

CORPORATE ATTRIBUTES AND TAX AGGRESSIVENESS IN NIGERIAN LISTED MANUFACTURING COMPANIES

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Abstract

This study empirically examined the effect of corporate attributes on tax aggressiveness in Nigerian listed manufacturing companies. The expo-facto research design was adopted for this study. Secondary data were collected from annual reports of listed manufacturing companies in Nigeria from 2012 to 2021. The analysis was done using the Ordinary Least Square method to test the hypothesis formulated. The results from the study for the hypothesis stated revealed that, a positive relationship exists between firm size (FIS) and tax aggressiveness. The result is significant at the 0.05 level ($p < 0.030$) which implies that larger firms in Nigerian listed manufacturing companies tend to exhibit higher levels of tax aggression. This study concluded that corporate attributes have a significant effect on tax aggressiveness of listed manufacturing companies in Nigeria. The study therefore recommended that the Federal Inland Revenue Service (FIRS) should strengthen its tax monitoring and enforcement efforts while also implementing robust auditing processes and conducting regular tax compliance checks to identify and deter aggressive tax planning practices among Nigerian companies. Also, Firms with higher leverage ratios were found to be more likely to engage in aggressive tax planning. Therefore, policymakers should offer targeted support or incentives such as tax credits to such firms to reduce their reliance on aggressive tax strategies.

Keywords: Corporate attributes, Firm size, Firm growth, Capital Intensity and Taxation

JEL Classification: M49

1. INTRODUCTION

Taxation serves as a pivotal tool within fiscal policy for steering a nation's economy. In Nigeria, successive governments have utilized tax policies strategically to cultivate growth within the private sector, particularly in industrial and business domains (Okerekeoti, 2022). Conversely, the taxation landscape and regulatory framework in Nigeria also serve as a deterrent for manufacturing enterprises, impacting their ability to generate value for stakeholders and enhance the overall worth of their businesses (Lambe, Orbunde & Akinpelu, 2021). Worldwide, taxes

play a crucial role as a primary revenue source for governments. Taxation is defined as compulsory contributions by members of society to the state within a government's authority. Taxes serve multiple purposes, including facilitating economic growth, stabilizing the economy, redistributing income, promoting fairness and equity, ensuring fiscal responsibility and accountability, and funding the provision of national goods and services (Omesí & Appah, 2021).

The government utilizes the proceeds from taxes to fulfill its customary responsibilities, including the provision of public goods, the upkeep of law and order, defense against external threats, and the regulation of commerce and business to ensure social and economic stability (Rimamsikwe & Sule, 2022). Ngozi (2022) has expressed that taxpayers are anticipated to play a role in the advancement and prosperity of any economy. Nevertheless, taxpayers often perceive tax payments as burdensome, leading them to mitigate the impact of corporate income tax by exploiting various tax provisions.

Otuedon (2021) highlighted that the presence of inhospitable tax policies is among the various factors contributing to the expansion of the underground economy, where law-abiding individuals and corporate entities seek refuge from perceived injustices imposed by the government. Governments worldwide heavily depend on corporate taxation as a significant source of revenue. In Sub-Saharan Africa, corporate entities are obligated to pay Company Income Tax based on their assessable profit, adhering to local tax regulations (Kowthar, 2021). Over time, disparities in tax payments have been observed among businesses, indicating the utilization of tax avoidance strategies. Tax planning involves engaging in activities in accordance with tax regulations to reduce a company's tax burden, as measured by its effective tax rate. This practice entails exploiting the flexibilities and loopholes in tax laws to minimize tax liability (Yahaya & Yusuf, 2020).

Tax aggressiveness involves strategically leveraging legal strategies to avoid or minimize tax payments. According to Kowthar (2021), it refers to a deliberate decrease in a company's actual corporate tax obligations. Martinez, Ribeiro, and Funchal (2019) argue that tax aggressiveness has led to the emergence of terms like tax management, tax planning, tax sheltering, and tax avoidance in accounting literature, which are often used interchangeably with the concept of tax aggressiveness.

Corporate attributes play a crucial role in effective corporate management, impacting various aspects such as the reduction of tax liability. The American Institute of Certified Public Accountants (AICPA) (2015) outlines two primary objectives of tax aggressiveness, namely minimizing overall income tax liability and aligning financial planning with minimal tax expenses. These objectives are realized through three broad strategies. The first involves reducing income tax resulting from specific arrangements or transactions. The second strategy focuses on shifting the timing of taxable events, while the third pertains to transferring income to another taxpayer within the same category, in a jurisdiction with a lower tax rate. Corporate

governance, defined as the framework guiding "the company's objectives, the means of achieving those objectives, and monitoring performance" (The Organization for Economic Co-Operation and Development [OECD], 2004), is instrumental in shaping business conduct and ensuring the accuracy of accounting information presented to stakeholders (Ianniello, Mainardi, & Rossi, 2020).

The concern of tax aggressiveness has become a significant issue for many manufacturing firms, sparking global academic research interest due to the substantial taxes these firms pay to the government. As the qualities of a firm play a crucial role in influencing efforts to reduce taxes, it is essential to recognize firm attributes as a key factor in the success or discontinuation of aggressive tax behavior (Onatuyeh & Ukolobi, 2020). Emphasizing the importance of management operating in utmost good faith, Olurankinse and Oyewole (2021) advocate for responsible discharge of duties to minimize costs through effective tax planning. Examining the issue of corporate tax aggressiveness reveals numerous challenges associated with tax and tax collection, including administrative compliance, corruption, ineffective governance, and limitations in human capacity building, among others (Jumaidu & Hauwa, 2018). Companies consistently seek ways to reduce their corporate tax liability, leading to widespread corporate tax avoidance practices in both developed and developing countries.

Numerous investigations into the relationship between corporate attributes and tax aggressiveness have yielded divergent results. Some studies have identified a positive correlation, while others have indicated a negative one. Consequently, prior research findings have been inconclusive, according to certain scholars. Notably, studies by Abdulkadir, Issa & Yunusa (2020), Issah & Rodrigues (2021), Islam & Hashim (2020), Lambe, Orbunde & Akinpelu (2021), Onatuyeh & Ukolobi (2020), and Dabor, Ekiomado & Aggreh (2019) have explored the nexus between corporate attributes and tax aggressiveness in Nigerian listed companies, revealing varied perspectives and inconclusive outcomes. The inconsistency, spanning from positive to negative significant associations in previous studies, has left a noticeable gap in the literature. Therefore, this study aims to fill this gap by investigating the impact of corporate attributes on the tax aggressiveness of listed manufacturing companies in Nigeria. The research is organized into five sections: the first introduces the study's subject matter, the second provides a literature review, the third outlines the research methodology, the fourth presents the research findings, and the final section offers conclusions and recommendations.

2. LITERATURE REVIEW

According to the findings of Yusoff and Alhaji (2020), corporate attributes encompass a set of measures designed to protect investors from potential expropriation by management, which involves the unauthorized use of assets. Acts of expropriation may include diverting profits or output, selling assets or securities to other enterprises at below-market prices, employing untrained family members in

managerial roles, or providing excessive remuneration packages. The overarching aim of corporate attributes is to foster fairness, transparency, and accountability within the corporate environment, as highlighted by Effiong, Akpan, and Oti (2019). Corporate governance, encompassing all methods related to defining and achieving company goals, plays a pivotal role in this context. Essentially, corporate attributes constitute a network of relationships involving a company's management, board of directors, shareholders, and stakeholders. It serves as the mechanism through which directors and auditors fulfill their responsibilities to the shareholders and other stakeholders in the company (Otuedon, 2021).

Bhagat and Bolton (2019) identified a correlation between heightened corporate attributes and the success of a firm in their study. Waluyo (2017) stated that the primary goal of robust corporate attributes is linked to accountability, responsibility, and a commitment to safeguard shareholders' obligations in tax payment. The ownership structure of a company significantly influences the extent of tax avoidance. Yuniarsih (2018) stated that corporate governance attributes serve as benchmarks for assessing corporate tax avoidance. Additionally, he asserted that the consequence of tax avoidance is the hastening of corporate evaluation.

Okerekeoti (2022) conducted a study to explore the influence of firm attributes on tax avoidance within the context of food production companies in Nigeria. The study employed an Ex-Post Facto research design and focused on a population of seven food production companies operating in Nigeria. Data for the analysis were sourced from the annual reports and accounts of these companies spanning from 2010 to 2020. The study utilized descriptive statistics and regression analysis to examine the hypotheses. The findings revealed that firm profitability exhibited a positive yet insignificant impact on tax avoidance, while firm size demonstrated a negative and insignificant effect on tax avoidance.

In a separate investigation, Olaniyi and Okerekeoti (2022) delved into the relationship between firm liquidity and tax aggressiveness within Deposit Money Banks in Nigeria. The study also employed an Ex-Post Facto research design and selected a sample of 13 deposit money banks listed on the Nigerian Exchange Group (NGX). Secondary data extracted from the annual reports and financial statements of these banks for the period 2012-2020 were utilized for analysis. Descriptive statistics and Ordinary Least Square (OLS) regression analysis were applied to examine the panel data. The results indicated that liquidity and firm size had insignificant negative impacts on tax aggressiveness, as measured by the book tax difference.

Omaliko and Okpala (2022) conducted an empirical investigation into the correlation between tax aggressiveness, moderated by firm size, and the sustainability of oil and gas companies in Nigeria. The study employed the effective tax rate as a measure of tax aggressiveness, while corporate sustainability was assessed through social-environmental performance. The research formulated hypotheses to guide the investigation and utilized the OLS regression model with

STATA V.15 for the statistical testing of parameter estimates. Adopting an Ex Post Facto design, the study gathered data from the published annual reports and accounts of listed oil and gas firms on the Nigerian Exchange Group (NGX) from 2013 to 2021. The study's findings suggest a significant and positive relationship between tax aggressiveness and the sustainability of quoted firms in Nigeria at a 1% significance level. Additionally, the research revealed that firm size moderates the relationship between tax aggressiveness and corporate sustainability at a 5% level of significance. Consequently, the study concluded that tax aggressiveness contributes to the sustainability of firms in Nigeria.

Ogbeide, Anyaduba, and Akogo (2022) investigated how firm attributes influence tax aggressiveness in Nigeria. The study focused on a population comprising the 13 listed commercial banks traded on the Nigerian Stock Exchange over a span of nine financial years (2012-2020). Data for the research were gathered from the annual reports and financial statements of the selected banks. Two different metrics for tax aggressiveness (GAAP-ETR and D_BT D) were utilized, and the data were subjected to analysis using the panel data regression technique. Additionally, the forecast capabilities of the models were evaluated using MAPE and Theil's inequality coefficient. The results of the analysis unveiled that firm size and complexity exhibited a significant positive correlation with tax aggressiveness, while firm age and profitability demonstrated significant negative impacts on tax aggressiveness, respectively.

3. METHODOLOGY

The research design employed in this study is ex post facto. According to Kowthar (2021), ex post facto research design is a systematic empirical investigation where the researcher does not manipulate independent variables because the situation under study already exists or has occurred. The study utilized time series and panel data, collecting information from listed manufacturing companies in Nigeria. The required data for the research include Effective Tax Rate (ETR), Firm Size (FIS), Firm Growth (FIG), and Capital Intensity (CAI). Secondary data collection was conducted through audited annual financial statements, accounts of sampled companies, fact books, and publications of the Nigerian Exchange Group. The data spans a decade, covering the years 2012 to 2021. The names of the sampled Nigerian manufacturing companies are as follows:

- BUA Cement Plc
- Nestle Nig. Plc
- Guinness Nig.
- Fidson Healthcare Plc
- Flour Mills of Nig. Plc
- Unilever Nig. Plc
- UAC of Nig. Plc
- Nig. Breweries Plc

- Lafarge Africa Plc
- Dangote Cement Plc
- Cadbury Nig. Plc

The research utilized a purposive sampling approach to mitigate bias when determining the sample size of the eleven (11) specified manufacturing companies included in the study. This method was considered suitable as it granted the researcher the ability to select the accessible population (sample size) based on criteria free from bias.

Model Specification

The objective of the study is to determine the effect of firm size on tax aggressiveness in Nigerian listed manufacturing companies. To address the objective, the model took the form

$$ETR = f(FIS, FIG, CAI) \tag{1}$$

Where:

ETR = Effective Tax Rate

FIS= Firm Size

FIG= Firm Growth

CAI = Capital Intensity

In mathematical form, the model takes shape

$$ETR_{it} = \beta_0 + \beta_1 FIS_{it} + \beta_2 FIG_{it} + \beta_3 CAI_{it} + \varepsilon_{it}. \tag{2}$$

Where i represent individual companies (1..., 11), t represents the time (2012...,2021), β_0 = constant, $\beta_1, \beta_2,$ and β_3 are coefficient of the independent variables and ε_{it} is the error term.

Equation 2 is re-specified in its logarithm form as:

$$LogETR_{it} = \beta_0 + \beta_1 LogFIS_{it} + \beta_2 LogFIG_{it} + \beta_3 LogCAI_{it} + \varepsilon_{it}. \tag{3}$$

Apriori, we expect $\beta_1 > 0$; $\beta_2 > 0$ and $\beta_3 > 0$

Table 1. Description of variables

Variable	Type	Measurement	Sources	Aprori Sign
Tax Aggressiveness (ETR)	Dependent	Effective Tax Rate	Hasibuan and Khomsujah (2019)	
Firm Size (FIS)	Independent	Log of total assets	Salawu & Adedeji (2017)	+
Firm Growth (FIG)	Control	(Present non-current assets – Previous non-current assets)/Previous non-current	Ogbeide and Obaretin (2018)	+

		assets x 100%		
Capital Intensity (CAI)	Control	Tangible assets divided by total assets	Salawu & Adedeji (2017)	+

Source: Author's Compilation, 2023

4. RESULTS AND DISCUSSIONS OF FINDINGS

Table 2: Descriptive analysis of variables

Company	Mean	Min	Max	Std. Dev
Tax Aggressiveness				
BUA Cement Plc	20.538	8.278	27.964	7.818
Nestle Nig. Plc	28.389	9.042	63.222	15.564
Guinness Nig.	35.740	-26.326	81.369	32.086
Fidson Healthcare Plc	42.347	11.176	159.954	43.623
Flour Mills of Nig. Plc	23.669	5.323	34.685	9.635
Unilever Nig. Plc	31.285	16.041	57.763	10.488
UAC of Nig. Plc	18.389	8.576	30.000	6.145
Nig. Breweries Plc	61.944	28.332	308.184	86.744
Lafarge Africa Plc	13.179	2.110	30.962	11.056
Dangote Cement Plc	36.680	12.780	155.124	42.144
Cadbury Nig. Plc	17.794	-47.341	32.690	24.185
Firm Size				
BUA Cement Plc	918,569,958	347,746,455	2,464,867,592	96,369,0827
Nestle Nig. Plc	165,097,011	88,963,218	310,238,504	69,463,327
Guinness Nig.	139,227,555	106,009,667	169,406,525	19,486,679
Fidson Healthcare Plc	19,944,217	10,780,963	33,105,410	7,083,482
Flour Mills of Nig. Plc	275,658,702	172,539,746	380,322,525	67,430,717
Unilever Nig. Plc	80,506,612	36,498,624	131,843,373	35,265,135
UAC of Nig. Plc	34,809,145	21,703,643	49,041,894	10,491,583
Nig. Breweries Plc	366,149,069	252,759,633	482,639,565	71,981,882
Lafarge Africa Plc	414,517,743	151,655,619	616,169,940	168,074,103
Dangote Cement Plc	147,589,732	963,441	820,477,942	310,473,824
Cadbury Nig. Plc	33,027,340	27,528,040	43,688,291	6,602,142
Firm Growth				
BUA Cement Plc	6.187	-97.107	29.923	37.118
Nestle Nig. Plc	6.779	1.914	12.769	3.968
Guinness Nig.	8.443	-11.115	61.554	19.997
Fidson Healthcare Plc	14.080	-3.369	48.769	16.067
Flour Mills of Nig. Plc	13.015	-26.999	49.991	25.244
Unilever Nig. Plc	4.731	-18.730	39.028	16.049
UAC of Nig. Plc	22.177	-29.749	103.870	39.277
Nig. Breweries Plc	17.712	-2.054	107.676	33.981

Lafarge Africa Plc	19.088	-18.427	158.428	55.366
Dangote Cement Plc	3.487	-99.877	32.179	38.147
Cadbury Nig. Plc	-8.036	-88.538	16.516	29.409
Capital Intensity				
BUA Cement Plc	63.198	50.001	83.603	11.171
Nestle Nig. Plc	50.412	31.899	69.871	12.499
Guinness Nig.	50.412	31.899	69.871	12.499
Fidson Healthcare Plc	53.446	9.446	73.236	18.497
Flour Mills of Nig. Plc	36.123	23.467	73.054	16.218
Unilever Nig. Plc	28.022	2.329	53.081	17.589
UAC of Nig. Plc	2.438	0.775	4.661	1.177
Nig. Breweries Plc	629.970	62.219	1,194.355	404.270
Lafarge Africa Plc	53.087	24.728	83.924	20.124
Dangote Cement Plc	40.309	21.488	60.555	13.944
Cadbury Nig. Plc	37.029	0.828	49.908	14.603

Source: Author's computation

Table 1 presents the descriptive analysis of all the variables used. The annual mean effective tax rate for Nigeria Breweries was 61.944% from 2012 to 2021, making it the highest among the listed companies. Fidson Healthcare Plc followed with 42.347%, followed by Dangote Cement Plc (36.680%), Guinness Nigeria (35.74%), and Unilever Plc (31.285%). Neste Nigeria Plc (28.389%), Flour Mills of Nig. Plc (23.669%), BUA Cement (20.538%), and UAC of Nig. Plc (18.389%) exhibited lower mean effective tax rates, suggesting a proactive approach to minimize tax obligations. On the other hand, Cadbury Nig Plc (17.794%) and Lafarge Cement Plc (13.179%) had even lower mean values, indicating a potentially more conservative tax planning approach. The minimum effective tax rates observed during the period were notably low for Cadbury Nig. Plc (-47.342%) and Guinness Nig. (-26.326%), indicating tax reduction strategies that resulted in reduced tax liabilities. Nigeria Breweries Plc and Unilever Nig. Plc had minimum effective tax rates of 28.322% and 16.041%, respectively. Other companies showed varying degrees of tax aggressiveness, with Nigeria Breweries Plc having a maximum effective tax rate of 308.184%, followed by Fidson Healthcare Plc (159.954%), and Dangote Cement Plc (155.124%), suggesting an active pursuit of tax reduction strategies. On the other end of the spectrum, UAC of Nig. Plc (30) and BUA Cement Plc (27.964%) demonstrated the lowest maximum effective tax rates during the period.

The annual firm size, measured by total assets in Naira, varies significantly among the 11 companies. Nigeria Breweries Plc stands out with the largest mean firm size of ₦366.1 billion indicating a substantial total asset value, reflecting its significant scale of operations. Following closely is Lafarge Africa Plc with an average firm size of ₦414.5 billion indicating a comparably large total asset base. Flour Mills of Nig. Plc, Dangote Cement Plc, Nestle Nig. Plc with a mean value of ₦275.6 billion, ₦147.5 billion and ₦165 billion also suggest significant firm size,

underscoring their substantial asset holdings. This is followed by Unilever Nig. Plc, BUA Cement Plc, and Guinness Nig. with an annual average total assets of average firm sizes ranging from ₦80.5 billion to ₦139.2 billion which shows moderate to relatively large total asset values. On the other hand, Fidson Healthcare Plc, UAC of Nig. Plc, and Cadbury Nig. Plc have smaller average firm sizes, ranging from ₦19.9 billion to ₦34.8 billion indicating comparatively smaller total asset values. As regards, the annual minimum firm size, BUA Cement Plc exhibits the highest minimum firm size of ₦347.7 billion This is followed by Nig. Breweries Plc, Flour Mills of Nig. Plc and Nestle Nig. Plc, with minimum annual total assets of ₦252.7 billion, ₦172.5 billion and ₦88.9 billion respectively. Guinness Nig., Lafarge Africa Plc have minimum firm sizes of ₦106 billion and ₦151.6 billion while Unilever Nig. Plc, UAC of Nig. Plc, Cadbury Nig. Plc, Fidson Healthcare Plc, and Dangote Cement Plc have lower minimum firm sizes, ranging from ₦10.7 billion to ₦36.4 billion. Considering the annual maximum firm size, BUA Cement Plc, Dangote Cement Plc and Lafarge Africa Plc have the highest maximum firm size with total assets reaching ₦2.4 trillion, ₦820.4 and ₦616.1 billion respectively during the period. Nig. Breweries Plc (₦482.6 billion) and Flour Mills of Nig. Plc (₦380.3 billion) also have significant total asset values during their peak periods. Other companies, including Nestle Nig. Plc, Guinness Nig., Unilever Nig. Plc, Cadbury Nig. Plc, UAC of Nig. Plc, and Nestle Nig. Plc, display varying degrees of financial strength during their peak asset-intensive periods, with maximum firm sizes ranging from ₦310.2 billion to ₦33.2 billion. Whereas, Fidson Healthcare Plc has the lowest annual firm size of ₦33.1 billion during the period.

UAC of Nig. Plc leads with the highest annual mean growth rate of 22.177% during the period, followed closely by Lafarge Africa Plc and Nig. Breweries Plc with mean growth rates of 19.088% and 17.712%, respectively, indicating robust growth trends. Fidson Healthcare Plc (14.08%), Flour Mills of Nig. Plc (13.015%), Guinness Nig. (8.443%), and Nestle Nig. Plc (6.779%) show comparatively lower annual average growth rates, while Dangote Cement Plc and Cadbury Nig. Plc exhibit slower growth compared to other companies. In terms of annual minimum growth rates, Dangote Cement Plc experienced the lowest growth value of -99.877%, indicating a significant decline or contraction during a particular year. Cadbury Nig. Plc follows with an annual minimum growth rate of -88.538%, showing another instance of substantial negative growth. UAC of Nig. Plc demonstrate an annual minimum growth rate of -29.749%, indicating a relatively lower level of decline or slower growth. Flour Mills of Nig. Plc, Lafarge Africa Plc, and Unilever Nig. Plc exhibit minimum growth rates ranging from -26.999% to -18.427%, reflecting varying degrees of negative growth or slower expansion. Guinness Nig. and Nestle Nig. Plc show minimum growth rates of -11.115% and 1.914%, respectively, indicating mixed growth patterns. BUA Cement Plc, Nig. Breweries Plc, and Fidson Healthcare Plc have minimum growth rates ranging from -2.054% to -3.369%, suggesting relatively lower levels of decline or slower growth. Turning to the maximum growth values, the range extends from 16.516% to 158.428%. Lafarge

Africa Plc exhibits the highest maximum growth rate of 158.428%, indicating exceptional growth during the period. Nig. Breweries Plc follows closely with a maximum growth rate of 107.676%, suggesting a similar trend of strong growth. UAC of Nig. Plc and Fidson Healthcare Plc have maximum growth rates of 103.87% and 48.769%, respectively, indicating relatively high growth rates. Flour Mills of Nig. Plc and Guinness Nig. show maximum growth rates ranging from 49.991% to 61.554%, indicating a relatively high level of growth. Nestle Nig. Plc and BUA Cement Plc demonstrate maximum growth rates of 12.769% and 29.923%, respectively, suggesting positive but relatively lower growth rates. Unilever Nig. Plc and Dangote Cement Plc exhibit maximum growth rates of 39.028% and 32.179%, reflecting relatively higher levels of growth.

In terms of capital intensity, Nigeria Breweries Plc have the highest annual mean capital intensity of 629.970%, signifying a significant capital investment required for efficient revenue generation. Following closely is BUA Cement Plc with a mean value of 63.198%, indicating a relatively high level of capital intensity. In contrast, UAC of Nig. Plc stands out with the lowest annual mean capital intensity of 2.438%, implying minimal capital investment in revenue generation. Nestle Nig. Plc and Guinness Nig. both share a similar mean value of 50.412%, reflecting considerable capital investment in their operations. Flour Mills of Nig. Plc, Unilever Nig. Plc, Dangote Cement Plc, Fidson Healthcare Plc, and Lafarge Africa Plc exhibit annual mean capital intensity values ranging from 28.022% to 53.446%, which shows varying degrees of capital investment for revenue generation. Cadbury Nig. Plc demonstrates an annual mean value of 37.029%, suggesting a moderate level of capital intensity. For minimum capital intensity, Nig. Breweries Plc has the highest annual value at 62.219%, indicating substantial investment even during less efficient periods. BUA Cement Plc closely follows with a minimum annual value of 50.001%, signifying a relatively high capital intensity during challenging times. On the other hand, UAC of Nig. Plc stands out with the lowest annual minimum capital intensity of 0.775%, implying efficient capital utilization during certain periods. Unilever Nig. Plc and Cadbury Nig. Plc also have low minimum annual capital intensity values of 2.329% and 0.828%, respectively, suggesting efficient capital usage during difficult economic conditions. Fidson Healthcare Plc, Flour Mills of Nig. Plc, Lafarge Africa Plc, and Dangote Cement Plc exhibit annual minimum capital intensity values ranging from 9.446% to 24.728%, reflecting varying degrees of capital efficiency during less favorable economic conditions. Lastly, for maximum capital intensity, Nig. Breweries Plc has the highest annual value of 1,194.355%, indicating an extraordinary level of capital investment during certain periods. BUA Cement Plc follows with a maximum value of 83.603%, signifying significant capital investment during their most capital-intensive periods. Lafarge Africa Plc also demonstrates considerable capital intensity with a maximum annual value of 83.924%, implying substantial allocation of resources to revenue generation during peak periods. Fidson Healthcare Plc, Flour Mills of Nig. Plc, Guinness Nig., Nestle Nig. Plc, and Dangote Cement Plc have maximum annual capital intensity values ranging from 49.908% to

73.236%, indicating varying degrees of capital investment efficiency during their most resource-intensive periods. Unilever Nig. Plc, UAC of Nig. Plc, and Cadbury Nig. Plc exhibit lower maximum capital intensity values of 53.081%, 4.661%, and 60.555%, respectively, suggesting relatively more efficient utilization of capital during their most capital-intensive periods.

4.1. TEST OF HYPOTHESES

The effect of firm size on tax aggressiveness in Nigerian listed manufacturing companies

Table 3: The Regression analysis between FIS, FIG, CAI and ETR

Dependent Variable: ETR

Method: Panel EGLS (Cross-section random effects)

Sample: 2012 2021

Periods included: 10

Cross-sections included: 11

Total panel (balanced) observations: 110

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.783257	0.196078	9.094608	0.0000
FIS	0.087468	0.024695	0.002659	0.0296
FIG	1.852309	0.349615	5.298138	0.0000
CAI	0.024695	0.033926	0.727888	0.4683
Effects Specification				
			S.D.	Rho
Cross-section random			0.028615	0.0240
Idiosyncratic random			0.182518	0.9760
Weighted Statistics				
Root MSE	0.181692	R-squared	0.217327	
Mean dependent var	1.677890	Adjusted R-squared	0.295626	
S.D. dependent var	0.183659	S.E. of regression	0.185088	
Sum squared resid	3.631316	F-statistic	0.440996	
Durbin-Watson stat	2.149075	Prob(F-statistic)	0.004160	
Unweighted Statistics				
R-squared	0.216701	Mean dependent var	1.872787	
Sum squared resid	3.709417	Durbin-Watson stat	2.103827	

Panel Cross-section Heteroskedasticity LR Test

Equation: UNTITLED

Specification: ETR C FIS FIG CAI

Null hypothesis: Residuals are homoscedastic

	Value	Df	Probability
Likelihood ratio	114.3238	11	0.6543

LR test summary:			
	Value	df	
Restricted LogL	30.37598	106	
Unrestricted LogL	87.53786	106	

The objective of the study is to determine the effect of firm size on tax aggressiveness in Nigerian listed manufacturing companies. Table 3 reports the Fixed Effects regression result for all the selected listed manufacturing companies. From the result, a positive relationship exists between firm size (FIS) and tax aggressiveness. Specifically, a one percent increase in firm size results in a 0.087 percent increase in tax aggression. The result is significant at the 0.05 level ($p = 0.030$) which implies that larger firms in Nigerian listed manufacturing companies tend to exhibit higher levels of tax aggression. This finding is consistent with the apriori expectation and supports the findings by Ogbeide (2017) and Akintoye, Adegbe & Onyeka-Iheme (2020) that larger companies face greater scrutiny and reputational risks, leading to more conservative tax strategies.

Also, the effect of firm growth (FIG) on tax aggressiveness is positive. A one percent increase in firm growth increases tax aggressiveness by 1.852 percent at a significant level of one percent. This suggests that listed manufacturing companies experiencing higher growth rates tend to engage in more aggressive tax planning strategies. This finding conforms with apriori and also aligns with previous research (Devi, Salim & Pheng, 2018; Lawal, 2021) suggesting that fast-growing firms may take advantage of tax incentives and deductions to minimize their tax liabilities.

Similarly, capital intensity (CAI) influenced tax aggressiveness positively. As presented in the table, a one percent increase in CAI increases tax aggressiveness by 0.025 percent, although the result is not significant. This suggests that capital intensity may not be a significant factor in determining tax aggression among the studied manufacturing companies. This finding conforms with apriori expectation and supports Olaniyi & Okerekeoti (2022) and Lanis & Richardson (2012). The result shows an R-squared value of 0.217, indicating that about 21.7% of the variation in tax aggression among Nigerian listed manufacturing companies can be explained by firm size, firm growth and capital intensity. Also, the Durbin-Watson statistic of 2.104, suggest no significant presence of autocorrelation in the model. Finally, the F-statistic is significant at one percent (0.004) which suggests that the overall model is statistically significant. Based on the findings, a positive

relationship exists between firm size and tax aggressiveness among Nigerian listed manufacturing companies.

H0: Firm size has no significant effect on effective tax rate of Nigerian manufacturing companies.

4.2. DECISION RULE

The decision was based on 5% (0.05) level of significance. The null hypothesis (Ho) will be rejected, if the Prob (F-statistic) value is lesser (<) than the stated 5% level of significance, otherwise accept. Since the p-value (0.030) is less than 5% (0.05). The study therefore rejects the null hypothesis which states that firm size has no significant effect on tax aggressiveness of Nigerian manufacturing companies.

5. CONCLUSION AND RECOMMENDATIONS

This study investigated how corporate attributes affect tax aggressiveness in manufacturing companies listed in Nigeria. Purposive sampling was employed to select eleven listed manufacturing companies. Employing the Effective Tax Rate (ETR) as a measure of tax aggressiveness, the coefficient results for firm size indicate a positive association, indicating that larger companies tend to be more involved in tax avoidance.

Based on the conclusion of the study, the study suggested the following recommendations.

- i. The Federal Inland Revenue Service (FIRS) should strengthen its tax monitoring and enforcement efforts while also implementing robust auditing processes and conducting regular tax compliance checks to identify and deter aggressive tax planning practices among Nigerian companies.
- ii. Firms with higher leverage ratios were found to be more likely to engage in aggressive tax planning. Policymakers should offer targeted support or incentives such as tax credits to such firms to reduce their reliance on aggressive tax strategies.

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