

External Determinants of Tax Aggressiveness of Listed Non-Financial Companies in Nigeria

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Received: 14 May 2025 / Revised: 11 August 2025 / Accepted: 17 August 2025

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Abstract

Research aim: Past studies have shown that managers tend to exhibit opportunistic tendencies which do not align with the shareholders' interest. According to the agency theory, conflicts arise when a company's manager (the agent) and stockholders (the principal) have different objectives. The firm's management and the revenue authority had different objectives when it came to using a company's financial report, which resulted in information asymmetry.

Design/ Methodology/ Approach: The research adopted a longitudinal design and purposefully sampled 63 companies out of a total population of 112. Secondary data was obtained from the selected companies' annual reports spanning from 2015 to 2024, and analysed using regression techniques.

Research finding: The findings revealed that institutional ownership, foreign ownership, ownership concentration, audit firm size, and leverage significantly influence tax aggressiveness, whereas board financial expertise exerts no significant impact on the tax aggressiveness of Nigerian publicly listed non-financial companies.

Theoretical contribution/Originality: This study contributes to the literature by filling a gap in sector-specific analyses of external determinants of tax aggressiveness within the Nigerian context. Grounded in agency theory, it extends prior research by disaggregating findings across industry sectors and demonstrating how external controls shape corporate tax behaviour.

Practitioner/Policy implication: The findings suggest that policymakers should enhance regulatory oversight on institutional and foreign investors' influence in corporate governance, promote the engagement of high-quality audit firms, and encourage debt monitoring mechanisms to reduce aggressive tax behaviour. Companies should also consider increasing the presence of financially literate board members to balance strategic tax planning with compliance.

Research limitation: The research focuses on publicly listed non-financial companies in Nigeria and spans the years 2015 to 2024. The exclusion of financial institutions and the reliance solely on secondary data may affect the generalizability of the results. Future studies could incorporate qualitative methods or expand to include cross-country comparisons and unlisted firms.

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Keywords: Board financial expertise, Effective tax rate, Foreign ownership, Institutional ownership, and Tax aggressiveness

Type of article: Research paper

JEL Classification: G34, H26, G32

1. Introduction

Globally, taxes are a fundamental revenue source for governments, as they represent a recognised, mandatory contribution by individuals and corporate entities towards governance, development, and maintenance of physical infrastructure, as well as a tool for bridging income inequalities (Agboola et al., 2024). Revenue from taxes contributes significantly towards government's total revenues and is among the primary sources of funding government expenditures. The extent of tax compliance amongst businesses in Nigeria is quite low, and a lot of them engage in tax avoidance and planning to lower their tax obligations, which has negative implications for the government's revenue collection efforts and the sustainability of public finance (FIRS, 2024). Tax planning is a legal and acceptable way of minimising tax liabilities, which is viewed as ethical. Additionally, businesses are increasingly using aggressive tax planning techniques to evade payment of taxes, which result in a loss of national revenue and has a detrimental impact on the effort made by the government to provide public goods and services (Olaoye & Ekundayo, 2021; Agboola et al., 2024). In Nigeria, like many developing economies, tax revenue is critical for achieving fiscal sustainability, particularly as reliance on oil revenue has proven volatile due to fluctuating global oil prices. According to the Federal Inland Revenue Service (FIRS, 2024), tax revenue contributed 12.38 trillion to Nigerian revenue in 2023, marking a significant improvement from 10.1 trillion in 2022. However, Nigeria's tax-to-GDP ratio remains alarmingly low at 10.86% as of 2022 compared to the African average of 16.5%, indicating systemic weaknesses in the country's revenue mobilisation strategy (OECD, 2023).

Despite various tax reforms, the Nigerian tax system is still characterised by pervasive tax aggressiveness, especially among corporations. According to the Joint Tax Board (JTB, 2024) and Federal Inland Revenue Service (FIRS, 2024), many companies either under-declare profits, inflate deductible expenses, or engage in transfer mispricing, especially multinational corporations (MNCs), to shift taxable income abroad. Tax Justice Network (2020) estimated that Nigeria loses over \$2.9 billion annually to corporate tax abuses, much of which stems from aggressive tax planning mechanisms.

The FIRS Annual Report (2022) identified over 6,000 corporate entities that failed to file annual tax returns or made questionable claims in their submissions. Many firms engage in creative accounting practices, such as inflating capital allowances or misclassifying operational expenses, to reduce taxable profits. Meanwhile, the National Bureau of Statistics (2024) have

repeatedly flagged the underperformance of Companies Income Tax (CIT) as a concern, despite increases in company registration and GDP growth. For example, while Nigeria recorded over 2.3 million registered businesses with the Corporate Affairs Commission (CAC) as of 2023, less than 20% are tax-compliant (FIRS. 2024).

The determinants of tax aggressiveness, which range from internal to external among companies, have been the subject of discussion in literature. Tax aggressive strategy is usually employed to lessen tax liability in order to achieve greater after-tax profit. Thus, it could also reflect a decline in taxable income when managed through tax planning practices that are legal as well as activities that may be viewed as illegal in some circumstances to reduce tax liability (Lanis & Richardson, 2011). This study is motivated by the fact that despite an increase in tax revenue, Nigeria's tax-to-GDP ratio remains worryingly low at 10.86%. Therefore, this study aims to determine whether external factors have influenced the tax aggressiveness of non-financial companies in Nigeria.

No previous studies, to the best of the researcher's knowledge, have examined external factors in relation to tax aggressiveness of non-financial companies in Nigeria on a sector-by-sector (disaggregated) and overall (aggregated) basis. However, numerous researchers like Onyeogubalu et al. (2025), Rahmahwati, et al. (2025), Ismanto and Abdurahman (2024), Efenana and Egbunike (2023), Aza et al. (2023), Dhiyaulhaq and Fadjaranie (2023), Martinez et al. (2023), Dick et al. (2021), Chen et al. (2020), Dang and Nguyen (2022), Tanko et al. (2022), Rimamsikwe and Sule (2022), Salihu and Kawi (2021), Jiang et al. (2020), Huang and Zhang (2020), Ariggraini and Widarjo (2020), Apriliyana and Suryarini (2019), Ying et al. (2017), have looked at the factors that influence corporate tax aggressiveness. Nevertheless, none of these studies have examined the external factors that influence tax aggression on a sector-by-sector (disaggregated) and overall (aggregated) basis, and also these studies were not conducted on non-financial companies in Nigeria. This signifies that their empirical findings cannot be applied to Nigeria. The gap filled by this study is its ability to examine, on a sector-by-sector (disaggregated) and overall (aggregated) basis, the external determinants of tax aggressiveness among non-financial companies in Nigeria.

Furthermore, Nigeria's economic reliance on oil has made the government increasingly vulnerable to revenue shocks. As oil receipts decline, non-oil tax revenue has become more critical for budget execution and the delivery of essential public services. Listed non-financial firms, operating across sectors such as telecommunications, manufacturing, agriculture, and construction, are central to the non-oil economy. Yet, many of these firms engage in aggressive tax planning and avoidance practices, undermining revenue mobilisation efforts (Onyeogubalu et al., 2025). Understanding the external pressures that drive such behaviour, such as institutional ownership,

board expertise, and leverage, is essential for improving tax revenue, tax administration and ensuring greater corporate accountability.

2. Literature Review

2.1 Tax Aggressiveness

This is the employment of aggressive but lawful tax planning techniques by a business to reduce its tax liability (Koh, 2017). Utami (2013) defines tax aggressiveness as a plan of transactions designed to minimise tax expense by exploiting weaknesses (loopholes) in tax laws. Furthermore, according to Utami (2013), tax aggressiveness is a strategy of transactions intended to minimise tax liability by taking advantage of gaps in the tax legislation.

2.2 Institutional Ownership

This represents the percentage of shares that institutions owned at the conclusion of the year (Simarmata & Cahyonowati, 2014; Yusuf, 2018). Agency Theory, propounded by Jensen and Meckling (1976), highlights conflicts of interest between managers and shareholders and that strong external governance, such as institutional investors and foreign ownership, is expected to curb managerial opportunism, such as tax aggressiveness. Institutional investors often demand transparency and accountability, which can discourage aggressive tax practices. Desai and Dharmapala (2006) found that institutional ownership reduces tax aggressiveness by enhancing monitoring. In Nigeria, institutional shareholders are increasingly involved in corporate governance, but their influence varies across sectors.

Because institutional ownership will promote the best possible control over managerial opportunistic behaviour, it can minimise conflicts of interest and have a major impact on management oversight. By minimising agency issues, institutional investors can reduce the cost of debt and lessen the likelihood of tax evasion. According to Ismanto and Abdulrahman (2024), Kaidonski and Jewartwski (2024), Olanisebe et al. (2023), Athia et al. (2023), Efenana and Egbunike (2023), Aza et al. (2023) Andari et al. (2022), Iwanty and Surjandari (2022), Dakhli and Sukartha (2021), Lawal et al. (2020), Luai et al. (2019), and Ying et al. (2017), institutional ownership has an inverse and insignificant effect on tax aggressiveness. Furthermore, Rahmahwati et al. (2025), Idea et al. (2021), Ariggraini and Widarjo (2020), Jiang et al. (2020), and Alkurdi and Mardini (2020) found that institutional ownership has a significantly positive effect on tax aggressiveness. These mixed findings have led to the research question: to what degree has institutional ownership influenced the tax aggressiveness of listed non-financial companies in Nigeria? The paper obtains data to address these research questions via the testing of the following null hypotheses:

H₀₁: Institutional ownership does not have any significant influence on the tax aggressiveness of listed non-financial companies in Nigeria.

2.3 Foreign Ownership

Foreign ownership is the ownership of an enterprise or a natural resource in a nation by individuals and corporations who are not citizens of that nation or by businesses with headquarters located outside of that nation. Political Cost Theory by Watts and Zimmerman (1986) suggests that firms with more visibility or influence, such as foreign-owned, may avoid aggressive tax strategies to reduce regulatory or reputational scrutiny. Furthermore, Taylor and Richardson (2014) reported that foreign-owned firms are less aggressive due to reputational concerns and home-country tax reporting requirements; hence foreign investors often insist on global best practices and may be risk-averse to tax non-compliance, thus discouraging aggressive tax planning.

It is anticipated that the company will benefit from the participation of foreign nationals in several ways, including global networks, dedication to shareholder rights, and avoidance of managerial entrenchment (Yusuf, 2018). Opponents of this viewpoint contend, however, that foreign board members can be less competent because of their lack of knowledge of domestic issues. Additionally, it could be expensive and worsen a member's adjustment issues to modify the board language to suit foreigners (Hassan et al., 2006). According to Yahaya (2025), Muji and Walluyo (2024), Efenana and Egbunike (2023), Dike et al. (2021), and Alaa (2021), foreign ownership has no significant effect on tax aggressiveness. This implies that companies with foreign ownership have less knowledge of domestic tax issues. Similarly, Rahmahwati et al (2025), Ariggraini and Widarjo (2020), Jiang et al. (2020), Shi et al. (2020), and Yuanita et al. (2020), found that foreign ownership has a significant effect on tax aggressiveness.

The studies opined that companies with foreign ownership are more likely to engage in tax avoidance plans as foreign shareholders can provide more resources, expertise, and diversity of perspectives to support tax aggressiveness strategies. From the above assertion, this study poses the research question: to what degree has foreign ownership influenced the tax aggressiveness of listed non-financial companies in Nigeria? This paper obtains data to address this research question via the testing of the following null hypothesis:

H₀₂: Foreign ownership does not have any significant influence on the tax aggressiveness of listed non-financial companies in Nigeria.

2.4 Ownership Concentration

This represents the proportion of significant block holders in a company (Thomsen & Pedersen, 2000). Any stockholder who acquires 5% or more of a firm's equity is reflected as a major stockholder. An individual, a domestic or international corporation, an institutional investor, and/or the government can all be substantial shareholders. Significant block holders are more motivated to keep an eye on management since the benefits of holding large stakes of ownership in the company outweigh the expenses of doing so. Ownership concentration may have an impact on shareholders' propensity to closely watch management's actions (Fraile & Fradejas, 2014).

High ownership concentration may either increase or decrease tax aggressiveness. Controlling shareholders may engage in aggressive planning to maximise returns (Chen et al., 2010), or they may prefer compliance to maintain long-term stability. The direction depends on whether the dominant shareholders prioritise short-term gains or long-term reputation. Furthermore, the agency theory by Jensen and Meckling (1976) opined that strong external ownership through block or ownership concentration is expected to curb managerial opportunism, such as tax aggressiveness.

High ownership levels, according to Khurana and Moser (2013), may encourage shareholders to actively supervise management since non-value-maximising decisions will have a big effect on the majority shareholders. Because of this, ownership concentration serves as a buffer against agency conflicts. On the one hand, large shareholders may efficiently supervise and drive managers to create more tax savings, hence companies with higher ownership concentrations may be more tax aggressive. (Khurana & Moser, 2013). Conversely, companies with a high concentration of ownership could be less aggressive when it comes to taxes, which could be because of the additional expenses like implementation and agency fees.

Similarly studies conducted by Yahaya (2025) and Efenana and Egbunike (2023) found that ownership concentration has no significant effect on tax aggressiveness, while Aza, et al. (2023), and Chen et al. (2010), found that ownership concentration has a significantly negative effect on tax aggressiveness. Ismanto and Abdurahman (2024), Dick et al. (2021), and Jiang et al. (2020) found that ownership structure has a significant positive effect on tax aggressiveness. These positions have posed the research question of what degree to which ownership concentration influences the tax aggressiveness of listed non-financial companies in Nigeria. The paper obtains data to address these research questions via the testing of the following null hypothesis:

H_{03} : Ownership concentration does not have any significant influence on tax aggressiveness of non-financial companies in Nigeria.

2.5 Board Financial Expertise

This implies that one or more board members have expertise in accounting, finance, taxation, and economics, enabling them to ensure management's adherence to established accounting standards and tax regulations. This is grounded in the understanding that specialised expertise equips directors to effectively monitor management and provide valuable guidance. Pfeffer and Salancik (1978), resource dependence theory emphasises the importance and value of expertise in monitoring, such as that provided by boards, in reducing risky corporate behaviour such as tax aggressiveness.

Firms with highly experienced directors in accounting and tax on their board tend to have greater levels of tax planning, which is consistent with the advisory role. In line with the oversight role, companies with more accounting specialists on the board tend to be less likely to participate in high-risk tax planning.

According to Dhiyaulhaq and Fadjarenie (2023), Yahaya et al. (2023), Akhor and Inegbedion (2023), Dang and Nguyen, (2022) Tanko et al. (2022), Rimamsikwe and Sule (2022), Salihu and Kawi (2021), and Huang and Zhang (2020) board financial expertise has a positive and significant effect on tax aggressiveness, while Onyeogubalu et al. (2025), Martinez et al. (2023), Chen et al. (2020) and Apriliyana and Suryarini (2019) found that board financial expertise has a negative significant effect on tax aggressiveness. These mixed findings resulted in the research question: to what degree has board financial expertise influenced listed non-financial companies' tax aggressiveness in Nigeria? The paper obtains data to address these research questions via the testing of the following null hypotheses:

H₀₄: Board financial expertise does not have any significant influence on the tax aggressiveness of non-financial companies in Nigeria.

2.6 Audit Firm Size

DeAngelo (1981) asserts that large audit firms are less afraid to be impartial, which allows them to provide high-quality audits because they are not scared of losing clients. The Resource Dependence Theory by Pfeffer and Salancik (1978) highlights the value of external expertise and monitoring, such as that provided by Big 4 audit firms in reducing tax aggressiveness. This is further supported by Krishnan and Schauer (2000) who found that there is a direct correlation between the size of the audit firm and the observed level of tax compliance. This correlation increases as the audit company moves from non-big four to big four.

Therefore, assuming all other factors remain constant, larger audit firms are more likely to be linked to more accurate audits than smaller audit firms

because large audit firm have greater resources available for conducting tests, and that the quantity and quality of audit procedures carried out by the auditor determines the audit quality. (Beatty, 1989; Titman & Trueman, 1986).

Prior studies conducted by Madah et al. (2021), Fadhilah (2011) and Baatwah and Hussainey (2023) found that audit firm size has no significant impact on tax aggressiveness, while Fu (2024), Abdelfattah (2023), Rizqia and Lastiati (2021), Sutrisno and Pirzada (2020) and Suardana (2014) found that audit firm size has a significant impact on tax aggressiveness ETR. Researchers think that businesses that use the Big Four for auditing will reduce their tax-aggressive activities in light of these findings. These positions have posed the research question: to what degree has audit firm size influenced listed non-financial companies' tax aggressiveness in Nigeria? The paper obtains data to address these research questions via the testing of the following null hypothesis:

H₀₅: Audit firm size does not have any significant influence on the tax aggressiveness of non-financial companies in Nigeria.

2.7 Leverage

Leverage is defined as the ratio of total liabilities to total assets by Rajan and Zingales (1995). It speaks to the ratio of debt to equity in a company's capital structure (Salehi, 2009). Political Cost Theory by Watts and Zimmerman (1986) opined that firms that are highly leveraged may avoid aggressive tax strategies to reduce regulatory or reputational scrutiny. On the other hand, Gupta and Newberry (1997) found that highly leveraged firms are more aggressive to preserve cash flow for debt servicing, or less aggressive due to heightened scrutiny by lenders and credit agencies. Leverage, therefore, has a complex, potentially non-linear relationship with tax aggressiveness.

Companies with greater leverage, according to Minnick and Noga (2010), use the interest charges to lower the amount of income tax due. According to Martins and Sule (2024), He and Tang (2023), Wahyudi (2023), Damayanti and Wulandari (2021), Yahaya and Yusuf (2020), Tanko et al. (2022), Suyono (2020), Uniamikogba et al. (2018) and Rani et al. (2018), leverage has a significant effect on tax aggressiveness, while Ramadanti et al. (2024), Idea et al. (2021), Takasanakeng (2022) Ugbogbo et al. (2020), Chen et al. (2020), and Ogbeide (2017) found that leverage has no significant effect on tax aggressiveness. These mixed findings resulted in the research question: to what degree has leverage influenced listed non-financial companies tax aggressiveness in Nigeria? The paper obtains data to address these research questions via the testing of the following null hypotheses:

H₀₅: Leverage does not have any significant influence on tax aggressiveness of non-financial companies in Nigeria.

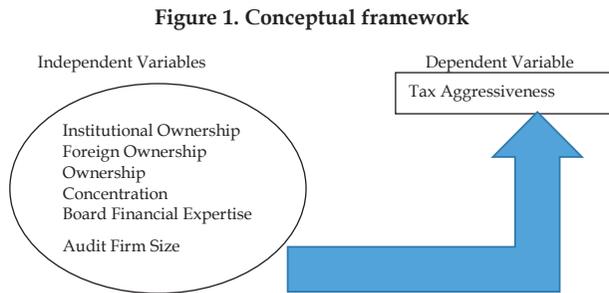
Agency Theory, developed by Jensen and Meckling (1976), underpins this study. The theory examines the relationship between principals (e.g. shareholders) and agents (e.g., managers). In a typical corporate setting, shareholders delegate decision-making authority to managers, who are expected to act in the shareholders' best interests. However, because managers often have access to more information and may pursue personal interests (e.g. job security, personal rewards, empire-building), conflicts known as agency problems arise. One manifestation of these agency problems is tax aggressiveness, where managers engage in tax avoidance strategies to increase after-tax earnings or retain more resources under their control. While some tax planning may benefit shareholders, overly aggressive strategies can expose the firm to regulatory, reputational, and legal risks, thus creating a divergence between managerial actions and shareholder interests.

Institutional investors hold large stakes in firms and have both the incentive and capacity to monitor managerial behaviour effectively. From an agency theory perspective, institutional ownership acts as an external monitoring mechanism that reduces managerial discretion and constrains self-serving behaviours, including excessive tax aggressiveness. From an agency perspective, foreign ownership reduces information asymmetry and increases external scrutiny, thereby discouraging managers from engaging in tax practices that might attract penalties or damage reputation. Similarly, boards are responsible for overseeing management decisions, including financial reporting and tax strategies. When board members possess financial, accounting, or tax-related expertise, they are well armed to identify, challenge, and prevent overly aggressive tax behaviour, which may not align with shareholder interests.

This aligns with agency theory's emphasis on monitoring mechanisms that curb managerial opportunism. Furthermore, large audit firms are less likely to endorse or overlook aggressive tax strategies that could compromise their professional standing or expose them to litigation and regulatory sanctions. They tend to discourage risky tax behaviour by enforcing compliance with accounting and tax standards and raising red flags on dubious tax positions. Finally, from an agency theory perspective, leverage can serve as a disciplinary mechanism that reduces free cash flow and limits managerial discretion. Managers of highly leveraged firms face greater scrutiny from creditors and must meet interest and principal payments, which constrains their ability to engage in high-risk strategies, including tax aggressiveness. However, leverage may also motivate tax avoidance as managers seek to conserve cash for debt servicing.

2.8 Conceptual Framework

This study is guided by a conceptual framework to depict the relationship between variables. The independent variables are Institutional Ownership, Foreign Ownership, Ownership Concentration, Board Financial Expertise, Audit Firm Size and Leverage, while the explained variable is tax aggressiveness. Figure 1 below shows the conceptual framework for the study.



Source: Authors' Computation 2025.

3. Methodology

A longitudinal research design was used in this study. This design is particularly suitable for studying tax aggressiveness, which is inherently dynamic and influenced by changes in firm characteristics and governance structures. Tax aggressiveness is not a static behaviour; it evolves in response to changes in ownership structure (e.g. institutional or foreign shareholding). Shifts in board composition or audit firm engagement, alterations in firm leverage and financial position, and regulatory reforms (e.g., changes in tax laws, audit regulations). A longitudinal design allows the researcher to observe how these time-varying external factors influence firms' tax aggressive behaviours, thus offering more robust insights than a single-period cross-sectional study.

A 10-year horizon offers an adequate time span to observe trends, fluctuations, and behavioural shifts in tax aggressiveness, capture the effects of medium to long-term changes in governance, ownership, and audit dynamics, and reduce the influence of short-term anomalies (e.g. industry-specific shocks or one-time tax events). The period 2015–2024 includes critical tax and governance reforms in Nigeria, such as the implementation of the Integrated Tax Administration System (ITAS) and Tax Pro-Max by the FIRS and revision of the Finance Acts, which significantly influence a firm's tax behaviour. The population under investigation is listed as non-financial

enterprises. Financial companies are excluded from the study because they have different regulatory and reporting frameworks, and complex tax structures and industry-specific treatments. Therefore, to ensure that the study captures consistent firm behaviour and avoids structural biases, a homogeneous sample is used because it strengthens internal validity and enables more meaningful cross-firm comparisons.

Non-financial companies in Nigeria comprise ten distinct industries: agriculture, services, real estate, conglomerates, consumer goods, healthcare, ICT, industrial goods, natural resources, oil and gas and combined. Studies by Chen et al. (2010) and Hanlon and Heitzman (2010) opined that industry disaggregation matters in tax aggressiveness research because firms in different industries face varying tax environments, transfer pricing practices, investment tax incentives, and depreciation allowances, all of which influence their incentives and opportunities to engage in aggressive tax strategies. As such, disaggregating by industry improves the precision, interpretability, and policy relevance of findings in tax aggressiveness studies.

There are 112 enterprises in the categories. 63 companies were chosen using a purposive sampling technique from the total population of 112, using the following criteria. Based on complete data availability, no company that was not listed after 2015 is chosen; also, listed companies before 2015 shall remain listed up to 2024. Purposive sampling was employed because it allows the researcher to intentionally select companies that meet well-defined inclusion criteria. Purposive sampling was preferred over random or stratified sampling because it allows the researcher to pre-screen for data completeness and relevance, thereby enhancing the validity and reliability of the statistical analysis. Using STATA version 16, multiple regression analysis was performed on the secondary data that was gathered from the publicly available annual reports of the chosen companies over the given time.

3.1 Measurement of Variables

The measurement of the variables for the study is presented in Table 1 below:

Table 1: Measurement of Variables

Variable	Type	Measurement	Source
Tax Aggressiveness	Dependent	Measured by the Total tax expenses/earnings before taxes.	Rahmahwati et al (2025), Ariggraini and Widarjo (2020), Jiang et al (2020)
Institutional Ownership	Independent	The percentage of a company's equity shares held by institutional investors relative to all of the company's shares	Ismanto and Abdulrahman (2024), Efenana and Egbunike (2023), Aza et al (2023)
Foreign Ownership	Independent	Measured by the percentage of the company's equity shares held by foreign investors relative to all of the shares in the company	Rahmahwati et al (2025), Efenana and Egbunike (2023), Dike et al (2021)
Ownership Concentration	Independent	Measured as the total percentage of shares owned by investors who own five percent or more of the total shares	Aza, et al (2023), Dick et al (2021)
Board Financial Expertise	Independent	Measured by the number of non-executive directors with financial expertise.	Dhiyaulhaq and Fadjarenie (2023), Martinez et al (2023), Obeitoh et al (2023), Dang and Nguyen (2022)
Audit Firm Size	Independent	Dichotomous variable 1 for firms audited by Big4 auditors, otherwise 0.	Madah et al (2021), FU (2024), Okoli Izedonmi (2014)
Size Leverage	Independent	A metric that indicates how much of the company's funding comes from outside sources. It is calculated as the business's total liabilities divided by its total assets.	Martins and Sule (2024), He and Tang (2023), Wahyudi (2023)

Source: Researchers' compilation from the literature

3.2 Research Model

To analyse the effect of external determinants of tax aggressiveness of listed non-financial companies in Nigeria, the study adopted with modification the model used by Efenana and Egbunike (2023), as follows:

$$ETR_{it} = \beta_0 + \beta_1 INO_{it} + \beta_2 FOW_{it} + \beta_3 OWC_{it} + \beta_4 BFE_{it} + \beta_5 AFS_{it} + \beta_6 LEV_{it} + \varepsilon_{it}$$

Where:

ETR_{it} = Effective tax rate of firm i at time t

INO_{it} = Institutional Ownership of the firm at time t

FOW_{it} = Foreign Ownership of firm i at time t

OWC_{it} = Ownership Concentration of firm i at time t

BFE_{it} = Board Financial Expertise

AFS_{it} = Audit firm size

LEV_{it} = Leverage of firm i at time t

β_0 = constant

β_1 to β_6 = coefficients of estimates

ε = error term

4. Empirical Analysis

4.1 Descriptive Statistics.

The result of the descriptive statistics is presented in Table 2 below:

Table 2: Descriptive Statistics

Sector	Statistics	Etr	ino	fow	own	bfe	afs	lev
AGRIC	mean	0.3508	0.1081	0.0000	0.2112	2.1200	0.0000	0.7303
	Minimum	-0.1549	0.0000	0.0000	0.0025	1.0000	0.0000	-1.0901
	Maximum	2.0359	0.3665	0.0000	0.6284	3.0000	0.0000	3.4195
CONGL	Mean	0.3047	0.1447	0.0004	0.2145	2.2800	0.2000	0.6481
	Minimum	-1.9826	0.0004	0.0000	0.0172	1.0000	0.0000	-3.0672
	Maximum	2.9089	0.4435	0.0028	0.8065	3.0000	1.0000	3.6312
CONSG	Mean	0.3381	0.1585	0.0560	0.2419	2.6333	0.7167	1.0619
	Minimum	-0.8614	0.0000	0.0000	0.0219	1.0000	0.0000	-2.9828
	Maximum	3.6690	0.9627	0.5496	0.9627	4.0000	1.0000	3.6475
CONSTR	Mean	0.5097	0.0990	0.0205	0.1000	1.9000	0.6667	0.8554
	Minimum	-1.9959	0.0005	0.0000	0.0018	1.0000	0.0000	-1.2424
	Maximum	2.3179	0.1599	0.0997	0.1599	3.0000	1.0000	1.8511
HEACR	Mean	0.4757	0.1492	0.0000	0.3762	2.5833	0.3333	0.8819
	Minimum	-1.8836	0.0000	0.0000	0.0570	1.0000	0.0000	-1.5412
	Maximum	3.2706	0.8773	0.0000	0.9874	4.0000	1.0000	2.0490
ICT	Mean	0.1430	0.1027	0.0064	0.1396	2.0000	0.5000	0.5092
	Minimum	-1.2442	0.0018	0.0000	0.0004	1.0000	0.0000	-0.5282
	Maximum	1.6005	0.4950	0.0300	0.4950	3.0000	1.0000	1.0752

Sector	Statistics	Etr	ino	fow	own	bfe	afs	lev
INDGD	Mean	0.4605	0.1923	0.0302	0.2549	2.8444	0.8667	0.4785
	minimum	-0.5272	0.0000	0.0000	0.0008	1.0000	0.0000	-2.6123
	maximum	3.8339	0.6912	0.3195	0.7889	4.0000	1.0000	1.7475
OILGAS	mean	0.4649	0.1482	0.0822	0.2138	2.6143	0.7429	1.2315
	minimum	-1.5174	0.0000	0.0000	0.0000	1.0000	0.0000	0.1253
	maximum	2.8009	0.3750	0.5752	0.7067	4.0000	1.0000	6.7605
SERV	mean	0.4466	0.0626	0.0016	0.1647	1.7250	0.4583	0.8519
	minimum	-1.6520	0.0000	0.0000	0.0000	1.0000	0.0000	-3.4528
	maximum	3.3415	0.7303	0.0121	0.5989	4.0000	1.0000	3.8846
Total	mean	0.3976	0.1316	0.0258	0.2209	2.3397	0.5413	0.8362
	minimum	-1.9959	0.0000	0.0000	0.0000	1.0000	0.0000	-3.4528
	maximum	3.8339	0.9627	0.5752	0.9874	4.0000	1.0000	6.7605

Source: Stata Output, 2025

4.1.1 Institutional Ownership (INO)

The results from Table 2 above revealed that in the agricultural sector, institutional ownership ranges from 0% to 36.65%, with an average of 10.8% from 2015 to 2024, conglomerate companies show institutional ownership of 0.04% to 44.35%, averaging 14.5%, Consumer goods companies have institutional ownership ranging from 0% to 96.27%, indicating that some companies have no institutional investors. Construction and real estate companies show institutional ownership from 0.0048% to 15.99%, averaging 9.9% of healthcare companies have ownership from 0% and 87.73%, with an average of 14.92%. ICT sector companies have 0.18% to 49.5% institutional ownership, averaging 10.27%. In industrial goods, institutional ownership ranges from 0% to 69%, averaging 19%. Oil and gas companies show 0% to 37.5% ownership, averaging 14.8%. Service sector companies have ownership between 0% and 73%, with an average of 6.3%. Overall, institutional ownership across non-financial companies in Nigeria varies from 0% to 96.27%.

4.1.2 Foreign Ownership (FOW)

From the results in Table 2, there is no foreign ownership in the agricultural sector. Conglomerates show foreign ownership ranging from 0% to 0.28%. Consumer goods companies show ownership from 0% to 54.9%, averaging 5.5%. Construction and real estate companies have foreign ownership ranging from 0% to 99.74%, while the healthcare sector records no foreign

ownership. ICT companies have 0% to 3% foreign ownership, with an average of 0.6%. Industrial goods companies show ownership from 0% to 31.9%, whereas in oil and gas companies, foreign ownership ranges from 0% to 57.5%, averaging 8.2%. Service companies have minimal foreign ownership, ranging from 0% to 1.2%, with an average of 0.16%. Overall, foreign ownership across non-financial companies in Nigeria ranges from 0% to 57.5%.

4.1.3 Ownership Concentration (OWN)

In the agricultural sector, ownership concentration ranges from 0.25% to 62.84%, averaging 21.12%, as shown in Table 2 above. Conglomerates range from 1.72% to 80.65%, while in consumer goods companies OWN range from 2.19% to 96.27%, averaging 24.19%. Construction and real estate companies have low concentration, with values from 0.18% to 15.99%. Healthcare companies have a concentration between 5.7% and 9.87%, indicating low ownership concentration. In ICT, ownership concentration ranges from 0.039% to 49.5%, averaging 13.96%. Industrial goods companies range from 0.08% to 78.88%. Oil and gas companies have ownership concentration ranging from 0% to 70.7%. Service companies show ownership concentration between 0% and 59.89%, averaging 16.47%. In conclusion, ownership concentration in non-financial companies varies from 0% to 98.74%.

4.1.4 Board Financial Expertise (BFE)

In the agricultural sector, financial expertise ranges from 1 to 3 members, averaging 2 members. In conglomerates, the number also ranges from 1 to 3, averaging 2 members. Consumer goods companies have between 1 and 4 financially skilled board members, averaging 3. Construction and real estate companies have 1 to 3 financially skilled members, averaging 2. Healthcare companies have 1 to 4 members with financial expertise, averaging 3. ICT companies show board expertise between 1 and 3 members, averaging 2. Industrial goods companies have 1 to 4 financially knowledgeable board members, averaging 3. Oil and gas companies also range between 1 and 4 members, averaging 2. Overall, non-financial companies in Nigeria have between 1 to 4 board members with financial expertise, with an average of 3.

4.1.5 Audit Firm Size (AFS)

Audit firm size differentiates companies audited by Big 4 audit firms (represented by 1) and other firms (represented by 0). In agriculture, all companies are audited by non-Big 4 firms (0). Conglomerates, real estate, industrial goods, consumer goods, construction and healthcare, ICT, oil and

gas, and services sectors all have companies audited by either Big 4 or non-Big 4 firms, showing both 0 and 1 values. In conclusion, across non-financial sectors in Nigeria, companies either engage Big 4 audit firms or other small audit firms for their annual audits.

4.1.6 Leverage (LEV)

Leverage measures the proportion of debt to equity. In agriculture, leverage ranges from 1.0901 to 3.4195, indicating heavy reliance on debt. Conglomerates show three times more debt than equity. Consumer goods companies also display heavy debt usage, with leverage ranging from 2.9828 to 3.6475. Construction and real estate companies have leverage between 1.2424 and 1.8511. Healthcare companies show leverage between -1.5412 and 2.0489, indicating mixed debt usage. ICT companies have leverage between 0.5282 and 1.0752. Industrial goods and oil and gas companies show leverage from -2.6122 to 1.7475. Service sector companies range from -3.4528 to 3.8846. In conclusion, non-financial companies' leverage varies widely from -3.4528 to 6.7605, suggesting different preferences for debt financing across sectors.

4.2 Correlation Analysis

Table 3 below presents the result of Pearson's correlation.

Table 3: Correlation Matrix Result

	etr	ino	fow	own	Bfe	afs	lev
etr	1.0000						
ino	0.0829	1.0000					
fow	0.0366	0.0321	1.0000				
own	0.0106	0.3761	0.1538	1.0000			
bfe	-0.0281	0.1131	0.0614	0.1756	1.0000		
afs	-0.1124	0.0447	0.0269	0.0851	0.2114	1.0000	
lev	0.0284	0.0750	0.1931	0.0614	0.0062	0.0119	1.0000

Source: Stata Output, 2025

The collinearity between the variables is represented by the correlation result in Table 3 above. The results showed that while board financial expertise and audit firm size have a negative association with tax aggressiveness, as indicated by the values -0.0281 and -0.1124, respectively, institutional and foreign ownership, ownership concentration, and leverage have a positive correlation with tax aggressiveness as indicated by the values

0.0829, 0.0366, 0.0106, and 0.0284, respectively.

With respect to institutional ownership and other determinants, the result revealed that foreign ownership, ownership concentration, board financial expertise, audit firm size and leverage positively correlate with institutional ownership as revealed by the values 0.0321, 0.3761, 0.1131, 0.0447 and 0.0750. Furthermore, the result revealed that ownership concentration, board financial expertise, audit firm size, and leverage were positively related to foreign ownership as indicated by the values 0.1538, 0.0614, 0.0269 and 0.1931 and also, board financial expertise, audit firm size, and leverage were positively related to ownership concentration to the extent of 0.1756, 0.0851 and 0.0614. In conclusion, audit firm size and leverage are positively related to board financial expertise to the extent of 0.2114 and 0.0062, and leverage is also associated with audit firm size positively, as revealed by the value 0.0119. The result implies that none of the variables have a collinearity problem because the relationship between all the variables is below 0.8 (Gujarati, 2009).

4.3 Post Diagnostic Test

The reliability of statistical inferences depends on conducting diagnostic tests on the data. Therefore, post-estimation tests were carried out to assess data normality, multicollinearity, group-wise heteroscedasticity and model specification problems. A summary of the results from these tests is provided in Table 4 below.

Table 4: Post Diagnostic Test

Regression assumptions	Test	We seek values
1) No heteroskedasticity problem	Breusch-Pagan hettest Chi2 (1): 0.409 P-value: 0.524	> 0.05
2) No multicollinearity problem	Variance inflation factor Lev. 1.43 Bfe. 1.21 Own. 1.11 ino 1.09 afs 1.09 fow 1.09	< 5.00
3) Residuals are normally distributed	Shapiro-Wilk W normality test Z: 0.557 P-value: 0.442	> 0.01
4) No specification problem	Linktest t: 0.638 P-value: 0.374	> 0.05

Source: Stata Output, 2025

Post-diagnostic results indicate an absence of heteroskedasticity among the variables, as evidenced by a χ^2 value of 0.409 and a corresponding p-value of 0.524, which is above the 5% significance level. For multicollinearity, the Variance Inflation Factor (VIF) values are all below 10, indicating no concern in this regard. According to Gujarati (2009), a VIF value above 10 may signal multicollinearity issues. The Shapiro-Wilk W test for normality was applied to assess the distribution of the variables, and with a p-value of 0.442 (44.2%), well above the 5% significance level, the results confirm that the residuals follow a normal distribution. Furthermore, the model shows no specification error, as the p-value of 0.374 also exceeds 0.05. Overall, these findings suggest that the model is suitable for explaining variations in tax aggressiveness based on the selected determinants.

4.4 Hausman Specification Test

With the results displayed in Table 5, the Hausman specification test was performed to identify the most suitable model between the fixed effects and random effects estimators.

Table 5: Hausman Specification Test

Chi ²	Prob > chi ²
10.62	0.0001

Source: Stata Output, 2025

The fixed effect model is chosen because, based on the results of the Specification test, the probability value of 0.0001 is less than 0.05 (5% significance level).

4.5 Discussion of Results

Table 6 presents the results of the fixed effects regression analysis across various sectors. The table includes coefficient estimates, corresponding p-values, R-squared values, and the number of observations and entities for each sector.

Table 6: Fixed Effect Regression Result

	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
VARIA	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL	MODEL OVERALL
ino	0.8664 0.000	1.2387 0.000	0.3604 0.039	2.1997 0.004	1.0774 0.020	0.3329 0.051	2.3618 0.070	0.8352 0.002	1.0936 0.029	2.1299 0.000
fow	0.390 0.000	0.402	.3042 0.369	-9.8610 0.133	1.7337 0.013	21.9	0.720 0.287	0.3938 0.001	0.3456 0.108	11.784 0.020
owc	-0.367* 0.052	0.0442 0.860	1.1155 0.186	-6.6805 0.170	0.5932 0.094	-1.2071 0.044	-4.7070 0.000	-0.1309 0.729	0.9269 0.0651	-0.613 0.020
bfe	0.1440 0.280	0.3314 0.047	-1.8742 0.014	3.8793 0.410	0.5793 0.113	0.7314 0.148	6.2909 0.000	0.2580 0.417	-0.4965 0.083	0.1641 0.379
afs	0.0628 0.0000	0.3673 0.000	0.2316 0.000	0.4486 0.000	-0.0474 0.003	0.3794* 0.000	0.3380 0.047	0.0117 0.0605	0.0592 0.004	0.4147 0.0379
lev	-0.1203 0.0000	-0.3109 0.000	0.0821 0.508	-1.1009 0.097	-0.1942 0.074	-0.6246 0.002	-0.8773 0.006	-0.1201 0.159	0.0525 0.602	-0.1711 0.003
Constan	0.4049 0.000	0.2633 0.000	0.0561 0.732	1.3189 0.084	0.4881 0.000	0.8568 0.000	0.5628 0.000	0.3552 0.000	-0.0406 0.756	0.3470 0.000
Observations	630.0000	50.0000	50.0000	30.0000	120.0000	60.0000	40.0000	90.0000	70.0000	120.0000
R-squared	0.3035	0.8503	0.5898	0.7747	0.2410	0.5874	0.4648	0.6994	0.6453	0.6814
Number of id	63	5	5	3	12	6	4	9	7	12

Source: Stata Output, 2025 coefficient in parentheses *** p<0.01, ** p<0.05, * p<0.1

4.6 Test of Research Hypotheses and Discussion Findings

4.6.1 Institutional Ownership and Tax Aggressiveness

The findings in Table 6 show that a one-unit rise in institutional ownership leads to an increase in tax aggressiveness in the agricultural, conglomerate, construction, consumer goods, industrial products, oil and gas, and services sectors, by 1.2387, 0.3604, 2.1997, 1.0774, 0.8352, 1.0936, and 2.1299, respectively. This is because, at the 5% significance level, institutional ownership exerts a positive and statistically significant influence on tax aggressiveness as reported by the p values of 0.000, 0.039, 0.004, 0.002, 0.000, 0.020, and 0.000 respectively. In contrast, for the IT and healthcare sectors, p-values of 0.051 and 0.070, both exceeding the 5% threshold indicate a positive but statistically insignificant effect. Overall, the study reveals

that for listed non-financial companies in Nigeria, institutional ownership has a significant positive impact on tax aggressiveness, as evidenced by a coefficient of 0.8664 and a p-value of 0.000 implying that a unit increase in institutional shareholding would boost tax aggressiveness by 0.866 units.

The results of the study show that institutional ownership has a significant impact on the tax aggressiveness of listed non-financial companies in Nigeria. The results are in line with earlier research by Rahmahwati et al. (2025), Ariggraini and Widarjo (2020), Jiang et al. (2020), who found that institutional ownership has a significant effect on tax aggressiveness. Although they are in disagreement with those of Ismanto and Abdulrahman (2024), Efenana and Egbunike (2023), Aza et al. (2023) Luai et al. (2019), and Ying et al. (2017) who found that institutional ownership has no significant effect on tax aggressiveness.

4.6.2 Foreign Ownership and Tax Aggressiveness

The coefficients of 0.3042, 9.8610, 0.720, and 0.3456, with corresponding p-values of 0.369, 0.133, 0.287, and 0.108 for conglomerate, construction, ICT, and oil and gas companies, respectively, which exceed the 0.05 threshold, indicate that foreign ownership does not significantly influence tax aggressiveness in these sectors. This means that a one-unit increase in foreign ownership within these sectors would result in increases of 0.3042, 9.8610, 0.720, and 0.3456 in tax aggressiveness, respectively.

Conversely, foreign ownership had a significant positive impact on tax aggressiveness at the 5% significance level in the consumer goods, industrial goods, and services sectors, with coefficients of 1.7337, 0.3038, and 11.784, and corresponding p-values of 0.013, 0.001, and 0.020, respectively. This implies that an increase in foreign ownership in these sectors would raise tax aggressiveness by 1.7337, 0.3038, and 11.784, respectively. Overall, the aggregate results show that foreign ownership significantly affects Nigerian listed non-financial firm's tax aggressiveness, as evidenced by a coefficient of 0.390 and a p-value of 0.000.

The correlation between tax aggression and foreign ownership is contingent upon the inherent/particular conditions. Foreign ownership may occasionally result in more aggressive taxation if the foreign owners are less concerned with upholding their good name in the host nation or have more leeway in their tax planning techniques. In other cases, foreign ownership leads to less tax aggressive behaviour if the foreign owners have a strong reputation to protect or are subject to regulations in their home country that discourage tax aggressive behaviour.

Additionally, other factors such as the host country's legal and regulatory environment, as well as cultural norms and values, influenced tax planning. According to this study, foreign ownership significantly

increases the tax aggressiveness of Nigerian listed non-financial enterprises. This implies that tax aggression will rise in proportion to a rise in foreign ownership. The results are consistent with those of Rahmahwati et al. (2025), Ariggraini and Widarjo (2020), Jiang et al. (2020) found that foreign ownership has a significant effect on tax aggressiveness; however, the results are not consistent with those of Efenana and Egbunike (2023), Dike et al. (2021), who found that foreign ownership has no significant effect on tax aggressiveness.

4.6.3 Ownership Concentration and Tax Aggressiveness

The results in Table 6 above indicate that ownership concentration has a positive relationship with tax aggressiveness in the agriculture, conglomerate, consumer goods, and oil and gas sectors, as revealed by the coefficients of 0.0442, 1.1155, 0.5932 and 0.9269 with a corresponding p-values of 0.860, 0.1860, 0.094 and 0.0651 respectively which is not significant at 5%. These implies that a unit rise in the ownership concentration in agriculture, conglomerate, consumer goods, and oil and gas sectors, will result in 0.0442, 1.1155, 0.5932 and 0.9269 unit increase in tax aggressiveness in those sectors. In contrast, ownership concentration has a significant inverse relationship with tax aggressiveness in the health, ICT, and service sectors as indicated by the coefficient of -1.2701, -4.7070 and -0.613 with corresponding p values of 0.044, 0.000 and 0.020 respectively. This implies that a unit rise in the ownership concentration in the health, ICT, and service sectors will reduce tax aggressiveness in those sectors.

In addition, ownership concentration in the construction and industrial goods sectors shows a negative association with tax aggressiveness, reflected in coefficients of -6.6805 and -0.1309 and corresponding p-values of 0.170 and 0.729, respectively, both statistically insignificant. However, when considered in aggregate, ownership concentration exerts a significant negative effect on the tax aggressiveness of listed non-financial companies in Nigeria, as indicated by a coefficient of -0.367 and a p-value of 0.052.

There is no clear correlation between ownership concentration and tax aggression; this varies depending on the sector. Because the dominant shareholder has a stronger personal interest in enhancing corporate earnings, there are situations where high levels of ownership concentration may result in more aggressive taxation. In other situations, if the dominant shareholder is a sizable institutional investor with a reputation to uphold or is governed by laws that forbid tax-aggressive behaviour, high levels of ownership concentration may result in less tax-aggressive behaviour. Furthermore, on the aggregate basis ownership concentration has no significant effect on tax aggressiveness of listed non-financial companies in Nigeria, the results is consistent with earlier research by Efenana and Egbunike (2023), but not

in agreement with the findings of Ismanto and Abdurahman (2024), Aza, et al. (2023), Dick et al. (2021), and Jiang et al. (2020) who found ownership structure has a significant positive effect on tax aggressiveness.

4.6.4 Board Financial Expertise and Tax Aggressiveness

The results in Table 6 show that board financial expertise is positively related to tax aggressiveness in the agriculture, construction, consumer goods, health, ICT, industrial goods, and service sectors, with coefficients of 0.3314, 3.8793, 0.5793, 0.7314, 6.2909, 0.2580, and 0.1641, and corresponding p-values of 0.047, 0.410, 0.113, 0.148, 0.000, 0.417, and 0.379, respectively. These relationships are statistically insignificant in all sectors except agriculture and ICT, where the effects are significant. This implies that a one-unit increase in board financial expertise would raise tax aggressiveness by 0.3314, 3.8793, 0.5793, 0.7314, 6.2909, 0.2580, and 0.1641 in the respective sectors. In contrast, a negative association was observed in the conglomerate sector, with a coefficient of -1.3742 and a p-value of 0.014, indicating a significant effect, and in the oil and gas sector, with a coefficient of -0.4965 and a p-value of 0.083, showing an insignificant effect.

This means that each additional unit of board financial expertise would reduce tax aggressiveness by 1.3742 in the conglomerate sector and by 0.4965 in the oil and gas sector. On an aggregate level, the coefficient of 0.1440 and p-value of 0.280 indicate a positive but statistically insignificant impact of board financial expertise on the tax aggressiveness of Nigeria's listed non-financial companies.

Board financial expertise may lead to less tax-aggressive behaviour if the board members have a good understanding of tax regulations and the potential risks associated with tax-aggressive behaviour. This may encourage them to pursue tax planning strategies that are compliant with regulations and minimise tax liability, while avoiding behaviour that is perceived as aggressive. In other cases, board financial expertise may lead to more tax-aggressive behaviour if the board members have a strong focus on maximising firm profits and are willing to engage in tax planning strategies that are perceived as aggressive. However, this relationship may be influenced by the country-specific regulations and cultural norms surrounding tax planning.

The study found that the tax aggressiveness of listed non-financial companies in Nigeria is not significantly impacted by the board's financial expertise. The results are consistent with those of Onyeogubalu et al. (2025), Chen et al. (2020) and Apriliyana and Suryarini (2019) found that board financial expertise has no significant effect on tax aggressiveness. Similarly, the findings contradict those of Dhiyaulhaq and Fadjaranie (2023), Martinez et al. (2023), Dang and Nguyen, (2022), Tanko et al. (2022), Rimamsikwe

and Sule (2022), Salihu and Kawi (2021), and Huang and Zhang (2020), who found that board financial expertise has a significant effect on tax aggressiveness.

4.6.5 Audit Firm Size and Tax Aggressiveness

With a p-value of 0.000 and an audit firm size coefficient of 0.628, the findings indicate that audit firm size has a positive and significant impact on the tax aggressiveness of listed non-financial corporations in Nigeria. This suggests that an increase in audit firm size leads to a 0.0628 rise in tax aggressiveness. In the agriculture sector, a strong positive relationship is observed, with a p-value of 0.000 and a coefficient of 0.367, meaning tax aggressiveness increases by 0.367 with larger audit firms. Similarly, in the conglomerate and construction sectors, coefficients of 0.2316 and 0.4486 with p-values of 0.000 and 0.003, respectively, reveal a positive and significant effect, indicating that the use of Big 4 audit firms raises tax aggressiveness by 0.2316 and 0.4486, respectively.

However, in the consumer goods sector, audit firm size has a negative and significant impact at the 5% level, with a coefficient of -0.0474 and a p-value of 0.003, meaning that larger audit firms reduce tax aggressiveness by 0.0474 units. In contrast, positive and significant effects are recorded for the health care and ICT sectors, with significance levels of 0.000 and 0.047, respectively. For the industrial goods sector, audit firm size shows a positive but insignificant effect, with a coefficient of 0.2580 and a p-value of 0.605. Additionally, in the oil and gas and services sectors, audit firm size increases tax aggressiveness by 0.0592 and 0.415, respectively, with the effect being insignificant for oil and gas but significant for services.

The size of an audit firm significantly influences how aggressively listed non-financial firms in Nigeria approach taxation. It follows that tax aggressiveness will rise with the size of the audit business, though larger audit firms may be less likely to tolerate tax aggressive behaviour by their clients due to their reputation for quality and independence, as well as the potential for regulatory scrutiny. In other cases, larger audit firms may be more willing to tolerate tax aggressive behaviour if they have a strong financial interest in maintaining the client relationship or if they are facing increased competition from smaller audit firms.

Additionally, the relationship may be influenced by the legal and regulatory environment, as well as cultural norms and values surrounding tax planning. This finding agrees with the findings of Madah et al. (2021) and Fadhilah (2011) that audit firm size has no significant impact on tax aggressiveness, while Fu (2024) and Suardana (2014) found that audit firm size has a significant impact on tax aggressiveness

4.6.6 Leverage and Tax Aggressiveness

Leverage has a significant negative effect on the tax aggressiveness of listed non-financial companies in Nigeria. Specifically, a one-unit increase in leverage proportion reduces tax aggressiveness by 0.120, while in the agricultural sector, such an increase leads to a 0.3109 unit decline. In contrast, leverage exerts a positive but insignificant influence on tax aggressiveness in conglomerates, as indicated by a coefficient of 0.0821 and a p-value of 0.508. For construction and consumer goods companies, leverage shows negative but insignificant effects, with coefficients of -0.1109 and -0.1942 and p-values of 0.097 and 0.072, respectively.

In the healthcare sector, leverage has a significant negative impact at the 5% level, with a coefficient of 0.6246 and a p-value of 0.002, indicating that each unit increase in leverage results in a 0.6236 decrease in tax aggressiveness. Similarly, in ICT companies, leverage significantly reduces tax aggressiveness by 0.877 units (p-value = 0.006). For industrial goods companies, leverage has a negative but insignificant impact, as reflected by a coefficient of -0.1201 and a p-value of 0.159. In the services sector, leverage demonstrates a significant negative effect, with a coefficient of -0.1711 and a p-value of 0.003. Finally, in the oil and gas sector, leverage shows a positive but insignificant relationship with tax aggressiveness, with a coefficient of 0.0525 and a p-value of 0.602

Due to increased risk and financial constraints, companies with higher levels of leverage may be less likely to engage in tax aggressive behaviour. However, in certain situations, companies with higher levels of leverage may be more likely to engage in tax aggressive behaviour if they are trying to maximise their financial returns and minimise their tax liability to help pay off their debt. This study discovered that the tax aggressiveness of listed non-financial companies in Nigeria is significantly impacted by leverage. The results align with those of Martins and Sule (2024), He and Tang (2023), Wahyudi (2023) Yahaya and Yusuf (2020) Tanko, et al. (2022) and Suyono (2020) that leverage has a significant effect on tax aggressiveness, while Ramadanti et al. (2024), Takasanakeng (2022), Ugbogbo et al. (2020), and Chen et al. (2020) found that leverage has no significant effect on tax aggressiveness.

5. Conclusion

The study concludes that institutional ownership exerts a significant positive effect on tax aggressiveness, implying that an increase in institutional shareholding encourages listed non-financial companies in Nigeria to pursue more aggressive tax strategies. Furthermore, foreign ownership also plays a significant role in intensifying tax aggressiveness, suggesting that

higher foreign shareholding is associated with a corresponding increase in aggressive tax practices.

Ownership concentration significantly influences the tax aggressiveness of listed non-financial companies in Nigeria. With respect to board financial expertise, the study reveals a positive but statistically insignificant relationship between the board's financial expertise and tax aggressiveness in these firms. The findings also show that audit firm size has a significant effect on tax aggressiveness, indicating that larger audit firms are associated with increased tax aggressiveness among Nigerian listed non-financial companies. While bigger audit firms are generally perceived as less likely to permit aggressive tax practices due to their emphasis on quality, independence, and the risk of regulatory scrutiny, in certain situations, they may be more inclined to tolerate such behaviour, particularly when motivated by strong financial incentives to retain a client or when facing heightened competition from smaller audit firms.

The study concludes that leverage has a significantly negative effect on the tax aggressiveness of listed non-financial companies in Nigeria, which indicates that a unit increase in the proportion of leverage will result in a decrease in tax aggressiveness. Based on the aforementioned conclusions, the following recommendations were made: non-financial firms in Nigeria should ensure that their board is made up of institutional and foreign ownership to promote effective tax planning within legal limits, and the proportion of board members with financial expertise should be increased to help optimise tax planning and enhance tax efficiency within regulatory boundaries. Non-financial companies should engage big audit firms to serve as a deterrent to illegal tax aggressiveness by increasing the likelihood of detection and potential consequences. Non-financial companies should have debt capital to serve as a monitoring mechanism against tax aggressiveness.

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