

CORPORATE GOVERNANCE AND CORPORATE TAX AGGRESSIVENESS: A COMPARATIVE ANALYSIS

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ABSTRACT: *The study investigates the nature of relationship between corporate governance and corporate tax aggressiveness in the banking and insurance firms in Nigeria. The ex post facto design was adopted and secondary data were sourced from the annual reports of thirteen (13) deposit money banks and thirteen (13) insurance companies between 2013 and 2018. Corporate tax aggressiveness was measured using Generally Accepted Accounting Principle Effective Tax Rate (GAAP-ETR) and the ordinary least squares (OLS) based panel regression technique was used to analyse the relationship between the variables of the study. The results showed that board independence and board size had a positive and significant influence on corporate tax aggressiveness in both sub-sectors. The influence of board gender diversity on tax aggressiveness is statistically insignificant in both subsectors. Also, the influence of audit firm type on corporate tax aggressiveness is positive in both models, but was only statistically significant in model one (DMBs). The study recommended that the insurance subsector should ensure that their boards are structured to be dominated by independent directors in line with the new code of corporate governance. Also, the outcome of our study on board size is suggestive that the position of the current Nigeria Code of Corporate Governance (2018) as regards to board size is justifiable and in line with current trends of events. On the issue of gender diversity, regulatory bodies should clearly specify the gender-mix a board should have and the required expertise they should possess. Also, large audit firms tend to be more conservative in performing audits and in advising client to align strictly with existing tax rules, rather than engaging in tax avoidance.*

Key words: *Corporate governance, corporate tax aggressiveness, board gender, board independence*

INTRODUCTION

In Nigeria and the world over, tax is a fundamental source of revenue to the government. Taxes are compulsory contributions by individual and corporate entities made to the government from which developmental activities and the maintenance of existing infrastructure is carried out as well as reducing the level of income inequalities. The payment of taxes is one of the major ways by which corporate entities, as well as individuals, show their civic responsibilities to the society (Christensen & Murphy, 2004). However, not all taxpayers

are willing to demonstrate this civic responsibility because the payment of taxes leads to a reduction in income and profit and as such, they engage in corporate tax aggressive strategies.

Corporate tax aggressiveness according to Onyali and Okafor (2018) refers to the activities of corporate entities to minimize their tax liabilities by using aggressive tax planning and tax avoidance activities. It involves putting in place strategies on how to pay the minimum amount of tax possible. As a strategy, it can be of benefit to some stakeholders and to the detriment of other stakeholder groups. Koverman and Velte (2019) assert that whether or not a firm's management acts in the best interest of shareholders, it will depend on the corporate governance policy of the firm.

Corporate governance exists to protect the interests of the various stakeholders of the company who may not be involved actively in the running of the business, due to the separation of ownership from management. Put differently in a corporate setting, decisions are taken by the management who may not bear much of the economic consequences of their actions. Therefore, to safeguard the interest of other stakeholders, there is a need for sound corporate governance. Corporate governance helps to align the interest of the entire stakeholders' group involved in the entity.

The study is motivated by the fact that even though a number of studies abound in this area (Hasibuan & Khomsiyah, 2019; Jamei, 2017; Mohammed, 2017; Onyali & Okafor, 2018; and Salawu & Adedeji, 2017) only a handful is focussed on developing countries, and only few evidences are present in Nigeria. This study however differs from other studies because it specifically examined the influence of selected corporate governance mechanisms on corporate tax aggressiveness of firms in the banking and insurance sub-sectors in Nigeria. The rationale behind this is to comparatively assess the effect of the selected corporate governance variables in two different corporate governance regulatory settings (rule-based and principle-based approaches) on corporate tax aggressiveness. The motivation of the paper stems from the fact that the inconsistencies in prior studies could be attributed to differences in methodology adopted and the corporate governance regulatory approaches of the sampled firms. The major aim of this study was to carry out a comparative analysis to determine which sub-sector is more aggressive to tax between the rule-based and principle-based corporate governance regulated firms as well as to identify the effect of selected corporate governance mechanisms on corporate tax aggressiveness in both the banking (rule-based) and insurance (principle-based) subsectors.

In order to accomplish the set objectives, the following research questions were raised.

- 1 What is the effect of board independence on corporate tax aggressiveness in Deposit Money Banks and Insurance firms?
- 2 What is the effect of board diversity on corporate tax aggressiveness in Deposit Money Banks and Insurance firms?
- 3 What is the effect of board size on corporate tax aggressiveness in Deposit Money Banks and Insurance firms?
- 4 What is the effect of audit firm type on corporate tax aggressiveness in Deposit Money Banks and Insurance firms?

LITERATURE REVIEW

Corporate Tax Aggressiveness

Corporate tax aggressiveness is a common trend all over the world (Lanis & Richardson, 2011) and it is more prevalent in developing economies because of high tax rate, lack of good relationship between taxpayers and tax authorities, weak tax penalties for non-compliance, and also the lack of the spirit of civic responsibility (Modugu & Omoye, 2014).

The term corporate tax aggressiveness has been used interchangeably by various researchers (Chen, Chen, Cheng & Shevin 2010; Boussaidi & Hamed, 2015; and Richardson, Taylor, & Lanis, 2013) as tax planning, tax management, tax sheltering, tax evasion and abusive tax planning.

According to Chen et al. (2010), tax planning activities can be grouped into legal, grey or illegal activities aimed at reducing tax payments. While those that fall into the legal area can be seen as tax avoidance, it can equally fall into the grey area when it is done aggressively. Hanlon and Heitzman (2010) see tax aggressiveness as strategies employed by taxpayers to reduce the amount of taxes it is to pay in relation to the statutory tax rate. In this study, we define corporate tax aggressiveness as strategies that involve organising the activities of an entity in order to pay the least amount of tax liabilities.

From extant literature, various methods have been used to measure tax aggressiveness. Prior studies (Hanlon & Heitzman, 2010; Richardson, Taylor & Lanis, 2016) argued that no single measure effectively captures the degree to which a firm engaged in corporate tax aggressiveness due to the limitations of each measure. In this study, we utilised the Generally Accepted Accounting Principle Effective Tax Rate (GAAP ETR) as a measure for corporate tax aggressiveness.

Concept of Corporate Governance

Corporate governance is the process of directing and managing the affairs of a company in order to maximize shareholders value (Onyali & Okafor, 2018). Corporate governance was introduced to ensure fairness, integrity, responsibility, accountability, disclosure and transparency in the operations of a corporate entity (Mohammed, 2017). In other words, corporate governance helps to align the interest of the entire stakeholders' group involved in the entity. It can also be referred to the rules, procedures, principles or codes that govern the mode of operation of an entity.

Corporate governance does not operate in a vacuum and as such, the mechanisms are the controls put in place to achieve the aims of corporate governance (Mohammed, 2017). In literature, there exist several components of corporate governance mechanism and this is grouped into the internal mechanisms (which monitors the activities of the organisation and put in place corrective measures when deviations occur) and the external corporate governance mechanisms (which ensures that companies abide by common standard of fairness, transparency, accountability and responsibility to protect the various stakeholders). For this study we would examine board independence, board size board gender diversity, and audit firm type.

Board Independence and Corporate Tax Aggressiveness

A board is a group of persons nominated to represent the shareholders, with a mandate to formulate strategies for the running of the organisation. According to Nigeria Code of Corporate Governance (2018) the board plays a focal role in corporate governance and it is the apex governing body in a company. The board of directors could be said to be the core

component of the internal governance structure. The board has primary responsibility for ensuring good corporate governance for companies. The board according to the code should encompass an adequate mix of executive directors, non-executive and independent non-executive directors. According to Mohammed (2017) the more the non-executive directors on the board, the greater the integrity and accountability of the board and this could also lead to a reduction in insider dealings.

Lanis and Richardson (2011) carried out a study on the effect of board of director composition on corporate tax aggressiveness. The study was carried out using regression analysis method. From the study, it was observed that there exists a negative relationship between outside directors and tax aggressiveness. This implies that the higher the percentage of independent directors on the board the less the likelihood of tax aggressiveness. The finding was in line with the work of Onyali and Okafor (2018) that found out that board independence is negatively correlated to tax aggressiveness. Eragbhe and Aderin (2018) found a contrary result in its study carried out on board characteristics and tax aggressiveness by employing a sample of 46 firms from listed companies in Nigerian Stock Exchange between the periods of 2012-2016. From the study, it was found out that there is a positive and insignificant relationship between board independence and tax aggressiveness in Nigeria. Zemzem and Ftouhim (2013) also found out from their study that the higher the number of outside directors does not reduce the likelihood of tax aggressiveness of firms. We therefore hypothesize that;

Ho₁: Board independence has no significant impact on corporate tax aggressiveness in deposit money banks and insurance firms

Board Gender Diversity and Corporate Tax Aggressiveness

According to the Nigeria code of corporate governance (2018), the effective discharge of the duties of the board is guaranteed by an adequate mix of skills and diversity (including experience and gender) without reducing competence, independence and integrity. Board diversity according to Wang (2015) is a key to effective corporate governance practice in an organisation, as diversity amongst members of the board can lead to better decision making and brings about innovation in an organisation. According to Eragbhe and Aderin (2018) board diversity is any feature that differentiates members of a particular board. This factor allows for classification of members of the board which could be in terms of knowledge, skills, experience, age, nationality, culture and gender. Gender diversity is an aspect of board diversity; gender diversity refers to the ratio of male to female on the board. In the opinion of Boussaidi and Hamed (2015) women play a vital role in compliance with legal aspects and more importantly tax related issues. Oyeleke, Erin, and Emeni (2016) asserts that the board can possibly minimise its tax aggressive behaviour when a female is sitting on the board of directors. Researchers have empirically examined the impact of board gender diversity on corporate tax aggressiveness.

Eragbhe and Aderin (2018) in its study found a negative and insignificant relationship between board gender diversity and tax aggressiveness in Nigeria. This implies that the number of women on the board does not have a strong influence on the tax aggressive strategy employed by a company. Oyeleke, et al (2016) also found an insignificant relationship between female directors and tax aggressiveness after controlling for firm characteristics and governance mechanisms.

Boussaidi and Hamed (2015) however found out that the impact of gender diversity on corporate board has negative and significant effects on a firm's tax aggressiveness, which implies that the higher the percentage of women on the board the higher the effective tax rate (that is a reduction in tax aggressive activities). We therefore hypothesize that;

Ho₂: Board gender diversity has no significant impact on corporate tax aggressiveness in deposit money banks and insurance firms

Board Size and Corporate Tax Aggressiveness

Board size refers to the number of directors on the board. The Nigeria Code of Corporate Governance (2018) recommends that the board should have a sufficient size to effectively undertake and achieve its business objectives as well as to monitor, oversee, direct and control the company's activities. It further stipulates that the size of the board has to be related to the scale and complexity of its operations. Kadir (2018) avers that corporate tax avoidance is usually carried out by managers for their own personal benefits (opportunistic behaviour) and one way of curbing this practice is by putting in place a larger board structure as it would help in curtailing the opportunistic behaviour of manager. The size of the board according to Boussaidi and Hamed (2015) plays a major role in influencing the management policy of a company including policies on tax aggressiveness. However, Minnick and Noga (2010) argues that smaller board size promotes good tax management while larger boards may be ineffective this may be attributed to difficulties in reaching a decision on tax aggressiveness policy.

Aliani and Zarai (2012a) examined the impact of board of directors on corporate tax planning. The results of the study indicate that there is an insignificance relationship between the size of the board and tax aggressiveness in the American firms. Similarly, Boussaidi and Hamed (2015) also found out that the relationship between corporate board size and corporate tax aggressiveness is insignificant. In a similar vein, Onyali and Okafor (2018) found out that board size has no significant impact on tax aggressiveness of quoted manufacturing firms in Nigeria. On the contrary Onatuyeh and Odu (2019) carried out a study on corporate board characteristics and tax aggressiveness in Nigeria manufacturing sector. The result from the study showed that corporate board size has a negative and significant impact on tax aggressiveness in manufacturing firms in Nigeria. Salawu and Adedeji (2017) also found a significant and positive relationship between the size of board composition and tax planning. We therefore hypothesize that;

Ho₃: Board size has no significant impact on corporate tax aggressiveness in deposit money banks and insurance firms

Audit Firm Type and Corporate Tax Aggressiveness

The Nigerian code of corporate governance (2018) states that an external auditor is appointed to provide an independent judgement on the truthfulness and fairness of the financial statements of the company; this is done in order to give reasonable assurance to stakeholders on the reliability of the financial statements. Audit firms are usually categorized into Big 4 auditing firms and non-big 4 auditing firms (Boussaidi & Hamed, 2015). The Big 4 are so categorized because of their size, reputation and global reach and as such they dominate the field of audit. McGuire, Omer, and Wang (2012) opined that companies engage in a higher degree of avoidance when their external audit firm is a tax expert and as such, the audit firm

type could affect the tax rate of a company. This is so because the Big 4 auditing firms would have gathered different expertise overtime from different tax cultures and as such may be able to provide different tax strategies to their clients when compared to other audit firms. In the view of Richardson et al. (2013) a company that engage the services of the Big 4 auditor and the services of the external auditor is less aggressive to tax. This may be attributed to the fact that the audit firm may strive to protect the reputation it has obtained over the period and as such may not want to align itself with the tax aggressive behaviour of the firm in order to maintain its reputation.

Salawu and Adedeji (2017) carried out an empirical study and it was observed that the audit quality variable showed that audit quality is not significant that is, the choice of the audit firm type (external auditor) does not have an effect on the corporate tax planning. Boussaidi and Hamed (2015) found out also that a company that engages the services of a BIG4 external auditor has the tendency to be less tax aggressive.

The study found a negative and insignificant relationship between the quality of the external auditor (BIG4) and effective tax rate. This may be connected to the fact that these BIG 4 audit firms have a reputation which they strive to protect and as such they may not want to be linked to tax aggressive practices.

McGuire, et al. (2012) in its study found out that firms that engage the services of external audit firm that are tax experts will engage in greater tax avoidance. This is so because the external audit firm can act as tax consultants thereby providing services that will possibly influence the clients' tax aggressive activities. From the study, it was also observed that the overall expertise of the external audit firm will lead to greater tax aggressive behaviour. We therefore hypothesize that;

Ho₄: Audit firm type has no significant impact on corporate tax aggressiveness in deposit money banks and insurance firms

Corporate Governance Regulatory Approach

Corporate governance regulatory approach can be categorised into two namely; the principle-based approach and the rule-based approach.

The principle-based corporate governance codes are a voluntary set of recommendations, standards and best practices, issued by a collective body in relation to the governance of corporations within a country (Nakpodia, Adegbite, Amaeshi & Owolabi, 2018). The principle-based corporate governance approach substitutes the use of rules and sanctions with principles, norms, and traditions that are generally agreed to be in the interest of the public. Rule-based systems, however, create an avenue for the governments to come up with stricter laws that must be adhered to and also intervene in corporate governance practices (Adegbite, Shrikes, & Nichol, 2011). The rule-based regulatory approach directs that compliance is mandatory and it gives government an active and intervening role in regulating the operations of an organisation (Nakpodia, et al., 2018). In Nigeria, both the rule-based and the principle-based regulatory approach exist simultaneously in various sub-sectors of the economy and we believe that corporate governance regulatory approach must be taken into consideration as it goes a long way to influence corporate behaviour considering the institutional arrangement of the country.

METHODOLOGY

Theoretical framework and Model Specification

Theoretical Framework

This study is hinged on stakeholder's theory to explain the impact of corporate governance on corporate tax aggressiveness. The stakeholder theory originated from the work of Freedman (1984) who offered a traditional definition of stakeholders as any group or individual who can affect or is affected by the achievements and activities of an organisation's objectives. The focus of the stakeholder theory is that the business should be run solely for the benefit of the entire stakeholder group. In order to achieve the overall objectives of corporate governance, the stakeholder's theory cannot be overlooked as such managers of business corporations need to take into consideration the interests of each stakeholder in its governance process.

Model Specification

Our study adapted the model of Eragbhe and Aderin (2018). Their model as stated in econometric form is;

$$TAXA = \beta_0 + \beta_1 SIZE_{it} + \beta_2 GEN_{it} + \beta_3 IND_{it} + \beta_4 FAGE_{it} + \epsilon_{it} \quad (1)$$

Where

TAXA = Tax aggressiveness

BSIZE = Board size

BGEN = Board gender diversity

BIND = Board independence

FAGE = Age of the listed firms

$\beta_0, \beta_1, \beta_2, \beta_3$ and β_4 are the parameters of estimation

ϵ = error term

i = represents the cross-section of firms

t = is the time period

Modifying the model of Eragbhe and Aderin (2018), by including some variables our model would be stated in its functional form as follows;

$$TAXA = f(\text{Corporate governance mechanisms}) \quad (2)$$

$$TAXA = f(\text{BIND, BGEN, BSIZE, AFT, FAGE, FSIZE}) \quad (3)$$

In econometric form:

$$TAXA = \beta_0 + \beta_1 BIND_{it} + \beta_2 BGEN_{it} + \beta_3 BSIZE_{it} + \beta_4 AFT_{it} + \beta_5 FAGE_{it} + \beta_6 FSIZE_{it} + \epsilon_{it} \quad (4)$$

Where;

TAXA = Tax aggressiveness

BIND = Board independence

BGEN = Board gender diversity

BSIZE = Board size

AFT = Audit firm type

FAGE = Age of listed firm

FSIZE = Size of listed firms

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 are the parameters of estimation

ϵ = the stochastic error term

i = cross-section of firms

t = time period

The apriori expectation

$\beta_1, \beta_2,$ and $\beta_3 > 0$

$\beta_4 < 0$

Table 1 Operationalization of Variables

S/N	Variables	Type	Measurement	Source	Apriori Sign
1	Tax aggressiveness	Dependent	(Total tax expenses/pre-tax income) x 100	Salawu and Adedeji (2017)	
2	Board independence	Independent	Proportion of non-executive directors divided by total board of directors	Onyali and Okafor (2018)	+
3	Board Gender Diversity	Independent	Proportion of female directors on the board divided by total number of directors on the board	Onyali and Okafor (2018)	+
4	Audit firm type	Independent	If Big 4 AUD= 1 and if not Big 4 AUD = 0.	Salawu and Adedeji (2017)	-
5	Board size	Independent	Total number of directors on the board at the end of the financial year	Salawu and Adedeji (2017)	+
6	Firm age	Control	Period from date of listing on the stock exchange till date	Eragbhe and Aderin (2018)	
7	Firm size	Control	Natural logarithm of the book value of total asset at the beginning of the period	Mohammed (2017)	

Source: Author’s Compilation (2020)

Research Design

This study adopted the ex post facto research design. This design is suitable in this study because we made use of secondary data (existing data) in examining how the independent variables affect the dependent variable.

Method of Data Collection and Analysis

The population for the study consists of twenty-six (26) firms from the banking and insurance sub-sector in Nigeria. A census of the thirteen (13) Deposit Money Bank was considered while the simple random sampling technique was used to choose thirteen (13) out of the sixteen (16) Insurance firms quoted on the Nigerian Stock Exchange as at 31st December 2018. The banking sub-sector captured firms operating under the rule-based regulatory approach while the insurance sub-sector represented firms operating under the principle-based regulatory framework.

The study carried out a sectorial analysis with the aid of the ordinary least squares (OLS) based panel regression. This technique was used to estimate the rule-based regulatory approach (banking sub-sector) and the principle-based regulatory approach model (insurance sub-sector) to obtain the combined effects of the explanatory variables. Also, the adjusted coefficient of determination (R^2) was used to compare the performance of the two models. The mean absolute percentage error (MAPE) and Theil's inequality coefficient (U-Statistics) was used to compare the forecasting performance of the two models. The analysis was done using Eviews 10 statistical software.

DATA ANALYSIS, INTERPRETATION AND DISCUSSION OF FINDINGS

Table 2 Descriptive Statistics

DMBs	TAXA	BIND	BGEN	BSIZE	AFT	FAGE	SIZE
Mean	0.16351	0.59023	0.19917	14.2615	0.76923	34.0000	254518675
Maximum	3	9	1	4	1	0	8
Minimum	1.00163	0.90909	0.33333	21.0000	1.00000	73.0000	822398422
Std. Dev.	2	1	3	0	0	0	6
Skewness	0.27777	0.00000	9.00000	0.00000	2.00000		
Kurtosis	-0.55204	8	0	0	0	0	156506504
Jarque-Bera	0.16488	0.12703	0.09124	2.94892	0.42460	18.8207	202810887
Probability	8	4	6	4	4	0	9
Observations	0.82201	0.74849		0.06211		0.20244	0.85665035
	2	3	-0.33592	4	-1.27802	7	1
	16.5749	3.07039	2.34595	2.29622	2.63333	2.54069	
	9	0	5	1	3	3	-0.2656706
	506.413	6.08270	2.38102	1.38324	18.0585	1.01535	
	1	8	1	8	6	8	2.576824
	0.00000	0.04777	0.30406	0.50076	0.00012	0.60189	
	0	0	6	2	0	1	0.275708
	65	65	65	65	65	65	65
Insurance	TAXA	BIND	BGEN	BSIZE	AFT	FAGE	SIZE
Mean	0.08107	0.51666	0.17562	9.35384	0.52307	37.4615	
Maximum	3	5	5	6	7	4	25400781
Minimum	1.15407	0.80000	0.44444	16.0000	1.00000	60.0000	
Std. Dev.	4	0	4	0	0	0	109988570
Skewness	0.11111	0.00000	4.00000	0.00000	0.00000	21.0000	
Kurtosis	-4.69844	1	0	0	0	0	1750337
Jarque-Bera	0.74177	0.11777	0.11784	2.57652	0.50335	12.7880	
Probability	5	8	2	1	4	3	24181431
Observations			0.46886	0.56445		0.35639	1.53805931
	-5.05720	-0.58354	2	1	-0.09241	4	6
	31.0798	4.27481	2.23882	3.26283	1.00853	1.64909	2.07467445
	2	6	4	7	9	2	1
	2412.52	8.09045	3.95068	3.63865	10.8335	6.31859	
	3	7	3	6	3	8	1.703138
	0.00000	0.01750	0.13871	0.16213	0.00444	0.05245	
	0	6	4	5	1	5	0.426745
	65	65	65	65	65	65	65

Source: Researcher's Compilation from Eviews 10, 2020

The descriptive statistics in Table 2 shows the characteristics of the variables used in the study. The result was presented in a comparative form in order to reflect the characteristics of

the two different sub-sectors (deposit money banks [DMBs] and Insurance) that formed the overall sample of the study. As observed, the mean values of TAXA (i.e. tax aggressiveness, proxied using GAAP-ETR) stood at 0.1635 (for DMBs) and 0.081 (for Insurance firms) respectively. This implies that the Nigeria insurance firms are more tax aggressive than the DMBs with effective tax rates (ETR) of 8.1% and 16.35% respectively for years 2014-2018 pooled together. On the proportion of non-executive directors on the board of both sub-sector (i.e. board independence), the outcome showed 59% and 51.7% for the banks and insurance firms respectively. Similarly, the mean values of BGEN suggest that the DMBs have marginally higher proportion of women representation on their board (about 20%) compared to the insurance firms at 17.6%. The minimum values of 0.0000 suggest that in some of the years studied, some companies in both sub-sectors had no female representation amongst their board of directors. On the variable of BSIZE, the mean values of 14.26 and 9.35 for DMBs and Insurance firms respectively also suggests that the banks have more board members (average of 14) compared to the insurance firms at average nine (9) members. The minimum and maximum values of the variable of BSIZE indicates that some of the banks had up to twenty-one (21) board of directors within the periods covered by the study, while the highest number of board members in the insurance companies within the same 5-year period was sixteen (16) members. It is worthy of note that, going by the 2018 code of corporate governance, Nigerian firms are allowed to have sufficient number of board of directors, depending on the size, scale and complexity of the firms' operations.

Further, the mean values of AFT (Audit firm type) suggests that, between year 2014 to 2018, about 77% of Nigerian banks were audited by one of the Big4 audit firms, while only about 52% of the insurance firms engaged the Big4 audit firms within the same period pooled together. On the variable of FAGE, the mean values suggest that the insurance firms are jointly older than the DMBs (37years and 34years respectively), in terms of years of incorporation of the individual firms. However, going by their minimum and maximum values, the oldest DMB is 73yrs as at 2018, while the oldest sampled insurance firm (as at 2018) is 60yrs. On firms size (SIZE), represented by the actual value of total assets, the mean values of both sub-sectors suggest that while the DMBs have average total assets of ₦2,545,186,758 ('000), the sampled insurance firms have cumulative average total assets value of ₦25,400,781 ('000). The minimum and maximum values suggest that, within the period covered by the study, the lowest total asset value of the deposit money banks, that is ₦156,506,504 ('000), is greater than the maximum total assets value of the insurance firms at ₦109,988,570 ('000). Thus, the smallest deposit money bank in Nigeria, in terms of total assets, is bigger than the largest insurance firm using the same metrics.

On the Jarque–Bera statistic, the outcome suggests that only the variables of TAXA, AFT and BIND showed significant departure from normality owing to their low (respective) probability values which are all less than 5%. However, all the other variables (BGEN, BSIZE, FAGE and SIZE) were all normally distributed as can be observed by their respective high probability values (that is, > 0.05). Although the violation of the normality assumption, in few of the variables, poses no major problem in panel data, the cumulative normality test shows that, overall, the residuals (u) are normally distributed. Figure 4.1 presents the result.

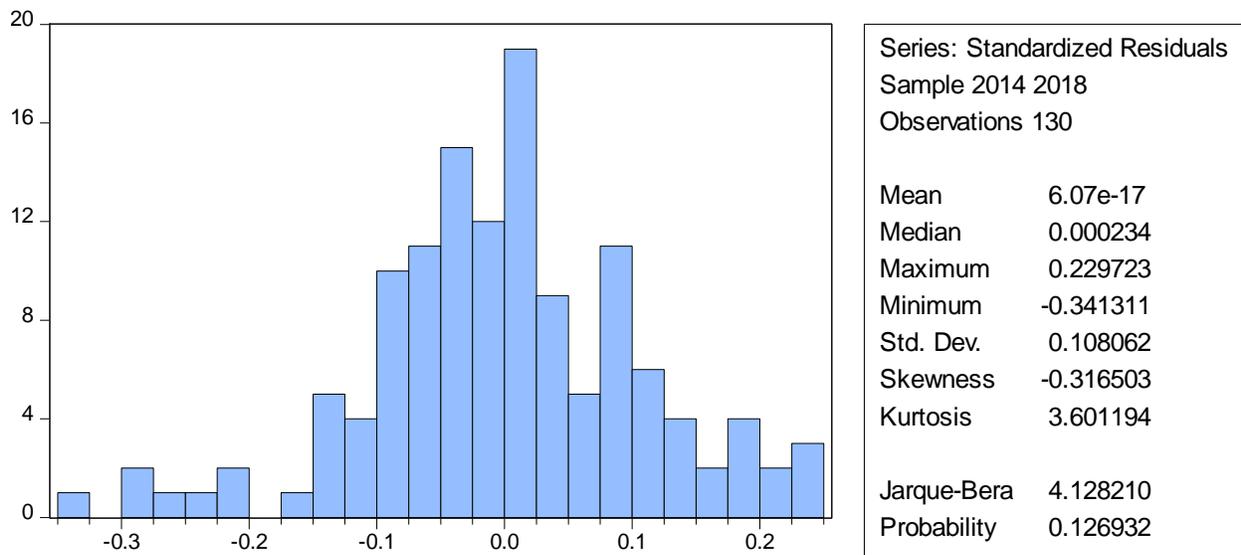


Figure 4.1 Histogram Normality Test

From Figure 4.1, the decision rule is to reject null hypothesis that the residuals (u) are normally distributed when p-value is less than 0.05 (5%). The histogram is fairly bell-shaped symmetrically which indicates that the data largely fitted into a normal bell-curve. The skewness coefficient (absolute) of 0.32 is an indication that the distributions are moderately skewed. The kurtosis coefficient is not too far from required value of 3, implying that the distribution is mesokurtic and normal. Also, probability value of the Jargue-Bera statistic stood high at 12.69% - meaning that we cannot reject the null hypothesis.

Multivariate results

This subsection presents the analysis and interpretation of the two panel regression models built for the purpose of this study, as specified in the previous chapter. The major purpose of adopting a dual model approach is to understand and compare the impacts of the selected corporate governance components on tax aggressive behaviours of two different subsectors (deposit money banks and insurance firms) representing companies operating under the rule-based and principle-based corporate governance regulatory approach respectively.

In achieving the above, both fixed and random effect panel regression procedures were estimated for both models. The Hausmans test thus was conducted since the standard procedure for panel data analysis requires it for the selection of the most appropriate model for statistical inference between the fixed and random effects model. Here, the null hypothesis (H_0) is that Random Effect Model is consistent; while the H_1 is that Fixed Effect Model is consistent. The decision rule is to accept H_1 (i.e. fixed effect is more consistent) when the p-value is less than 5%.

Table 4.5 Hausman Test Result (Models 1 and 2)

Model	Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Model 1	Cross-section random	13.59623	6	0.0345
	Cross-section fixed	15.70504	6	0.0154
Model 2	Cross-section random	13.59623	6	0.0345
	Cross-section fixed	15.70504	6	0.0154

Source: Eviews 10 Output, 2020

From the outcome of the Hausman tests in Table 4.5, the corresponding probability values of the chi-squared statistic are both less than 5% (i.e. 0.0345 and 0.0154 for models one and two respectively). This means that, in both tests, the null hypothesis (Ho) should be rejected at the 5% level of significance. This implies that fixed effect model was preferred to the random effect model in capturing the relationships in both models and drawing inferences thereon.

Table 4.6
Panel Regression Results

Variable	Coefficient	t-Statistic	Prob.	Variable	Coefficient	t-Statistic	Prob.
C	-1.086751	-1.465473	0.1496	C	14.42905	1.425280	0.1608
BIND	0.131307	4.449402	0.0001***	BIND	2.307900	1.751578	0.0865*
BGEN	0.083731	1.289950	0.2035	BGEN	1.432738	1.067239	0.2914
BSIZE	0.005573	3.337567	0.0017***	BSIZE	0.118125	2.067277	0.0444**
AFT	0.069850	22.32901	0.0000***	AFT	0.159673	0.380872	0.7051
FAGE	-0.003199	-0.545664	0.5879	FAGE	0.148059	1.502752	0.1397
FSIZE	0.053168	1.201493	0.2357	FSIZE	-1.358097	-1.773032	0.0828*
R-squared			0.873006	R-squared			0.421096
Adjusted R-Squared			0.823312	Adjusted R-Squared			0.194569
F-statistic			17.56782	F-statistic			1.858920
Prob(F-statistic)			0.000000** *	Prob(F-statistic)			0.046186* *

Source: Researcher’s Compilation (2020) NOTE: ***, **, *.Significant at the 1%, 5% & 10% levels respectively

On the joint statistical significance of the models, as observed from Table 4.6, the overall *p* –values of 0.000 and 0.046 (for models 1 and 2 respectively) means that a joint linear relationship exists between the dependent variable (TAXA) and the explanatory variables of each model taken together - at the 1% and 5% levels of significance respectively. Thus, both models are valid and can be used for statistical inferences. The *R*² values of 0.873 and 0.421, for models one and two respectively, indicate that the former have a stronger explanatory power than the latter at 87.3% and 42.1% respectively. On the adjusted *R*², which controls for the effect of the inclusion of successive explanatory variables on the degrees of freedom stood,

both models showed values of 0.823 and 0.195. This suggests that in model one, about 18% of variances in TAXA was left unaccounted for, while about 80% of the variations in TAXA were not captured by second model. Thus, the model 2 has a weak explanatory power compared to model 1.

On the performance of the individual variables in terms of their levels of significance, it could be observed from model one that three out of the four independent variables (BIND, BSIZE and AFT) were statistically significant at 1% level of confidence. This suggests that the changes in tax aggressiveness (TAXA) in DMBs within the period covered by the study are significantly associated with the type of auditor (AFT), the size of the board (BSIZE) and the proportion of non-executive directors (BIND). However, the independent variable of female board members (BGEN) and the two control variables (FAGE and SIZE) were not statistically significant. Specifically, the independent variable of BIND showed positive coefficient sign (0.1313) and a low probability value (0.0001) which implies that, all things being equal, banks with higher proportion of non-executive directors are associated with significantly higher ETR (i.e. are less tax aggressive). Also, the variable of BSIZE has positive coefficient value (0.00557) and a significant probability value (p -value = 0.0017) which implies that about 0.006 unit increases in tax aggressiveness (TAXA) in DMBs within the period covered by the study is significantly associated with changes in board size. Similarly, the positive coefficient sign of AFT and the significant probability value implies that, holding the other variables constant, banks that engage Big4 audit firms are more tax aggressive.

On the behaviours of the explanatory variables on tax aggressiveness in model two, the result shows that the variables of board independence (BIND); board size (BSIZE) and firm size (SIZE) appeared statistically significant in model 2, while BGEN, AFT and FAGE were not statistically relevant. Specifically, the variable of BIND has a positive coefficient value (2.31) and a probability value of 0.0865 which can be considered significant only at the 10% level of confidence. This implies that tax aggressiveness (TAXA) is predicted to increase by up to 2.3 units as a result of changes in board independence in insurance subsector. Similarly, the independent variable of BSIZE showed a coefficient value of 0.118 and p -value of 0.444 meaning that board size impacts positively on tax aggressiveness in the insurance subsector. What this implies is that, holding other variables constant, TAXA is predicted to increase by up to 0.12 units when board size goes up by one. Regarding the two control variables in model 2 (FAGE and FSIZE), only SIZE was statistically relevant. The negative coefficient sign of SIZE in model 2 signifies that, while firm size impacts negatively on tax aggressiveness in the insurance subsector, its impact on tax aggressiveness among DMBs is positive. Thus, despite that conflicting signs among the control variables, all the four independent variables showed the same positive coefficient signs in both models, although varies by way of statistical significance levels. This suggests that, all things being equal, the four independent variables behave uniformly towards our variable of interest (i.e. affects tax aggressiveness in the same direction) in both the rule-based and principle-based regulatory settings, but varies by way of level of significance in each subsector.

Model Comparison and Forecast Evaluation

The forecast ability of the two estimated models was assessed using different dynamic forecast statistics. For the purpose of this study, and as stated in the previous chapter, the

mean absolute percentage error (MAPE) and Theil's inequality coefficient (U-Statistics) are the two evaluation criteria used in assessing the forecast ability of the models. Figures 4.2 and 4.3 present the outcomes.

Figure 4.2 Forecast Estimation (Model 1_Banking Sub-sector)

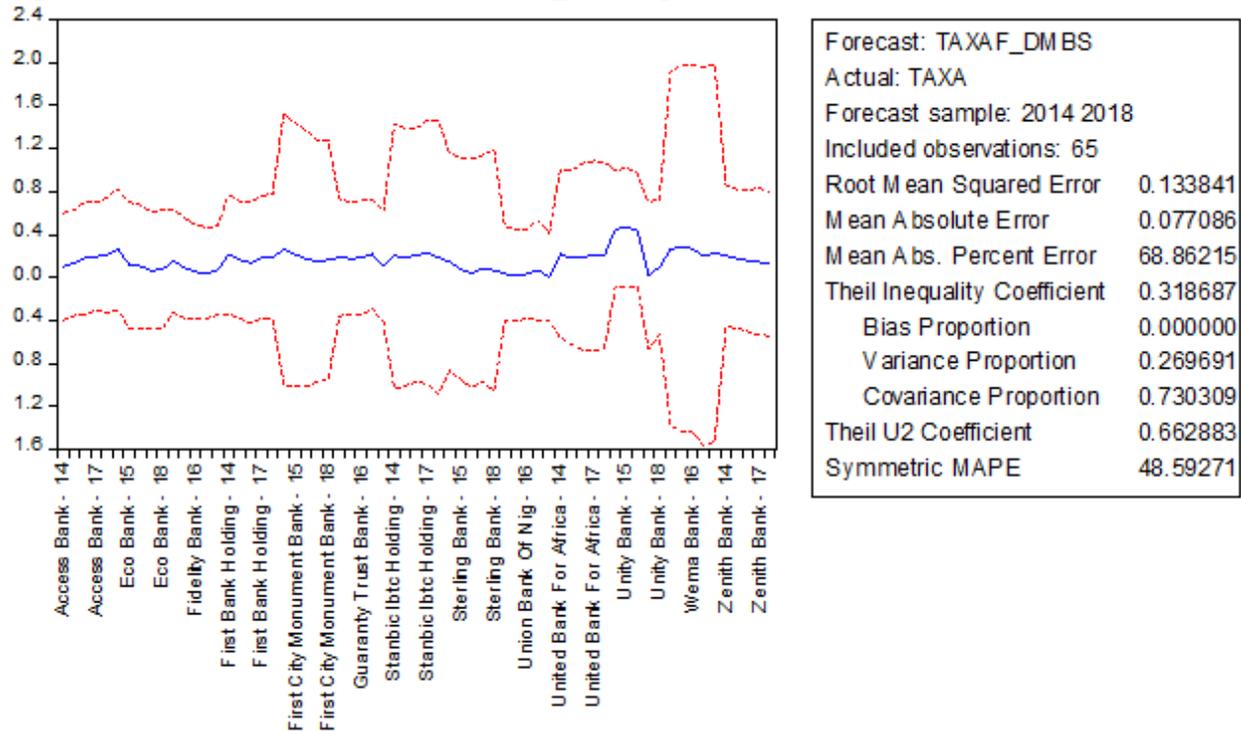


Figure 4.3 Forecast Estimation (Model 2_Insurance Sub-sector)

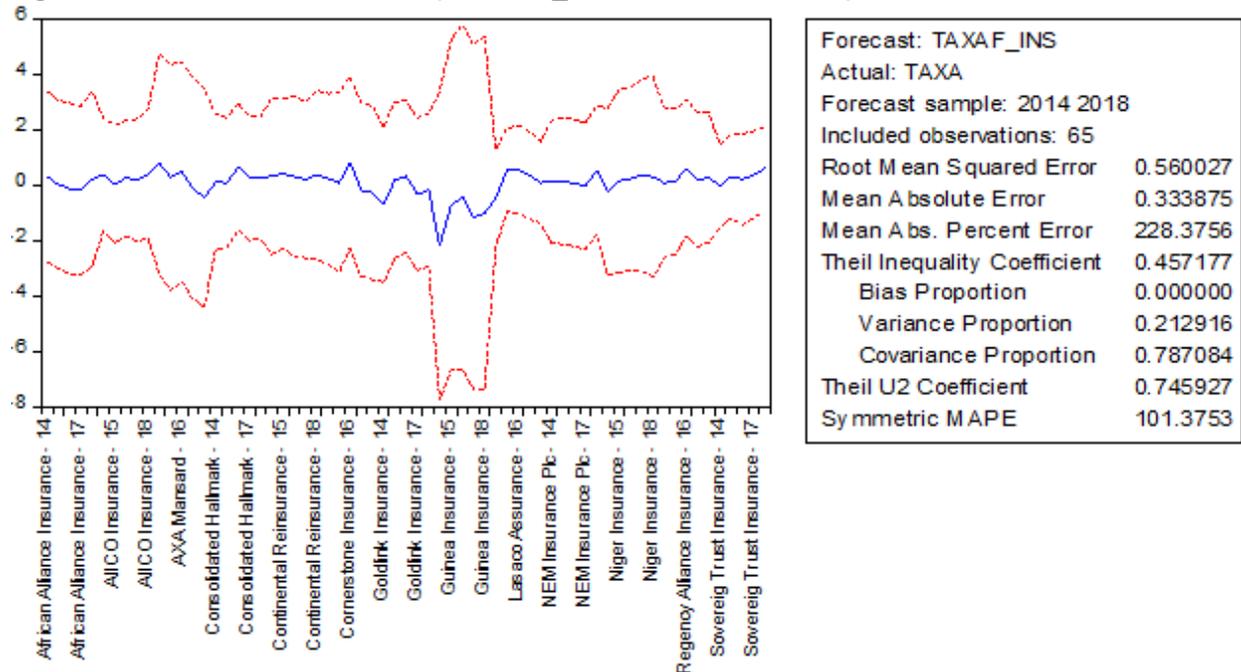


Table 4.7 Summary of the Forecast criteria for the two estimated models

	Model 1 (Banking sub-sector)	Model 2 (Insurance sub-sector)
Root Mean Squared Error (RMSE)	0.133841	0.560027
Mean Absolute Error (MAE)	0.077086	0.333875
Mean Abs. Percent Error (MAPE)	68.86215	228.3756
Theil Inequality Coefficient (TIC)	0.318687	0.457177
Bias Proportion (BP)	0.000000	0.000000
Variance Proportion (VP)	0.269691	0.212916
Covariance Proportion (CP)	0.730309	0.787084
Theil U2 Coefficient (TUC)	0.662883	0.745927
Symmetric MAPE (SP)	48.59271	101.3753

Source: Compiled from Eviews 10 output, 2020

Despite the fact that the values of the adjusted coefficients of determination in both models 1 and 2 have already given the indication of the performance levels of the models, the forecast evaluation statistics summarised from Fig. 4.2 and 4.3 threw more light. The assumption of the two assessment criteria we adopted (MAPE and TIC) is that, the lower the values, the better the predictive power of the model. Specifically, a Theil's-U ranges from 0 to 1. Values going close to the value of 1 indicates poor predictive model, while the closer the Theil's-U is to 0, the better the model. As can be seen from Table 4.7, the Theil Inequality Coefficient (TIC) values of models one and two are 0.318687 and 0.457177 respectively. Thus, the TIC of model (1) is of lower value and this represents a more accurate prediction of model (1) over model (2). Similarly, the MAPE statistic values of both models stood at 68.86215 and 228.3756 respectively which also reaffirms that model (1) has a more predictive power and more reliable than model (2) in explaining financial companies tax aggressive behaviours.

DISCUSSION OF FINDINGS

As shown in the summary of the regression outputs in Table 4.6, board independence (BIND) as an independent variable to tax aggressiveness showed a positive and significant influence on TAXA at 1% and 10% levels respectively (i.e. for models 1 and 2). Thus, board independence impacts positively on tax aggressiveness in both banking and insurance subsectors. A clearer interpretation of this result implies that since board independence has a significant positive impact on ETR (the proxy for tax aggressiveness), it then means that board independence increases ETR; and firms with high ETR are less aggressive. In essence, banks and insurance firms with more independent non-executive directors are more likely to be less tax aggressive. This finding is in tandem with our apriori expectation of $\beta_1 > 0$ since the independent director's acts as a check in curbing the excesses of the board. This result agrees with most prior empirical results which show that the more the number of independent outside directors, the less tax aggressive a firm becomes (e.g. Lanis & Richardson, 2011; Onyali & Okafor, 2018; Richardson et al, 2013). However, our result on board independence negates those by Eragbhe

and Aderin (2018) and Zemzem and Ftouhim (2013) which both found insignificant relationships between board independence and tax aggressiveness. This disparity between our result and theirs could be attributed to sample and jurisdiction differences, since the former did not focus on Nigerian financial firms and the latter sampled only French listed companies.

In the second hypothesis, the independent variable of board diversity (BGEN) showed positive and non-significant influence on tax aggressiveness (TAXA). Although the positive coefficient signs of board diversity in both model (1) and model (2) are in line with our expectation of $\beta_2 > 0$, because the underlining expectation was that board gender diversity play a vital role in compliance with legal provisions and are risk adverse by nature (Boussaidi & Hamed, 2015; Oyeleke et al, 2016); the insignificance nature of the variable was not expected. However, the insignificance of the board (gender) diversity variable is in tandem with Eragbhe and Aderin (2018) and Oyeleke et al (2016) which found that the number of women on the board does not have a significant influence on the tax aggressive strategy employed by Nigerian companies.

The result also showed that the independent variable of board size (BSIZE) has positive and significant coefficient values in both model (1) and (2) at 1% and 5% levels respectively. It can thus be interpreted that banks and insurance companies with large board sizes are significantly associated with high ETR, which implies less tax aggressiveness. This outcome is in agreement with our apriori expectation of a positive relationship - based on the assumption that tax avoidance practices are rooted in management opportunistic behaviours which could be mitigated by having sufficient number of board members. However, the result is at variance with some prior empirical results which show that board size is not a major determinant of tax aggressiveness (for example; Aliani & Zarai, 2012a, Boussaidi & Hamed, 2015; and Onyali & Okafor, 2018). On the other hand, the significant impact of board size on ETR corroborates some prior empirical results by Nigerian authors, such as Onatuyeh and Odu (2019) and Salawu and Adedeji (2017).

As regards to the fourth hypothesis, it can be observed from Table 4.6 that the independent variable of audit firm type has positive coefficient signs in both models (1) and (2). However, only that of the former appeared statistically significant (at 1% level) due to the low probability value. Thus, the null hypothesis (Ho4) that audit firm type has no significant influence on corporate tax aggressiveness can only be rejected in model (1), but remains valid in model (2). The positive coefficient sign is at variance with our apriori expectation of an inverse relationship since we projected that companies that engage Big4 tax professionals are associated higher degree of tax avoidance, and implicationally lower ETR. On one hand, the positive significant relationship between audit firm type and tax aggressiveness in the banking subsector agrees with the result of McGuire, et al. (2012), while the insignificant relationship found in the insurance subsector aligns with Boussaidi and Hamed (2015) and Salawu and Adedeji (2017). The possible explanation for the disparity in the result of audit firm type (AFT) in both models is that the DMBs engage more Big4 audit firms (77% within the period studied) compared to the insurance firms (52%) within the study period. Hence, the tendency that the Big4 variable (proxy for audit firm size) emerges significant was more in model (1) as observed.

CONCLUSION AND RECOMMENDATIONS

The major idea of the study is to comparatively assess the behaviours of the selected corporate governance variables in two different corporate governance regulatory settings (rule-based and principle-based approaches).

In the preliminary analysis, the result suggests that the insurance subsector is more tax aggressive (ETF=8%) than the banking subsector (ETR=16%). From the estimation of the split models, it was discovered that the variations in tax aggressiveness was better explained in model (1), than in model (2) using the same explanatory variables. However, the behaviours of each of the independent variables were all positive in both models, but vary by way of level of significance. The model were further evaluated using two dynamic forecast statistics (MAPE and Theil's inequality coefficient), the outcome confirms that model (1) has better predictive power than model (2) in terms of forecast ability.

Based on the above outcomes, it can be summarised that within the context of this study, board independence, board size and audit firm type are the major influencers of tax aggressiveness in the banking subsector, while board independence and board size were core determinants of tax aggressiveness in the insurance subsector. On the other hand, between the two control variables adopted by the study, only firm size appeared significant, but that was only in the insurance subsector. Therefore, based on findings of the study, we recommended that;

- i. Board independence was considered significant in the study, but only at 10% level of confidence in the insurance subsector. It is recommended that the insurance subsector should ensure that their boards are structures to be dominated by independent directors in line with the new code of corporate governance.
- ii. The study considers the observed < 20% female board membership in both subsectors as largely minimal, to cushion the effect regulatory bodies should clearly specify the actual proportion of gender-mix a board should have and the required expertise they should possess. This, to large extent, would help in increasing women involvement in fiscal decision making processes of organisations.
- iii. The outcome of our study on board size is suggestive that the position of the current Nigeria Code of Corporate Governance (2018) as regards to board size is justifiable and in line with current trends of events. As such, listed financial companies should ensure they maintain sufficient board size to effectively monitor, oversee, direct and control the company's activities.
- iv. The significance of audit firm size variable in both models is indicative that large audit firms tend to be more conservative in performing audits and in advising client to align strictly with existing tax rules, rather than engaging in tax avoidance. It is thus recommended that listed firms should sustain the engagements of the big audit firms in order to enhance their firm value.
- v. The wide gap between Nigeria's corporate tax rate (30%) and the observed ETR of the two (DMBs and Insurance) sampled subsectors (16% and 8% respectively) gives a strong indication that government loses a chunk of tax revenue through firms tax aggressive practices. The policy implication of this outcome is suggestive of the need for policies that reduces incentives for tax avoidance. If the cost of engaging tax professionals for

tax planning purposes outweighs the tax benefits to derived, a firm will opt not to avoid taxes as there would be limited incentives to being highly tax aggressive.

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