FIRMS' CHARACTERISTICS AND TAX AGGRESSIVENESS OF LISTED COMPANIES IN NIGERIA

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Abstract

In recent years, studies have shown that companies engaged in aggressive tax planning shaped by their firms' characteristics to manage its cash flows and corporate returns. This study examined the effect of the characteristics of a firm on tax aggressiveness among the selected publicly listed non-financial firms in Nigeria. The study adopted an ex-post facto research design. Secondary data were obtained from the published annual reports of thirty (30) non-financial companies listed on the Nigerian Exchange Group Plc. from 2013 to 2020 using purposive sampling technique. Descriptive statistics and multiple Linear Regression (Ordinary Least Square-OLS) were employed to analyse the effect of independent variables (operating cash flows ratio, debts to assets ratio, firm size and capital intensity) on the dependent variable (tax aggressiveness) measured by the cash effective tax rate (CETR). Findings revealed that operating cash flow ratio exerted positive and statistically significant effect on cash effective tax rate, while debts to assets ratio and capital intensity exerted negative influence on tax aggressiveness but not significant statistically. Firm size showed positive but not statistically significant influence on tax aggressiveness. The study thus suggests that operating cash flow is a primary driver of tax aggressiveness and we recommend that companies should manage their tax practices in such a way that it reduces the detrimental impact on the society and corporate risk involved in engaging in aggressive tax actions. Implications of these findings for both regulators and corporations are discussed.

Keywords: *Tax Aggressiveness, Firms' Characteristics, Agency Theory, Non-financial firms, Nigeria.*

JEL Classification Code: 39

1. Introduction

Taxes are compulsory levies paid by individuals and corporate entities to the government. They are expenses that are paid by a company as tax liabilities and are a component of the company's operational costs, with the result that the company's after-tax earnings are reduced. The government collects tax revenue through its tax authority. In Nigeria, the Federal Inland Revenue Service (FIRS), also known as the Federal Tax Authority is in charge of collecting all taxes to the federal government, including taxes levied on profit of businesses known as company income tax. Tax avoidance and tax evasion are anti-social practices perpetuated by individuals and companies in Nigeria that result in a reduction in the amount of revenue generated by the government. In line with this, Otusanya (2011), Modugu, Eragbe & Izedonmi (2012), and Otusanya & Adeyeye (2022) noted that compliance, evasion and avoidance are enormous issues

in developing economies like Nigeria. Although scholars have argued that tax avoidance, which is the practice of taking advantage of the gaps in the tax laws to reduce tax payable is considered legal but tax evasion is totally condemned and illegal; there is a very thin line between both as often times, tax avoidance practices could be seen as tax evasion when challenged in the court of law (Otusanya, 2011). Tax aggressiveness involves a continuous abuse of the loopholes in the tax laws that result in an abnormally low tax payable by a company. Whether tax avoidance, tax planning, tax minimization or tax sheltering, as these are terms that are used interchangeably as tax aggressiveness in research (Ogbeide & Iyafekhe, 2018) and they all have the same grave effect of rubbing the government of revenue needed to run the economy.

In 2019, the Executive Chairman of the FIRS revealed that the government lost $15 billion per year to tax avoidance and evasion. In 2020, the Chairman stated that Nigeria lost about ₦5.4 trillion in ten years (between 2007 and 2017) due to tax fraud by Multinational Companies doing business in the country. Also, according to the Federal Inland Revenue fact book, Nigeria has been unable to fulfil its annual objective for corporate income tax collection for the past six years, as real tax revenue generated from company income tax has consistently fallen short of the annual target. In 2020, Nigeria generated a total of ₦1.41 trillion as revenue from Company Income Tax (CIT). However, the National Bureau for Statistics (NBS) revealed that when compared to 2019, the country's total CIT generated fell by 13.35 per cent in 2020. Though COVID-19's austerity measures may have contributed to a drop in company income tax receipts in 2020, Nigeria's overall tax revenue has always been low in comparison to its peers in other extractive-industry countries such as South Africa and Ghana. When compared to its counterparts globally, Nigeria's tax as a percentage of GDP ranks lowest, according to data from the World Bank and the OECD report in 2019. FIRS fact book captured that from 2015 to 2018, the overall annual target was ₦1.66 billion, ₦1.70 billion, ₦1.71 billion, and ₦1.40 billion, respectively, while the actual amount received from corporate tax was ₦1.34 billion, ₦1.21 billion, ₦0.93 billion, and ₦1.26 billion.

Tax aggressive practices breed various degrees of negative impact on the government and economy at large. First, it could lead to huge national debt. It is no surprise that the country's total debt has risen steadily over the last six years, from 2015 to 2020. The debt profile would have been reduced if government funds are not lost as a result of tax aggressive practices. Next, it makes government incapable of fulfilling its duties to the citizens, in providing basic health care and infrastructural facilities for example, the supply of public goods and services. Also, it erodes tax fairness even more by transferring the burden of tax to honest, socially responsible individuals and corporations. Lastly, it limits the government from investing in social infrastructure and establishing social welfare programmes, leading to higher levels of poverty in Nigeria (Ogbeide & Iyafekhe, 2018; Otusanya, Arowomole & Adeyeye, 2013).

The study of tax aggressiveness has attracted a lot of attention from academics all over the world, particularly in Nigeria, where there are few studies on the association between firm

characteristics and tax aggressiveness as the study is yet to gain full momentum (Nwaobia, Kwarbia & Ogundajo, 2016; Ogbeide, 2017). Moreover, different investigations have shown diverse outcomes. Adegbite & Bojuwon, 2019 investigated the effect of corporate avoidance practices among publicly listed firms and discovered that thin capitalisation, firm size, profitability, leverage, intangible assets, and transfer pricing are all significantly linked to corporate tax avoidance. In contrast, the study of Ugbogbo, Omoregie & Eguavoen (2019) showed that profit before tax and leverage had a negative significant relationship with aggressive tax avoidance; only firm size had positive significant relationship with the effective tax rate. The association between firm characteristics and tax aggressiveness has been studied, although the conclusions are diverse. Several studies carried out in Nigeria have employed characteristics such as return on assets, debt to equity ratio, interest charges, transfer pricing, audit quality and firm size (Adegbite & Bojuwon, 2019; Ogbeide 2017; Nwaobia et al., 2016). Evidence has shown that the associations between Firms' characteristics such as operating cash flow ratio, total debts to assets ratio and capital intensity on tax aggressiveness are yet to be examined and deployed in Nigeria. This study, therefore, introduces these new variables and to discover their effect and influence on tax aggressiveness. Also, the dependent variable; the cash ETR was employed as against the current ETR which has been over flogged in previous studies.

In view of the importance of revenue generated by the government from corporate tax and the unhealthy practices and characteristics of companies which has resulted in a substantial decrease in the revenue generated from taxation, it is imperative to establish if firms' characteristics impact tax aggressiveness. Is there a relationship between firms' characteristics and tax aggressiveness? The objective of the study is to determine the combined effect of operating cash flows ratio, debts to assets ratio, firms' size and capital intensity controlled by audit quality, board composition and firm age on tax aggressiveness. In order to provide empirical answer to this research question, the following hypothesis is tested:

Ho1: Firms' characteristics exert no positive and significant effect on firm tax aggressiveness.
To achieve the above, the study relied on eight years data from 2013 to 2020 drawn from thirty (30) companies listed on the Nigerian Exchange Group Plc. The study demonstrates the need by tax authorities in Nigeria to anticipate the level of aggressive tax avoidance perpetrated by companies, especially in the non-financial sector and to enable them enact appropriate regulations to close the loopholes that allow company to perform tax aggressiveness, specifically in terms of corporate taxation. Therefore, this study is significant both for its theoretical and empirical contributions to literature. The study is further broken down into four sections. The second section shows the conceptual, theoretical and empirical reviews of the extant literature relating to the study. Section three covers the research methods employed to test the hypothesis formulated for this study. The fourth section deals with data analysis, presentation of results and the discussion of findings. The last section provides the summary, conclusions and recommendations.

2. Literature Review

This section discusses the concepts related to the study, identifies theory that underlies tax aggressive practices, reviewed empirical studies and the gap in literature.

2.1 Conceptual framework

This subsection examines the basic concepts to which this study relates.

2.1.1 Firms' Characteristics

Firms' characteristics are distinct variables that consist of the internal environment of a company which influence how much a company's value changes (Effiong & Ekpoese, 2020). They noted that firms' characteristics are not a novel concept and that business take cognisance of them. Firm characteristics that have been studied in extant literature encompass: firm size, leverage, liquidity, sales growth, assets growth, ownership structure, board characteristics, firm age, dividend pay-out, return on assets, audit quality, intangibles, capital intensity, inventory intensity, foreign, net operating loss, research and development, operating cash flows, access to capital markets and growth opportunities. It is therefore important that research into these features be carried out, as they interact to affect expense reduction, including the firm's tax liability. Each of the above-mentioned variables has its own meaning and measurement method (Dyreng, Hanlon, & Maydew, 2009).

Firms' characteristics examined in this study include: operating cash flow ratio, debts to assets ratio, capital intensity and firm size. These characteristics were chosen because, except for firm size, not much research into these areas has been carried out in Nigeria.

2.1.2 Operating Cash Flow Ratio (OCFR)

Operating cash flows are cash flows that result from transactions and other events that affect profit or loss. They are the primary revenue-generating operations of an entity, which includes the delivery or production of items for sale and the provision of services (Ittelson, 2020).

Cash is a firm's most liquid asset, and there are three primary reasons for a company to keep cash: speculative, precautionary, and transactional. Research into the relationship between operating cash flows and tax aggressiveness has shown that when a company has a significant amount of operating cash flows, it tends to engage in activities to lower the amount of tax owed, thereby resulting in the company carrying out tax aggressive activities (Dreng et al., 2009). They noted that profitable firms arguably had greater incentives to engage in aggressive tax practices than unprofitable firms. If this be the case (Kurniawan & Nuryanah, 2017) noted that the level of cash holdings by a company could influence aggressive tax avoidance by opportunistic managers.

2.1.3 Debt to Asset Ratio (DAR)

The debt-to-asset ratio is a leverage ratio which measures the proportion of the total assets of a company that are financed by creditors as opposed to investors. In other words, it illustrates how much of an asset's value is financed by borrowing as against that which is financed by investors. This is an essential metric since it demonstrates how much of the assets of a company are

claimed by creditors as debt. Creditors and investors utilize this statistic to make business decisions.

When a company uses debt in financing its operational activities, it should pay the interest, that is, interest expense payable. Loan interest is a deductible charge on taxable income and thus, will reduce the existing tax burden. The level of tax aggressiveness performed by the company can be seen from how much the capital structure is financed by debt, the higher the leverage then the tax aggressiveness reduces as the use of debt will incur the cost of interest that will directly reduce the profit amount of the company. Consequently, the debt will give a negative relationship to the tax aggressiveness (Ugbogbo et al. 2019; Dewi &Yasa, 2020).

2.1.4   Firm Size

Firm size refers to the scale of organization and operations of a business enterprise. It refers to the size or amount of work produced by a particular company. Machfoedz as cited in Harjito, Sari, & Yulianto (2017) noted that the size of a firm is one of the most crucial qualities. Firms' size categorizes a firm as either large or small based on a range of factors such as total sales, average sales level, stock market value and total asset. The larger the company, the more intricate the transaction and vice versa and they tend to be able to manage their tax burden optimally because they have resources and experts in the field of taxation and have a law firm that can find gaps in tax law to minimize corporate tax payments. Consequently, corporations engage in tax aggressiveness by exploiting existing loopholes (Dewi & Yasa, 2020).

2.1.5   Capital Intensity

Capital intensity ratio measures the weight of fixed assets such as property, plant and equipment, machinery, and other fixed assets on total assets. A company's investment in fixed assets will give rise to depreciation. Higher investment on fixed assets implies a higher cost of depreciation and which can be a deduction from the company's tax burden. The accumulated depreciation is deducted from the asset; thus, capital intensity is associated with tax aggressiveness (Dewi &Yasa, 2020; Lanis & Richardson, 2012).

2.1.6 Tax Aggressiveness

Tax aggressiveness is defined as an attempt by a company to reduce its tax payments through various means such as tax avoidance and aggressive tax planning (Chen, Chen, Cheng & Shelvin, 2010). It may be deduced that these activities include both legal and unlawful actions, as well as unclear areas. Similarly, Frank, Lynch, and Rego (2009) noted that tax aggressiveness is a type of tax planning which involves arranging activities and manipulations aimed at reducing tax income, which is often referred to as tax management. The goal is to ensure that wealth is transferred from the government to the company's shareholders. Although not all of the activities taken may be in violation of the rules, the more a company utilizes them, the more it is considered tax aggressive. While there are different conceptualizations, references, and even measuring methodologies for this notion, most of them are of the same intent and goal, but their consequences on the stability of a company differ.

Tax aggressiveness is mostly detected using Effective Tax Rates (ETR). The relationship between total tax expenses and pre-tax income is expressed by the ETR. Variants of the ETR are: first, the Book Effective Tax Rate (BETR), calculated as total book tax expense (current and deferred) divided by pre-tax income. Next, the Current Book Effective Tax Rate (CETR) calculated as current book tax expense divided by pre-tax income. In addition, the cash ETR is derived by dividing the actual tax paid (tax expense from the cash flow statement) by profit before tax. As a result, it calculates the real tax avoided per unit of pre-tax income. In addition, the cash flow ETR has introduced a recent measure of tax aggressiveness (Gebhart, 2017). It is calculated as cash tax paid divided by net cash flow from operating activities.

Furthermore, Henry and Sansing (H & S) developed a measure that captures tax avoidance practices by both profitable and unprofitable companies. It is calculated by following two steps: the first step is to calculate the gap between the cash tax paid and the pre-tax income multiplied by the statutory rate and thereafter, divided by the asset's market value. Companies that pay the tax authority exactly what is expected and have carried out no tax avoidance will have a nil value; a positive H & S value show companies that pay more and a negative H & S value for companies that pay less (Henry & Sansing, 2014; Aronmwan & Okaiwele, 2020).

2.2 Theoretical framework

Several theoretical framings had been adopted in understanding why companies engaged in tax aggressiveness. These are tax deterrence theory, political cost theory, agency theory and stakeholder theory. To this study, agency theory was deplored as the theoretical lens to explain the relationship between firms' characteristics and tax aggressiveness among firms in Nigeria.

2.2.1 Agency Theory

The agency cost theory was developed by Meckling and Jensen in 1976. The theory postulates that owners are the principals, while managers are the agents. The owners of a company will always want to maximize their wealth, and management will work to meet those demands. They are rewarded with significant incentives in order to meet the interests of shareholders. The owners' belief is shaped with the understanding that tax avoidance strategies will increase or maximize their wealth, and subsequently will supports management drive for this practice. This situation can lead to a conflict of interest on the part of the government and the corporation. These conflicts of interest may have an impact on matters connected to the company's performance, such as the company's tax payment policy. Here, agency conflict is related to tax aggressiveness in the form of tax minimization strategies. Company executives are typically endowed more with company-related knowledge than the government, allowing them to perform tax planning schemes. Tax dodging therefore becomes a strategy used by businesses to maximize their profits at the detriment of the state (Otusanya, Jia, & Lauwo, 2022).

The government, as the principal, requires companies to pay taxes in accordance with current tax laws and regulations, while the company, as the agent, is more concerned with optimizing profits

in order to reduce tax burdens through tax aggressiveness. To divert these monies, management would use tax avoidance measures, which would hide revenues from tax authorities, and the government lose money in the end. Desai & Dharmapala (2009) noted that if companies with effective corporate governance indulge in tax avoidance practices, these activities are likely to boost the firm's value, which will be reflected in increased wealth for shareholders, and vice versa. The executive character has a significant impact on the policies that are issued as well as the decisions that are made, including the decision to engage in aggressive tax avoidance. When a firm engages in tax avoidance or other tax minimisation strategies, it runs the danger of receiving a penalty that could result in a decrease in the company's worth and exposure to tax related risks.

The proponents believed that the principal should lavishly reward and compensate the agent, as well as offer incentives, in order to prevent or reduce agency costs (Meckling & Jensen, 1976). According to the agency theory, therefore, aggressive tax avoidance involves a conflict of interest between both parties and this impact negatively on government revenue and can facilitate various forms of managerial rent extraction.

2.3   Empirical review

Tax aggressiveness is often influenced by innumerable essential firm characteristics; one of the characteristics believed to influence tax aggressiveness of firms is operating cash flows. Wijaya & Hasbiy (2020) investigated the link between operating cash flows and tax avoidance in Indonesian manufacturing industry. Data were collected from 58 companies as a sample size for a four-year period and analysed via descriptive and regression techniques. The results showed that cash flows from operations influenced discretionary tax avoidance and concluded that companies kept their operating cash flow to conduct tax avoidance. Kurniawan and Nuryanah (2017) discovered no indication that tax avoidance as represented by the cash effective tax rate (ETR) had a substantial association with cash flow ratio.

Leverage as a firm's characteristics variable impacts on tax aggressiveness. Dewi and Yasa (2020) empirical evidence revealed that debt had negative effects on tax aggressiveness, represented by the current ETR. Also Ugbogbo et al. (2019) discovered a negative relationship between short-term debts to assets ratio and corporate tax aggressive avoidance, which was represented by the book ETR.

Firm size is also a characteristic expected to influence tax aggressiveness of firms. On the empirical fronts, in Ogbeide (2018) study, firm size exerted positive and significant influence on tax aggressiveness but Rania et al. (2018) revealed that size had a considerable negative effect on tax avoidance and that earnings management cannot moderate the relationship between size and tax avoidance. Prabowo (2020) findings revealed that the size of the company had no significant impact on effective tax rate in palm oil firms in Indonesia. In Pratama (2017) study, company size was found to exert significant impact on tax avoidance practices, as measured by GAAP

ETR. In contrast, Lanis & Richardson (2012) regression analysis revealed that firm size in Australia was not strongly associated with effective tax rates.

Capital intensity is another company characteristic that could influence tax aggressiveness, as firms that make significant investments in physical assets, for example, prefer to employ a higher depreciation expense to minimize their assessable income and hence pay less income tax, implying that capital intensity is linked to the decrease of tax liability. On the empirical fronts, Lanis and Richardson (2012) additional analyses found that capital intensity all have positive and substantial associations with tax aggressiveness. However, Dewi and Yasa (2020) discovered that the effect of capital intensity on tax aggressiveness was negative.

3. Methodology

Ex-post facto research design was employed in this study. This study adopted a secondary method of data collection. The population of this study consisted of eighty-eight (88) listed non-financial companies, drawn from seven sectors on the Nigerian Exchange Group Plc. as at December 2020. The sample size was determined using the purposive sampling technique and the sample size was based on companies with complete financial data for the period of 2013 to 2020 and companies that do not have negative profit before tax for the period of 2013 to 2020. A total number of thirty (30) companies were drawn as the sample size and data were gathered from the annual reports and financial statements of the sample. The study utilized both descriptive and inferential statistics to ascertain the nature of relationship that exists between the variables. Descriptive statistics was employed to generate the mean and standard deviations of the data collected. Thereafter, Karl Pearson Product Moment Correlation Coefficient-PPMCC and multiple Linear Regression (Ordinary Least Square-OLS) via STATA version 14 were employed to analyse the data gathered and test the hypotheses.

3.1   Model specification

To ascertain the effect of firms' characteristics on tax aggressiveness of listed companies in Nigeria, the study considered a multiple linear regression model. This equation is hereby formulated to test the hypothesis in order to get multiple regression results. The model is presented below in algebraic form as,

Tax Aggressiveness (TAG) = f (Firms Characteristics- FC)………………………… ….Equ. 1
Tax Aggressiveness is a function of Firms Characteristics- FC
$CETR = X0 + \beta_1 OCFR + \beta_{2t} DAR + \beta_{3t} FS + \beta_{4t} CAPINT + AQ + BOCO + FA + \varepsilon_t$.Eqn 2

Table 1. Variables measurement and nomenclature

S/N	Variable	Measurement	Source
1	Cash Effective Tax Rate (CETR)	Cash tax paid Pre-tax Income	(Aronmwan & Okaiwele, 2020)
2	Operating cash flows ratio (OCFR)	Cash flows from operations tax divided by total assets	(Wijaya & Hasbiy, 2020)

3	Debt to asset ratio (DAR)	Total debts divided by total assets	(Dewi &Yasa, 2020)
4	Firm size (FS)	The natural logarithm of total assets	(Prabowo, 2020)
5	Capital intensity (CAPINT)	Net property, plant and equipment divided by total assets.	(Dewi &Yasa, 2020)

Source: Literature Review   β   = Constant Ɛ   = Error term

Three control variables were employed in the study in order to control for other effect on tax aggressiveness. Audit Quality (AQ) measured as a ratio of one (1) if audited by the Big four firms, otherwise zero (0). Firm age (FA) is measured as difference between the year this study is conducted and the year the company was established. Finally, board composition measured the proportion of non-executive directors who are independent members on the board.

4. Results and Discussion
4.1   Descriptive statistics
The descriptive statistics of the dependent variable, cash effective tax rate (CETR) and the independent variables; operating cash flows ratio (OCFR), debts to assets ratio (DAR), firms' size (FS), and capital intensity (CAPINT) are reported in Table 2.

Table 2.   Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CETR	240	.2318333	.1978334	0	1.01
OCFR	240	.1726387	.1769671	-.1471577	1.299546
DAR	240	.5385284	.4124414	0	5.713515
FS	240	10.2882	.8134561	8.506598	12.32553
CAPINT	240	.3630348	.2167154	0	1.564811
AQ	240	.5625	.4971151	0	1
BOCO	240	.215576	.1643099	.06	.91
FA	240	40.35417	18.69631	5	74

Source: Researchers' Computation via STATA version 14
Note: OCFR; Operating Cash flows Ratio: DAR; Debts to Assets Ratio: FS; Firm Size: CAPINT; Capital Intensity: CETR; Cash Effective Tax Rate: AQ; Audit Quality: BOCO; Board Composition: FA; Firm Age.

From Table 2, CETR, the mean (standard deviation) is 0.231 (0.197) with a range of 0 – 1. OCFR has a mean (standard deviation) of 0.172 (0.176) with a range of -.147–1.29. Certain companies generated negative operating cash flows in a few years, even though the profit before tax is positive. DAR has an average (standard deviation) of 0.538 (0.412) with a range of 0 – 5.713; firm size has an average (standard deviation) of 10.28 (0.813) with a range of 8.5 – 12.32 and as observed, capital intensity has a mean (standard deviation) of 0.363 (0.216) with a range of 0 – 1.56.

For the control variables, audit quality has an average of 0.5625 with a range of 0-1 as expected; board composition has an average (standard deviation) score of 0.215 (0.164) with a range of .06 - .91 and finally, firm age has a mean (standard deviation) of 40 (18) with a range of 5-74. Generally, all of the variables in the table above have a fair range of variation, as well as a reasonable degree of consistency in the means, indicating normalcy of distributions.

Table 3: Diagnostic tests

	Serial Correlation	Heteroscedasticity	Jarque-Bera (Normality)	Ramsey Reset (Linearity)
Statistic	0.366599	0.127184	224.1625.	0.278972
Prob	0.6935	0.9725	0.009248	0.5979

The Breusch-Godfrey Serial Correlation LM Test was performed to determine if the independent variables are correlated with the error term. The probability value of the F-statistic revealed a value of 0.6935 which is greater than 0.05 confidence level. The null hypothesis, therefore, is accepted and thus, this study concluded that all independent variables are uncorrelated with the successive error terms in the model for firms characteristics and tax aggressiveness.

Heteroscedasticity test was carried out using Breusch-Pagan Test Statistics. Results showed that the model established in this study were not statistically significant as the obtained probability values of $0.9725 > 0.05$. Thus, the null hypothesis was accepted and concluded that the data is homoscedastic.

The Jarque-Bera test was also performed in this research to determine the normalcy of the models established. The results of this test indicated normalcy in the model with a probability value (Pval $= 0.00 < 0.05$); consequently, the alternative hypothesis of normalcy was accepted and the study thus concluded that the error term is normally distributed.

Finally, the linearity test was estimated using Ramsey Reset Test to ascertain whether or not the independent variable is a perfect linear function of other explanatory variable. The probability value of value $0.5979 > 0.05$. The null hypothesis was accepted, and the study concluded that no independent variable was a perfect linear function of other explanatory variables.

4.1.2 Correlational Analysis
Table 4: The Relationship among Operating Cash Flows Ratio, Debts to Assets Ratio, Firms' Size and Capital Intensity on Cash Effective Tax Rate.

	OCFR	DAR	FS	CAPINT
Cash Effective Tax Rate	1.000	1.000	1.000	1.000
Pearson Correlation	.2343	.015	.0392	-.0305
Sig. (2-tailed)	0.0003	0.812	0.545	0.637
N	240	240	240	240

Source: Researchers Computation via STATA version 14

The relationship between operating cash flows ratio and cash effective tax rate (CETR) is shown in the analysis above. The correlation coefficient (r) between operating cash flow ratio and cash effective tax rate is 0.2343. This implies that the degree of relationship between operating cash flow ratio is about 23.43% on cash effective tax rate. The correlation coefficient (r) of debts to assets ratio on cash effective tax rate is 0.0154, thus signifying a weak positive relationship, implying that the degree of association between debts to assets ratio is about 1.5% on cash effective tax rate. Firm size showed a correlation coefficient (r) of 0.0392, thus signifying a positive relationship between both variables. This implies that the degree of association between firms' size is about 3.9% on cash effective tax rate. Finally, the correlation coefficient (r) of capital intensity on cash effective tax rate is -0.0305. This implies that the degree of negative association between capital intensity is about 3.5% on cash effective tax rate; that is for every increase in capital intensity, cash effective tax rate decreases by about 3.5%.

Test of hypothesis
The hypothesis formulated for this study here tested establish if an empirical relationship exists between firms' characteristics and tax aggressiveness.

Ho1: The combined effect of operating cash flows ratio, debts to assets ratio, firms' size and capital intensity on cash effective tax rate is positive and statistically not significant.

Table 5 show the model summary of the results obtained from the analysis.

Table 5: The Model Summary of Operating Cash Flow Ratio (OCFR), Debts to Assets Ratio (DAR), Firms Size (FS), Capital Intensity (CAPINT) and Cash Effective Tax Rate (CETR).

Source	SS	df	MS	Number of obs	=	240
				$F_{(4, 235)}$	=	2.48
Model	16.2091519	7	2.3155931	Prob> F	=	0.0180
Residual	216.850863	232	0.9347019	R-squared	=	0.0695
				Adj R-squared	=	0.0415
Total	233.060015	239	0.9751465	Root MSE	=	.9668

Source: Researchers Computation via STATA version 14

The ANOVA table is used to test the overall significance of the model from the value of the t-statistics. The coefficient of determination (R^2) as 0.0695 which is 6.9% supported by a value of adjusted R^2 of 4.1%. Because multiple regression was used in the analysis of this study, the researchers used the Adj R^2. Thus, this shows that about 4.1% change in cash effective tax rate (CETR) can be explained by operating cash flow ratio (OCFR), debts to assets ratio (DAR), 'firms' size (FS) and capital intensity (CAPINT). The remaining 95.9% not explained by the independent variables may be explained by the stochastic term. Furthermore, The F Probability statistic likewise validated the model's significance. The result showed that the model is fit enough and therefore significantly predicts Cash Effective Tax Rate at 5% level of significance since the F-statistic is 2.48 with a corresponding Pval of 0.0180 (Pval = 0.01 < 0.05). Therefore, the null hypothesis was rejected, and the alternate hypothesis accepted, resulting in the

conclusion that the joint impact of operating cash flow ratio (OCFR), debts to assets ratio (DAR), firms' size (FS) and capital intensity (CAPINT) on Cash Effective Tax Rate (CETR) is statistically significant.

Table 6: *Pooled Effect Model on Effect of Operating Cash Flow Ratio, Debts to Assets Ratio, Firm Size and Capital Intensity on Tax Aggressiveness of Selected Nigerian Firms.*

CETR	Coef.	Std. Err.	t	P>|t|	Beta
OCFR	1.491204	.3772888	3.95	0.000	.2672358
DAR	-.0536875	.1599853	-0.34	0.737	-.0224234
FS	.0556876	.0882263	0.63	0.529	.0458731
CAPINT	-.3186831	.3113159	-1.02	0.307	-.0699381
AQ	-.1612027	.1491982	-1.08	0.281	-.0811511
BOCO	-.2495486	.3921117	-0.64	0.525	-.0415225
FA	.0011797	.0037182	0.32	0.751	.0223346
cons	-.2395317	.9104177	-0.26	0.793	

Source: Researchers computation using STATA version-14

Table 6 showed results of the co-efficient that establish the nature of the effect of operating cash flow ratio (OCFR), debts to assets ratio (DAR), firms' size (FS) and capital intensity (CAPINT) on tax aggressiveness. The beta values show the level of contribution of each of the independent variables (OCFR, DAR, FS, and CAPINT) on the dependent variable. 1% increase in operating cash flow ratio increases tax aggressiveness (TAG) by 0.14%, it shows that OCFR exerts a positive and significant impact on TAG. (β= .1491204, t = 0.000 < 0.05). An increase in DAR decreases TAG by 5.3%, implying a negative effect of DAR on TAG (β= -.0536875, t = 0.737 > 0.05), but the effect is not statistically significant. 1% increase in FS increases TAG by 5.5%, thus FS showed a positive impact on TAG (β = .0458731, t = 0.529 > 0.529), but statistically not significant. Also, 1% increase in CAPINT decreases TAG by 31.8%, denoting a negative effect of CAPINT on TAG (β = -.0699381, t = 0.307 > 0.05), although not statistically significant. The co-efficient of the model is 0.149OCFR, -0.053DAR, 0.055FS and -0.318CAPINT, the linear multiple regression model of the study is thus; CETR= -0.239+0.149OCFR-0.053DAR+0.055FS- 0.318CAPINT +ϵit. This implies that while operating cash flow ratio and firms' size have positive impact on cash effective tax rate, debts to assets ratio and capital intensity exert negative impact on cash effective tax rate.

For the control variables, 1% increase in audit quality decreases TAG by 16.1 %, signifying a negative effect of audit quality on TAG (β = -.0811511, t = 0.281 > 0.05). An increase in board composition decreases TAG by 24.9%, revealing that there is a negative effect of board composition on TAG (β = -.0415225, t = 0.525 > 0.05). As firm age increases by 1%, TAG increases by 0.1 %, implying a positive effect of firm age on TAG (β = .0223346, t = 0.793 > 0.05).

4.2   Discussion of Findings

The result from the study revealed that the combined effect of operating cash flow ratio, debts to assets ratio, firm size and capital intensity on cash effective tax rate is positive and statistically

significant. Individually, the effect of operating cash flows on tax aggressiveness was positively significant signifying that more profitable organizations are more prone to engage in aggressive tax practices than less profitable ones; debts to assets ratio showed a negative but not significant effect on tax aggressiveness, implying that the higher the debts to assets ratio, the lesser the chances of a firm to carry out tax aggressive practices; firm size had a positive and statistically not significant impact on tax aggressiveness, meaning that the size of a company could influence tax aggressive practices but such is statistically not significant and capital intensity exerted a negative insignificant influence on tax aggressiveness denoting that the higher the fixed assets intensity, the lesser the chances of companies to be tax aggressive. In line with previous research, (Wijaya & Hasbiy, 2020) that discovered that cash flows from operations influenced discretionary tax avoidance and those Indonesian companies kept their operating cash flow in order to avoid tax. (Dewi &Yasa, 2020) empirical evidence revealed that debt had negative effects on tax aggressiveness, represented by the current ETR. (Lanis & Richardson, 2012) also discovered positive effect of firm size on tax aggressiveness, although not significant. (Prabowo, 2020) also discovered that there existed no significant impact of firm size on GAAP ETR. Capital intensity had negative effect on tax aggressiveness in (Dewi &Yasa, 2020) study.

5. Summary and Conclusions

This study investigated the correlation between and impact of Firms characteristics on tax aggressiveness in Nigeria. To examine this, a sample of thirty (30) non-financial firms listed on Nigeria Exchange Group Plc. were selected using data extracted from their annual report from 2013 to 2020. To measure tax aggressiveness, the cash effective tax rate was employed in this study.

From the analyses conducted, only operating cash flow ratio indicated a positive and significant effect with cash effective tax rate. Operating cash flow shows a company's level of profitability from its operations. Therefore, in line with the agency theory, tax aggressive companies would be tempted to carry out activities that enables them pays the least amount of tax possible. It is concluded therefore that a key driver of tax aggressiveness is the cash generated from operations, otherwise known as the operating cash flows. Debts to assets ratio showed an inverse effect on tax aggressiveness. In contrast to other research that found a positive significant effect; this study employed total debt to total assets ratio and not debt to equity ratio or long-term debts to assets ratio. The size of a firm impact on tax aggressive practices showed a statistically not significant effect, therefore according to this study, large or small firms could carry out tax aggressive practice, contrary to the belief that large firms are more prone to tax aggressive actions than smaller firms. Prior research had found a significant link between capital intensity and tax aggressiveness, but this study found that an inverse effect between both variables in contrast to prior studies.

Based on conclusions reached by this study, we therefore recommend that the government should set up corporate tax avoidance monitoring systems to help minimize aggressive tax practices by firms and bring firms within the tax net. Companies should manage their tax

practices in such a way that it reduces the detrimental impact on the society and corporate risk involved in engaging in aggressive tax schemes. Quoted companies should maintain strong and rigorous internal control systems to mitigate losses resulting from a manager's proclivity to act selfishly in the pursuit of tax avoidance behavior or practice.

There are several limitations to this study. First, the sample consisted of publicly quoted non-financial Nigerian companies. Unlisted companies were excluded in the sample due to data inaccessibility. Second, because tax return data are reserved and inaccessible, the ETR measure was derived using data from the financial statements. (Plesko, 2003) as cited in (Lanis & Richardson, 2012) queried the precision of tax aggressiveness measures generated from the financial statements, so our results should be cautiously interpreted. Third, the result discovered for cash effective cash rate will likely yield different results if the denominator used was net cash flows from operating activities or also different results if other ETR based measures were employed as the dependent variable.

This study made some moderate contributions to the extant literature. First, the study established that operating cash flows ratio (measure of firm characteristics); significantly influence cash effective tax rate (measure of tax aggressiveness) by companies in Nigeria and that capital intensive firms are not prone to carrying out tax aggressive practice. Second, the study reaffirms that the agency theory captures tax aggressive practices by companies in Nigeria as a conflict of interest continually arise between companies who want to maximize profit and the government who wants to maximize taxes. And lastly, it expands the models employed by prior studies in examining the connection between Firms characteristics and tax aggressiveness in Nigeria by employing two new variables; operating cash flow ratio and debts to assets ratio were introduced as independent variables; while the cash effective tax rate was introduced as the measure of tax aggressiveness.

The study, therefore, suggests that future studies should incorporate both profit- and loss-making companies by using the Henry and Sansing's measure for tax aggressiveness. The firm characteristics could further be expanded to include other variables that may influence tax aggressive practices in Nigeria and beyond such as net operating loss, foreign and research and development. Inclusion of financial companies' data and the level of tax aggressiveness by listed companies in Nigeria during the Covid era require investigation as this will complement existing literature.

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