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VALUE ADDED TAX AND GROSS FIXED CAPITAL FORMATION IN NIGERIA

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ABSTRACT

This study assessed the effect of value added tax on gross fixed capital formation in Nigeria for a period of twenty years spanning from 2006 to 2025. Ex-Post facto research design was adopted. The time series data were obtained from Federal Inland Revenue Services, Central Bank of Nigeria, National Bureau of Statistics and the World Bank Publications. As a preliminary step in testing, the study employed the Augmented Dickey-Fuller (ADF) Unit root test to confirm the order of integration of the time series variables. The study employed Ordinary Least Square (OLS) regression analysis. In conclusion, the study found that value added tax has a significant and positive effect on gross fixed capital formation in Nigeria at 5% level of significance. It was recommended that the Federal Government should see that the application of value added tax ensures that international trade takes place on a transparent basis and avoids distortions like tax cascading associated with alternative commodity taxes devise means of curbing corruption and leakages in the petroleum profit tax administration.

Key words: *Gross Fixed Capital Formation, Tax Reform, Value Added Tax.*

INTRODUCTION

Tax systems are used by governments to achieve a variety of objectives, including income redistribution, stabilization, financing publicly provided goods and services, and fostering investments and economic growth. Differences in the ease with which different households, firms or sectors within an economy can be taxed also give rise to many alternative specifications of particular taxes which may have different associated economic effects (Amahalu & Okafor, 2023). Taxes common to many structures include direct taxes on income, profits and property (for example, land, wealth) and indirect taxes on domestically produced goods and services (value added taxes, excises), imports and exports (Aruna, et.al., 2020). Taxation can be used to influence or direct the consumption pattern of citizens and to encourage or discourage investment in certain sectors of the economy. Tax revenue (such as

companies' income tax, petroleum profit tax, value added tax, custom and excise duties, and personal income tax) is the income that is collected by governments through taxation (Okeke, et.al., 2018b). Taxation is the primary source of government revenue. Revenue may be extracted from sources such as individuals, public enterprises, trade, royalties on natural resources and/or foreign aid (Okeke, et.al., 2018a).

Gross fixed capital formation measures the value of acquisitions of new or existing fixed assets by the business sector, governments, and "pure" households (excluding their unincorporated enterprises) minus disposals of fixed assets. Gross fixed capital formation a major contributor to overall investments is the leading source of business cycle volatility, employment generation and economic growth (Benee, et.al., 2021b). In the long term, the taxation of income (such as companies' income tax, petroleum profit tax, value added tax, custom and excise duties, and personal income tax) whilst providing the revenues needed to fund government expenditure, may also depress output, consumption and gross private domestic investment. Higher taxes such as corporate and personal income and capital gain taxes inhibit domestic investment rate and subsequently economic growth (Ndah, et,al., 2024). Higher taxes encourage tax evasion and distort the efficient utilisation of human capital and slow down growth in labour supply as economic agents substitute labour choice in favour of leisure. In addition, suboptimal taxes can lead to a huge flow of resources from high productivity sectors such as manufacturing industries to informal sectors that may have lower productivity and multiplier effects (Amahalu, et.al., 2024).

Tax revenue is of great concern in investors' decisions and hence in economic growth and employment. Complex and excessive taxation deters foreign investors, drives out domestic investors, curbs entrepreneurship, and results in deadweight losses due to tax compliance and tax avoidance costs (Amahalu, et.al., 2022). Nigeria tax system is confronted with certain challenges such as multiplicity of taxes, bad administration, non-availability of database, tax touting, complex nature of the Nigerian tax laws, minimum tax, commencement, change of accounting date and cessation, and non-payment of tax refunds, tax evasion, tax avoidance, bribery on the part of tax officers, and poor accountability, hence, the need to ascertain the effect of value added tax on gross fixed capital formation in Nigeria.

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Objective

1. The study sought to ascertain if Value added tax has any significant effect on gross fixed capital formation.

LITERATURE REVIEW

Value Added Tax (VAT)

VAT is a consumption tax paid on all goods and services provided in or imported into Nigeria (Amahalu & Umunnakwe, 2024). VAT, which is currently charged at the rate of 7.5% is payable by individuals, companies, and government agencies. Certain goods and services including medical and pharmaceutical products, medical services basic food items, books and educational materials, exports and others are exempt from VAT (Umunnakwe & Amahalu, 2024). A value-added tax (VAT) is a consumption tax that is levied on a product repeatedly at every point of sale at which value has been added. That is, the tax is added when a raw materials producer sells a product to a factory, when the factory sells the finished product to a wholesaler, when the wholesaler sells it on to a retailer, and, finally, when the retailer sells it to the consumer who will use it. Ultimately, the retail consumer pays the VAT. The buyer in each earlier stage of the product's production is reimbursed for the VAT by the subsequent buyer in the chain (Oshiole, et.al., 2024).

VAT is an indirect tax on the consumption of goods and services in the economy (Okonkwo, et.al., 2022). Value-added tax (VAT) is a type of indirect tax levied on goods and services for value added at every point of production or distribution cycle, starting from raw materials and going all the way to the final retail purchase (Ezechukwu, et.al., 2022). VAT was introduced on April 1, 2005. Under it, the amount of value addition is first identified at each stage, and then tax is levied on the same. Ultimately, the end consumer has to pay the complete VAT while buying goods; buyers at earlier stages of production receive reimbursements of tax they have paid, because the consumer bears the entire tax (Dim, et. al., 2022). VAT is governed by Value Added Tax Act Cap V1, LFN 2004 (as amended). The main aim behind the introduction of VAT was to eliminate the presence of double taxation and the cascading effect from the then existing sales tax structure. A cascading effect is when there is tax levied on a product at every step of the sale. The tax is levied on a value which includes tax paid by the previous buyer, so the consumer ends up paying tax on already-paid tax. Levying tax at each stage of

the production process ensures better compliance and fewer loopholes to exploit (Bennee, et.al., 2021a).

Gross Fixed Capital Formation

Gross fixed capital formation (GFCF) measures the value of acquisitions of new or existing fixed assets by the business sector, governments and households (excluding their unincorporated enterprises) *less* disposals of fixed assets. GFCF is a component of the expenditure on gross domestic product (GDP), and thus shows something about how much of the new value added in the economy is invested rather than consumed (Obumneme, et.al., 2026). In terms of macro-economic policy, gross fixed capital formation, which is the major component of domestic investment, is seen as an important process that could accelerate economic growth (Aniefor & Amahalu, 2022).

Value Added Tax and Gross Fixed Capital Formation

Value-added tax is a consumption tax that has been embraced by so many countries all over the world. Because it is a consumption tax, it is relatively difficult to evade and easy to administer (Ashiedu, et.al., 2022). Value-added tax in its simplest form is a tax chargeable on the supply of goods and services and only indirectly on the people who consume such goods and services. The relevance of tax revenues is a core motive for suggesting that emerging economies such as Nigeria must increasingly mobilize their internal resources to enhance economic growth and reduce fiscal deficits through the implementation of an effective tax policy (Okeke, et.al., 2018). However, VAT has become the primary source of revenue to a lot of countries that are still developing.

The rationale behind the introduction of value added tax in Nigeria came from the study group set up by the federal government in 1991 to review the entire tax system. This review was urgently needed as it is proven theoretically that economic growth (GDP) depends on total government revenue generated via different means of which value added tax (VAT) revenue is inclusive. This proven assertion coupled with the need to revamp Nigeria's economy and set it on the path of growth and sustainable development, the Nigerian government worked tirelessly for years in search of a permanent solution to the economic problems it faced (Amahalau, Obi, Okudo & Okafor, 2022). By the introduction of VAT, it was intended that government revenue priorities will shift from oil revenue which is vulnerable to international petroleum price fluctuation to more stable internally generated revenue

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Theoretical Review

Optimal Tax Reform Theory (OTRT)

Optimal taxation is the taxation that reflects society's choices between the rival goals of equality and economic efficiency, the starting point of which is to maximize social welfare. Optimal tax theory originated from the foundational work of Ramsey (1927). Frank P. Ramsey (1927) developed the theory in his article "A Contribution to the Theory of Taxation". The standard theory of optimal taxation posits that a tax system should be chosen to maximize a social welfare function subject to a set of constraints. The literature on optimal taxation typically treats the social planner as a utilitarian: that is, the social welfare function is based on the utilities of individuals in the society. Theory of optimal taxation is the study of designing and implementing a tax that maximises a social welfare function subject to economic constraints. The social welfare function used is typically a function of individuals' utilities, most commonly some form of utilitarian function, so the tax system is chosen to maximise the aggregate of individual utilities. Tax revenue is required to fund the provision of public goods and other government services, as well as for redistribution from rich to poor individuals. However, most taxes distort individual behavior, because the activity that is taxed becomes relatively less desirable; for instance, taxes on labour income reduce the incentive to work.

Empirical Review

Agbo and Nwachukwu (2025) evaluated the effect of tax revenue and government spending on the Real GDP of Nigeria for1990 to 2022. The study employed the ex post facto research plan, while using the OLS multiple regression technique to ascertain the impact of the explanatory variables on the dependent variable. The findings showed that tax has a positive but weak effect while government spending has adverse and little impact on the Real GDP of Nigeria.

Kuba, Alhaji and Muhammad (2025) examined the relationship between tax revenue and the economic growth of Nigeria from 1981 to 2022. The study used an ex-post facto research design sand three hypotheses were tested at 5% significance level, utilizing data from the CBN. The findings indicated that the tax on petroleum profits had a coefficient of -0.022970

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and a t-value of - 0.513293, suggesting it had a minimal impact on GDP at the 5% level. In contrast, corporation income tax revealed a significant positive correlation with GDP over the long term, with a coefficient of 0.370362 and a t-statistic of 5.975400. Additionally, the customs excise tax displayed a slight negative association with economic growth, evidenced by a t-value of -2.183335 and a coefficient of -0.180944.

Igube and Okafor (2025) focused on impact of federal government taxes on Nigeria economic growth. In achieving the objectives of the study, ex-post facto research design was adopted. The source of data for the work were secondary data through the use of CBN statistical bulletin and Federal inland revenue bulletin. The secondary data were sourced through Federal inland revenue services (FIRS) bulletin and Central Bank of Nigeria (CBN) statistical bulletin from 1972-2022. Data collected from FIRS includes, petroleum profit tax, company income tax, value added tax and custom and excise duties. However, the data collected from CBN statistical bulletin includes, gross domestic product, foreign direct investment and per capita income.Data collected were analyzed using descriptive statistics, unit root and Auto-Regression Distribution Lag (ARDL). The findings revealed that federal government taxes (PPT, CIT, VAT and CED) have no significant impact on change in gross domestic product in Nigeria.

MATERIALS AND METHODS

This study employed E*x-post facto* research design. Time series data were obtained from the publications of Federal Inland Revenue Service (FIRS) bulletin of various years, Central Bank of Nigeria (CBN) publications, like Statistical Bulletin various years, Annual Reports for various years; National Bureau of Statistics (NBS), Federal Ministry of Budget and Economic Planning and the World Bank Publications from 2006 to 2025. Augmented Dickey-Fuller (ADF) test was used to check for stationarity and to find out if the time series data contain a unit root to avoid a spurious result.

Table 1: Measurement of Variables

Variable Type	Indicators	Variable Symbols	Definition
Independent Variable			
	Value Added Tax	VAT	7.5% of total value of the goods or services purchased
Dependent Variable	Gross Fixed Capital Formation	GFCF	Fixed asset acquisitions minus disposals

The results of the unit root are presented in Table 2:

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Table 2 Differenced Results

Variables	Test Statistic	Test Critical Values			Status	Prob.
	ADF	1% level	5% level	10% level	Stationary	
DGFCF	-8.085822	-4.004425	-3.098896	-2.690439	1(1)	0.0000
DVAT	-12.52491	-3.920350	-3.065585	-2.673459	1(1)	0.0000

Source: E-views 10.0, Output File, 2026

Table 3: Ordinary Least Square regression (OLS) analysis showing the effect of VAT on GFCF

Dependent Variable: GFCF
Method: Least Squares
Date: 04/04/26 Time: 15:22
Sample: 2006 2025
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.974275	2.327106	3.426692	0.0037
VAT	0.506897	0.111110	4.562131	0.0005

R-squared	0.252067	Mean dependent var	2.910500
Adjusted R-squared	0.202205	S.D. dependent var	0.311220
S.E. of regression	0.982613	Akaike info criterion	-2.805453
Sum squared resid	0.021937	Schwarz criterion	-2.531558
Log likelihood	22.15981	Hannan-Quinn criter.	-2.774047
F-statistic	12.00110	Durbin-Watson stat	1.580999
Prob(F-statistic)	0.000501		

Source: E-Views 10.0 regression output, 2026

The regressed coefficient correlation result in table 3 shows the existence of a positive relationship between GFCF and VAT. The coefficient of determination obtained is 0.506897 (50.69%), which is commonly referred to as the R^2. The R-Squared value shows that 50.69% of the systematic variations in the dependant variable (GFCF) can be predicted by the independent variable up to 50.69%. 49.31% was explained by unknown variables that were not included in the model. The overall significance of the model Prob > F-statistic is statistically significant at 5%.

GFCF = 7.974275 + 0.506897VAT + μ. The implication is that for there to be a unit increase in GFCF, VAT has to increase by 51%.

Decision: Considering the p-value of 0.0005 which is less than the critical p-value of 0.05, hence the study concludes that Value added tax has a significant and positive effect on gross fixed capital formation at 5% level of significance (β_1 = 0.506897; p-value = 0.0005).

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CONCLUSION AND RECOMMENDATION

The study concludes that value added tax has a significant and positive effect on gross fixed capital formation in Nigeria. Based on the findings made, the study recommended that:

i. Since VAT plays a critical role towards domestic revenue mobilization and is the major revenue instrument in many developing countries. Government should see that the application of VAT ensures that international trade takes place on a transparent basis and avoids distortions like tax cascading associated with alternative commodity taxes.

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