

Tax Aggressiveness, Corporate Governance and Audit Fees: A Study of Listed Firms in Nigeria

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Abstract

The concept of audit fee has received immense empirical investigation in literature. However, these vast studies have not sufficiently explored the relation of the concept with tax aggressiveness and corporate governance. This study therefore sought to provide empirical evidence as to whether tax aggressive and corporate governance mechanisms are significantly associated with audit fees among listed firms in Nigeria. Leaning on the agency and stakeholder theories, the study examined the measures of tax aggressiveness of effective tax rate and cash tax rate as well as corporate governance mechanisms of board gender diversity, audit committee diligence, and board independence; and how these variables explain changes in external audit fees. A sample of one hundred and seven (107) firms from the entire firms quoted on the Nigerian Stock Exchange as at December, 2018 was utilised. Data were sourced solely from annual financial statements of the studied firms over a ten-year period (2009 to 2018). The panel regression technique, with preference for the random effect model based on the outcome of the Hausman test, was employed to estimate the balanced panel data. The results of the study showed that cash tax rate, audit committee diligence and board independence all exert positive and significant effect on audit fees. Surprisingly, the study revealed a positive but statistically insignificant link between board gender diversity and audit fees. This result may not be unconnected with the low presence of female directors on the board of the firms investigated. In light of the findings, we therefore recommend that more female gender should be allowed to sit on the boards of listed firms in Nigeria in line with the Norwegian model of 40% female gender representation and the Federal Government 35% Affirmative Action. We also recommend that board independence should be encouraged more so as to enhance their oversight functions, and promote quality financial reporting and audit amongst listed firms in Nigeria.

Keywords: tax aggressiveness, audit fees, cash effective tax rate, corporate governance

1. Introduction

The auditing profession has come under increased examination in recent years regarding how auditors determine the amount of audit fees charged for audit services (Basioudis, Geiger, & Papanatasiou, 2006), which has been on the rise. This is an important issue that needs further empirical investigation for clarity given that only a handful of past studies have investigated the effect of firm's behavior, such as tax aggressiveness compared to other commonly examined determinants of audit fees. The separation of corporate ownership from control necessitates the need for the appointment of an external auditor to examine the financial statements prepared by an audit client. The fees chargeable by auditors for audit services within a given duration are very fundamental in an audit assignment as they must carefully consider the costs and benefits that are connected with the discharge of their services to make a decision on audit fees (Hayes, Dassen, Schilder, & Wallage, 2005). This signifies that audit fees charged by auditors are very crucial in carrying out an audit task. While studies concerning the determinants of audit fees are numerous, just a few of them have investigated the relationship between tax aggressiveness and audit fees. These studies connect firms' tax aggressive actions to higher audit risk and higher audit fees (Desai & Dharmapala, 2009; Donohoe & Knechel, 2014; Heltzer & Shelton, 2015; Klassen, Lisowsky, & Mescall, 2016; Seetharaman, Gui & Lynn, 2002).

Desai and Dharmapala (2009) argue that managers are able to manipulate earnings or 'strip rent' due to complex structures designed for tax shelters (a measure of tax aggressiveness), and this increases audit risk as the auditor must assess contingent tax liabilities or uncertain tax benefits. Based on data from UK firms cross-listed on the US markets, Seetharaman et al. (2002) stress that external auditors will increase audit effort as client risk increases and charge a risk

premium on risky engagements to make up for increased risk of lawsuits. From a survey of US auditors, Heltzer and Shelton (2015) provide further support for the proposition that tax aggressiveness affects auditors' risk assessments and audit fees. Other studies report that public audit firms will charge higher audit fees, when there is evidence of aggressive tax planning by audit clients, as a compensation for the risks of legal action they may face if tax authorities find out that clients have not complied with their tax obligations (Donohoe & Knechel, 2014; Klassen, Lisowsky, & Mescall, 2016).

Besides being performed abroad, a common theme across the aforementioned studies is that they report a direct relationship between tax aggressiveness and external audit, indicating that auditors see tax aggressiveness as a signal of potential audit engagement risk, and thus will adjust their risk assessment, increase audit effort and fees accordingly to compensate for the expected value of possible future liability losses, including litigation costs. However, this stream of studies offer partial explanations as to the extent to which the adoption of tax aggressive strategies by manager can facilitate or hinder management's fiduciary duty to shareholders as they habitually examined the shareholder-managers agency costs only from the perspective of the link between tax aggressiveness and audit fees, without considering the relevance of corporate governance to the dynamics of both concepts. Localizing the focus to Nigeria, we discovered that the discourse and study of audit fees have been restricted to determinants such as audit client characteristics, audit firm characteristics (Ohidoa & Omokhudu, 2018; Semiu, & Olayinka, 2010; Urhoghide & Izedonmi, 2015), and certain corporate governance variables as demonstrated in studies by Abdulmalik and Che Ahmed (2016) and Urhoghide and Emeni (2014), to mention but a few. Currently, there is no documented Nigerian study on the relationship between tax aggressiveness and audit fees. This is to the best of our knowledge.

Moreover, studies that have examined the link between tax aggressiveness, corporate governance and external audit fees hardly exist in the literature. The few related studies include corporate governance, tax aggressiveness and earnings management (Putric, Adam & Fuadah, 2018), tax avoidance, corporate governance and firm value (Yee, Sapiei, & Abdullah, 2018) and tax planning, corporate governance and equity value (Abdul Wahab, & Holland, 2012). Nonetheless, the only research study that has attempted a blend of tax aggressiveness, corporate governance and audit fees was performed by Martiner and Lessa (2014). In investigating the connection, these authors affirmed that auditors will charge higher fees when auditing highly tax-aggressive clients, but subsequently found an indirect relationship between tax aggressiveness and audit fees when corporate governance was introduced as dummy variables. Even though, Martiner and Lessa (2014) argued that all variables in their study demonstrated good statistical significance, their result is limited by the relatively short sample period covered. A period of 3 years is not long enough for any change in their variable of interest to influence the dependent variable (audit fees). Also, the authors adopted only a single proxy to capture the degree of tax aggressiveness of the Brazilian firms investigated. Hanlon and Heitzman (2010) and Dhaliwal, Huang, Moser, and Pereira (2011) cautioned that relying only on one measure of corporate tax aggressiveness may lead to spurious conclusions. This is because different measures of tax aggressiveness can have different impacts on audit fees and it is difficult for a single measure to capture all tax aggressive behaviours of firms.

The present study extends Martiner and Lessa's (2014) work as follows: First, an expanded sample size was employed by using data from multiple years. With a larger number of firm-year observations, it is expected that the generalisability of the findings by Martiner and Lessa (2014) would be improved upon. Secondly, we captured the tax aggressive behaviour of firms in Nigeria using two measures: the effective tax rate and the cash tax rate. These two measures were chosen so as to assess the impact of tax aggressiveness on audit fees from two dimensions of accounting (accrual and cash bases). Furthermore, as auditors are interested in client's corporate governance structure given that it can influence their engagement risk assessment, audit effort, and audit pricing (Cassell, Giroux, Myers and Omer, 2012), corporate governance and tax aggressiveness were investigated in order to assess how they interact with audit fees within corporate firms.

Consistent with the findings of Desai and Dharmapala (2006) and Moore (2007), this study therefore proposes that managers of firms with weak corporate governance structure are more susceptible to embarking on tax-aggressive actions that will boost their personal gains at the expense of wealth creation for shareholders than managers of firms with strong corporate governance structure. Hence, it is expected that a firm that has more female board members, diligent audit committee, and highly independent board can effectively constrain tax aggressiveness through effective performance of the required oversight functions, close working with the external auditors, (Armstrong, Blouin, Jagolinzer, & Larcker, 2015; Boussaidi & Hamed, 2015; Zaman, Hudaib & Haniffa, 2011), as well as the demand for more audit, which will cause auditors to do more audit work and hence charge higher audit fees. It is against the above backdrop that this research examines the relationship between tax aggressiveness, corporate governance and audit fees with consideration to the Nigeria's case.

The remainder of the paper is structured as follows: Section 2 addresses the concepts of audit fees, tax aggressiveness, and corporate governance. Following this section is section 3 which focuses on the methodology, comprising the research framework, research design and model specification. Estimation of results and discussion of findings were carried out in section 4. Section 5 concludes the study with some recommendations.

2. Review of Literature

2.1 Audit Fee

Audit fee refers to the cost of conducting audit so as to express an opinion thereon about the conformity of financial statements with generally accepted accounting principles (Soltani, 2007). It is the cost that is associated with the audit services which are demanded by the audit clients (Simunic, 1984). The demand for audit services is made by users, such as shareholders, outside investors, government and the general public (Dinh, 2012). However, users of audit services hardly have similar goals because they do not have same interest. For instance, management will be interested in reporting higher revenue in order to get higher bonuses and keep their positions. On the other hand, prospective investors will be interested in knowing whether the firm is profitable or not so that they can make informed investment decisions. Generally, audit fee figures are usually transformed into natural logarithm in order to control for the skewed nature of the figure (Yatim, Kent, & Clarkson, 2006) and make results uniform (Martinez & Lessa, 2014).

Prior studies on audit fees beginning with the seminar work of Simunic (1980) have identified client-related and auditors-related perspectives as two important elements that influence the amount paid as an audit fee within diverse regulatory and institutional contexts. The client-related perspective includes audit client size, audit client complexity, profitability and industry of operation (Boo & Sharma, 2008; Goodwin-Stewart & Kent, 2006; Stewart & Munro, 2007; Zaman, Hudaib, & Haniffa, 2011). The auditor-related perspective includes audit firm size, and audit firm tenure (Bedard & Johnstone, 2010; Ezzamel, Gwilliam, & Holland, 2002; Urhoghide & Emeni 2014). However, a different stream of studies continues to discuss other drivers of audit fees, such as earnings managements (Gul, Chen, & Tsui, 2003; Martinez, & Jesus-Moraes, 2017), tax aggressiveness (Donohoe & Knechel, 2014; Hanlon, Krishnan & Mills, 2012; Saremi, Mohammadi & Nezhad, 2016), and corporate governance mechanisms (Boo & Sharma, 2008; Boussaidi & Hamed, 2015; Urhoghide & Emeni, 2014). The main focus of this study is to determine how tax aggressiveness and corporate governance explain changes in audit fees.

2.2 Tax Aggressiveness

There is a lack of clear and universally accepted definition of tax aggressiveness because the concept may mean “a different thing to different people” (Hanlon & Heitzman, 2010:137). However, a more all-inclusive meaning is found in Lisowsky et al. (2010), in which they presented tax aggressiveness as activities close to the end of a continuum of tax avoidance actions that range from legal tax planning to investments in rather illegal tax shelters. Tax aggressive actions are viewed as a veritable investment for firms and shareholders as it can be used to reduce the tax liabilities and improve revenue, but authors including Ilaboya, Izevbekhai and Ohiokha (2016) and Chen et al. (2010) stated that investors may not support tax planning policies because of the likely future costs to the firm. Different measures of corporate tax aggressiveness have been used in the previous literature (Lee, Dobiysanski, & Minton, 2015). These measures, as categorised by Salihu, Obid, and Annuar (2013), are of three broad groups.

This first group is based on the Effective Tax Rate (ETR). Basically, the effective tax rate is the average tax rate a firm pays on its pre-tax accounting income (Minnick & Noga, 2010). ETR based measures are compared with the statutory tax rate (STR). Where the effective tax rate is less than the statutory tax rate, it indicates evidence of tax aggressiveness (Salihu, Obid, & Annuar, 2013). The effective tax rate comes in several variants including the accounting ETR; current ETR; cash ETR; long-run cash ETR; cash effective tax rate CETR). The second group consists of those measures that consider the size of the gap between book and taxable income (BTD) and it is defined as the difference between a firm's reported pretax income as per the financial statements and its taxable income as per the tax returns (Guenther, 2014; Manzon & Plesko, 2002). The size of the gap suggests the presence of tax aggressive practices. The measures of book-to-tax difference include the total book-tax difference, temporary book-tax difference, permanent tax- to book difference, discretionary permanent difference and discretionary total book-tax difference. The final group focuses on other measures of tax aggressiveness such as tax savings, unrecognised tax benefits and tax shelter estimates (Lee et al., 2015; Salihu et al., 2013). Tax savings is the difference between statutory tax rate and effective tax rate (Ilaboya, Izevbekhai, & Ohiokha, 2016). In Nigeria, statutory rate is 30% for companies. Yet, a different measure of tax aggressiveness called the cash tax rate (CTR) exists in tax literature. This measure, defined by Salihu, Obid, and Annuar (2014) as the ratio of cash taxes paid by a firm to its operating cash flows, has not been tested empirically. This is a gap in the literature that this study sought to address as well.

2.3 Tax Aggressiveness and Audit Fees

Diverse studies have explored the association between corporate tax and external audit fees, and specifically, how firms' tax outcomes influence audit pricing (e.g. Donohoe & Knechel, 2014; Hanlon, Krishnan, & Mills, 2012; Heltzer & Shelton, 2015; Saremi, Mohammadi, & Nezhad (2016)). While various measurement of tax aggressiveness abounds in literature, a sizeable number of prior studies have employed the firms' annual effective tax rate (ETR) as a proxy for tax aggressiveness, perhaps based on the evidence in Derashid & Zhang (2003) that it reduces the tax burden of a firm without essentially reducing its pre-tax income. However, results of these studies, especially those that have employed the effective tax rate as a surrogate for tax aggressiveness, are conflicting. For instance, Donohoe and Knechel (2014) used the long-run effective tax rates as a compound measure, and found a positive relationship between tax aggressive actions of firms and audit fees. According to the researchers, firms with lower long-run cash or current effective tax rates (aggressive firms) are likely to pay about 6 percent more for an audit work than non-aggressive firms over a nine-year period. Saremi, Mohammadi, and Nezhad (2016) examined the link between seven variables (financial leverage, firm size, audit opinion, loss report, accruals, and effective tax rate) and audit fees of the firms listed in Tehran Stock Exchange. Their results using multivariate regression analysis revealed a positive significant association between firm size, loss report and audit fees, but a negative association between effective tax rate and audit fees.

Given the controversies surrounding the effective tax rate, it is therefore not surprising that the measure has been criticized severally in literature. Hanlon (2003) faulted the use of the current effective tax rates on the ground that current tax expense may understate or overstate the current ETR compared to the actual tax expense. Salihu et al. (2013) queried the use of the cash ETR because its numerator, which includes income tax expense, is subject to the influence of accrual accounting, and thus reflects the non-conforming tax aggressiveness as it ignores the non-accrual basis of accounting. In contrast, Hanlon and Heitzman (2010) argued that the cash tax rate quantifies tax (avoidance) aggressiveness in a way not relative to accrual accounting and thus reflects conforming tax aggressiveness. Therefore, in order to evaluate the influence of tax aggressiveness on audit fees from two dimensions of accounting (i.e. accrual and cash bases), both the effective tax rate (ETR) and cash tax rate (CTR) were employed in this study. The effective tax rate was adopted as a second measure despite its criticisms because it is a common measure in tax literature, and auditors use it when conducting analytical review on materiality and/or audit risk. Moreover, using two or more measures of corporate tax aggressiveness in a study of this nature can help restrain spurious conclusions. Hence, we propose the following hypotheses:

Ho₁: There is no significant relationship between effective tax rate (ETR) and audit fees

Ho₂: There is no significant relationship between cash tax rate (CTR) and audit fees

2.4 Corporate Governance

Corporate governance is the system by which firms are directed and controlled (Cadbury, 1992). The general opinion is that firms with strong corporate governance will experience better management and performance than those with weak corporate governance (Brown & Caylor, 2004). Traditionally, prior literature on the determinants of audit fees has focused on production-based perspective. This line of literature demonstrates that audit fees are determined by factors such as firm size, firm industry of operation, firm complexity, risk, and firm profitability, amongst others (Goodwin-Stewart & Kent, 2006; Boo & Sharma, 2008; Zaman, Hudaib & Haniffa, 2011). From the production-based approach, sound corporate governance practices are expected to strengthen the control mechanisms and decrease the need for more external audit, and consequently audit fees. However, other lines of literature on the drivers of audit fees assume a different viewpoint. Studies by Hay and Knechel (2004), and Hay et al. (2006) underline the significance of the demand-driven factors, such as the independent directors, female directors and audit committee demanding for a comprehensive audit for the purpose of protecting their reputations and fulfilling their task of due diligence. The demand for comprehensive audit by the firm is likely to influence the amount of audit fees payable. Corporate governance mechanisms applied in our study are among the commonly investigated ones.

2.4.1 Board Gender Diversity and Audit Fees

Board gender diversity connotes having female directors with their male counterparts on corporate board. There is a growing stream of research on the difference in the ways male and female directors bring their characteristics to bear on their choices of leadership style and decisions making process in the board (Bilimoria, 2000; Renee & Daniel, 2009). Given the high risk-averse nature of female directors compared to male directors, Oyenike, Olayinka, and Emeni (2016) affirm that female directors normally support less risky policies to drive financial decisions and results. Adams and Ferreira (2009) discovered that female board members are connected with improved profitability, stronger board monitoring and good governance credentials than their male counterparts.

Gul, Srinidhi and Tsui (2008) investigated the relationship between female directors (proxy for board gender diversity) and audit fees based on a sample size of 2,784 US firms, and found that boards with a higher ratio of female directors in the boardroom demand for more audits, and this result in high audit fees being paid. An study by Sahlman (1990) produced results similar to those of Gul et al (2008). Although, Ittonen, Miettinen, and Vähänä (2010) documented a negative connection between audit committee gender diversity and audit fees based on evidence from the US. According to the authors, by improving the effectiveness of the internal control function in the firm, female chairs demand for less audit work, resulting in lower audit fees payment due to reduced audit risk assessment. Hence, we hypothesise as follows:

H₀₃: There is no significant relationship between board gender diversity and audit fees

2.4.2 Audit Committee Diligence and Audit Fees

Audit committee's diligence is measured by the number of meetings conducted by the committee in a year (Ika & Ghazali, 2012). The intensity of audit committee's activities can lead to the effectiveness of its oversight functions especially in matters relating to the financial reporting and auditing function (Zaman, Hudaib & Haniffa, 2011). The findings of different empirical work on the link between audit committee diligence and audit fees are mixed. Stewart and Munro (2007) examined the impact of audit committee existence and meetings on external audit amongst Australian corporations and found that audit committee activities highly influence the audit fee of an engagement because as the audit client demands for extra audit assurances due to the diligence of the audit committee, the audit fee increases.

Also, a study performed by Yatim, Kent, and Clarkson (2006) on Malaysian companies reported that audit fees are highly influenced by the diligence demonstrated by audit committees. Conversely, studies such as Tsui, Jaggi, and Gul (2001) and Razman and Iskandar (2004) affirmed that the relationship between audit committee diligence and audit fees was not likely to be linear, as diligent audit committee might be considered by external auditors as contributing to improving the general control environment installed by the audit client, thus reducing the amount of audit risk associated with an audit assignment, amount of audit work required and the audit fees payable. As a result, we propose the following hypothesis:

H₀₄: There is no significant relationship between audit committee diligence and audit fees

2.4.3 Board Independence and Audit Fees

Board independence means the number of independent non-executive (outside) directors on the board in relation to the total number of directors (Clifford & Evans, 1997). The assumption is that boards dominated by outside directors will be more independent and will make better decisions than boards dominated by insiders because of their fiduciary duty towards shareholders and their independence from management (Fama & Jensen, 1983). Agency theory is in tandem with this assumption.

A number of studies support the position that to effectively perform its oversight functions, an independent board will require working closely with independent external auditors. Hence, Hay, Knechel, and Ling (2008) and Hay and Knechel (2004) contend that a firm whose stakeholders are interested in improving control and governance will engage the services of competent independent directors, who in turn will prefer the services of quality external auditors. Engaging the services of high quality and experienced auditors can be costly (Adelopo & Jallow, 2008; Hay & Knechel, 2004). Conversely, some studies including that of Tsui, Jaggi and Gul (2001) found a negative relationship between board independence and audit fees. Therefore, we propose the following hypothesis:

H₀₅: There is no significant relationship between board independence and audit fees

2.4.4 Firm Size and Audit Fees

It is likely that other factors may jointly influence tax aggressiveness or audit fees and cause spurious correlation. Therefore, in addition to discussing variables used as proxies for tax aggressiveness, corporate governance and audit fees, this study includes firm size as a control variable. Firm size means the size of an organisation. Since the pioneering work of Simunic (1980), firm size seems to be a key explanatory feature in the study of audit fee phenomenon. The amount of variation in audit fees explained by firm size is generally above 70 percent (Hay et al., 2006). Theoretically, it is expected that a direct relationship will exist between the size of a client firm and the audit fees chargeable. This because the volume of business and accounting activities of large firms are quite enormous, and so auditing them requires longer audit time (Clatworthy & Peel, 2006; Hay et al., 2006). Firm size is commonly measured as the natural logarithm of the carrying value of total assets of the firm (Kim, Liu & Rhee, 2003).

3. Methodology

3.1 Theoretical Framework

The theoretical framework of the study consists of the agency and stakeholder theories. The agency theory argues that the agent (manager) may engage in opportunistic behaviour (e.g. embarking on opaque aggressive tax policies) at the expense of the principal's (shareholder's) interest as both parties seek to maximise their utilities. Jensen and Meckling (1979) modeled this situation as an agency relationship where the inability of the principal to directly monitor the agent's actions could lead to moral hazard, thereby increasing agency costs. The authors considered agency costs as comprising monitoring costs incurred by shareholders to monitor managers' actions. Audit fees are important component of the monitoring costs as long as auditors ensure managers act in the best interest of shareholders. Auditors will spend more time and exert extra effort inspecting managers' activities if they assess both agency problems and audit risks to be high (Simunic, 1980), resulting in increased audit fees payable. Alternatively, the stakeholder theory stretches the agency theory beyond the principal-agent conflicts of interest. Thus, while agency theory seeks to resolve the agency conflict between managers and shareholders, the stakeholder theory focuses on proffering solution to conflicts among several stakeholders, including the relevant tax authorities, suppliers and customers of the firm.

Most corporate governance regulatory requirements have laid emphasis on effective corporate governance structure so as to protect shareholders' rights and recognise the importance of transparency and disclosure (Dahya, Dimitrov, & McConnell, 2008). An effective corporate governance arrangement supports, amongst others, board gender diversity, active audit committee, and independent board. Both the agency and stakeholder theories posit that these governance monitors are vital for better financial reporting and auditing function, and therefore suggest that higher levels of effective corporate governance will help constrain tax aggressive actions by management (Minnick & Noga, 2010), ensure quality audit, reduce audit litigation and reputational costs usually associated with risky audit engagements (Donohoe & Knechel, 2014) for the benefit of not just shareholders (agency theory) but also all other relevant stakeholders (stakeholder theory). Flowing from the extant literature and theoretical review above, a schema showing the link between tax aggressiveness, corporate governance, and external audit fee is presented as follows:

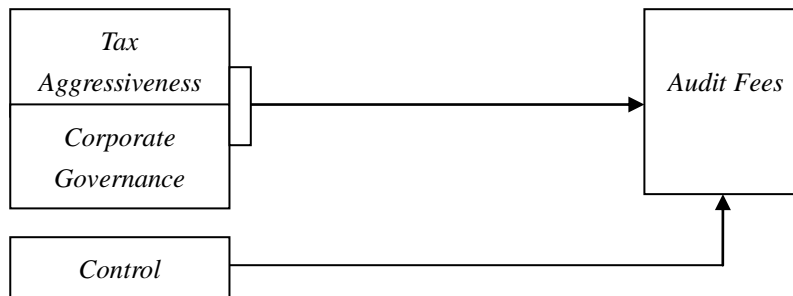


Figure 1. A schema showing the link between tax aggressiveness, corporate governance and audit fees

3.2 Model Specification and Operationalisation of Variables

Against the backdrop of the above review of theoretical and extant literature, a functional relationship between effective tax rate, cash tax rate, board gender diversity, active audit committee, independent board, firm size, and audit fee is expected. The general form of the linear relationship is represented as:

$$Y_{it} = \alpha + \beta X_{it} + \mu_i \tag{1}$$

The functional form of the relationship between tax aggressiveness and audit fee is expressed as:

$$\text{Audit fee} = \alpha_0 + \alpha_1 \text{Tax aggressiveness} \tag{2}$$

Introducing the control variable selected for the study, equation (2) is transformed as:

$$\text{Audit fee} = \alpha_0 + \alpha_1 \text{Tax aggressiveness} + \alpha_2 \text{Control variable} \tag{3}$$

The functional form of the relationship between corporate governance and audit fee is expressed as:

$$\text{Audit fee} = \alpha_0 + \alpha_1 \text{Corporate governance} \tag{4}$$

Introducing the control variable selected for the study, equation (4) is transformed as:

$$\text{Audit fee} = \alpha_0 + \alpha_1 \text{Corporate governance} + \alpha_2 \text{Control variable} \tag{5}$$

Model 1: (Measures of Tax Aggressiveness)

The econometric transformation of equation (3) is expressed as:

$$\text{AUDFEE}_{it} = \beta_0 + \beta_1 \text{ETR}_{it} + \beta_2 \text{CTR}_{it} + \beta_3 \text{FSIZ}_{it} + \mu_{it} \tag{6}$$

Model 2: (Components of Corporate Governance)

The econometric transformation of equation (5) is expressed as:

$$\text{AUDFEE}_{it} = \beta_0 + \beta_1 \text{BGEN}_{it} + \beta_2 \text{ACDI}_{it} + \beta_3 \text{BIND}_{it} + \beta_4 \text{FSIZ}_{it} + \varepsilon_{it} \tag{7}$$

Where:

β_0 = intercept;

AUDFEE = audit fees;

ETR = effective tax rate;

CTR = cash tax rate;

BGEN = board gender diversity;

ACDI = audit committee diligence;

BIND = board independence;

FSIZ = firm size;

ε = error term; Apriori expectation based on extant literature and both agency/stakeholder theories: $\beta_1, \beta_2, \beta_3, \beta_4 > 0$;

i = number of firms (1, 2, 3, ... 107);

t = time period to be covered (1, 2, 3, ... 10) and $\beta_1 \dots \beta_4$ = regression coefficients.

Table 1. Operationalisation of variables

Variable Definition	Acronyms	Type of Variable	Measurement of Variables	Sources
Audit fee	AUDFEE	Regressand	Natural log of audit fee	Yatim, et al (2006); Martinez and Lessa, (2014)
Effective tax rate	ETR	Regressor	total tax liability scaled by pre-tax accounting income	Minnick and Noga, 2010; Salihu, et al (2013)
Cash tax rate	CTR	Regressor	Ratio of cash taxes paid to operating cash flow	Hanlon and Heitzman (2010), and Salihu et al. (2014)
Board independence	BIND	Regressor	Proportion of independent non-executive directors on the board	Clifford and Evans (1997); Hay, Knechel, and Ling (2008)
Board Gender Diversity	BGEN	Regressor	Measure as the ratio of female to male members on the board	Renee & Daniel, 2009; Oyenike, Olayinka, and Emeni (2016)
Audit committee diligence	ACDI	Regressor	Number of audit committee meetings for the year.	Ika and Ghazali, (2012); Zaman, Hudaib & Haniffa (2011)
Firm size	FSIZ	Control	The natural log of total assets of the firm	Kim, Liu and Rhee (2003); Hay et al. (2006)

Source: Researchers' compilation, 2020

3.3 Research Design, Philosophy, and Study Sample

This study employed the correlational research design. This research design was adopted because it is apt when dealing with numerous variables and establishing or predicting the pattern of relationships among the said variables (Brom & Hedges, 2009 in Creswell, 2012). Given that the present study sought to examine the connection between tax aggressiveness, corporate governance and audit fees, this research design was therefore deemed to be a suitable one. Moreover, the study used the positivist research philosophy rooted on the deductive approach as quantitative data were needed for testing the formulated research hypotheses.

The population of the study consists of the entire 169 firms quoted on the Nigerian Stock Exchange (NSE) as at 31st December, 2018. Due to the difficulty associated with studying the entire firms listed on the Nigerian Stock Exchange, the Yamani's (1967) scientific approach to sample determination was used to calculate a study sample size of 119 firms. To ensure that the 119 firms are given equal opportunity of being selected, the probabilistic sampling approach was adopted with emphasis on a simple random sampling technique. However, a final sample size of 107 listed firms was selected based on the following criteria: The first criterion was that sample firms included in the study hold a complete ten-year financial statement data. Hence, firms with missing data in the period under review (2009 to 2018) were excluded from the study. Secondly, firms that either ceased operations or were delisted at any given point during the period of study were excluded.

In line with our research strategy and philosophy, the data used in this study were extracted exclusively from secondary sources. Specifically, the data were gleaned from the corporate annual reports of the 107 listed firms, covering a period of ten years from 2009-2018. This was augmented, where necessary, with the financial information of the firms as contained in the Nigeria Stock Exchange (NSE) fact book. The choice to use secondary data is predicated on their ease of availability and the fact that the variables of this study were proxied by metrics obtainable from secondary data. Both descriptive statistics and inferential statistics were used to analyse our study data. Besides, in order to establish the accuracy of the research model, we performed the classical regression assumption test of heteroskedasticity, serial correlation, and model specification. The panel regression technique, which showed preference for the random effect model due to the outcome of the Hausman test, was employed to enable us investigate the connection between tax aggressiveness, corporate governance and audit fees.

4. Estimation of Results and Discussion of Findings

4.1 Descriptive Statistics

Table 2 presents the descriptive statistics for all the variables that were studied: dependent variable, independent variables and control variables.

Table 2. Results of descriptive statistics

	AUDFEE	ETR	CTR	BIND	BGEN	ACDI	FSIZ
Mean	42914.32	-0.275604	0.219394	0.684043	0.141079	3.604559	6.807704
Median	11200.00	-0.263750	0.202870	0.672230	0.803001	4.000330	7.143000
Maximum	728000.0	19.74880	68.04620	0.930000	0.590000	8.000000	11.56500
Minimum	0.800000	-39.07600	-5.758600	0.190000	0.000000	1.000000	5.080000
Std. Dev.	91609.52	1.600801	1.288044	0.156870	0.112678	0.811443	0.889541
Skewness	3.128450	-7.709746	18.46624	-0.232488	0.658236	0.177554	0.480133
Kurtosis	16.5777	134.0664	511.4676	2.201728	3.276457	4.693962	2.470005
Jarque-Bera	13383.77	9793744	14518220	1423962	99.31001	300.2887	51.66169
Probability	0.000000	0.000000	0.000000	0.000112	0.000011	0.000012	0.000024
Sum	3673583	-230.6966	293.1260	559.8641	95.04821	3254.401	6253.168
Sum Sq. Dev.	1.20E+11	4140.331	4492.680	17.52158	9.85265	628.7970	730.5245
Observations	1070	1070	1070	1070	1070	1070	1070

Source: Researchers' Computation (E-views) 2020

The mean audit fee is ₦42,914.32 million with a maximum value of ₦728,000 million and a minimum value of ₦80,000.00 million respectively. The mean effective tax rate is -0.275604 with a maximum value of 19.74880% and a minimum value of -39.07600%. The cash tax rate (CTR) reported a mean value of 0.219394 (approximately 22%), a minimum value of -5.758600%, and maximum value of 68.04620% respectively. The CTR figure is below the statutory tax rate of 30% as stipulated by the Nigerian government. The result shows that the sampled listed firms were tax aggressive in the periods reviewed. The standard deviation of 1.288044 for CTR signifies the risk associated with engaging in tax aggressive practice which includes likely penalties imposed by tax authorities after a tax audit and/or decrease in stock prices following news of tax offenses. Board independence (BIND) reported a mean value of 0.684043 (approximately 68% independence), with a maximum board independence of 93% and a minimum board independence of 19%. The closeness of both the mean (68%) and median values (67%) as well as the standard deviation of 0.156870 indicates that BIND displays significant clustering around the average of the sample. The mean board gender diversity (BGEN) is 0.141079 (approximately 14%), with a minimum value of 0.000000 signifying absence of female gender in the board, and a maximum value of 0.590000 representing 59% female gender in the board. Compared to most European countries, particularly Norway, that currently have legislations for gender quota, the mean value of 14% is rather low. Nonetheless, the descriptive statistics shows that some of the listed firms have reasonable proportion of women in their boards, given the maximum sample value of 59%.

The mean audit committee diligence (ACDI) is 3.604559, representing an average of four (4) meetings per year. The maximum number of meetings per year is 8 with a minimum value of one (1) audit committee meeting per year. The control variable of the study is firm size (FSIZ). The average firm size measured by the natural logarithm of total assets has a mean of 6.807704 representing about ₦6.8 billion, with a standard deviation of 0.889541. FSIZ for the period ranged from a minimum value of 5.080000 (approximately ₦5.08 billion) to a maximum value of 11,56500 (approximately ₦11.6 billion), indicative of wide variations between the studied firms regarding firm sizes. Skewness value of 0.480133 and kurtosis of 2.470005 signify slight departure from symmetry within the firm size data set but the figures are not so alarming as to suggest the presence of outliers. The Jarque-Bera statistics are relatively large and the probability values are significant at the 5% level, indicative of the normality of the regression data.

4.2 Correlation Coefficients

Table 3 presents the Pearson correlation coefficients (r), in a matrix format, among variables of the study.

Table 3. Results of correlation analysis

Covariance Analysis: Ordinary							
Date: 03/18/20 Time: 10:06							
Sample: 2009 2018							
Included observations: 1070							
Correlation							
t-Statistic							
Prob.	AUDFEE	ETR	CTR	BIND	BGEN	ACDI	FSIZE
AUDFEE	1.000000						

		1.000000					
		-0.343878					
		0.6323					
CTR	0.015957	-0.426032	1.000000				
	0.521546	-15.80591	-----				
	0.5062	0.0000	-----				

BIND	-0.083809	-0.035929	-0.005387	1.000000			
	-2.750859	-1.175114	-0.176072	-----			
	0.0021	0.1727	0.7604	-----			
BGEN	0.133229	0.031068	0.011368	-0.046974	1.000000		
	4.402468	1.015959	0.371523	-1.537006	-----		
	0.0000	0.2332	0.6118	0.0792	-----		
ACDI	0.150742	0.001452	0.064274	-0.081437	0.106567	1.000000	
	4.996837	0.047453	2.105867	-2.672326	3.507334	-----	
	0.0000	0.8620	0.0176	0.0021	0.0004	-----	
FSIZE	0.647982	0.012396	-0.008458	-0.126636	0.201505	0.239368	1.000000
	30.50578	0.405229	-0.276438	-4.180109	6.756786	8.114825	-----
	0.0000	0.5873	0.6829	0.0000	0.0000	0.0000	-----

Source: Researchers’ Computation (E-views) 2020

As shown in Table 2, the correlation coefficients are relatively small and indicative of the absence of the problem of multicollinearity. The correlation coefficient are mixed with some showing positive correlation and others showing negative correlation. The coefficient of correlation between the ETR and AUDFEE is negative (-0.010522), indicating that as ETR increases, AUDFEE decreases. Conversely, the CTR is positively correlated with AUDFEE (R = 0.015957), suggesting an increase in audit fees due to a rise in cash tax rate. Moreover, both BGEN (R = 0.133229) and ACDI (R = 0.150742) exhibited a positive relation with audit fees, a sign that implies that both variables are moving in the same direction with audit fees. However, the same cannot be said of BIND (R = -0.083809) as it moves in the opposite direction with AUDFEE. The negative correlation between BIND and AUDFEE indicates that as board independence increases, audit fee reduces. The correlation matrix regarding the FSIZ (R = 0.647982) is positively correlated with AUDFEE. The positive sign between FSIZ and AUDFEE implies that as firm size increases, audit fee increases as well. Lastly, neither the independent variables nor the control variable seems highly correlated with each other. The highest correlation coefficient (R = 0.647982) is between FSIZ and AUDFEE. Since none of the correlations is greater than or equal to 0.8, the potential for harmful multicollinearity is therefore low (Kennedy, 2008). The result of the correlation analysis is further strengthened with the result of the test of variance inflation factor in Table 3.

4.3 Variance Inflation Factor

Tables 6, 7, and 8 show the results of the regression model used to test all hypotheses formulated in this study. The use of multivariate hypothesis test is based on the assumption that no significant multicollinearity exists among the explanatory variables. The applicability of this test is that if multicollinearity exists, it may cause a phony regression result. Therefore, to investigate the existence of multicollinearity, the variance inflation factors (VIFs) for each of the explanatory variables were computed as presented in Table 4.

Table 4. Results of test of variance inflation factor

Variance Inflation Factors			
Date: 03/18/20 Time: 11:51			
Sample: 1090			
Included observations: 1070			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	6.05E+07	104.5282	NA
ETR	1242226	1.054426	1.038827

CTR	1148989	1.199131	1.042601
BIND	2.33E+07	18.03903	1.082375
BGEN	4.32E+07	1.784417	1.076142
ACDI	6881542	18.07086	1.067396
FSIZE	6578208	61.66243	1.009709

Source: Researchers' Computation (E-views) 2020

The results show all the individual co-variates VIF and VIF mean values (1.052842) are lower than the benchmark of 10, a number that is used as a rule of thumb to indicate multicollinearity problems (Field, 2000). These results demonstrate no case of multicollinearity in the research model. There can only be problem of multicollinearity if the values of the centered VIF are in excess of 10. The outcome of the variance inflation factor test further reinforced the results of the correlation analysis in Table 2. Therefore, the results of the regression analysis can be interpreted with a greater degree of confidence.

4.4 Regression Diagnostics

The regression analysis was preceded by the classical regression assumption test of heteroskedasticity (using the Breusch-Pagan-Godfrey Test), test of serial correlation (using the Breusch-Godfrey Test), and the test of model specification (using the Ramsey RESET Test). The result of the classical regression diagnostics is presented in Table 4 below:

Table 5. Results of classical Regression Assumption Test

Diagnostic Test	F-statistic	Probability
Serial Correlation	1.185600	0.2400
Heteroskedasticity	4.694875	0.0000
Ramsey RESET	0.965449	0.2178

Source: Researchers' Computation (E-views) 2020

The result of the Breusch-Godfrey serial correlation test could not sustain the null hypothesis of serially correlated variables with F-statistic of 1.185600 and probability value of 0.2400. The null hypothesis of the heteroskedastic residuals could not be rejected with F-statistic of 4.694875 and probability value of 0.0000. The null hypothesis of misspecified model could not be sustained with F-statistic of 0.965449 and probability value of 0.2178 at the 5% level. Thus, the results show that the regression model is not mis-specified, its variables not serially correlated and there is presence of homoscedastic residuals, indicating the absence of the problem of heteroscedasticity.

4.5 Analysis of Regression Results: Model 1

The panel regression shows preference for the random effect model since the Hausman test reported probability values that exceed 0.05 even though the results of the fixed effect model are not substantially different from those of the random effect model. Therefore, for purposes of the analysis, emphasis was on the result of the random effect model. These results are presented in Tables 6, 7 and 8.

Table 6. Result of regression analysis on the relationship between ETR and audit fees

	Random Effect	Fixed Effect
Constant	-15.88485 (0.0000)	-13.16520 (0.0000)
ETR	-0.226687 (0.6216)	-0.265942 (0.5917)
FSIZ	17.390896	14.195456

	(0.0000)	(0.0000)
R-squared	0.350836	0.650736
Adjusted R-squared	0.349304	0.633601
F- statistic	130.9386	30.38378
Prob. (F-statistic)	0.000000	0.000000
Durbin Watson Statistic	1.013415	1.043780
Hausman Test	0.6854	
Observation	1070	1070

Source: Researchers' Computation (E-views) 2020. Note: ETR is effective tax rate, FSIZ is firm size. The variables are significant at $P \leq 0.05$. The t-values are presented in the Table and the probability values are in parenthesis

The regression result of the relationship between the effective tax rate and audit fees is presented in Table 5. The coefficient of multiple determination of the random effect model is 0.350836 while the adjusted value is 0.349304. The import of the result is that 35% of the systematic cross-sectional variation in audit fees is explained by the effective tax rate. The balance is accounted for by the error term. The F-statistic of 130.9386 and the probability value of 0.000000 are highly significant and show that a linear relationship exists between both variables. This means the model fits the data.

The result of the relationship between the effective tax rate and audit fees reported a t-value of -0.226687 and a probability value of 0.6216 $> P = 0.05$ at the 5% level of significance. The result indicates a negative connection between the aggressive tax behaviour of the firms investigated and audit fees. While the result maybe counter intuitive in nature, it shows that the relationship between effective tax rate and audit fees is statistically insignificant in the firms listed on the Nigerian Stock Exchange. Against the background of the insignificant relationship between the effective tax rate and audit fees, the null hypothesis was therefore accepted and the alternate rejected. The result of this study is in tandem with the negative relationship reported by Saremi, Mohammadi, and Nezhad (2016), but at variance with the positive relationship found by Donohoe and Knechel (2014).

Table 7. Result of regression analysis on the relationship between CTR and audit fees

	Random Effect	Fixed Effect
Constant	-15.85927 (0.0000)	-13.14628 (0.0000)
CTR	2.205696 (0.0002)	2.131555 (0.003)
FSIZ	17.371496 (0.0000)	14.181648 (0.0000)
R-squared	0.350766	0.6507544
Adjusted R-squared	0.339234	0.633624
F- statistic	130.88496	30.38881
Prob. (F-statistic)	0.000000	0.000000
Durbin Watson Statistic	1.015222	1.045306
Hausman Test	0.6206	
Observation	1070	1070

Source: Researchers' Computation (E-views) 2020. Note: CTR is cash tax rate, FSIZ is firm size. The variables are significant at $P \leq 0.05$. The t-values are presented in the Table and the probability values are in parenthesis

The regression result of the relationship between the cash tax rate and audit fees is presented in Table 6. The coefficient of multiple determinations reported a value of 0.350766 and the adjusted value is 0.339234. The implication is that about 34% of the systematic cross-sectional variation in audit fees is accounted for by the cash tax rate. The F-statistic of 130.88496 and the probability value of 0.000000 is an indication of a high significant linear relationship between both variables. Also, it means that the model fits the data.

The result of the relationship between cash tax rate and audit fees reported a t-value of 2.205696 and a probability value of $0.0002 < P = 0.05$ at the 5% level of significance. The result indicates a positive connection between CTR and AUDFEE, indicating that tax aggressiveness, measured by cash tax rate, increases audit fees. The differences in result of the two measures of tax aggressiveness may not be unconnected with the criticisms of the effective tax rate measure of tax aggressiveness. The result of the positive and statistically significant relationship between the cash tax rate and audit fees could not sustain the null hypothesis of no significant relationship between cash tax rate and audit fees. Hence, the null hypothesis was rejected and the alternate accepted. There is hardly any study that has measured corporate tax aggressiveness using the cash tax rate.

4.6 Analysis of Regression Results: Model 2

The result of the regression analysis of Model two (2) is presented in Table 7. The coefficient of multiple determination reported a value of 0.361666 and the adjusted coefficient of multiple determination reported a value of 0.358617, signifying that about 36% systematic cross-sectional variation in audit fees is explained by board independence, board gender diversity, and audit committee diligence. The F-statistic of 68.66779 and the p-value of $0.000000 < P = 0.05$ is an indication of a significant linear relationship between the dependent and independent variables.

Table 8. Result of regression analysis on relationship between corporate governance mechanisms and audit fees

	Random Effect	Fixed Effect
Constant	-15.46766 (0.0000)	-13.2711 (0.0000)
BIND	2.06806 (0.0056)	2.19625 (0.0052)
BGEND	0.50893 (0.4198)	0.54443 (0.3970)
ACDI	2.06514 (0.0363)	2.13579 (0.0270)
FSIZ	16.97293 (0.0000)	13.85732 (0.0000)
R-squared	0.361666	0.653113
Adjusted R-squared	0.358617	0.635604
F- statistic	68.88779	29.80404
Prob. (F-statistic)	0.000000	0.000000
Durbin Watson Statistic	1.085664	1.246363
Hausman Test	0.7101	
Observation	1070	1070

Source: Researchers' Computation (E-views) 2020. Note: BIND is board independence, BGEND is board gender diversity, ACDI is audit committee diligence, FSIZ is firm size. The variables are significant at $P \leq 0.05$. The t-values are presented in the Table and the probability values are in parenthesis

The result of the relationship between BIND and AUDFEE is positive and significant at the 5% level, with a reported t-value of 2.06806 and a probability value of $0.0056 < 0.05$. Intuitively, it is expected that a board dominated by outside directors will be more independent of management and such board will ensure quality reporting by driving

high quality audit, which can cause audit fees payable to increase. As a result, the null hypothesis of no significant relationship between board independence and audit fees was rejected and the alternate accepted. This finding is inconsistent with the negative association reported by Tsui, Jaggi and Gul (2001), but consistent with the position of Adelopo and Jallow (2008), Hay, Knechel, and Ling (2008) and Hay and Knechel (2004) who noted that independent directors will have preference for external audit services which offer quality audit and are often costly.

The result of the relationship between BGEND and AUDFEE is positive and statistically insignificant at the 5% level. The result reported a t-value of 0.50893 with a probability value of $0.4198 > 0.05$. This means that the presence of female directors in corporate boards in Nigeria has the tendency of increasing the amount of audit fees through meticulous monitoring and demand for extra audit. However, the positive but insignificant nature of the result is undoubtedly on account of the low presence of female directors on the board of the firms investigated. The average female gender on corporate boards in Nigeria, as reported in the descriptive analysis in Table 1, is 14%. This is a far cry from the Norwegian Model of 40% (Hoel, 2008). Consequently, the null hypothesis was accepted. The positive relationship of the study corroborates the positions of Gul, Srinidhi and Tsui (2008) and Sahlman (1990), even though the result is insignificant.

The result of the relationship between ACDI and AUDFEE is positive and statistically significant at the 5% level. The result reported a t-value of 2.06514 and a probability value of $0.0363 < 0.05$ at the 5% level of significance. The result shows that as the diligence of the audit committee increases, the fees charged by external auditors also increase. This is because the more frequent the audit committee meetings, the more efficiently they will discharge their oversight function which will no doubt drive up the audit fees payable. In the light of this finding, the alternate hypothesis which proposes a significant relationship between ACDI and AUDFEE was accepted and the null rejected. This finding is in tandem with the positions of Stewart and Munro (2007) and Yatim, Kent, and Clarkson (2006) but not in consonant with the negative results of Razman and Iskandar (2004). The control variable of firm size is positive and significant at the 5% level (t-value = 16.97293, p-value = $0.0000 < 0.05$). The significant positive relationship between FSIZ and AUDFEE is expected. The implication is that an increase in firm size increases the fees payable to external auditors. With increase in size, the activities of the firm become disperse and complex which will mean extra audit effort and audit fees. Clatworthy and Peel (2006) and Hay et al. (2006) had similar findings.

5. Conclusion and Recommendations

Most studies on the concept of audit fee have often intended to focus on determinants like audit client characteristics, audit firm characteristics and certain corporate governance variables as against firm's behaviour, such as tax aggressiveness, despite its significance to audit fees determination. To this end, research on the interplay between tax aggressiveness and audit fees or how tax aggressiveness and corporate governance relate with audit fees are sparse. This study therefore investigated the connection between tax aggressiveness, corporate governance and audit fees for the purpose of providing insight into how tax aggressiveness and corporate governance interact with audit fees within corporate environment. Leaning on both the agency and stakeholder theories and to achieve the above objective, the study examined the measures of tax aggressiveness of effective tax rate and cash tax rate as well as corporate governance mechanisms of board gender diversity, audit committee diligence, and board independence; and these variables determine audit fees payable to external auditors. Control variable such as firm size projected to influence audit fees and cause spurious correlation, was incorporated into the regression model.

Furthermore, a sample size of 107 firms listed on the Nigerian Stock Exchange over a ten-year period (2009 to 2018) was selected for the study. One thousand and seventy (1,070) firm-year observations were estimated using random effect panel regression technique based on the outcome of the Hausman Test. The results of the study provide that not only does the cash tax rate cause a significant increase in audit fees, both audit committee diligence and board independence also increase audit fees payable to external auditors by listed firms in Nigeria. The results of the study provide a positive but statistically insignificant relationship between board gender diversity and audit fees. This result was quite unexpected given the large amount of past empirical studies which have reported a positive and significant connection between female dominated corporate boards and audit fees. The insignificant nature of the result may not be unconnected with the low presence of female directors on the board of listed firms in Nigeria.

Based on the findings of this study, it is therefore recommended that it is important for management of listed firms in Nigeria to cut down on their tax aggressive behaviour so as to reduce the amount of audit fees paid to external auditors. Improvement on the independence of the board should be encouraged so as to enhance quality financial reporting and audit. Finally, more female gender should be allowed to sit on the board of listed firms in Nigeria, in line with the Norwegian model of 40% female gender representation and the Federal Government 35% Affirmative Action.

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