Determinants of Corporate Actual Cash Taxes Paid: A New Insight from Nigeria

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Abstract: This study examines the hypotheses that revenues, profitability, intangible assets, and percentage of foreign shareholdings, external auditors, tax haven status and firm size do not associate with corporate actual cash taxes paid. The main results of pooled OLS multivariate regression suggest that revenue, intangible assets, and percentage of foreign shareholdings are directly and significantly associated with corporate actual cash taxes paid. In particular, revenues, intangible assets, and percentage of foreign shareholdings are found to increase corporate actual cash taxes paid, thereby leading to conservative tax planning schemes that reduce tax avoidance. The result also suggests that Big-4 accountancy firms, tax haven status and firm size are negatively and significantly associated with corporate actual cash taxes paid. Consequently, it is recommended that the Federal Inland Revenue Service should monitor the revenue and intangible assets of companies through their annual fillings. Another recommendation is that relevant government agencies should encourage foreign equity participation in Nigerian companies. Finally, they should collaborate to provide policy changes that would increase the participation of Non-Big-4 accounting firms in auditing companies' financial statements in Nigeria.

Keywords: Actual cash taxes paid; Taxation; Tax avoidance; Tax planning

JEL Classifications: M41; H5; H26

1. Introduction

This study examines the determinants of corporate actual cash taxes paid. The purpose of this is to gauge tax planning activities of companies. We use statements of cash flows data. Foster and Ward (2007) and Dowds (1995) suggest that cash taxes paid may avail more useful information to financial statement users than the traditional, fully-allocated GAAP-based income tax expenses. Companies use GAAP-induced methods to avoid paying appropriate taxes. One of these methods is effective tax rate, which is measured by dividing total tax expense by (adjusted) profit before taxes). The other GAAP-induced method is total current tax expenses divided by worldwide profit before tax financial income (e.g., Lisowsky, 2010). The third GAAP-induced is by dividing firms' total current period tax expense by operating cash flows. However, there are non-GAAP-induced accrual based methods, which are based on actual cash taxes paid. One method is effective cash taxes paid, which is defined by Chen, Chen, Chen and Shevlin (2010), Lennox, Lisowsky and Pittman (2013) and Römgens and Steinweg (2016) as total actual cash taxes paid divided by total unadjusted profit before tax. Dyreng, Hanlon and Maydew (2008), Römgens and Steinweg (2016) define the other effective cash taxes paid as total

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actual cash taxes paid scaled by total adjusted profit before tax. Lennox *et al*. (2013) and Dowds (1995) are of the view that actual cash taxes paid provides a cleaner measure that converge both permanent and temporary differences. Actual cash taxes paid may not equalize with current tax expenses due to two main reasons which are related to timing differences and reconciliation between a company and tax authorities. According to one multinational company:

"*The main driver for the difference is the timing of when cash tax payments are made in respect of a financial year, with some being made in the year in question and some being made after the year end. As such, cash tax payments made in 2020 may relate in part to the 2019 current tax charge and in part to the 2020 current tax charge. Further payments in respect of the 2020 position may fall due in 2021. Another factor is that tax returns may subsequently be amended where open issues are closed with tax authorities, leading to additional payments being made or refunds being received in later years.*" (https:www.gsk.com.media).

This study should be of interest to Nigerian and global equity investors, particularly in Europe and U.S. who participates in the country's equity investment landscape. It will also be of interest to them because Nigerian quoted firms mainly originated from Europe and U.S. multinational corporations. Asien (2021) provides new and useful typologies with which to categorize companies operating in Nigeria. These are: 1) companies registered and operating only in Nigeria, 2) international companies, which are registered and domiciled in Nigeria, and which may have subsidiaries outside the country. Asien (2021) refers to these two types of companies as non-tax haven companies. The third category are foreign companies, which were originally incorporated and domiciled in a foreign tax haven jurisdiction, but which were registered and operating in Nigeria at the same time. The current study adopts these definitions in classifying tax haven (havens) companies and non-tax haven (non-havens) companies.

1.1. Problematizing the Study

It is of great concern that companies continue to use aggressive or conservative tax planning schemes to avoid paying appropriate amount of actual cash taxes. A review of the Nigerian literature in the area by Adekoya, Oyebamiji and Lawal (2020) did not show any prior researches that have attempted to provide a link between corporate actual taxes paid and our independent variables of interest in this study. Therefore, it will be interesting to investigate this matter by using revenues, intangible assets, foreign shareholdings, tax haven status, accountancy firms and firm size as potential determinants of actual cash taxes paid in Nigeria.

1.2. Background and Motivation of the Study

The bulk of research on corporate taxation neglects to address internal factors that affect actual cash taxes paid by companies. Drawing from the "mirror" analogy, the actual cash taxes corporate entities pay is exactly the same as those received by the government, assuming there are no leakages. The government wants to get as much tax revenues as is possible while companies want to pay as little tax as is possible. The game between the Federal Inland Revenue Service as government's appointed tax collector and the corporate tax payers is captured by Lord President Clyde in 1929 in a case involving *Ayrshire Pullman Motors Services and D M Ritchie v IRC* when his Lordship ruled that:

"No man in this country is under the smallest obligation, moral or otherwise, to arrange his legal relations to his business or to his property so as to enable the Inland Revenue to put the largest possible shovel into his stores. The Inland Revenue is not slow - and quite rightly - to take advantage, which is open to it under the taxing Statutes for the purpose of depleting the taxpayer's pocket. The taxpayer is in the like manner, entitled to be astute to prevent, so far as he honestly can, the depletion of his means by the Revenue."

In 1936, Lord Tomlin made a similar but terse ruling in support of companies' tax planning when his Lordship also ruled that "*every man is entitled if he can to order his affairs so that the tax attaching under the appropriate Act is less than it otherwise would be.*"(ICR v Duke of Westminster (1936) AC1 (HL)).

Therefore, companies try to avoid paying high taxes through aggressive tax planning schemes, which is legitimate in so far as it is within the ambit of tax laws. Most companies engage in diligent tax planning, legitimately or otherwise which makes them not to pay the appropriate amount of cash taxes in non-tax havens like Nigeria. The taxes not paid often find their way to tax haven countries through orchestrated tax planning devices. Hence international companies contribute to the base erosion of non-tax haven countries like Nigeria.

The study is somehow aligned with prior studies such as Lennox *et al*. (2013), Chen *et al*. (2010), Foster and Ward (2007), Dyreng *et al*. (2008), Römgens and Steinweg (2016), and Mocanu, Constantin, and Răileanu (2021) who examined the determinants of effective actual cash taxes paid. Most the prior researches such as Lennox *et al*. (2013) and Dyreng *et al*. (2008) used U.S. data. Mocanu *et al*. (2021), Garcia-Bernardo, Janský and Tørsløv (2019) and Römgens and Steinweg (2016) used European data for their studies. Our study is somewhat related to Nigerian empirical studies like Tijjani and Zachariah (2020) who studied the association between GAAP effective corporate tax rates (GAAP *ETR*) and managerial ownership, institutional ownership, foreign ownership, return on assets, and leverage; and Adams and Balogun (2020) who used firm size, firm leverage, return on assets, and inventory intensity as determinants of GAAP *ETR*.

Our study appears to be the first (Nigerian) study to use firm-level data to examine the determinants of corporate actual cash taxes paid. It also appears to be the first Nigerian research to introduce tax haven status as a variable to be associated with corporate actual cash taxes paid at the company level. The study also appears to be the first to use statements of cash flows information to provide insight on the relationship between tax planning and the variables of the study. These are potential contributions to the literature.

In brief, the major findings from the main analysis of study suggest that revenue, intangible assets, and percentage of foreign shareholdings (Big-4 accountancy firms, tax haven status and firm size) have positive (negative) significant associations with the amount of actual cash taxes paid. The finding on pre-tax profits is mixed such that it is 50-50 to reach a definitive conclusion on the relationship between firm performance and actual cash taxes paid. Findings from additional analysis suggest that revenue and foreign shareholdings are robust to alternative model specifications, by using the natural logarithm of the amount actual cash taxes paid.

The remainder of the paper is structured as follows. The next section is a review of related literature. Section 3 addresses the methodology. Section 4 presents the empirical results and discussions, while section 5 concludes the paper.

2. Review of Related Literature

2.1. Revenue (REV)

Research and anecdotal evidences attest that many companies manipulate their revenues (see Asien, 2012 and Stolowy & Breton, 2004), or engage in aggressive reporting (e.g., Ball, 2009; Adekoya et al., 2020) in order to minimize tax expenses, for example. In the context of international tax planning and profit shifting, Bernard and Weiner (1990) opined that firms can be motivated to report higher profits in a host country so that the greater part of their revenues are taxed at low rates elsewhere, possibly in a tax-haven jurisdiction. As most companies are unwilling to pay high corporate tax they would want to manipulate their revenue figures. It is hypothesized that:

H_o1: Revenues do not significantly associate with actual cash taxes paid.

2.2. Profitability (PBT)

Mocanu et al. (2021) and Eichfelder and Hechtner (2018) are of the view that profitability is associated with tax avoidance. In particular, Mocanu et al. (2021), who examined the determinants of tax avoidance by Romania headquartered companies from 2013-2017 argued that high taxable profit is a consequence of high performance which yields high tax on profit. Salaudeen and Ejeh (2018) who examined the effect of ownership structure on corporate tax aggressive activities of listed firms in Nigeria and who used profitability as a control variable found evidence that profitability is positively related to tax aggressiveness and significantly so. It is hypothesized that:

H_o2: Profitability does not associate with actual cash taxes paid.

2.3. Intangible Assets (INTAN)

Dyreng et al. (2008) and Grubert and Slemrod (1998) asserted that companies that do not have physical assets can more easily shift income to a tax haven jurisdiction without the burdens that accompany firms with tangible fixed assets. The authors used the average level of intangible assets to proxy firm's ability to easily shift income, and they expect that the average level of intangibles will inversely relate to cash taxes paid. It is hypothesized that:

H_o3: intangible assets are not significantly associated with actual cash taxes paid.

2.4. Percentage of Foreign Shareholders (FSH)

Using GAAP induced methods, Tijjani and Zachariah (2020) tested the hypothesis that there is a negative association between foreign ownership and tax planning of non-financial companies in Nigeria. The authors found that foreign shareholdings are negative and insignificantly associated with current tax expenses, or tax planning. Their result contradicted prior studies' findings. In explaining the unexpected mixed result, Tijjani and Zachariah (2020, p. 105) argued that the proportion of shares

held by foreign investors in their sampled companies is relatively few. They, thus, concluded that the number of shares does not matter; hence the small proportion of shares held by investors increases tax planning. However, Asien (2021) using data from non-financial quoted companies in Nigeria between 2012 and 2019, found a negative and significant association between percentage foreign shareholdings and probability of tax havens location. We hypothesize that:

H_o4: Foreign shareholdings are not significantly associated with actual cash taxes paid.

2.5. Accountancy Firms (AUDIT)

Sikka and Hampton (2005) opined that the sale of tax avoidance schemes by accountancy firms has existed for a very long time, except that the interesting aspect of it is the variety of schemes and tactics used by accountancy firms. In UK, Sikka and Hampton (2005) interacted with big four accountancy firms who revealed that accountancy firms sell tax advice/services to their clients such that the listed companies in UK avoided paying appropriate taxes. Sikka and Hampton (2005) discovered that big four accountancy firms simultaneously advice the UK government on tax matters as well. In effect, according to the authors, Big-4 accounting firms use their insider knowledge to advice their clients on how to avoid paying appropriate taxes. Relatedly, Eichfelder and Hechtner (2018) showed that profitable companies can engage good accounting firms to assist them to minimize their tax obligations. We hypothesize that:

H_o5: Big 4 accountancy firms do not significantly associate with actual cash taxes paid,

2.6. Tax Haven Companies (HAVEN)

Prior research such as Dyreng *et al.* (2008) and Slemrod and Wilson (2009) argued that locating in tax havens enhances companies' ability to avoid actual cash tax payments. In particular, Slemrod and Wilson (2009) believed that the proclivity to involve in tax haven operations is due to capital income tax rates. Hines (2010) is of the view that the low tax rates available in tax havens can encourage tax avoidance by multinational companies so that they structure their transactions to reduce taxable incomes in the highest tax jurisdictions. Hines (2010) argued that companies located in tax havens can avoid paying taxes by shifting them elsewhere. In a similar vein, Dyreng *et al*. (2008) expected firms located in tax havens will be more proficient at sheltering income from taxes. The authors, therefore, expect a negative coefficient on *HAVEN*. We hypothesize that:

$H_0$6: Tax haven status does not significantly associate with actual cash taxes paid,

2.7. Firm Size (SIZE)

Large companies have the clout to influence things in their favor (Zimmerman, 1983; Watts & Zimmerman, 1990). Large companies are able to do this as a result of the huge resources and wherewithal available at their disposal. On the other hand, prior research has found that large U.S. firms have significantly higher worldwide effective corporate tax rates than other firms (e.g., Dyreng *et al*., 2008; and Zimmerman, 1983). Chen *et al*. (2010) argued that firm size may inversely relate to firms' tax burden.

H_o7: Firm size does not significantly associate with actual cash taxes paid.

The literatures reviewed in this section suggest that there are no prior researches that investigated our variables of interest or used the Nigerian research setting to do so. The study is attempting to close this gap.

3. Methodology

3.1. Population, Sample and Data Sources

A research sample of 55 companies was drawn from the population of 263 non-financial services companies quoted on the Nigeria Exchange Group (www.ngxgroup.com) as at the end of 2019. Convenience sampling selection method was adopted with the following stringent conditions. Firstly, we required that the companies must have functional websites from where their annual reports and audited financial statements must be available and downloadable. Secondly, where the first source is not feasible, we required that the documents must be available and downloadable from a third party's website. We found www.africanfinancials.com to be of immense help as we were able to source our data from there. The study covers eight years, from 2012-2019. The valid firm-year observations used in the analysis depended on data availability on each variable – see Table 2 in the Methodology section. At the time of data collection, there were no organized databases in Nigeria from where to collect the research data. Therefore, we embarked on hand-collection of data from audited e-annual reports and accounts. We could not control for the apparent self-selection bias in our use of purposive sampling method, please see limitations of the study at the end of this paper.

3.2. Empirical Models

For the main analysis, the empirical model specifications are as follows.

$$CTP_{i,t} = \alpha_{i,t} + \beta_1 REV_{i,t} + \beta_2 PBT_{i,t} + \beta_3 INTAN_{i,t} + B_4 FSH_{i,t} + B_5 AUDIT_{i,t} + \beta_6 HAVEN_{i,t} + \beta_7 SIZE_{i,t} + \mathcal{E}_{i,t} \quad \ldots 1$$

$$CTP_{i,t} = \alpha_{i,t} + \beta_1 REV_{i,t} + \beta_2 PBT_{i,t} + \beta_3 INTAN_{i,t} + B_4 FSH_{i,t} + B_5 AUDIT_{i,t} + \mathcal{E}_{i,t} \quad \ldots 2$$

$$CTP_{i,t} = \alpha_{i,t} + \beta_1 REV_{i,t} + \beta_2 PBT_{i,t} + \beta_3 INTAN_{i,t} + B_4 FSH_{i,t} + B_5 HAVEN_{i,t} + \mathcal{E}_{i,t} \quad \ldots 3$$

$$CTP_{i,t} = \alpha_{i,t} + \beta_1 REV_{i,t} + \beta_2 PBT_{i,t} + \beta_3 INTAN_{i,t} + B_4 FSH_{i,t} + \beta_5 SIZE_{i,t} + \mathcal{E}_{i,t} \quad \ldots 4$$

Where: *CTP* is amount of actual cash taxes paid. The use of *CTP* as dependent variable follows Foster and Ward (2007) and Dowds (1995). The independent variables are *REV*, *PBT*, *INTAN*, *FSH*. *REV* is revenue. *PBT* is pretax profit. *INTAN* is intangible assets. *FSH* is percentage of foreign shareholdings. Tax haven status (*HAVEN)* is one of the two control variables. It is a dummy variable that takes the value 0 (1) for tax haven (non-tax haven) companies. That is to say, *HAVEN* discriminates between companies located in tax havens and those that are not. The other control variable is total assets (*SIZE*), which used as a proxy for firm size. $\mathcal{E}$ is residual error term, i.i.d. and assumed to be normally distributed with mean zero and constant variance. The italicized subscripts *i* are company *i*'s observation while *t* represents the companies' matched year observation, *t*. We drop subscript *i* and *t* in our subsequent analyses. We shall invoke equations 1-4 for the additional analysis in the later part of the study. The results from the main tests will be used to draw inferences of the study. All statistical

significance tests are performed at the conventional of .01 and .05 levels (2-tailed). The variables are described further in Table 1. SPSS is used to analyze the data.

Table 1.	**Description of variables**	Author(s) who have used the variables
Dependent variable		
CTP	Amount of actual cash taxes paid for eight years. (*Used for the main analysis of the study*).	Foster and Ward (2007) and Dowds (1995)
Ln(CTP)	The natural logarithm of *CTP* for eight years. (*Used for additional analysis of the study*).	–
Independent variables		
REV	Operating revenue.	Ghodbane *et al*. (2021)
PBT	Measures profit after deducting all expenses but tax.	OECD (2020), Tijjani and Zachariah (2020)
INTAN	Intangible assets.	Janský and Palanský (2019), Dyreng *et al*. (2008), Ghodbane *et al*. (2021), and Elemes, Blaylock and Spence (2021)
FSH	Percentage of foreign shareholdings.	Asien (2020), Tijjani and Zachariah (2020), Annuar, Salihu and Sheikh Obid (2014)
AUDIT	Accountancy firms or external auditors.	Eichfelder and Hechtner (2018), Asien (2020, 2021), Jones, Temouria and Cobham (2018)
Control variables		
HAVEN	A dummy variable indicating whether a company has headquarters or subsidiaries operating in a tax haven (0), and (1) otherwise.	Dyreng *et al*. (2008), Asien (2021)
SIZE	Total asset.	Adams and Balogun (2020), Asien (2020), Dyreng *et al*. (2008)

***Source**: Author's compilation*

4. Empirical Results and Discussions

4.1. Descriptive Statistics

The descriptive statistics are reported in Table 2. Average *CTP* is about ₦2274014, with maximum of about ₦90177057. Some of the companies did not pay actual cash taxes, nor had *INTAN* and *FSH*. Average *REV* is about ₦85013596.09, the minimum (maximum) is about ₦86112 (₦1169734682). Average *PBT* is about ₦10887643, with maximum of about ₦300806000. Some of the companies made losses before tax of about ₦88725526. Average (maximum) *INTAN* is about ₦8928315.4 (₦432321760). Average *FSH* is about 34.23%, with maximum of about 88%.

Some companies did not have foreign shareholdings. Mean *SIZE* is about ₦118522785, with minimum (maximum) of about ₦137320 (₦1741351000). *HAVEN* is a dummy variable taking the value "0" for companies with locations in a tax haven, and "1" otherwise. The mean *HAVEN* is .26, which is closer to 0 than to 1, suggesting that tax haven is the mean. There were 8 missing firm-year observations for *CTP*. *REV, PBT, INTAN*, and *SIZE* each have 5 missing firm-year observations while

FSH has 15. Two missing observations are recorded for *AUDIT*. The mean *AUDIT* is about .71, closer to 1, the code for Big-4 accounting firms. The tax haven statuses of all the companies are known to be 440. Other unique features of *AUDIT* and *HAVEN* are shown in Table 3, A and B, respectively.

Table 2. Descriptive statistics

	# of firm-year observations				
	Valid	Missing	Mean	Minimum	Maximum
CTP	432	8	2274014.33	0	90177057
Ln(CTP)	432	8	11.3493	.00	18.32
REV	435	5	85013596.09	86112	1169734682
PBT	435	5	10887642.85	-88725526	300806000
INTAN	435	5	8928315.354	.00	432321760
FSH	425	15	34.2251	.00	87.95
SIZE	435	5	118522785.41	137320	1741351000
AUDIT	438	2	.71	0	2
HAVEN	440	0	.26	0	1

Author's compilation

Table 3. A. *AUDIT*

		# of observations	Percent	Cum. Percent
Valid	NON–BIG 4 (0)	147	33.4	33.6
	BIG 4 (1)	273	62.0	95.9
	Joint Auditors (2)	18	4.1	100.0
	Total	438	99.5	
Missing	System	2	.5	
Total		440	100.0	

Table 3. B. *HAVEN*

		# of observations	Percent	Cum. Percent
Valid	HAVEN (0)	324	73.6	73.6
	Non-Haven (1)	116	26.4	100.0
	Total	440	100.0	

***Source**: Author's compilation*

4.2. Pearson Bivariate Correlation Analysis

Table 4 presents the Spearman bivariate correlation coefficients. In Tables 4 and 5, all significant correlations are bracketed and italicized. Meanwhile, all the correlations are direct.

Table 4. *Pearson bivariate correlation*

	CTP	*Ln(CTP)*	*REV*	*PBT*	*INTAN*	*FSH*	*AUDIT*	*HAVEN*	*SIZE*
CTP	1	–							
Ln(CTP)	–	1							
REV	.689**	.470**	1						
PBT	.462**	.283**	.736**	1					
INTAN	.497**	.262**	.491**	.113*	1				
FSH	.217**	.233**	.194**	.019	.056	1			
AUDIT	.110*	.197**	.276**	.276**	.079	.191**	1		
HAVEN	.071	.099*	.133**	.134**	.205**	.263**	.182**	1	
SIZE	.529**	.383**	.865**	.738**	.533**	.054	.295**	.188**	1

**. *Correlation is significant at the 0.01 level (2-tailed).*
*. *Correlation is significant at the 0.05 level (2-tailed).*

Source: Author's compilation

The independent variables have positive correlations with *CTP* and *Ln(CTP)*. With the exception of *HAVEN*, the correlation between *CTP* and each of the independent variable is direct and ranges from

small to high values, and are significant at conventional levels. Specifically, *CTP* has a high correlation with *REV* (.689) and *SIZE* (.529), is moderately correlated with *PBT* (.462), and with *INTAN* (.497). There is a small correlation between *CTP* and *FSH* (.217) as well as with *AUDIT* (.110).

The bivariate corrections between *Ln(CTP)* and the independent variables are analogous in sign to those of *CTP*. In terms of correlation coefficients for *Ln(CTP)*, *FSH*, *AUDIT* and *HAVEN* have increased while the correlation coefficients of the remaining independent variables have reduced: for example, the following correlation coefficients are between *Ln(CTP)* and *REV* (.470), *PBT* (.283), *INTAN* (.262), and *SIZE* (.383). Meanwhile *HAVEN* which was not significant with *CTP* is now significant at the .05 level, and that is the only exception between *CTP* and *Ln(CTP)*.

Taken together, the positive correlation are *prima facie* indications that *REV*, *PBT*, *INTAN*, *FSH* and *SIZE* directly and significantly associate with *CTP* and *Ln(CTP)*, so that increases in these variables increase *CTP* and *Ln(CTP)* as well. The inter-correlations amongst the independent variables are positive and significant at conventional levels, except for the pairs of *INTAN* and *FSH*, *INTAN* and *AUDIT*, *PBT* and *FSH*, and *FSH* and *SIZE*. The highest inter-correlation is between *REV* and *SIZE* (.865). There is also a strong correlation (.736) between *REV* and *PBT*, between *PBT* and *SIZE* (.738), and between *SIZE* and *INTAN* (.533). There is a moderate significant correlation (.491) between *INTAN* and *REV*. There are small significant corrections among *INTAN* and *PBT* (.113), *FSH* and *REV* (.194), *AUDIT* and *REV* and *PBT* (.276). *HAVEN* has small correlations with *REV* (.133), *PBT* (.134), *INTAN* (.205), *FSH* (.263), and *AUDIT* (.182). The positive correlations among the independent variables suggest that the variables move in the same direction.

Next, we run partial correction by controlling for *SIZE* and *HAVEN*. The results are presented in Table 5.

Table 5. Partial correlation (controlling for *HAVEN* and *SIZE*)

	REV	*PBT*	*INTAN*	*FSH*	*AUDIT*
REV	1				
PBT	.289**	1			
INTAN	.077	-.494**	1		
FSH	.319**	-.030	-.002	1	
AUDIT	.054	.093	-.115*	.158**	1

**. *Correlation is significant at the 0.01 level (2-tailed).*
*. *Correlation is significant at the 0.05 level (2-tailed).*

Source: Author's compilation

The partial correlations continue to be positive, except for the pairs of *PBT/INTAN*, *PBT/FSH*, *INTAN/FSH*, and *INTAN/AUDIT*, whose coefficients have become negative, suggesting that the pairs have now become inversely correlated. The partial correlations between *REV* and *PBT*, *REV* and *FSH*, and *PBT* and *INTAN* continue to be significant at our desired levels of test. The correlation between *INTAN* and *AUDIT* is now significant. However, the correlations between *REV* and *INTAN* and *REV* and *AUDIT* as well as between *PBT* and *FSH* are no longer significant. *PBT*/*AUDIT* and *INTAN*/*FSH* remain the same as in the bivariate correlations.

4.3. Multicollinearity Check

We checked for multicollinearity among the independent variables before proceeding to run the pooled OLS multivariate regressions. The highest correlation among the independent variables is .865

(*REV* and *SIZE*). We also check for multicollinearity through variable inflation factors (VIFs) of the independent variables. The (untabulated) VIFs are within theoretically acceptable limits of 10 (see Hair, Black, Babin, & Anderson, 2009). We found the highest VIF to be 6 less than 6. These checks suggest that there are no multicollinearity problems among the independent variables of the study.

4.3.1. Multivariate Regressions Results

The pooled OLS multivariate regressions results are presented in Table 6, where the Sig. ρ-values are bolded and italicized. In Table 6, Model 1 is the baseline model incorporating all the research variables, independents and controls. Model 2 excludes the two control variables at the same time. Model 3 excludes only *SIZE* while including *HAVEN*. Model 4 excludes only *HAVEN*. Table 6 show that *REV*, *INTAN*, and *FSH* have positive and statistically significant association with *CTP* on all the four models. This suggests that *REV*, *INTAN*, and *FSH* each increases actual cash taxes paid by the companies as a result of conservative tax panning schemes that lead to reduced tax avoidance. *PBT* is positively associated with *CTP* throughout the models, however, it is significant (insignificant) in Models 1 and 4 (Models 2 and 3). *AUDIT*, *HAVEN* and *SIZE* are negative in their association with *CTP*. This is an indication that *AUDIT*, *HAVEN* and *SIZE* each reduces actual cash taxes paid consequent upon aggressive tax planning schemes that lead to increased tax avoidance.

Furthermore, the signed results on *REV*, *PBT*, *INTAN*, *FSH* and *AUDIT* are consistent across the four models. With respect to *CTP*, for example, the positive (negative) sign on *REV*, *PBT*, *INTAN*, and *FSH* (*AUDIT*, *HAVEN* and *SIZE*) are stable across all the models.

In the different models, the t-statistic is as follows. *REV* (t = 9.52, 7.93, 7.45 and 10.1 in Mode1s 1-4, respectively). The beta coefficients are, respectively, .72, .52, .50 and .75 in model 1, Model 2, Model 3 and Model 4. Holding other factors constant, in economic terms, the result suggests that an increase in *REV* by ₦1 will lead to an increase in *CTP* by about ₦0.72, ₦0.52, ₦0.50, and ₦0.75 in Models 1, 2, 3, and 4, respectively. In the baseline model and in model 4, *PBT* (t = 3.93 and 3.68, respectively). The beta coefficients are .24 and .22. All things equal, in economic terms, the result suggests that an increase in *PBT* by ₦1 will lead to an increase in *CTP* by about ₦0.24 (in Model 1) and ₦0.22 (in Model 4). Meanwhile, *PBT* is significantly (not significantly) associated with *CTP* Models 1 and 4 (Models 2 and 3). In Models 1 and 4, the test value on *PBT* is 3.93 and 3.68, respectively; and the beta coefficient is .239 (in Model 1) and .223 (in Model 4). In economic terms, this result suggests that an increase in *PBT* by ₦1 leads to *CTP* increasing by about ₦24, according to the baseline model. *INTAN* (t = 7.79, 5.38, 5.85 and 7.52 in Mode1s 1-4, respectively).

Respectively, the beta coefficients of *INTAN* are .36, .23, .26 and .35 in the baseline model and in models 2-4. In economic terms, a ₦1 addition to *INTAN* increases *CTP* by about ₦36, ₦23, ₦26, and ₦35 in Models 1, 2, 3, and 4, respectively. In economic terms, this result suggests that an increase in *INTAN* by ₦1 leads to *CTP* increasing by about ₦36, going by the result of the baseline model. The result on *FSH* is indicative that foreign shareholdings are positively and significantly associated with *CTP*, (t = 2.96, 3.34, 3.91 and 2.48 in Mode1s 1-4, respectively). The beta coefficient of FSH is, respectively, .108, .12, .15, and .087 in models 1-4. In economic terms, this suggests that a 1% addition to *FSH* is likely to increase *CTP* by about ₦10.8, ₦12, ₦15, and ₦8.7 in Models 1-4, in that order. This suggests that *FSH* increases actual cash taxes paid, *CTP*. In other words, foreign shareholdings hinder tax avoidance schemes. This test result confounds the null hypothesis on H_o4, leading to the acceptance of the alternative hypothesis on H_o4 that the percentage of foreign shareholdings is associated with actual cash taxes paid.

AUDIT is weakly, negatively and significantly associated with *CTP* in all the models, *t* = -1.87, -2.74, -2.51 and -2.03 in Models 1-4, respectively. *AUDIT* is not significant in the baseline model; however, it is significant if it was tested at a liberal .10. The beta coefficients of *AUDIT* are very small (10% is the highest in all the models). In economic terms, the result is indicative that engaging an additional Big-4 accountancy firm may lead to a reduction in *CTP* by about ₦10, ₦9 and ₦7 in Models 2-4, respectively. Given that the test on *AUDIT* is significant in 3 out of the 4 Models, and that the Big-4 accountancy firms are in the majority (62%, see Table 3.A), we can infer that Big-4 accountancy firms significantly reduce actual cash taxes paid. In other words, engaging Big-4 accountancy firms is likely to help in aggressive tax planning schemes; howbeit, the economic impact appears to be negligible. However, we accept the alternative hypothesis 5 (H_o5) that Big-4 accountancy firms are associated with reducing actual cash taxes paid. Therefore, we reject the null hypothesis that Big-4 accountancy firms are not associated with actual cash taxes paid. The control variable (*HAVEN*) is negative and statistically significant (*t* = -1.99 and -2.44, in Models 1 and 3). This implies that moving from one tax jurisdiction to the other is likely to decrease *CTP* by about 7%, and 9%, respectively. The economic impact of this result is that *CTP* is likely to decrease by about ₦7, and ₦9, in the baseline model and in Model 3, respectively. Therefore, we accept the alternative hypothesis 6 (H_o6) that tax haven jurisdictions are associated with actual cash taxes paid.

Table 6. Multivariate Analysis of Determinants of Actual Cash Taxes Paid

		Model 1		**Model 2**		**Model 3**		**Model 4**	
		β	*ρ*	β	*p*	β	*p*	β	*p*
(*α*)	*CTP*	-356753	.496	-691932.22	.203	-570778.8	.293	-444443.34	.397
	T-value	(-.681)		(-1.275)		(-1.053)		(-.848)	
Independent Variables									
REV	*CTP*	.716	***.000*** **	.523	***.000*** **	.495	***.000*** **	.745	***.000*** **
	T-value	*(9.52)*		*(7.93)*		*(7.45)*		*(10.1)*	
PBT	*CTP*	.239	***.000*** **	.076	.184	.103	.075	.223	***.000*** **
	T-value	*(3.93)*		*(1.33)*		*(1.78)*		*(3.68)*	
INTAN	*CTP*	.363	***.000*** **	.233	***.000*** **	.260	***.000*** **	.345	***.000*** **
	T-value	*(7.79)*		*(5.38)*		*(5.85)*		*(7.52)*	
FSH	*CTP*	.108	***.003*** **	.120	***.001*** **	.146	***.000*** **	.087	***.014*** *
	T-value	*(2.96)*		*(3.34)*		*(3.91)*		*(2.48)*	
AUDIT	*CTP*	-.066	.062	-.10	***.006*** **	-.09	***.012*** *	-.07	***.043*** *
	T-value	*(-1.87)*		*(-2.74)*		*(-2.51)*		*(-2.03)*	
Control Variables									
HAVEN	*CTP*	-.070	***.048*** *			-.09	***.015*** *		
	T-value	*(-1.99)*				*(-2.44)*			
SIZE	*CTP*	-.433	***.000*** **					-.45	***.000*** **
	T-value	*(-5.63)*						*(-5.82)*	
R^2		.565		.525		.532		.561	
Adj. R^2		.558		.519		.525		.555	
F–statistic		76.4	***.000***	91.4	***.000***	78.04	***.000***	87.9	***.000***
Durbin-Watson		.783		.631		.640		.779	

Source: Author's compilation

Finally, *SIZE* is negative and statistically significant, t = -5.63 and -5.82, in the baseline model and in Model 4. This tends to suggest that ₦1 change in *SIZE* can lead to a decrease in *CTP* by about 43%, and 45%, respectively. The economic implication of this is that *CTP* will decrease by about ₦43, and ₦45 in Models 1 and 4, respectively. Thus, we accept the alternative to hypothesis 7 (H_o7) that firm size is associated with actual cash taxes paid. The results on the control variables imply that they

negatively associate with *CTP*, which can lead to tax aggressive planning schemes or simply tax avoidance. Therefore, it is safe to infer that tax haven jurisdiction and firm size significantly minimize actual cash taxes paid. To sum up, therefore, we accept the alternative hypotheses that revenue, intangible assets, and percentage of foreign shareholdings (Big-4 accountancy firms) are positively (negatively) significantly (insignificantly) associated with *CTP* while our control variables are negatively associated with *CTP*.

The explanatory power of the model shows that the independent variables explain up to 56% of the variability in actual cash taxes paid by the quoted companies in Nigeria between 2012 and 2019. About 44% of the remaining variability in *CTP* is attributed to other factors not considered in our study. This main test result forms the basis of the analysis and conclusion.

4.3.2. Additional Analysis

We test the robustness of the independent variables to alternative model specification by transforming actual cash taxes paid, *Ln(CTP)*, into natural logarithms and invoke equations 1-4. The descriptive statistics of *Ln(TCP)* is contained in row 2 of Table 2 above. The Pearson bivariate correlations are as contained in column 2 of Table 4. The signed relationships are as contained in that table; the interpretations monotonically follow the same patterns as those accompanying Table 4.

4.3.2.1. Multivariate Regressions Results

The result of the test is contained in Table 7.

Table 7. Multivariate Analysis of Determinants of Actual Cash Taxes Paid (2012-2019)

		Model 1		**Model 2**		**Model 3**		**Model 4**	
		β	*ρ*	β	*p*	β	*p*	β	*p*
(*Constant*)	*Ln(CTP)*	9.541	***.000***	9.529	***.000***	9.537	***.000***	9.534	***.000***
	T-value	(30.804)		(31.040)		(30.906)		(30.9)	
Independent Variables									
REV	*Ln(CTP)*	.490	***.000*** **	.485	***.000*** **	.481	***.000*** **	.495	***.000*** **
	T-value	*(5.02)*		*(5.92)*		*(5.78)*		*(5.17)*	
PBT	*Ln(CTP)*	-.091	.249	-.10	.156	-.10	.182	-.09	.229
	T-value	*(-1.15)*		*(-1.4)*		*(-1.34)*		*(-1.20)*	
INTAN	*Ln(CTP)*	.029	.628	*.021*	.696	*.025*	.653	.026	.658
	T-value	*(.486)*		*(.391)*		*(.450)*		*(.442)*	
FSH	*Ln(CTP)*	.148	***.002*** **	.146	***.001*** **	.150	***.001*** **	.145	***.002*** **
	T-value	*(3.12)*		*(3.26)*		*(3.21)*		*(3.18)*	
AUDIT	*Ln(CTP)*	.083	.067	.081	.071	.082	.068	.082	.070
	T-value	*(1.83)*		*(1.81)*		*(1.83)*		*(1.82)*	
Control Variables									
HAVEN	*Ln(CTP)*	-.012	.791			-.01	.776		
	T-value	*(-.266)*				*(-.284)*			
SIZE	*Ln(CTP)*	-.018	.855					-.02	.835
	T-value	*(-.183)*						*(-.209)*	
R^2		.261		.261		.261		.261	
Adj. R^2		.249		.252		.250		.250	
F–statistic		20.9	***.000***	29.4	***.000***	29.36	***.000***	24.4	***.000***
Durbin-Watson		1.15		1.15		1.152		1.15	

Source: Author's compilation

In all the models, *REV* remains positive and significant as in the main analysis. In economic terms, this result suggests that ₦1 increase in *REV* is likely increase *Ln(CTP)* by about ₦49 (in Models 1 and 2), ₦48 and ₦50, in Models 3 and 4, respectively. Therefore, *REV* is robust or insensitive to this test. *PBT* is sensitive as it has become negative and statistically insignificant in all the models. *INTAN* is sensitive by becoming insignificant in all the models. *FSH* is robust or insensitive to this test as the signed result and statistical significance remain unchanged across all the models. The results on *REV* and *FSH* strengthen the inferences reached in the main analysis by accepting the alternative hypotheses that revenue and the percentage of foreign shareholdings are significantly associated with actual cash taxes paid. In addition, *REV* and *FSH* are positive in associating with *Ln(CTP)*, meaning that *REV* and *FSH* tend to increase *Ln(CTP)* by reducing tax planning activities and thereby reduce tax avoidance. *AUDIT* has a reversed sign from negative to positive, and is now insignificant across the four models. Therefore, the results on all but *REV* and *FSH* are sensitive to the test using *Ln(CTP)*. *HAVEN* and *SIZE* are no longer significant. The variables explain up to 26% of the variation in *Ln(CTP)*.

The explanatory power ((R^2), adjusted (R^2)) of the independent variables is up to 26%, 25%. That is to say, the independent variables are now able to explain up to 26% or 25% of the variation in *Ln(CTP)*, which is our alternative model specification.

5. Conclusions

This study examines the determinants of actual cash taxes paid by quoted companies in Nigeria. The main results presented in Table 6 suggest that revenue (*REV*), intangible assets (*INTAN*), and percentage of foreign shareholdings (*FSH*) directly and significantly determine corporate actual cash taxes paid (*CTP*). This suggests that revenues, intangible assets, and percentage of foreign shareholdings increase corporate actual cash taxes paid. These variables make companies to engage in conservative tax planning schemes that reduce tax avoidance. The main results suggest that Big-4 accountancy firms (*AUDIT*), tax haven status (*HAVEN*) and firm size (*SIZE*) significantly reduce corporate actual cash taxes paid (*CTP*). Consequently, accountancy firms, tax haven status, and firm size will likely lead to aggressive tax planning schemes that increase tax avoidance. Findings from additional analysis suggest that revenues (*REV*) and percentage of foreign shareholdings (*FSH)* are robust to using *Ln(CTP)* as dependent variable. The models in main analysis explain up to about 56% of the variation in corporate actual cash taxes paid (*CTP*) between 2012 and 2019. The unexplained 44% of the variation in *CTP* is attributable to factors not examined by the study.

We recommend as follows: The Federal Inland Revenue Service should monitor the revenue and intangible assets of companies through their annual fillings. Relevant government agencies should encourage foreign equity participation in Nigerian companies, and should collaborate to provide policy changes that would increase participation of Non-Big-4 accounting firms in auditing companies' financial statements in Nigeria.

This study contributes to the literature in important respects. Firstly, this study pioneers the use Nigerian firm-level data to interrogate the determinants of corporate actual cash taxes paid, a line item/information available in statements of cash flows. Secondly, the study is the first Nigerian research to associate revenues, pretax profits, intangible assets, percentage of foreign shareholdings, accountancy firms, tax haven status and firm size with corporate actual cash taxes paid. Hopefully, our

study provides new insights into tax planning and tax avoidance schemes used by quoted companies in Nigeria.

5.1. Limitations

We draw readers' attention to a few caveats. Firstly, the study uses convenience method to collect the research data. The possibility exists that this data collection method can lead to self-selection bias. Secondly, a longitudinal study of this nature would have required that we control for economy-wide risks/shocks of some sort if the study was conducted at the macro level. This was not feasible because the study was carried out at the firm-level and within the same country where all companies face similar economy-wide risk factors or shocks. Finally, although there may have been a need to control for industry-specific dynamics, but we did not. We therefore call for caution in interpreting the results.

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