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RESEARCH ARTICLE

Board Attributes and Tax Aggressiveness among Listed Firms in Nigeria

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Abstract

This study examined the relationship between board attribute and tax aggressiveness of publicly quoted manufacturing firms in Nigeria. Specifically, this study assessed the extent to which board size, board independence, and board meetings relate to effective tax rate of listed manufacturing firms in Nigeria. Further, this study applied *ex-post facto* research design using a population of sixty-two listed manufacturing firms in Nigeria. Purposive sampling was used in selecting the sample size of forty-six firms while secondary data were sourced from audited financial statements of the sampled firms over a ten-year period from 2014-2023. The regression result revealed that board independence (coefficient = -0.057, P-value = 0.521] and board meetings (coefficient = 0.044; P-value = 0.630) have no statistically significant relationship with tax aggressiveness but a statistically significant relationship was found between board size (coefficient = 0.214; P-value=0.009]. This result calls for some strategic recommendations for managing tax concerns among manufacturing firms in Nigeria. This study concludes that while board size may align with tax conservatism/compliance, board independence and diligence have no significant contribution to tax aggressiveness. Therefore, this study recommends that management should consider optimizing board size to enhance tax planning strategies that minimize cash tax payments while ensuring regulatory compliance.

Keywords: Board Independence, Board Size, Board Meetings, Tax Aggressiveness, Nigeria.

JEL Classification: M49; E62 R PAGE.

1. Introduction

One of the major challenges facing most developing countries is the diversification of their sources of revenue. Nigeria is not left out. Although richly endowed with crude oil among other solid mineral resources, her age-long dependence on oil revenue as a major source of government revenue, at the expense of other possible non-oil sources of revenue, has left much to be desired (Ogbeide, Anyaduba & Akogo, 2022). As a result, taxation has become one of the sources of revenue such that governments are now diversifying and rolling out policies towards strengthening it. Tax is an important source of government revenue. Government requires tax revenue to augment its public expenditure as well as in ensuring sufficient provisions of public amenities to the society.

Most developed nations (such as United Kingdom) rely on taxation as a major source of government revenue and appear to have fared better, because taxes provide a more stable and predictable flow of income in meeting governments' expenditure needs (Ofoegbu & Akwu, 2016). Unfortunately, not every national government, especially in developing countries, are able to effectively achieve optimal tax compliance level. In many cases, a large proportion of the informal sector of the economy escape the tax net entirely (while companies in the formal sector try

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to avoid taxes by engaging in tax planning activities in order to minimize their tax burden (Oladipupo & Obazee, 2016). According to Olaoye and Ekundayo (2019), one of the underlying features of tax is that it is a mandatory payment enforced by government for which no immediate gain is received in return at least in the short-run.

One of the main justifications for businesses to engage in aggressive tax practices is the claim that businesses are increasingly constrained by the enormous amounts of money they must pay in taxes each year, despite the fact that taxes are one of the world's most reliable sources of income for most governments. Evidently, since taxes paid by corporate organizations significantly reduce annual profits and potential distributable revenue, management is nevertheless tempted to look into (legal and criminal) options for reducing the tax obligations (Onyali & Okafor, 2018; Onatuyeh & Odu, 2019). Tax aggressiveness is a plan or arrangement established for the sole or dominant purpose of avoiding tax (Obiora *et al.,* 2022). To ensure effective tax aggressiveness, proper monitoring through board oversight has been advocated. Consequently, it is important to look at other board attributes to ascertain the ones that will yield a positive drive to tax aggressiveness and they include board size, meetings and independence.

Tax aggressiveness is a legitimate and legal way of paying lesser taxes or not paying at all. It is a plan or arrangement established for the sole or dominant purpose of avoiding tax. Notably, whilst we acknowledged the plentiful empirical studies in the accounting literature on tax aggressiveness, there is limited literature that had assessed whether the selected board attributes (board size, meetings and independence) would affect tax aggressiveness. This therefore necessitates the need to carry out this investigation by looking at three (3) board attributes (such as board size, board independence and board meetings) as they affect tax aggressiveness of publicly quoted manufacturing companies in Nigeria.

2. Review of Related Literature

2.1 Board Attributes

Majority of these researchers are of the opinion that larger boards may lead to communication and coordination problems, cost ineffectiveness and poor decision-making process (Jensen, 1993; Lipton and Lorsh, 1992; Raheja, 2003), others have argued that larger boards are needed for cross-fertilization of ideas which may result in better decision outcome (Jenter *et al.,* 2018; Said *et al.,* 2009), However Ideh, Jeroh, and Ebiaghan (2021) opine that, small boards of directors strengthen good tax management.

The repeated calls for corporate managers to be more disciplined and highly monitored came after the outburst of worrisome high profile financial scandals (Jeroh, E. 2020) which involved corporate giants within and outside Nigeria. Ignited by the global and domestic concern of financial reporting quality of firms, SEC (2003, 2011) through her Corporate Governance Codes (CGCs) provides that companies should constitute corporate boards that are more independent in their structure.

Board meeting is an important component of corporate governance as it provides an avenue for directors on the board to deliberate on issues and make strategic decisions that are germane to the success of a company and attainment of its overall objectives. According to Eluyea et al (2018), regular board meetings is an internal issue at the discretion of chairman of board meeting as there is no explicit governance law stipulating the minimum number of meetings. However, the efficacy of board meetings is difficult to define and to assess (Chou, Chung, & Yin, 2013). Such higher level of board activity can enhance firms' value (Brick & Chidambaran, 2010). The frequency of meetings may also be relevant, if the board aims to monitor its managers closely (Lin, Yeh, & Yang, 2014). The consequences of board meetings on firms are not consensual among existent empirical research.

2.2 Tax Aggressiveness

This refers to legal activities which are usually provided by the auditor or tax agent and can be classified as gray area activities as well as illegal activities (Chen et al., 2010). Tax aggressiveness may also be regarded as the minimization of tax payment through tax planning activities. Tax aggressiveness is interchangeably used as tax avoidance (Desai & Dharmapala, 2004). We employ the effective tax rate (ETR) as a measure of tax aggressiveness to improve the robustness of our results. This measure reflects aggressive tax planning through permanent book-tax differences.

Examples of such tax planning are investments in tax havens with lower foreign tax rates (provided that foreign source earnings are classified as permanently reinvested), investment in tax exempt or tax favored assets, and participation in tax shelters that give rise to losses for tax purposes but not for book purposes (Wilson 2009). Effective tax rate also represents the alternative measure of tax aggressiveness most frequently used by many academic researchers

(Robinson and Sikes, 2006; Dyreng *et al.,* 2008; Minnik and Noga, 2010).

2.3 Profitability (Control Variable)

In econometric models which examine corporate tax aggressiveness as the dependent variable, firm profitability is often included as a control variable to account for its significant influence on tax-related decisions (Richardson, Taylor & Lanis, 2013). More profitable firms have both the means and incentives to engage in tax minimization strategies (Neuman, 2014), but they may also face greater scrutiny from tax authorities and stakeholders, potentially discouraging aggressive tax behavior. On the one hand, Neuman, (2014) note that by controlling for profitability, the model ensures that variations in tax aggressiveness are not merely a byproduct of differences in firms' financial performance.

On the other hand, without controlling for profitability, the estimated relationship between board attributes and tax aggressiveness could be misleading. Profitability is typically measured using financial ratios such as return on assets (ROA), allowing for standardized comparisons across firms (Kharatyan, Nunes & Lopes, 2016). By incorporating this variable, the model adjusts for the direct effect of profitability on tax behavior, ensuring that any observed influence of board attributes reflects governance-related factors rather than financial performance alone, hence, enhances the robustness of the econometric analysis and strengthens the reliability of its conclusions.

2.4 Theoretical Framework

Agency theory was developed by Jensen and Meckling (1976) explained that the company's management as an agent for shareholders, acting for their own interests not as a party that sided with the shareholders as assumed in the stewardship model. Agency theory explains that management cannot be trusted to act in the best way for the public interest in general. Thus, managers cannot be trusted to do their jobs - which of course is to maximize shareholder value (Rusdiyanto & Narsa, 2019; Gazali *et al.,* 2020). In these words, the Board members are seen as core part of management. This article is based on the agency conflict arising the clash of interests of Board members and shareholders. The agents are the Board members and the shareholders are the principals. Agency theory tries to offer clearance over conflict between the agent and principal.

Jensen and Meckling (2009) later propound the agency theory in 1976. They stressed that agency conflict commonly arise between owners and managers of corporation. Managers may pursue project with negative net present values or seek rent extraction therefrom. Seidman and Stemberg (2018) posit that tax aggressiveness is a framework of evaluation of agency conflicts. They emphasized further that the minimization of payment of the fiscal burdens improves the shareholders' value, but however, the strategy of tax aggressiveness is quite expensive for the managers. Managers may incur reputational costs arising from tax evasion penalty.

3. Methodology

For this study, *ex-post facto* research design was adopted because it is adjudged as the most appropriate research design technique for a study of this nature. *Ex-post facto* research design attempts to demonstrate the relationship between the dependent and independent variables, essentially by analysing past occurrences or events with already existing (secondary) data. Cross-sectional historical data collected from different entities (listed manufacturing firms) over a 10-year period (2014 - 2023) was explored.

The population of listed manufacturing firms was 62 obtained from six (6) sectors to include: health care (7), natural resources (4), conglomerates (6) agriculture (5) Industrial goods (13) and Consumer Goods (21) companies. Given the characteristics of manufacturing companies in Nigeria, non-probabilistic sampling technique viz: purposive sampling approach was adopted in this study. This approach takes into consideration the stratified approach which covers the six sub-classifications of listed manufacturing companies in Nigeria to include: Industrial Goods, Consumer Goods, Health Care, Conglomerate, Natural Resources and Agriculture sub-sectors.

The need for purposive sampling is aimed at selecting a sample size of manufacturing firms that fairly represent the population, having met certain requirements that best suit the purpose of the study. The criteria for the selection of the sampled firms are as follows: the selected manufacturing firm must remain listed on the Nigerian Exchange Group (NGX) during the period 2014 – 2023; the selected manufacturing firm must have complete financial statements for the period under consideration; the shares/stock of the selected manufacturing firm must be in active trade as of the time of this study; and listed manufacturing firm facing suspension were removed.

In this study, one econometric model was developed to capture board attribute effect on tax aggressiveness of listed manufacturing firms in Nigeria. The model of Bash and Zoghlami, (2023) was modified to fit the objectives of this study and expressed functionally as:

Tax Aggressiveness = *f*(board size, board independence, board meeting, profitability) … (1)

The econometric form of the model is presented in equations 2 as:

$$\mathbf{ATAX_{it}} = \beta_0 + \beta_1 SBOD_{it} + \beta_2 INBOD_{it} + \beta_4 MBOD_{it} + \beta_6 PROF_{it} + e_{it} \quad \text{... (2)}$$

Where:

ATAX = Tax Aggressiveness; SBOD = Board Size; INBOD =Board Independence; MBOD = Board Meeting; PROF= Profitability; "{i}" = Cross Section (Sample Companies); t=Time Frame (2014 to 2023); e_{it} = Stochastic error Term

Table 1. *Operationalization of Variables*

Variables	Measurement	Source
Effective Tax Rate (Dependent Variable)	Cash effective tax in percentage is computed as income tax paid in cash flow statement divided by profit before tax	Fitriyani and Mayangsari (2023)
Board Size (Independent Variable)	Computed as the total numbers of all directors of a company including the Chairman +Vice Chairman +CEO/Managing director + Executive Directors +Non-Executive Directors or Independent Directors excluding the company secretary	Ruslim, (2023).
Board Independence (Independent Variable)	Computed in absolute values as total number of non-executive directors' present on the board	Utami and Danarsari, (2023).
Board Meeting (Independent Variable)	Computed in absolute values as the total number of meetings held within one year	Barros and Sarmento, (2020).
Profitability (Control Variable)	Computed in percentages as profit after tax divided by total asset	da Silva, de Carvalho Junior, & Nascimento (2023)

Source: *Researchers' Compilation, (2025)*

4. Results

Table 2. *Descriptive Statistics*

Variable	Obs	Mean	Std. dev.	Min	Max
ATAX	460	3.715022	3.17775	0	49.88
SBOD	460	8.984783	2.939808	3	19
INBOD	460	6.395652	2.668297	0	17
MBOB	460	4.604857	1.257077	1	11
PROF	460	3.194759	15.21635	-179.92	108.9

Source: *Authors' Computation Stata Version 17*

The descriptive statistics of tax aggressiveness (ATAX) which is measured in terms of cash effective tax provide compelling insights into the operational strategies of manufacturing firms listed on the Nigerian Exchange Group. Tax aggressiveness (ATAX) showed a mean value of 3.72% with a standard deviation of 3.18, suggesting a moderate level of variability in tax-saving strategies among the sampled firms. Cash effective tax (ATAX), ranging from 0 to 49.88%, captures the extent to which firms manage their actual cash tax payments relative to profit before tax. Firms with lower ATAX values indicate higher levels of tax aggressiveness, effectively minimizing tax liabilities through strategic tax planning. Conversely, firms with higher ATAX values remit a larger proportion of its earnings as tax, reflecting varying corporate tax strategies across the sampled manufacturing firms. Board attributes also exhibit interesting patterns.

The size of the board of directors (SBOD) averages approximately nine members (mean: 8.98), with some boards as small as three and others as large as nineteen. Additionally, board independence (INBOD), measured by the count of non-executive directors, averages around six members, suggesting a reasonable emphasis on independent oversight, although some of the sampled firms lack this entirely. In this study, board meeting reflected by the frequency of meetings (MBOD), averages 4.6 annually, with a maximum of 11 meetings, demonstrating variability in board engagement levels.

Table 3. *Data Normality Test*

Variable	Obs	W	V	Z	Prob>Z
ATAX	460	0.65245	108.461	11.223	0.00000
SBOD	460	0.96588	10.647	5.664	0.00000
INBOD	460	0.96130	12.078	5.966	0.00000
MBOD	460	0.94434	17.132	6.799	0.00000
PROF	460	0.69817	93.458	10.862	0.00000

Source: *Authors' Computation Stata Version 17*

The outcomes indicate that all the variables show significant deviations from normality, as evidenced by the p-values being less than 0.05 for each case, underscoring a non-normal distribution. In this study, aggressive tax (ATAX) has a z-value of 11.223 and a p-value of 0.00000, indicating a non-normal distribution. This deviation arises from varying tax strategies among firms, where some consistently manage their cash tax payments, while others show minimal variations, leading to an uneven data spread.

Board variables to include Size of the Board of Directors (SBOD), and Board Independence (INBOD), z-values of 5.664, and 5.966 respectively, paired with p-values of 0.00000, also revealed significant non-normality data patterns. Board Meetings (MBOD) has a z-value of 6.799 corresponding to a p-value of 0.00000, further affirmed that meeting frequencies vary significantly among manufacturing firms in Nigeria.

Table 4. *Correlation Analysis Result*

	ATAX	SBOD	INBOD	MBOD	PROF
ATAX	1.0000				
SBOD	0.1892	1.0000			
INBOD	0.1619	0.8720	1.0000		
MBOD	0.0738	0.2530	0.2170	1.0000	
PROF	0.0870	0.2125	0.1809	0.2507	1.0000

Source: *Authors' Computation Stata Version 17*

The correlation analysis provides insights into the associations between board attributes and tax aggressiveness, among listed manufacturing firms in Nigeria. As a non-parametric test, this analysis measures the strength and direction of monotonic associations between variables without implying causation or direct effects. Weak positive association between tax aggressiveness and the size of the board of directors (ρ=0.1892\rho) suggests that larger boards may align with slightly higher utilization of cash effective tax-saving mechanisms. Similarly, the weak positive association between tax aggressiveness and board independence (ρ=0.1619\rho) implies that greater representation of non-executive directors on boards associates with increased tax aggressiveness, potentially reflecting their role in scrutinizing and optimizing financial strategies.

The weak association observed between tax aggressiveness and board meeting (ρ=0.0738\rho) indicates that the frequency of board meetings has minimal alignment with cash effective tax-saving strategy. Further, profitability shows a weak positive association with tax aggressiveness (ρ=0.0870\rho), suggesting that more profitable firms may engage slightly more in managing their actual cash tax payments relative to profit before tax. Regarding collinearity, the strong positive association between board size and board independence (ρ=0.8720\rho) exceeds the threshold of ρ≥0.80\rho, indicating potential issues of no multicollinearity.

Table 5. *Regression Result*

Variables	Symbol	Coefficient	P-value	Remark
Board Size	SBOD	0.2140	0.009	
Board Independence	INBOD	-0.0570	0.521	
Board Meetings	MBOD	0.0440	0.630	
Profitability	Prof	0.0297	0.000	
R-Squared = 0.79	F-value = 13.01	F-Prob. = 0.000		

Source: *Authors' Computation Stata Version 17*

The regression result revealed that board independence (coefficient = -0.057, P-value = 0.521] and board meetings (coefficient = 0.044; P-value = 0.630) have no statistically significant relationship with tax aggressiveness but a statistically significant relationship was found between board size (coefficient = 0.214; P-value=0.009]. This result calls for some strategic recommendations for managing tax concerns among manufacturing firms in Nigeria.

Board attributes and tax aggressiveness nexus remain pivotal subjects in corporate finance and accounting, given their profound implications for firm performance, regulatory compliance, and public finance. Tax aggressiveness encompasses strategies employed by corporations to minimize tax liabilities, influencing profitability and resource allocation. As a global phenomenon, tax aggressiveness practices are often shaped by board structures that dictate decision-making and accountability frameworks within firms. Chukwu et al. (2019) and Goh, Lee, Lim, and Shevlin (2016) underscored the importance of board mechanisms, such board oversight and transparency in curbing aggressive tax strategies; these mechanisms offers a vital check against excessive risk-taking in tax planning, fostering a balance between cost-saving measures and regulatory adherence.

5. Conclusion and Recommendations

The study concludes that while board size may align with tax conservatism/compliance, board independence and diligence have no significant contribution to tax aggressiveness. Therefore, this study recommends that management should consider optimizing board size to enhance tax planning strategies that minimize cash tax payments while ensuring regulatory compliance. Based on the findings, the study recommends that management should consider optimizing board size to enhance tax planning strategies that minimize cash tax payments while ensuring regulatory compliance.

The study contributes to knowledge by establishing that while there is relationship between board meetings and tax aggressiveness, insignificant relationship was found for board size and board independence of the publicly quoted manufacturing firms in Nigeria. The study contributes to knowledge by filling the gap in accounting/management literature on how board attributes (board meetings, size, and independence) affect tax aggressiveness in Nigeria.

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