Tax System and Equity Investment in a Growing Economy

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ABSTRACT

The purpose of the study is to identify the impact of the tax system on investment in equity capital by analyzing the six types of taxes that affect the activities of firms. The data for the independent variables (tax classes in Nigeria) are obtained from the Federal Internal Revenue Service, while the data for the dependent variable (equity investment) are obtained from the Statistical Bulletin of the Central Bank of Nigeria. The necessary statistical methodologies are used to examine the impact of various tax classes on equity investment from 2011 to 2020. According to the research, capital gains tax and gas income tax have little effect on equity investment. The petroleum profit tax and corporate income tax have a considerable detrimental impact on equity investment. On the plus side, value added tax and education tax have a significant favorable impact on equity investment. These **results** are one-of-a-kind and precisely depict the genuine nature of the country's tax system and its impact on investment. As a result, the research proposes a tax shift to lessen the tax burden on enterprises in order to stimulate equity investment, which will increase firms' capital base for the purpose of business expansion and growth of the nation's economic structure.

Keywords: tax structure; business taxes; equity investment; firms

INTRODUCTION

In a developing economy, the tax structure can either increase or discourage equity investment, depending on whether the arrangement is flawed and stock investment averse. Every economy necessitates a harmonious tax system in order to prosper, because investment in stocks is dependent on how heavy the tax implications might be at any particular time. As much as investors are concerned about their cost of investment, corporations are similarly hesitant to extend their stock base if the tax implications of such expansion would have a significant impact on their profitability. Thus, a good tax system strives not only to upgrade the required cash for community disbursements but also to promote wealth distribution, economic equilibrium, and the allocation of resources, which should be essential for economic progress [1–3]. S.M. Nzotta [4] listed four essential trepidations that must be acknowledged in order for revenue system to thrive in any municipality. To initiate this assumption, a tax is an obligatory recompense provided by citizens to the government, and this support is for wide-ranging communal use. Second, a tax imposes an all-purpose charge on members of a community. Third, there is a presumption that the tax financier's involvement to unrestricted proceeds may not be equal to the benefits gotten. As a final point, the administration does not charge a tax on a citizen because it has delivered definite welfare to the entire household. Thus, it is flawless that a strong tax arrangement plays a multidimensional starring role in any nation's fiscal attainment, and Nigeria is not exempt in this respect [5].

Nigeria's tax structure comprises both undeviating and ancillary assessments. Straight taxes have numerous components. Individual profit tax, energy revenue tax, corporate income tax, and educational tax are examples. Private proceeds tax is a compulsory levy on the returns of persons, whether employment remuneration or income from a sole proprietorship business [6]. An oil return tax is a tax levied on profits derived from petroleum operations [7]. The petroleum profit tax, according to [8], is a tax that applies to upstream operations in the oil business. Petroleum

Profit Tax (PPT) is a tax levied on businesses extracting and shipping crude oil. It is especially relevant to the rents, royalties, margins, and profit-sharing components involved with oil extraction, scouting, and drilling licenses [9]. Petroleum profit tax is a tax on upstream oil sector operations such as rent, royalties, margin, oil mining prospecting, and exploration leases. Companies' income tax (CIT), according to [7], is a tax levied on a company's earnings. According to [10], firm income tax is a tax on profits produced by businesses. It was first implemented in Nigeria in 1961 and is handled by the Federal Internal Revenue Services. The CIT statute has been amended several times since it was enacted, however, CIT rate has remained at 30%.

The education tax was implemented in 1993 as a societal requirement imposed on limited liability enterprises to make sure they contribute to the expansion of learning amenities in the nation [11]. It is a sectoral tax levied on the assessable profit of Nigerian-incorporated business organizations. Decree No. 7 of 1993, as modified, imposed the tax. The education tax money would be utilized solely to enhance educational facilities and supplement the education sector's financial problems in Nigeria. As highlighted by [12], the most major components of indirect taxes in Nigeria are VAT (Value Added Tax), Customs and Excise Duty. The Federal Government of Nigeria implemented VAT in January 1993. The argument for substituting the then-sales tax with VAT was driven by the sales tax's restricted tax base, whereas VAT has a bigger tax basis. VAT is defined by [13] as a tax on the projected worth supplementary to an item for consumption or service at every phase of its production or delivery, and the additions are finally made by the consumer. VAT is a consumer levy applied at each level of the distribution cycle [14]. It is currently charged at 7.5% on all applicable goods and services.

Taxes determine the amount of money invested in listed company shares on the Nigerian Stock Exchange. Ordinary shares or stocks are examples of equity, and their holders are invariably legitimate owners of businesses. Shareholders are equity holders who are entitled to dividends based on the number of shares owned in a company at any particular moment. They are also co-owners of the company and, hence, stakeholders. At the annual general meeting, equity holders elect who will serve as directors, external auditors, and other critical roles. Thus, the organization's growth is determined by the degree of investment in its stock, which is likewise influenced by the level of tax burden. This research is critical because it will advise the government on the sort of tax structure that should be supported to increase equity investment in the country. Previous research [15–20] focused on the influence of the tax system on national economic growth. The current study investigates the impact of a country's tax system on equity investment, particularly in a rising economy. Private sector investment has provided a significant boost to the Nigerian economy for several years. However, the country's tax system has yet to be developed in relation to this sector of the economy. As a result, this analysis employs a combination of direct and indirect taxes to analyze the extent to which equity investment responds to Nigeria's tax system. This research work has six sections. Section one deals with the introductory stage; section two discusses the review of previously existing literature; section three specifies the methods used in this study; section four provides the empirical results of this study; section five provides a detailed discussion based on the empirical results; and finally, section six provides concluding remarks.

LITERATURE REVIEW

F. Widmalm [20] revealed that the taxation system has an influence on economic prosperity. Personal income tax, specifically, was associated with several adverse relationships with economic success. Y. Lee and R. H. Gordon [21] research revealed that mandatory company tax ratios were highly negatively related to bridge fluctuations in average economies. According to fixed-effect regressions, boosts in business taxes reflect a poorer prospective rate of growth within economies. Reducing the company tax rate by ten percentage points boosts the rising trend by 1 to 2%, as per the marginal effects.

J. Arnold [16] results of a study of 21 European countries showed that income taxes are frequently associated with worse productivity expansion than consumer and real estate taxes. Real estate taxes, notably recurring taxes on real property, appeared to be the most pro-growth, followed by indirect taxation and finally payroll taxes. Business taxes had a detrimental influence on GDP per capita. These findings demonstrated that an earnings innovation

tax policy would shift a section of the total income aside from taxable income, notably corporate taxes, and toward recurring real estate and buyer levies. There was more risk of a negative relationship between individual income tax wealth distribution and productivity.

According to [22], the study found that real estate taxes were the most secure method of expansion, followed by sales taxes, personal taxes, and corporation taxes. I.A.L. Ramot and M. Ichihashi [23] revealed that state corporations' business taxes were strongly negatively associated to income and wealth imbalances after controlling for many other determinants of wealth and overall economic movement. Individual tax ratios, on the other hand, had little effect on output or income inequality.

Y. Keho [24] research disclosed that increases in the tax liability and the proportion of straight taxable income to tax receipts were significantly associated with economic expansion declines, with an extravagant tax rate being considerably more destructive than the proportion of direct taxes collected. R.V. Adkisson and M. Mikidadu [25] outcomes were used to quantify the developmental impacts of the profitability of tax sharing adjustments.

S. Di Sanzo et al. [26] study found that periodic levies on underlying assets looked to be the least harmful to growth, but there was no compelling proof that sales taxes were superior to payroll taxes. M. Grdinic et al. [27] proved that all sorts of taxes had an adverse effect on economic growth. Personal income taxes had the highest adverse effect on economic growth, followed by corporation taxes and city taxes, which had the least detrimental effect. Consumption taxes had relatively irrelevant effects.

D. Stoilova [3] provided evidence that a tax system based on preferential indirect taxation, payroll taxes, and city taxes was more helpful to productivity expansion. M.F. Mdanat et al. [28] confirmed that purchases and duties had a favorable influence on per capita GDP growth; however, personal taxes had a detrimental effect on the indicator. The results of the analysis by B. Gashi et al. [29] revealed the impact of specific taxes on GDP, such as profit tax, interest, dividend, and rent taxes, VAT, Withheld tax, Individuals as well as corporate taxes. As a consequence, the findings demonstrated that the large bulk of levies had a beneficial impact on GDP growth.

I.J. Manukaji [30] analysis revealed that all of the tax classifications investigated, including consumer tax collection, individual earnings levy, crude tax, and firm taxes, had a significant influence on Nigeria's economy. O. Uhuaba and T. Siyanbola [31] inquiry discovered that Nigeria's tax structure had a noteworthy positive impact on infrastructure. An investigation by J. Alves [17] found that the effect of income taxation on capital appreciation was greatest when revenue from this tax source was about 10.7 percent. According to A. Lapatinas et al. [32], capital taxes have a greater negative influence on economic sophistication in more advanced countries.

M.L.T. Nguyen et al. [33] found that consumption tax (CT) and income tax (IT) had significant effects on economic growth in Vietnam's localities, while property tax (PT) was not statistically relevant. N. Yanikkaya and T. Turan's [34] analysis found that moving from income taxes to expenditure and housing costs had a direct influence on the rate of economic growth, but switching from consumption and real estate taxes to income taxes had a favorable effect for low-income countries. Using Panel Group mean guesstimates and data from 14 Indian states from 1991–2016, Y.N. Neog and A.K. Gaur [35] exposed that income and commodity–service taxes had a negative influence on state wealth creation, whereas possessions and capital operation taxes had a generously encouraging consequence.

A. Krysovatyy et al. [1] explored the relationship between the tax liability and GDP and, using chain numerical solution, revealed the effect of work rewards (salaries), taxes, and gross surplus on GDP growth, while also affirming the presumption that an increase in the tax burden did not result in a decline in GDP in Ukraine. There was a definite association between the tax burden and GDP in Ukraine. When the tax burden was reduced, GDP decreased; when it was increased, GDP grew. Lower corporate income tax rates were also shown to have a positive impact on investment dynamics, whereas higher excise taxes resulted in a fall in legal production and an increase in the shadow sector. VAT (20%) had no influence on GDP growth in Ukraine, but imposing a 7% VAT on medicines resulted in price hikes and a change in purchasing pattern toward low-cost items. Personal income tax changes (increases) reduced consumer demand, stifling GDP growth and welfare.

S. Gechert and P. Heimberger [36] study discovered that a variety of factors, including investigator choices regarding the assessment of growth and company taxes, as well as correcting for other financial elements, influenced published projections. N. Alinaghi and W. R. Reed [15] have done a meta-analysis of the influence of taxes on fiscal evolution in OECD states. A classification system of [37] was used in the research, which estimates the output contribution of different tax-spending-deficit configurations. Classification system was used to examine 979 approximations from 49 OECD studies on tax implications. A 10% rise in taxes, when paired with a Fiscal Fall in tax mix, culminated in a 0.2% drop in annual GDP growth. When paired with a Tax Positive fiscal policy package, the identical tax escalation was connected with a 0.2% increase in annual GDP progression.

RESEARCH METHODOLOGY

The research looks at the impact of tax structures on equity investment in a rising economy. For all independent variables — petroleum profit tax (PPT), corporate income tax (CIT), gas income tax (GIT), capital gains tax (CGT), education tax (EDT), and value added tax (VAT) — the data set for this study was acquired from the Federal Inland Revenue Service data source (VAT). The Central Bank of Nigeria (CBN) Statistical Bulletin was used to compile the data set for equity investment (EQI). All data were collected in billions of naira. The study applied the multiple regression technique for data exploration. Multivariate regression is a statistical technique that describes the link between disparate or predicting factors and one dependent or criterion variable. A dependent variable is defined as a function of numerous independent variables, each with its own coefficient, plus a constant term. Multiple regression necessitates the use of two or more predictor variables, which is why it is named multiple regression.

The mathematical demonstration of multiple linear regression is:

$$Y = a + bX_1 + cX_2 + dX_3 + eX_4 + fX_5 + gX_6 + \varepsilon,$$

where Y — reliant variable; X_1, X_2, X_3, X_4, X_5, X_6 — autonomous (expounding) variables; a — intercept; b, c, d, e, f, g — gradients; ε — residual (error).

Also, every parameter in a multiple regression model informs us the effect of a change in that informative variable on the dependent factor while maintaining the other clarifying elements fixed [38]. According to G. Smith [38], we require a sufficient number of data points and significant variance in each explanatory variable to produce credible estimates.

The multiple regression model assumes the non-collinearity of independent variables used in a study. In this study, multi-collinearity is tested via Variance-Inflatory Factor (VIF) to avoid its occurrence. The VIF measures the rate at which the variances of a variable rise. It demonstrates how the existence of multicollinearity increases the variation of a variable. As the variance of a variable grows, so does the level of collinearity [39]. A general guideline is that if the VIF index value exceeds 10, the variable is very collinear [39]. Variable Inflation Factors (VIF) are commonly applied to identify the presence of multicollinearity. The strong point of the connection between the sovereign dynamics is firm by VIF appropriate values. It is projected by lapping one element against each factor. An independent variable's VIF score shows how effectively the variable is explained by other independent variables. The R^2 value is used to measure how well one self-determining variable is characterized by the other autonomous variables. A high R^2 score indicates that the variable is substantially associated with the other elements in the model. This is captured by the VIF formula:

$$VIF = \frac{1}{1} - R^2.$$

The study tested for normality using Jarque-Bera histogram normality. With a value greater than the 5% threshold of significance, the data set has a normal distribution; otherwise, the data set does not have a normal distribution. To ensure the lack of heteroscedasticity in the regression model, the p-value must be larger than the 5% threshold [40]. The serial correlation of Breusch-Godfrey the LM test is a test for autocorrelation in relapse model mistakes. The valueless premise provides that there is no sequential association of any order with a p-value larger than 5% significance. In this order, the stability test's idea is that if non-linear mixtures of the predictors have any potential to explain the response variable, the model has been mis-specified.
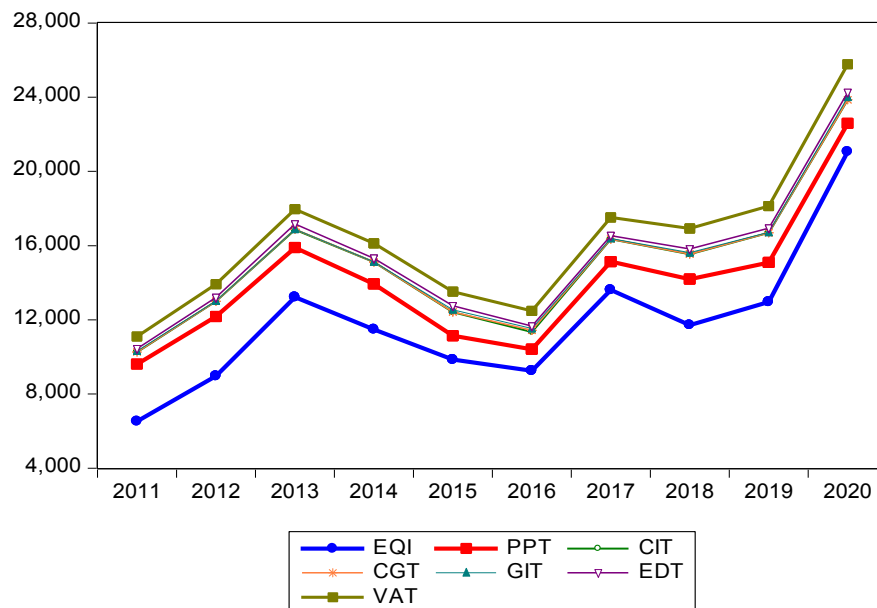
Fig. 1. **Trend of Data from 2011–2020**

Source: Federal Inland Revenue Service data base and CBN Statistical bulletin. URL: https://www.firs.gov.ng/tax-statistics-report/ (accessed on 28.06.2021).

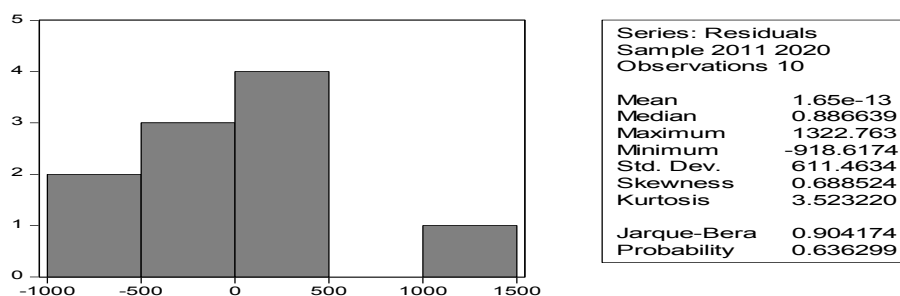|	
Series: Residuals	
Sample 2011 2020	
Observations 10	
Mean	1.65e-13
Median	0.886639
Maximum	1322.763
Minimum	–918.6174
Std. Dev.	611.4634
Skewness	0.688524
Kurtosis	3.523220
Jarque-Bera	0.904174
Probability	0.636299

Fig. 2. **Histogram Normality**

Source: Research output from e-view 10.

RESULTS

The trend analysis of tax structure and equity investment shown in *Fig. 1* depicts a material relationship between equity investment and tax system in the country.

The graph shows that they were all rising and falling simultaneously. The implication is that a favorable tax structure improves investment in equity, while unfavorable tax structure diminishes investment in equity and affects firms' expansion. Therefore, tax is one of the macroeconomic variables that affects stock market development, especially investment in equity. Tax structure is a component of government policies affecting investors' decisions and firms' growth prospects. High corporate profit taxes have a different effect in that they may deter enterprises from locating in the nation. Just as low-tax states may entice businesses away from their neighbors, low-tax countries prefer to entice any movable enterprises. Of poorer quality, enterprises that are incapable of repositioning would stop paying of the complex tax and are at a competitive disadvantage in business and in tracking down investor funding [41].

The Jarque-Bera Test, which is a form of Lagrange multiplier test, is a normalcy test. Countless arithmetical assessments, such as the t test and F test, make ordinariness postulation; the Jarque-Bera check is generally performed before one of these tests to validate normalcy [40]. The examination specifically compares the skewness and kurtosis of data to check if they resemble a common scattering. An ordinary spreading has a skew of zero (that is, it is completely

Table 1

Variance Inflation Factors Sample: 2011–2020 Included Observations: 10

	Coefficient	Uncentered	Centered
Variable	**Variance**	**VIF**	**VIF**
PPT	0.881	40.079	3.879
CIT	5.037	60.020	3.176
CGT	295.884	2.885	2.011
GIT	152.124	6.603	2.519
EDT	79.220	28.784	1.564
VAT	4.740	39.883	2.758
C	17381979	154.966	NA

Source: Author's calculation.

Table 2

Other Investigative Checks

Test type	F-statistic	P-value
Heteroskedasticity Test Breusch-Pagan-Godfrey	0.27	0.92
Breusch-Godfrey Serial Correlation LM Test	1.94	0.45
Ramsey RESET Test	0.00	0.96

Source: Author's calculation.

proportioned around the mean) and a kurtosis of three; kurtosis shows how much data is in the tails and gives a notion of how "peaked" the distribution is [40]. The normal distribution is validated in this study by the skewness result in Figure 1, which is almost 0 and the Kurtosis, which is approximately 3. Furthermore, the Jarque-Bera finding, which has a p-value of 0.64 and is greater than the 5% level of implication, strongly confirms the normality of the data set distribution.

A perfect or precise link between the regression exploratory variables is referred to as multicollinearity. Linear regression analysis is based on the assumption that there is no perfect, accurate relationship among exploratory variables. When this assumption is broken in regression analysis, the problem of Multicollinearity arises. The necessities for multiple undeviating relapses are unchanged for the basic rectilinear model. Nonetheless, for the reason that compound direct scrutiny encompasses plentiful self-regulating elements, there is supplementary prerequisite for non-collinearity of the model. Self-governing factors should have the tiniest quantity of linking other in the same category. If the autonomous elements are intensely concomitant, defining the actual networks between the dependent and sovereign variables will be puzzling. The VIF index of all the independent variables in _Table 1_ is below the value of 10, therefore, there is no multicollinearity in the model.

The results of the Heteroskedasticity Test Breusch-Pagan-Godfrey, the Breusch-Godfrey Serial Correlation LM Test, and the Ramsey RESET Test are shown in _Table 2_. As a consequence, the p-value for the Heteroskedasticity test is 0.92, which is greater than the 5% level of significance. As a result, the regression model has no Heteroskedasticity. As a result, there is homoscedasticity, implying "same scatter" [41]. _Table 2_ similarly shows that serial correlation is missing, with a p-value of 0.45 being greater than the 5% threshold. It is also established that the model is stable, as evidenced by the p-value of 0.96 larger than the 0.05 significance level in the Ramsey RESET Test in _Table 2_.

MODEL STABILITY CONFIRMATION

Figures 3 and _4_ show the robustness and stability of the multiple regression model utilized in this investigation. The presence of a blue line between the red dotted lines that does not cross their borders indicates that the model is flawless and unshakable. The lack of autocorrelation is indicated by the Durbin-Watson result in _Table 3_, while the F-statistic p-value indicates that the model is a good fit and that all predictor factors jointly and positively enhance equity investment.

DISCUSSION

Table 3 summarizes the findings of the multiple regression analysis, which assisted in determining the impact of Nigeria's tax structure on equity investment. According to the findings in _Table 3_,
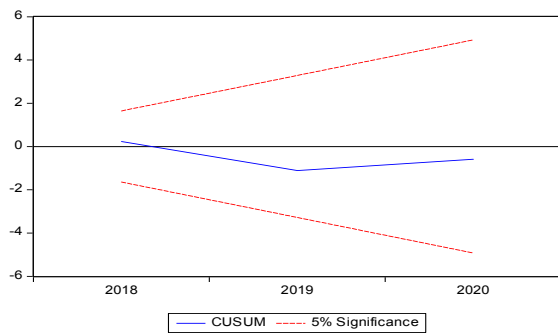
Fig. 3. **CUSUM Test**
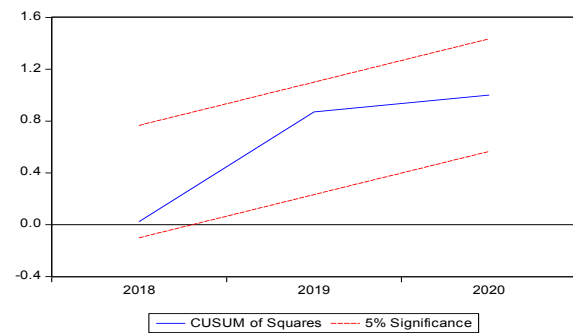*Source:* Research output from e-view 10.

Fig. 4. **CUSUM of Squares**
Source: Research output from e-view 10.

Table 3

Regression Analysis Dependent Variable: EQI Method: Least Squares
Sample: 2011–2020
Included Observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PPT	−3.365	0.939	−3.584	0.037***
CIT	−7.309	2.244	−3.256	0.047***
CGT	−38.434	17.201	−2.234	0.111
GIT	−27.666	12.333	−2.243	0.110
EDT	31.085	8.900	3.492	0.039***
VAT	12.936	2.177	5.941	0.009**
C	11302.08	4169.170	2.710	0.073
R-squared	0.975	Mean dependent var		11867.02
Adjusted R-squared	0.927	S.D. dependent var		3924.179
S.E. of regression	1059.086	Akaike info criterion		16.964
Sum squared resid	3364987	Schwarz criterion		17.176
Log likelihood	−77.821	Hannan-Quinn criter.		16.731
F-statistic	20.093	Durbin-Watson stat		2.008
Prob(F-statistic)	0.016			

Source: Author's calculation.

Note: ** Significant @ 1% level; *** Significant @ 5% level.

the Petroleum Profit Tax (PPT) has a considerable negative impact on equity investment (EQI). The t-statistic is −3.584 while the p-value is 0.037 which indicates that PPT has a significant unfavorable influence on EQI at 5% degree of importance because the t-statistic has a negative value and the p-value is lower than 0.05. This result contradicts the study outcome of [30]. Similarly, the findings indicate that corporate income tax (CIT) has a large negative impact on equity investment. This is because the t-statistic of CIT is −3.256 and has a probability figure of 0.047 which is also less than 0.05 level of significance. This outcome is consistent with the findings of [16, 21, 23, 28]. The findings of [1, 29, 30, 33] do not corroborate.

Table 3 further shows that capital gains tax (CGT) has a minor negative effect on equity investment. The t-statistic of CGT is −2.234 with a p-value of 0.111

which is above 0.05 level of materiality. On that basis, the findings of this study accord with those of [33], although [32] discovered a wholly negative result. However, research by [3, 16, 34, 35] found a considerable favorable effect. Similarly, the Gas Income Tax (GIT) has a negative neutral effect on the EQI. GIT has a t-statistic of −2.234 and a p-value of 0.110, both of which are above the 0.05 level of materiality. However, there was a dearth of actual research to compare this outcome against.

Table 3 shows that the education tax (EDT) has a strong beneficial influence on equity investment. *Table 3* shows that EDT has a t-statistic of 3.492 and a p-value of 0.039, indicating that it is statistically significant and positive. Because the t-statistic is favorable and the p-value is less than 5%, there is a significant positive impact. In this sense, there was a paucity of matching earlier studies for comparison purposes. In the same order, the results reveal that VAT has a significant beneficial impact on EQI because its t-statistic is 5.941 with a p-value of 0.009. This conclusion is backed by [3, 16, 28–30, 35]. On the other hand, [35] revealed that consumption tax had a negative influence on growth, whereas [18, 27] discovered a neutral effect.

CONCLUSION

The research looks into the effect of Nigeria's tax structure on equity investment. According to the regression results, the capital gains tax and the gas income tax had a neutral, although negative, effect on equity investment. The findings also demonstrated that PPT and CIT had a combined negative influence on EQI, but VAT and EDT had a considerable beneficial impact on EQI. The policy relevance of these findings is that the Nigerian tax system has to be overhauled in order to promote huge investment in the Nigerian equities market. In the study of [23], high tax rate reduced the growth of the economy. Likewise in Nigeria, as revealed by this study. VAT rate was 5% and is now 7.5% while the EDT rate is just 2% and both enhance equity investment. However, both CIT and PPT are major taxes in Nigeria, having 30% and 85% rates, respectively. They are all related to businesses that require investors to increase their capital base. According to all indicators, these tax rates may have been unpleasant for businesses and investors for a long time. Through equity investment, this study promotes capital market growth and business expansion. As a result, the study suggests a more favorable tax structure for equity investments. For instance, a tax shift might occur that lowers CIT and PPT rates in order to attract more equity investors in these enterprises, thus strengthening the economy and creating more jobs for the jobless. This is because when enterprises develop as a result of public investment, more employment opportunities are created, and society becomes a more peaceful environment for all residents.

The significance of this research is clear in the policy implications of the findings, which demonstrate that policymakers must lower tax rates to incentivize equity investment. The researcher encountered certain difficulties when doing this research, including a lack of data to compare these findings with those of other sub-Saharan African states. As a result, the study was restricted to Nigeria. As a response, the study suggests more research into the impact of tax structures on equity investment in other sub-Saharan African nations.

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