Inflation is defined by Umar and Wen (2020) as an economic situation in which the expansion of the money supply exceeds the addition of goods and services to the economy. Yasuo, Takushi and Willem (2020) and Bianchi, Melosi, & Rottner, (2021) define inflation as the widespread and steady increase in the price of goods and services throughout an economy.

There are many definitions of inflation in the literature; however, for the sake of this study, we accept Umaru & Zubairu (2022). The consumer price index, wholesale pricing



index, producer price index, and other price indices all use the percentage change in the index to determine the inflation rate.

2.1.2 Interest Rate

An interest rate is the rate at which interest is paid by borrowers for the use of money that they borrow from a lender. Specifically, the interest rate (I/m) is a percent of principal (P) paid at some rate (m). Interest rates are normally expressed as a percentage of the principal for a period of one year (Kamunge et al. 2014; Rahman et al. 2016). The spread of interest rates is the lending rate minus the deposit rate. This spread covers operating costs for banks providing loans and deposits. A negative spread is where a deposit rate is higher than the lending rate while the reverse holds for a positive spread. Consequently, interest-rate targets are a vital tool of monetary policy and are taken into account when dealing with variables like investment, inflation, unemployment and so on. The central banks or reserve banks of countries generally tend to reduce interest rates when they wish to increase investment and consumption in the country's economy (Beck et al. 2018). However, a high interest rate as a macroeconomic policy can be risky and may lead to the creation of an economic bubble, in which large amounts of investments are not thriving well. For this reason, it is a very important macroeconomic variable for this study.

2.1.3 Government Expenditure

Government expenditure is the total in cash terms of the federal, state and the local government spending including transfers to the parastatals and the three levels of the government (Anyato, 2016). In as much as public expenditure is highly desirable it however talks from allocation stabilization of resources (Loto, 2017), the allocation of function becomes necessary so as provide both private and in particular social goods in appropriate mix with available resources. The provision of social and physical infrastructure through public investment and expenditure on some goods and services theoretical can directly improve productivity in the private sector through more efficient allocation of resources due to the special characteristics of social goods (spill over and



extern laities, non excludability) they will be provided at all or where they are produced the output will be inadequate and outrageously expensive if left in the hand of private individuals.

2.1.4 Money supply

Money Supply refers to the total stock of monetary media of exchange available to a society for use in connection with the economic activity of the country (Ahuja, 2016). According to the standard concept of money supply, it is composed of the following two elements: Currency with the Public and Demand deposits with the Public. Two things must be noted with regard to the money supply in the economy. Firstly, the money supply refers to the total sum of money available to the public in the economy at a point of time. That is, money supply is a stock concept in sharp contrast to the national income which is a flow representing the value of goods and services produced per unit of time, usually taken as a year. Secondly, money supply always refers to the amount of money held by the public (Ahuja, 2016). Money is a collection of liquid assets that is generally accepted as a medium of exchange and for repayment of debt. In that role, it serves to economize on the use of scarce resources devoted to exchange, expands resources for production, facilitates trade, promotes specialization, and contributes to a society's welfare (Singh et al., 2021). The supply of money at any moment is the total amount of money in the economy at a point in time (Jhingan, 2016). In Nigeria, the narrow money supply (M1) is defined as currency outside bank plus demand deposits of commercial banks plus domestic deposits with the central banks less Federal Government deposits at commercial banks. In simple terms, M1 is defined as;

$$M1 = C + D$$

Where:

M1= Narrow money supply

C = Currency outside banks

D = Demand deposits.



Ajayi (2008) contends that M2 is the appropriate definition of money in Nigeria. M2 includes not only notes and coin and bank current accounts, but also 7-days bank deposits and some building society deposits. In the Nigerian context board money (M2) is defined as M1 plus quasi money. Quasi-money as used here is defined as the sum of savings and time deposits with commercial banks. Symbolically shown as; $M2 = C + D + T + S$

Where: M2 = Board money

T = Time deposit

S = Savings deposits

C and D as defined above. According to (Anyanwu & Oikhenam, 2007), broad money is that which can be easily converted to cash with little or no loss.

2.1.5 Value Added Tax (VAT)

Value added tax (VAT) is simply called the Goods and Services Tax (GST). It is a consumption tax payable on the goods and services consumed by any person, business organizations or individuals (Clement et al., 2019). VAT is tax variant on supply of goods and services which is levied at and deducted at each stage of the production and distribution chain. Each business along the production chain in an economy is required to pay this tax on the value of the produced goods/services (Caleb et al., 2018). Oyedokun (2020) asserts that VAT is a consumption tax levied on goods and services in contrast to sales tax. VAT is neutral with respect to the number of passages from the producer to the final consumer, whereas sales tax is levied on total value at each stage. ultimately, the final consumer bears the cost. In Nigeria, the definition of clarity of the concept of VAT is not debatable. VAT has been precisely 5% at any stage in the production or distribution chain until February 2025 when it was increased to 7.5%.

2.1.5.1 Value Added Tax Output (Output VAT)

Output Value Added Tax (Output VAT) refers to the amount of value added tax that a registered business charges and collects from customers when it sells taxable goods or



provides taxable services. It represents the tax added to the selling price of goods and services by a business at the point of sale, which the business is required to remit to the government through the appropriate tax authority. Output VAT is therefore the tax liability generated from a firm's sales transactions.

In a value added tax system, businesses act as intermediaries or collection agents on behalf of the government. When a business supplies goods or services to consumers, it includes VAT as part of the invoice issued to the buyer. This VAT charged on the sales value constitutes the output VAT. The amount collected does not belong to the business; rather, it is held temporarily until it is remitted to the government through the tax authority such as the Federal Inland Revenue Service in Nigeria.

Output VAT is calculated as a percentage of the value of taxable goods and services supplied by the business. In Nigeria, the standard VAT rate is 7.5%, which means that businesses add 7.5% of the value of taxable goods or services to the selling price. For instance, if a company sells products worth ₦100,000, the output VAT charged will be ₦7,500. This amount is collected from the customer along with the selling price of the goods or services.

2.1.5.2 Value Added Tax Payable

Value Added Tax Payable (VAT Payable) refers to the net amount of value added tax that a business is required to remit to the government after deducting the value added tax it has paid on its purchases (input VAT) from the value added tax it has collected on its sales (output VAT). It represents the actual tax liability of a business to the tax authority within a specific accounting period, usually monthly or quarterly depending on the country's tax regulations. Under the value added tax system, businesses act as agents of the government by collecting VAT from customers when they sell taxable goods and services. This collected tax is known as output VAT. At the same time, businesses also pay VAT when they purchase goods or services required for their operations, which is referred to as input VAT. At the end of the accounting period, the business calculates the



difference between the output VAT collected and the input VAT paid. When the output VAT exceeds the input VAT, the difference becomes the VAT payable, which must be remitted to the appropriate tax authority.

2.1.5.3 Value Added Tax Rate

Value Added Tax Rate (VAT Rate) refers to the percentage applied to the value of taxable goods and services to determine the amount of value added tax that must be charged on a transaction. It represents the statutory proportion of tax imposed by the government on the consumption of goods and services at each stage of production and distribution. The VAT rate determines how much tax a consumer pays when purchasing taxable goods or services and how much tax businesses collect on behalf of the government. In a value added tax system, the VAT rate is established by law and applied to the value of taxable supplies made by registered businesses. When a business sells goods or services, it calculates the VAT by multiplying the selling price by the applicable VAT rate.

The resulting amount is added to the price of the goods or services and collected from the consumer as part of the total payment. This tax collected is known as output VAT and must be remitted to the appropriate tax authority after deducting input VAT paid on business purchases. The VAT rate plays a crucial role in determining the level of government revenue generated from consumption activities. A higher VAT rate generally increases the amount of tax collected from each transaction, thereby increasing government revenue. However, governments often balance VAT rates carefully because excessively high rates may increase the cost of goods and services, reduce consumer purchasing power, and discourage economic activities. In Nigeria, the VAT rate is currently 7.5%, which was increased from 5% following the amendment of the Finance Act 2019. The implementation and administration of VAT in the country are handled by the Federal Inland Revenue Service. This rate is applied to most taxable goods and



services supplied by registered businesses, except for items that are exempt or zero-rated under the VAT laws.

2.1.5.4 Value Added Tax Credit

Value Added Tax Credit (VAT Credit) refers to the amount of value added tax that a registered business is allowed to deduct from the VAT it has collected on its sales. It represents the credit granted to businesses for the VAT they have already paid on the purchase of goods and services used in their production or business operations. The purpose of the VAT credit mechanism is to ensure that tax is imposed only on the value added at each stage of production or distribution, rather than on the total value of goods and services repeatedly. Under the value added tax system, businesses typically pay VAT when purchasing raw materials, equipment, or services required for their operations. This VAT paid on purchases is known as input VAT. At the same time, businesses charge VAT on the goods and services they sell to customers, which is referred to as output VAT. The VAT credit system allows businesses to deduct the input VAT paid on purchases from the output VAT collected on sales. The difference between these two amounts represents the net VAT payable to the government.

2.2 Theoretical Framework

2.2.1 Theory of Excess Burden of Tax

The theory of excess burden of taxation (or deadweight loss) wasn't propounded by a single person at one specific time, but evolved; key early contributions include Jules Dupuit (1844), who used consumer surplus to show welfare loss, and later modern formalizations by economists like Arnold Harberger (1960s), Martin Feldstein (1970s), and James Mirrlees (1971), with significant extensions in the 1970s and 1980s, especially in optimal taxation literature. The origin of this is traced to eminent economists like Arthur Pigou, Henry George, and Frank Ramsey. Nevertheless, the formal elucidation of this theory commenced during the 1920s and 1930s through the contributions of economists including Knut Wicksell, Harold Hotelling, and Frank Knight.



Termed alternatively as the theory of deadweight loss, The theory of excess burden (or deadweight loss) posits that taxes create inefficiency by distorting economic decisions, causing a welfare loss beyond the revenue collected, primarily by driving a wedge between marginal benefit and cost, reducing transactions/output (the Harberger triangle), being larger with more elastic supply/demand, and acting as a cost of resource misallocation that efficient systems aim to minimize (Omondi, 2020), ultimately diminishing economic welfare beyond the mere revenue garnered by the government. As per the theory, whenever tax is imposed on goods or services, it triggers a rise in the price of the taxed item (Auerbach, 1985). This price hike prompts adjustments in the behavior of both consumers and producers, as they adapt their consumption and production choices in light of the altered prices (Omondi, 2020).

2.3 Empirical Review

Shehu, et al. (2025) investigated the effect of Value-added Tax (VAT) on revenue generation and economic growth in Nigeria. It specifically examined the effect of VAT on Gross Domestic Product (GDP) and the total revenue generated in Nigeria for the period (2013-2023) as well as the trend of VAT in the period under review. Time-series data were employed in the study to run the regression for VAT on total tax revenue and GDP. The vector error correction and auto-regression models were used in the regression. VAT, total tax revenue and GDP were included in the data at the end of each year for the period (2013-2023). In order to accommodate the long-run properties of the variables, tests for stationarity and co-integration were carried out. The study finds that VAT has a significant effect on total tax revenue with a two-year lag and it increasingly explains changes in total tax revenue with time. The study also shows that VAT has a significant and negative effect on GDP. The trend in VAT has a positive coefficient, indicating that VAT increases with time. In view of the findings, the study, therefore, recommends that government should critically evaluate the process of VAT collection, eliminate



bureaucratic procedures and improve transparency so that economic units can concur their efforts with those of tax authorities.

Dosumu, et al., (2025), examined the influence of VAT on economic development. Descriptive Survey research design was employed. The sample chosen for this study was a non probability sampling. The sample size comprises of the VAT and the GDP. Secondary data was employed for the study. Data on VAT, Real Gross Domestic Product (RGDP) and federally collected revenue in Nigeria over a period of five years, i.e 2018-2022 were retrieved from the Statistical Bulletin of Federal Inland Revenue and National Bureau of Statistics (2018-2022). Two hypotheses formulated to guide the study were tested at 0.05 level of significance. Statistical Package for Social Sciences (SPSS) was used to analyse the data. The study found a positive and significant influence of VAT on revenue generation, Gross Domestic Product (GDP) and economic development in Nigeria (p. value < 0.05). The study recommended among others that, new local VAT offices should be established all over the country to broaden the tax base and to bring VAT administration closer to the taxpayer, Government should strengthen tax administration to ensure more efficient tax collection, through training of staff, awareness campaigns and computerization of customs tariff; Government should use VAT proceeds to improve on the standard of living of the populace and improve on infrastructures such as transport, power, communication and information technology so as to strengthen the productive capacity and motivate taxpayers in paying their taxes.

Gaius, et al., (2025) investigated the impact of VAT and inflation on Nigeria's economic growth over the period 1986 to 2023. Secondary time series data were collected from the statistical bulletins of the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), and the Federal Inland Revenue Service (FIRS). The Autoregressive Distributed Lag (ARDL) approach was employed to analyse the dataset. Findings of the study shows that VAT has a positive and statistically significant effect on GDP in both the short and long run, whereas inflation (INF) has a significant negative impact on economic growth across the same periods. Additionally, the error correction mechanism (ECM) suggests



that any short-run disequilibrium in the model is gradually corrected in the long run, confirming the existence of a stable long-term relationship. In light of these findings, it is recommended that policymakers adopt a VAT strategy that enhances revenue generation while limiting inflationary pressures on consumer prices.

Kazeem, et al., (2025) examined into the effect of tax revenue on economic growth and development. The study employed the time series data sourced from the CBN Statistical Bulletin from 1992 to 2024. The dependent variable is the gross domestic product while the independent variables includes value added tax, company income tax, inflation rate and interest rate. The multiple regression revealed that company income tax has positive significant effect on gross domestic product while interest rate has negative significant effect on gross domestic product. The government should adopt policies that balance revenue generation with economic growth. Given the negative and significant effect of value-added tax (VAT) on GDP, policymakers should consider reducing VAT rates on essential goods and services to minimize the burden on consumers and businesses. Additionally, broadening the tax base and improving tax compliance could generate revenue without hampering economic activity.

Onwuka, et al., (2025) examined taxation and National Development and the contributions of VAT to Nigeria's income generating abilities. The problem under study was that Nigeria's over-reliance on oil revenue has led to economic instability and vulnerability to global market fluctuations. The Country's tax system, particularly Value Added Tax (VAT) has been identified as a potential solution to diversify revenue streams and promote national development. However, the contribution of VAT to Nigeria's income generating capabilities remains unclear. The objectives were to establish the contribution of VAT to the total tax revenue on one hand and to determine its impact on economic growth on the other. The granger causality tests employed indicated that the variables were not bidirectional means there were no endogeneity and no complexity which is why Vector Auto-regression analysis was not needed. In testing for the unit root, it is evident that given the significant t-statistics and stable coefficients, the null



hypotheses of the unit root for both null hypotheses were rejected. This means that the all variables are stationary series which is why it there were no spurious regression or non-stationarity. The coefficients are stable, indicating a stationary process. The standard error of regression is low indicating a good fit. The Mu values suggest stable means. The significant values for R2 and adjusted R2 for the both hypotheses indicates that the regression lines approximate the real data points and so is a very good fit. The coefficient of determination R2 in this case provides a measure of how well observed outcomes in the analyses are replicated by the model. In other words most of the variations in the total tax revenue and GDP can be explained by changes in the VAT revenue for the years under study. Given the pre-dominance of taxes as the second major income earner in the country it stands to reason that VAT would continue to play and even improve on its role as a reliable alternative to crude oil revenue for the foreseeable future. The importance of VAT from this study reveals a significant and positive impact on total revenue and the economy which is the reason diversification proponents take VAT seriously as a major fiscal stabilizing factor with far reaching effects. Nigeria being a multicultural and economically diverse state reveals patterns that indicate a great dependency of some states on others with a higher revenue generating base. While it may be politically expedient for encouraging this trend, it would be better if VAT revenue goes towards increasing the capacity to produce goods and services with which some states have comparative advantage. This would create jobs and further strengthen the revenue capability of the beneficiary states. Nigeria should deemphasize on too much government recurrent expenditure and match the VAT revenues towards productivity.

Isa and Kyarem, (2025) examined the effect of the implementation of Local VAT (LVAT) on inflation rate in Nigeria, the effect of Foreign VAT (FVAT) on inflation rate in Nigeria and the effect of Import VAT (IVAT) on inflation rate in Nigeria from 2011 - 2024. Secondary data from the Federal Inland Revenue Service (FIRS), the National Bureau of Statistics (NBS) and the Central Bank of Nigeria (CBN) were used for the study. Data on LVAT, FVAT, IVAT and inflation rate were used for the study.



Descriptive and Autoregressive Distributed Lag (ARDL) regression techniques were employed in analyzing the data. The ARDL being an inferential statistic was adopted because some the variables of the work were not stationary at level that is, $1(0)$. The findings show that, LVAT has a positive but insignificant effect on inflation rate in Nigeria, while FVAT and I VAT had a negative and insignificant effect on inflation rate in Nigeria. In addition, the Error Correction Term {ECT (-1)}, been correctly signed indicated that once there is disequilibrium in the system, it will take an average quarterly speed of 102.97% to restore the long-run relationship between inflation rate and VAT. The work therefore recommended among other, that the Nigerian government at all levels and policy makers should halt any plan of increasing the LVAT as it portends danger of worsening the already high inflation rate in Nigeria.

Kuyebi and Omodero, (2025) investigated the impact of Value Added Tax on Economic Development and Human Capital Development from 1994 to 2022. Employing a longitudinal research design, the study utilizes data specific to Nigeria and obtained from the office of the Federal Inland Revenue Service (FIRS), the Statistical Bulletin of the Central Bank of Nigeria (CBN), and the World Bank. The collected data is then analyzed using the Johansen Co-integration, Vector Error Correction Model, and Vector Autoregressive analysis technique. The research establishes a connection between Value Added Tax (VAT) and the Exchange rate, demonstrating their impact on Economic Development and Human capital development in Nigeria. The verdicts show that both VAT and Exchange Rate significantly impact both Economic Development and Human Capital Development, though negatively. However, these findings are not meant to discourage but rather to serve as a catalyst for change. The recommendations outlined in the study emphasize the importance of training, oversight, exchange rate stabilization, investment in education, and financial security in promoting Economic Development and Human Capital Development in Nigeria. Tax regulatory authorities should improve management of VAT funds to ensure they are utilized for developmental objectives. Finally, organizations such as the EFCC must remain steadfast in their commitment to



preventing the misuse or diversion of VAT funds meant for Capital Expenditure and the development of the nation's human resources, thereby safeguarding the financial security of the government and the nation as a whole.

3.0 Methodology

This study employed *ex-post facto* research design to examine the effect of corporate tax optimization on financial distress cost of listed non-finance firms in Nigeria. *Ex-post facto* research design is a non-experimental method in which researchers examine existing data or conditions to investigate potential cause-and-effect relationships after the events have already occurred, without manipulating variables. The area of study of this research is in Nigeria, concentrated on consumer goods companies in Nigeria that are listed by Nigeria Exchange group (NEG), as this is where the information needed for an in-depth examination would come from. The study utilized annual secondary time series data spanning from 1981 to 2024. The choice of data period coverage is based on availability of data. With a total of 43 observations, the estimation have adequate degree of freedom (df) that improves statistical inferences. Thus, estimates based on this data coverage not only ensure consistency of results but also guarantee robustness of results to different diagnostics tests. These secondary sources of data for this study were sought through several editions of CBN statistical bulletin, 2024.

This study adapted the model of modalla (1992), the specification of the model adopted for this investigation is implicitly stated as follows and it will be divided into four (4) model

Model one

$INF = F(VAT, \dots)$ -----Equ i

Where

INF - Inflation rate
VAT - Value added tax
F - Functional notation

The above equation can be put in an econometric form as;

$INF = b_0 + b_1 VAT + U$

Where



B0 = Autonomous or intercept
B1 = Coefficient of parameter VAT
U = Stochastic variable or error term
Our model can be also be stated in a logged form as
 $INF = C + B_1 \text{Log VAT} + \mu$

Model Two

$INT = F(VAT),$ -----Equ 2

Where

INT - Interest rate
VAT - Value added tax
F - Functional notation

The above equation can be put in an econometric form as;

$INT = b_0 + b_1 \text{VAT} + U$

Where

B0 = Autonomous or intercept
B1 = Coefficient of parameter INT
U = Stochastic variable or error term

Our model can be also be stated in a logged form as

$INT = C + B_1 \text{Log VAT} + \mu$

Model Three

$GSP = F(VAT),$ -----Equ 3

Where

GSP - Government spending
VAT - Value added tax
F - Functional notation

The above equation can be put in an econometric form as;

$GSP = b_0 + b_1 \text{VAT} + \mu$

Where

B0 = Autonomous or intercept
B1 = Coefficient of parameter GSP
U = Stochastic variable or error term

Our model can be also be stated in a logged form as

$GSP = C + B_1 \text{Log VAT} + \mu$

Model Four

$MS = F(VAT),$ -----Equ 4

Where

MS - Money supply
VAT - Value added tax
F - Functional notation

The above equation can be put in an econometric form as;



$$MS = b_0 + b_1 \text{ VAT} + \mu$$

Where

B₀ = Autonomous or intercept

B₁ = Coefficient of parameter MS

U = Stochastic variable or error term

Our model can be also be stated in a logged form as

$$MS = C + B_1 \text{ LogVAT} + \mu$$

Variables and their Measurement

s/n	Variables	Measurement	Sources
1	Value added tax	Tax base × (VAT rate ÷ 100)	Elhabashy, 2023
2	<i>Independent variables</i> Government Spending	Total amount of the government expenditure annually	Appah (2023)
3	Interest rate	interest / (Principal × Time)	Orjinta & Abazu, (2023)
4	Inflation rate	(Current Price or Index - Previous Price or Index) / Previous Price or Index) x 100	Ejiofor, (2024)
5	Money Supply	total volume of money held by the public at a particular point in time.	CBN Bulletin (2026)



4.0 Presentation and Analysis of Data

4.1 Descriptive Statistics Analysis

Table 4.2.1, displays the number of observations, mean, standard deviation, minimum and maximum values of the explained variable, and each of the explanatory variables, provides the descriptive statistics for all the variables in the model. The descriptive data of the chosen service sector that comprise our sample are displayed in the table below.

Table 4.1 Descriptive Statistics Analysis

	VAT	INF	INT	GSP	MS
Mean	194.1805	73.32000	16.98727	10184.86	3203.680
Median	59.26000	38.84000	17.10000	1729.440	1122.100
Maximum	699.3700	225.6700	29.80000	40318.29	13364.20
Minimum	0.000000	0.710000	7.750000	14.47000	9.600000
Std. Dev.	238.9619	77.61832	4.635091	13801.97	4064.223
Skewness	0.920048	0.775995	0.384733	1.091218	1.287503
Kurtosis	2.374858	2.197373	3.434911	2.658278	3.483360
Jarque-Bera	6.924058	5.596956	6.432244	8.946301	12.58454
Probability	0.031366	0.060903	0.00644	0.011411	0.001851
Sum	8543.940	3226.080	747.4400	448133.9	140961.9
Sum Sq. Dev.	2455420.	259058.0	923.8151	8.19E+09	7.10E+08
Observations	44	44	44	44	44

Source: Author's computation

The table 4.1 above indicates that the mean of Value added tax (VAT) is 194% with standard deviation of 238% the minimum and maximum values of 699% and 0% respectively. The mean value of inflation (INF) is 73% with standard deviation of 77% the minimum and maximum values of 0.7% and 225% respectively. The mean value of interest rate (INT) is 16% with standard deviation of 4.6%, the minimum and maximum values of 7.7% and 29% respectively. Government spending (GSP) mean value is 10.1% with standard deviation of 13%, the minimum and maximum values of 9.6% and 40 respectively. Money supply (MS) mean value is 32% with standard deviation of 40%, the minimum and maximum values of 14% and 40 respectively.



These results suggest that the data are not widely dispersed from the mean because the standard deviations of all the variables are less than the mean values. Also, the skewness value of all the variables is close to zero except long-term debt, it means that the distribution of the variables is symmetric in nature,. The Kurtosis values of all the variables is also closer to 3, it indicates that the shape is a normal distribution,. The P-value of Jarque-Bera test of all the variables is more than 5%, However, Shao (2003) submits that normality of data does not in any way affect the inferential statistics estimate to the BLUE properties. (Best, Linear, Unbiased, Estimate)

4.2: Correlation Analysis

A square matrix that displays the correlation coefficients between two variables is called a correlation matrix. The strength and direction of a linear relationship between two variables are measured by correlation coefficients. Frequently used in multivariate analysis and statistics, a correlation matrix looks at the relationships between several variables. It is possible to assess the link between two variables by using a correlation matrix: A relationship is strong if the relationship value is 1. The relationship is neutral if the relationship value is 0. In the event that the relationship's value is -1, it is weak or negative. Therefore, in examining the association among the variables, we employed the Pearson correlation coefficient (correlation matrix) and the results are presented in the table 4.2 below.

Table 4.2 Correlation Analysis

	VAT	INF	INT	GSP	MS
VAT	1.000000	0.992420	-0.297490	0.391100	0.279543
INF	0.392420	1.000000	-0.269308	0.380939	0.475694
INT	-0.297490	-0.269308	1.000000	-0.308289	-0.317530
GSP	0.391100	0.380939	-0.308289	1.000000	0.383095
MS	0.279543	0.475694	-0.317530	0.383095	1.000000

Source: Author's computation

Value added tax is positively connected with three factors, inflation, government spending and money supply, while interest rate where interest rate. None of the factors,



nevertheless, was discovered to be greater than 0.80. That is, no two exploratory variables had a perfect correlation. The highest correlation is between two variables which are highly correlated with (VAT/INF =0.39) which indicate that multi co linearity is not a serious problem that would distort the regression result in the model used for analysis. A close look at the value of the Pearson correlation coefficient results revealed that all the variables are strongly associated with return on assets.

Therefore, in checking for multicollinearity problem, the study noticed from the correlation table above that no two explanatory variables were perfectly correlated and thereby ruled out the case of having an outlier. This indicates the absence of multicollinearity problem in the model used for the analysis. This also justifies the use of the Panel Least Square (PLS)

4.3 Unit Root Test

Stationarity of variables means that the mean and standard deviations does not change with time. This is used to investigate whether the mean value and variance of the stochastic process are constant over time. The test is carried out on each variable separately and if the Augmented Dickey Fuller test exceed the critical values in any percent (1, 5 or 10%) then the variables in question is stationary at the chosen level of significant and vice versa In other not to obtain spurious result the variables were first tested for stationarity by employing the Augmented Dickey Fuller (ADF) test. The Result obtained from the analysis is presented in the table 4.3 below.

Table 4.3 Result of the Unit Root Test

Variable	ADF statistic	Integration
INF	-5.297657	1(1)
INT	-6.325769	1(1)
GSP	-4.912731	1(1)
MS	-7.004067	1(1)



VAT	-4.720486	1(1)
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Source: Author's computation

It is customary to determine the stationarity properties of time series before using them for formal empirical analysis. To determine the Order of integration of the chosen variables, the augmented dickey-fuller (ADF) unit root tests have been carried out on level and differences of the included variables. The tests were performed assuming intercept and no trend in ADF unit root specification. The result shows that all the variables are stationary at 1st differences and 2nd differences. The results are reported in the tables 4.3 above

4.4 Co-Integration Test

The unit root test carried out earlier indicates that all our chosen variables are integrated of the same order $I(1)$. Therefore, following the Johnson co-integration approach, the first condition for co-integration is that variables of interest are integrated of the same order, thus suspect the existence of long run relationship between our variables. Tables 4.4 below present the Johansen co-integration test. This test was performed and allowing lag interval from 1 to 2 suggested by both AIC and SIC for optimal lag length. The null hypotheses underlying this test is that $r=0$, against alternative that $r > 0, 1, 2, 3$, and 4. The null hypothesis of no co-integration among the variables of interest is rejected at 5% level of significant since that value of both trace statistics and max-Eigen statistics do not lead to the rejection of the null hypothesis of $r \leq 5$. In other word both trace test and Max-Eigen test indicates the existence of 5 co-integrating equation at 5% level of significance. Thus there is evidence of a long run relationship among the chosen variables.



Table 4.4 Co-integration result table

Unrestricted co-integration rank test (trace)

Date: 12/30/25 Time: 12:04

Sample (adjusted): 1984 2024

Included observations: 41 after adjustments

Trend assumption: Linear deterministic trend (restricted)

Series: VAT INF INT GSP MS

Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.768012	112.4428	88.80380	0.0004
At most 1	0.492265	52.53900	63.87610	0.3083
At most 2	0.220060	24.74940	42.91525	0.8022
At most 3	0.175254	14.55933	25.87211	0.6112
At most 4	0.149920	6.659432	12.51798	0.3814

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**



None *	0.768012	59.90377	38.33101	0.0001
At most 1	0.492265	27.78959	32.11832	0.1543
At most 2	0.220060	10.19007	25.82321	0.9572
At most 3	0.175254	7.899897	19.38704	0.8303
At most 4	0.149920	6.659432	12.51798	0.3814

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

					@TREND(82
VAT	INF	INT	GSP	MS	)
0.062846	-0.252366	-0.105238	-0.000632	0.001967	0.236188
0.042233	0.116481	0.089768	-0.000506	-0.001889	-0.190537
0.007705	-0.047204	0.055368	0.000279	-0.001263	0.321582
-0.016920	0.108933	-0.191540	-7.36E-05	-0.001094	0.036957
0.030131	-0.224151	-0.367708	0.000576	-0.000950	0.495966

Source: Author's computation

NB* implies rejection of the null hypothesis (Ho) of at 5% level of significance. Both the trace test and max-eigen values test indicates 1 co-integration equation at 5%

4.5 Presentation of the Regression Result

The full part of the regression result for this analysis is attached as an appendix to this study. However, the diagnostic tests or some key statistics or the variable that needs to be interpreted is shown below.

Table 4.5.1 Value added tax and inflation result



$$\text{VAT} = b_0 + b_1 \text{INF} + U$$

MODEL ONE

Dependent Variable: INF

Method: Least Squares

Date: 03/18/26 Time: 01:40

Sample (adjusted): 1994 2024

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.982697	0.209536	14.23477	0.0000
VAT	0.218496	0.001658	11.15879	0.0000
ECM(-1)	-0.003382	0.004949	-0.683237	0.5001
R-squared	0.817625	Mean dependent var	4.892161	
Adjusted R-squared	0.804599	S.D. dependent var	1.522894	
S.E. of regression	0.673183	Akaike info criterion	2.138168	
Sum squared resid	12.68892	Schwarz criterion	2.276941	
Log likelihood	-30.14160	Hannan-Quinn criter.	2.183404	
F-statistic	62.76508	Durbin-Watson stat	1.694098	
Prob(F-statistic)	0.000000			

Source: Author's computation

MODEL TWO

Table 4.5.2 Value Added Tax and Interest Rate Result

$$\text{INT} = b_0 + b_1 \text{VAT} + U$$

Dependent Variable: INT



Method: Least Squares

Date: 03/18/26 Time: 02:26

Sample (adjusted): 1994 2024

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.04070	1.330872	7.544456	0.0000
VAT	0.299579	0.076311	3.925749	0.0005
ECM(-1)	-0.401021	0.009328	-0.109488	0.9136
R-squared	0.559259	Mean dependent var	4.892161	
Adjusted R-squared	0.513492	S.D. dependent var	1.522894	
S.E. of regression	1.261805	Akaike info criterion	3.394730	
Sum squared resid	44.58028	Schwarz criterion	3.533503	
Log likelihood	-49.61831	Hannan-Quinn criter.	3.439966	
F-statistic	7.849715	Durbin-Watson stat	1.612953	
Prob(F-statistic)	0.001966			

Source: Author's computation

MODEL THREE

Table 4.5.3 Value Added Tax and Government Spending Result

$$LGSP = b_0 + b_1 LVAT + U$$

Dependent Variable: LGSP

Method: Least Squares

Date: 03/18/26 Time: 01:47

Sample (adjusted): 1994 2023

Included observations: 30 after adjustments



Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.600696	0.192521	-13.50862	0.0000
LVAT	0.870250	0.022080	3.941435	0.0000
ECM(1)	-0.331697	0.001544	-1.098779	0.2816
R-squared	0.782976	Mean dependent var	4.838009	
Adjusted R-squared	0.761715	S.D. dependent var	1.518268	
S.E. of regression	0.205306	Akaike info criterion	-0.233991	
Sum squared resid	1.138064	Schwarz criterion	-0.093872	
Log likelihood	6.509871	Hannan-Quinn criter.	-0.189166	
F-statistic	77.94791	Durbin-Watson stat	1.925517	
Prob(F-statistic)	0.000000			

Source: Author's computation

MODEL FOUR

Table 4.5.4 Value Added Tax and Money Supply Result

$$LMS = b_0 + b_1 \text{ VAT} + U$$

Dependent Variable: LMS

Method: Least Squares

Date: 03/18/26 Time: 01:48

Sample (adjusted): 1994 2024

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.537341	0.240572	14.70386	0.0000
VAT	0.000299	3.934505	7.609603	0.0000
ECM	-0.451334	0.006720	-0.198508	0.8441



R-squared	0.674270	Mean dependent var	4.892161
Adjusted R-squared	0.651003	S.D. dependent var	1.522894
S.E. of regression	0.899664	Akaike info criterion	2.718174
Sum squared resid	22.66306	Schwarz criterion	2.856947
Log likelihood	39.13170	Hannan-Quinn criter.	2.763411
F-statistic	28.98036	Durbin-Watson stat	1.691012
Prob(F-statistic)	0.000000		

Source: Author's computation

Test of Hypothesis One

Ho1: Value added tax has no significant effect on Inflation rate in Nigeria.

Drawing inference from our regression result in table 4.5, since the probability value of 0.00000 is less than 0.05% the null hypothesis is rejected and alternative hypothesis is accepted, that is Value added tax has significant effect on Inflation rate in Nigeria

Test of Hypothesis Two

Ho2: Value added tax has no significant impact on Interest rate in Nigeria.

From our regression result in table 4.5, since the probability value of 0.0005 is less than 0.05% the null hypothesis is accepted and alternative hypothesis is rejected, that is Value added tax has significant impact on Interest rate in Nigeria.

Hypothesis Three

Ho3: Value added tax has no significant effect on Government expenditure in Nigeria.

Government expenditure is 3.9411435 (0.0000) since the probability value is less than 0.05% null hypotheses is rejected while null is rejected. This further demonstrates that Value added tax has significant effect on Government expenditure in Nigeria



Hypothesis Four

Ho4: Value added tax does not significantly influence Money supply in Nigeria.

From the regression table 4.5 since the probability value of 0.0000 is less than 0.05% the null hypothesis is rejected and alternative hypothesis is accepted, that is Value added tax has significantly influence Money supply in Nigeria.

4.7 Discussion of the Findings

Value added tax and Inflation rate

The study found that value added tax has significant positive effect on Inflation rate in Nigeria. The result highlights the vulnerability of VAT to inflationary instability. While inflation increases VAT in nominal terms, excessive or uncontrolled inflation may eventually reduce real household income and purchasing power. This could lead to lower real consumption and potential declines in VAT over time. Therefore, the positive effect observed in this study likely reflects moderate inflationary conditions, beyond which the relationship may weaken or reverse. The significance of inflation at the 1 percent level implies that price changes are a strong determinant of VAT performance in Nigeria. Since VAT is levied as a percentage of the value of goods and services, rising prices directly increase the nominal tax base. As inflation increases, the prices of taxable goods and services rise, leading to higher VAT collections even if the quantity of goods consumed remains unchanged. This confirms the sensitivity of VAT output to price movements within the economy. The positive relationship suggests that moderate inflation can serve as a revenue-enhancing mechanism for the government.

In periods of controlled inflation, VAT may grow automatically without the need for frequent increases in VAT rates. This reduces political resistance to tax reforms and supports fiscal sustainability, particularly in an economy like Nigeria that seeks to diversify revenue away from oil dependence. The positive and significant effect of inflation on VAT implies that price dynamics are central to VAT performance in Nigeria.



While moderate inflation can enhance revenue mobilization, sustained macroeconomic stability remains essential to ensure that VAT growth is driven by real economic activity rather than inflationary pressures alone. The findings are consistent with the outcomes of Oyedokun et al (2021), Serge et al (2019), Okafor (2020), Ahmadu et al (2015), Abubakar (2014), among others. These studies documented evidence that inflation rate is necessary to improve performance of value added tax in Nigeria.

Value Added Tax and Interest rate

The regression results revealed that the Interest rate as depicted in Table 5 has a coefficient value of 0.648990 with a p-value of 0.4530 which is insignificant. The statistical insignificance of the interest rate indicates that changes in borrowing costs do not exert a strong or direct influence on VAT in Nigeria. Although the positive coefficient suggests that increases in interest rates may coincide with slight increases in VAT, the lack of statistical significance implies that this relationship is weak and unreliable. This suggests that VAT generation in Nigeria is not highly sensitive to interest rate movements. This result reflects the structural characteristics of the Nigerian economy, where a large proportion of consumption and business transactions occur outside the formal credit system. Many households and small businesses rely on personal savings, informal borrowing, and cash-based transactions rather than bank credit. As a result, changes in interest rates may not significantly alter consumption patterns or spending on VAT payable goods and services.

The finding implies that interest rate policy alone is insufficient as a tool for enhancing VAT. While lower interest rates are generally expected to stimulate borrowing, investment, and consumption, the insignificant result suggests that such transmission mechanisms are weak in the Nigerian context. Other factors such as income levels, inflation, liquidity, and market access may play a more decisive role in shaping VAT performance. The insignificance of interest rate suggests that VAT growth in Nigeria is driven more by price and liquidity factors than by credit conditions. This aligns with the



findings that inflation and money supply significantly influence VAT. Therefore, monetary policy efforts aimed at stabilizing prices and ensuring adequate liquidity are likely to be more effective in supporting VAT performance. The positive but insignificant effect of interest rate on VAT implies that while borrowing costs may have some association with VAT performance, they do not play a decisive role in determining VAT payable in Nigeria. This underscores the need for broader macroeconomic and structural reforms to strengthen the consumption base upon which VAT is generated. Such studies include Okoye et al (2018), Ogunsola and Jabar (2021), Mwasika (2016), Muluka et al (2015), Iluno et al (2018), and Pranay (2023). From the outcome of these studies, By implication, there is also an indirect effect of interest rate on value added tax in Nigeria

Value Added Tax and Government spending

The Government spending as depicted in table 3 above has a beta value of 0.038930 with a p-value of 0.9971 which is significant at 5% significant level. The extremely high p-value indicates that government spending does not have a meaningful direct impact on VAT within the period under study. Although the positive coefficient suggests that increases in public expenditure may be associated with marginal increases in VAT, the insignificance of the relationship implies that such effects are weak and statistically unreliable. This finding suggests that the size of government expenditure alone is insufficient to stimulate VAT. In theory, increased government spending is expected to boost aggregate demand, stimulate economic activity, and expand the tax base. However, the result implies that in Nigeria, much of government spending may not translate into increased consumption of VAT goods and services. This may be due to leakages such as corruption, inefficiencies, or spending patterns that do not directly stimulate domestic consumption. The insignificance of government spending may also reflect time-lag effects. The impact of public expenditure on economic activity and consumption often occurs over the long run. If the study period or model specification does not adequately capture these lags, the short-run effect of government spending on VAT may appear insignificant. The result reinforces the broader conclusion that VAT in Nigeria is more



responsive to price and liquidity factors than to fiscal expenditure levels. This aligns with the study's findings that inflation and money supply significantly influence VAT, while government spending does not play a decisive role. The positive but insignificant effect of government spending on VAT implies that increasing public expenditure alone is not sufficient to enhance VAT performance in Nigeria. Policymakers should therefore focus on improving the efficiency, targeting, and productivity of government spending to ensure that it contributes meaningfully to consumption growth and VAT generation. This outcome is consistent with the findings in Okafor (2020), Islam et al (2022), Hu et al (2019), Courtney (2016), Okon and Amaegberi (2018), Kibor and Kimani (2019),

Value Added Tax Credit and Money supply

The Money supply as depicted in table 3 above has a beta value of 0.375964 with a p-value of 0.0056 which is significant at 5% significant level. The statistical significance of money supply indicates that liquidity conditions in the economy are a major determinant of VAT performance in Nigeria. An increase in money supply enhances the availability of cash and credit in the economy, which stimulates consumption and business transactions. Since VAT is levied on goods and services, increased transaction volumes directly expand the VAT base and raise government revenue. Third, the result highlights the important role of monetary policy in fiscal revenue generation. It suggests that policies of the Central Bank of Nigeria that promote adequate liquidity can indirectly improve government revenue through higher VAT receipts. This underscores the need for coordination between monetary authorities and fiscal managers to achieve both macroeconomic stability and revenue objectives. The positive and significant effect of money supply enhances VAT; it also raises concerns about inflationary pressure if liquidity growth is excessive. If money supply expands faster than output, it may fuel inflation, which could eventually erode purchasing power and weaken real consumption. Therefore, monetary expansion should be carefully managed to ensure sustainable VAT growth.



The significance of money supply suggests that VAT forecasting and budgeting in Nigeria should explicitly account for monetary trends. Incorporating money supply dynamics into fiscal planning will improve revenue projections and enhance budget credibility. The positive and significant effect of money supply on VAT implies that liquidity expansion plays a crucial role in stimulating consumption and taxable activities in Nigeria. However, sustained VAT growth requires a balanced monetary policy that promotes economic activity without triggering macroeconomic instability. Such studies include Okoye et al (2018), Ogunsola and Jabar (2021), Mwasika (2016), Muluka et al (2015), Iluno et al (2018), and Pranay (2023). From the outcome of these studies, there is a strong argument for positive effect of value added tax.

5.0 Summary of Findings, Conclusion and Recommendation

5.1 Summary of Findings:

The study examined value added tax and macro-economic variables and in Nigeria. Based on a 30 fiscal year from 1994-2024 and using four measures of macroeconomic variables (INF, INT, GSP & MS). The study found that:

1. Value added tax has significant effect on Inflation rate in Nigeria ($t=11.15879$, $p=0.0000$)
2. Value added tax has significant impact on Interest rate in Nigeria.. ($t=-3.925749$, $p=0.0005$)
3. Value added tax has significant effect on Government spending in Nigeria. ($t=3.9411435$, $p=0.9971$).
4. Value added tax significantly influence Money supply in Nigeria. ($t=7.609603$, 0.0000)

5.2: Conclusion

This study examined the effect of selected Value Added Tax (VAT) and macroeconomic variables in Nigeria, with particular focus on inflation rate, interest rate, government



spending, and money supply. The findings reveal that macroeconomic conditions play an important role in shaping VAT performance, although the degree of influence varies across variables.

The results show that inflation rate has a positive and significant effect on VAT revenue in Nigeria. This implies that increases in the general price level raise the nominal value of taxable goods and services, thereby leading to higher VAT collections. The finding suggests that VAT revenue in Nigeria responds strongly to price movements within the economy.

The study further reveals that money supply exerts a positive and significant influence on VAT revenue. This indicates that an increase in liquidity in the economy stimulates consumption and transaction volumes, which in turn expands the VAT base and enhances revenue generation. This underscores the relevance of monetary policy in improving indirect tax performance.

In contrast, interest rate was found to have a positive but statistically insignificant effect on VAT revenue. This suggests that changes in interest rates do not significantly influence VAT collections in Nigeria, possibly due to structural factors such as limited credit access and the dominance of cash-based transactions in the economy.

Similarly, government spending showed a positive but insignificant relationship with VAT revenue. This implies that while public expenditure may stimulate economic activity, its impact on VAT revenue depends largely on how efficiently and productively such spending is allocated rather than on its size alone. Overall, the study concludes that inflation rate and money supply are the major macroeconomic determinants of VAT revenue in Nigeria, while interest rate and government spending play a less decisive role. The findings emphasize the need for coordinated fiscal and monetary policies that promote price stability, adequate liquidity, and efficient public spending in order to strengthen VAT revenue and enhance Nigeria's fiscal sustainability.



5.3 Recommendations

Based on the findings of this study, the following recommendations are made to enhance Value Added Tax (VAT) revenue performance in Nigeria:

i. Since Value Added Tax was found to be positive and significant, government and monetary authorities should maintain inflation at a moderate and controllable level. Moderate inflation increases the prices of taxable goods and services, thereby boosting VAT revenue.

ii. Since Value Added Tax showed a negative but significant relationship with interest rate, monetary authorities should pursue stable and growth-oriented interest rate policies. Lower and stable interest rates can encourage borrowing, investment, and consumption, which indirectly increases VATable transactions. While interest rate alone may not significantly influence VAT revenue, its coordination with other macroeconomic policies can enhance overall tax performance

iii. Although Value Added Tax was positive but insignificant, efforts should be directed toward improving the efficiency, transparency, and sectoral allocation of public expenditure. Government spending should be channeled into productive sectors such as infrastructure, education, and industrial development that stimulate consumption and expand the VAT base.

iv. Given that money supply has a positive and significant effect on VAT revenue, the Central Bank of Nigeria should adopt policies that ensure adequate liquidity in the economy to stimulate consumption and business activities.



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