EXPLORING THE NEXUS OF TAX AVOIDANCE AND TAX RISK: EVIDENCE FROM LISTED FIRMS IN NIGERIA

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DOI: https://doi.org/10.57233/ijamer.v2i2.06

Article History: Received: 26 February 2026 | **Revised:** 14 March 2026| **Accepted:** 20 May 2026 | **Published:** 25 June 2026

How to Cite This Article:
Aminu, B. S., Samaila, I, A., Kibiya, I. U., & Usman, M. (2026). Nexus tax avoidance and tax risk: Evidence from listed firms in Nigeria. *International Journal of Accounting, Management and Economic Review, 2*(2). https://doi.org/10.57233/ijamer.v2i2.06

Abstract
Aggressive tax management strategy is constantly associate with uncertainty and instability in tax provision leading higher tax liability in future. This study examined nexus tax avoidance on the uncertainty of Nigeria quoted firm in Nigeria. Data for the study was extracted from the audited annual reports and accounts of 67 firms, covering a period 2014 to 2024. Being a combination of both times series data and cross-sectional data, panel data methodology was adopted for the data analysis. Specifically, multiple regression technique was used to estimate the models. The results of data analysis reveal that tax avoidance significantly affects inconsistency in tax payments. The findings implies that listed companies in Nigeria are experiencing higher tax risk dues to aggressive tax avoidance activities. Based on these findings the study concluded that tax avoidance activities increases tax risk for listed firms in Nigeria. Therefore, the study recommends that tax avoidance that management of listed firms in Nigeria should review tax avoidance strategies and implement more robust tax risk management process.

Keywords: Current ETR, tax avoidance and tax risk.

1.0 Introduction

Tax is considered as a cost of doing business, consequently expected to reduced profit and negatively influence firm value. Thus, companies tend to pay higher tax when they recorded huge profit (Putri, 2024). However, through tax management strategies companies can use legal

tax saving strategies to minimizes its tax liabilities and maximize its after tax profit. Tax avoidance is seen as valuable action that reduces transfer of wealth from the shareholders to government in form of tax liability (Desai & Dharmapala, 2009). Likewise, Boussaidi and Hamed-Sidhom (2020) viewed tax aggressiveness as the used legal means to achieve less tax burden. Flamini et al., (2021) argued that the likelihood for firms to engage in tax aggressiveness behaviors considerably depends on the associated costs and benefits of the schemes. Tax avoidance and tax aggressiveness have been used interchangeably in tax literature (Sugeng& Zaman, 2020; Halon & Hietzman, 2010). Kovermann (2018) posit that tax avoidance activities are expected to have positive impact on the shareholders. Therefore, from traditional perspective tax avoidance results in lower tax burden and higher after-tax income. However, owing to uncertainty in the relevant tax laws, possibility of tax audit among others could increases firms' tax burden. Thus, tax avoidance activities can lead to tax risk.

Further, tax risk usually arises due to measures taken by taxpayers to capitalize on the loopholes in the relevant tax laws with aims of achieving minimum tax. Carolina et al., (2021; Deslandes and Fortin 2019) Argued that tax avoidance schemes can lead to uncertainty in the long run as the actions could results in additional tax liabilities. Correspondingly, Tax risk can be seen as likelihood to uphold tax position over a period of time (Schrader & Chiulien, 2020). Also, in the words of Neifar and Utz (2018). Tax risk occurs when tax authorities conduct tax audit and force taxpayers to pay additional taxes along with fines, penalties and interest. Likewise, Drake et al. (2019) describe tax risk as the variability in tax outcomes which negatively affect investors' valuation of tax avoidance. Also, Drake et. al. (2019) opined that tax risk originates from uncertainties in a firm's transactions. Prior studies on tax avoidance and tax risk include Sari and Etemadi (2019), Mangoting et. al. (2021), Putri (2024). However, Sari and Etemadi (2019) studies used Iranian data, Putri (2024) was carried out in Indonesia, therefore, their findings can't not generalize in the Nigerian context. Furthermore, in the Nigerian context most studies examine tax avoidance in relation to other variables for instances, Aronmwan and Ogbaisi, (2022) studied standalone risk committees and tax aggressiveness, Baba and Muhammad (2023) studied tax avoidance and cost of debt of listed manufacturing firms in Nigeria, Oghenekaro and Orife (2024) examines tax avoidance and firm value of quoted firms in Nigeria. Therefore, this study is one of pioneer studies that examines tax avoidance and tax risk of listed firms in Nigeria.

Inclusive, our study contributed to body of knowledgewith regards to tax risk in connection tax avoidance strategy. The fact that poor tax avoidance strategy might result in more tax risk and decrease value of firms motivates this study. Secondly, this study is related to the literature that examines the consequences of tax risk in tax avoidance behaviour; thus, the study contributes to the streams of literature by showing the effects of tax avoidance on the tax risk. The paper is arranged as follows. Section 2 devoted on theoretical framework, reviews the literature and generated hypotheses. The next part deals with methodology, while analyses the results was presented in part 4.The ultimate section, conclude the study.

2.0 Literature Review

Tax Risk under Agency Theory

Agency theory explainedlink between principal and agent in a business contract. Accordingly, the agents are responsible for taking strategic decision on behalf of the owners including tax decision which is considered a purely managerial affair (Desai & Dharmapala, 2009). Additionally, Hanlon and Heitzman (2010) posit that decision regarding company's income tax can reflect the views of both management and shareholders, thus, tax avoidance activities are within the horizon of agency context. Therefore, company may engage in tax avoidance schemes not only to lessen tax cost but to satisfy their self-interestat expense of overall goals of the organization. Additionally, Desai and Dharmapala (2009) argued that information asymmetry increases managerial opportunistic behaviour. This implies that the benefit of the schemes may not goes to the shareholders and increase potentials risk to the shareholders. Earlier literature links tax management tactics with variability in effective tax rate. For instance, Mangoting et al., (2021) documented that hazardous tax schemes lead to lower cETR. However, tax avoidance activities associate with less inconsistency in tax outcome (Drake et al., 2017; Choi and Park 2022). On the other hand, Irawan and Turwanto (2020) provides positive links between tax avoidance and five years standard deviation of cash ETR. From the foregoing agency theory is used for present study.

Tax Avoidance and Tax Risk

Tax avoidance is an action taken by corporate taxpayer through loopholes in tax laws with aims of attained minimum tax burden (Halon & Hietzman, 2010). Tax avoidance is described as means of chosen a strategy that is capable to a lower firm tax burden (Oats & Tuck, 2019). In the words, Madugba et al., (2020) described tax avoidance as taxpayers 'behaviors in the computation of income tax payable in manner that guarantee minimum tax burden legally. Previous literature closely links tax avoidance with uncertainty in tax payment, for instances, Neuman et al., (2013) argue that tax risk can be a product of tax avoidance activities due to its ability to potential positive effect on future tax payments. Drake et al., (2019) viewed tax risk comparable to traditional view in behavioural sciences as potential deviation from expected return. Thus, tax risk can be interpreted as the uncertainty in companies future tax liabilities due ambiguity in tax laws, possible tax audit and investigation overturning tax avoidance decisions. Prior studies on the nexus tax avoidance and tax risk produce mixed findings, for instance, Drake et. al. (2019) established that tax avoidance is not associate with volatility in ETR, implying that tax payment out is not relate to avoidance schemes employed by the tax payers. On the other hand, Sari and Etemadi (2019) found that Effective Tax Rate (ETR) is negative and statistically significant to tax risk proxies by standard deviation of ETR. This suggests less tax risk among the sampled companies. Dyreng et al., (2019) claimed that firms with associated small cETR experiences higher uncertainty in tax liabilities. In another study, Choi and Park (2022) reported positive and significant impact of tax avoidance on the tax risk of listed firms in Korea between 2001 and 2017. Thus, aggressive tax avoidance increases tax risk resulting in additional tax in future.Equally, Mangoting et. al. (2021) reported that tax risk positively associated with tax avoidance, thus uncertainties in tax avoidance strategies increase tax risk. In US Krieg and Li (2025) documented that diverse and efficient tax planning activities ease tax risk. From the forgoing discussion we postulate that:

H_1Tax avoidance activities relate corporate tax risk

3.0 Methodology

In testing statistical hypothesis postulate in literature section, the study adopts quantitative research methods of positivist approach to empirically investigated nexus tax avoidance and tax risk. Quantitative design entails measurement and extracting related to quantitative variables (Bala et al., 2025). The populations constitute 142 listed companies between 2014 and 2024. We exclude companies with missing data and incomplete data from the sample size. Consequently, the final sample constitutes unbalanced sample 67 companies over 11 years period, making it 725 firm-year observations. Data for the study were extracted from annual reports and accounts of the sample firms.

Definition and Measurement of Variables

Tax Risk

Consistent with prior on tax risk such as Irawan and Turwanto (2020) and Guedrib and Marouni (2023) we measured tax risk using standard deviation of annual cash effective rate over five years. The higher the dispersion the greater the risk

Independent Variables

We employed two proxies to capture corporate tax avoidance activities, consistent withDyreng et. el. (2010); Mindzakand Zeng (2020) our first measure is current effective tax rate(cuETR). It's defined as the tax expenses divided by pre-tax income. Our second measure is annual cash effective tax rate (cETR), is defined tax paid scaled by firm total assets(Mindzak& Zeng 2020).

Control Variables

In line with Alkurdi and Mardini (2020); Irawan and Turwanto (2020) and Guedrib and Marouni (2023), three control variables are considered. This includes firm size, profitability (ROA), and industry type. We measure firm sizeas logarithm of total assets (Alkurdi & Mardini, 2020). ROA is defined as profit before income tax divided total assets. For industry sector, a dummy is used as 1 is assigned for financial services, 2 for manufacturing firms and 3 is assigned for Services Company.

Econometric Model

The econometric models to test the hypothesised relationship is presented below

$$TR_{it} = \beta + \beta_1 cuETR_{it} + \beta_2 cETR_{it} + \beta_3 ROA_{it} + \beta_4 Fsize_{it} + \beta_5 IND_{it} + \varepsilon_{it}$$

Where TR stands for Tax risk, cuETR is current effective rate, cETR represent cash effective tax risk. Moreover, ROA stand for return on assets capturing profitability, Fsize represent firm's size and IND stand for industry dummy.

4.0 Data Analysis

Table I contains the descriptive statistics. It shows that the mean value of Tax Risk (TR) is 0.217. This suggests that on average the inconsistency in standard deviation of cash ETR is 22%. The standard deviation of 0.277 implied insignificant disparity among the sampled firms. Furthermore, the average value for cuETR and cETR is 19.2 per cent, and 12.6 per cent respectively. This suggests that bear tax burden of 19.2% and 12.6 %.

Table 1:
Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max.
TR	723	0.217	0.277	0.010	1.068
cuETR	725	0.192	0.188	-0.161	0.568
cETR	725	0.126	0.164	-0.093	0.521
ROA	725	0.065	0.099	-0.138	0.289
Fsize	726	10.618	0.936	8.584	13.44
IND	725	1.806	0.814	1.000	3.000

Source: STATA Output, 2026.

With Regardsto control variables, ROA show an average of 0.065 signifying that on average the sampled firm earned a profit of 6.5% of every invested in firm assets. Firm size has a mean value 10.618 with minimum and maximum value of 8.584 and 13.44 respectively. Finally, the mean value of industry dummy (IND) is 0.814, suggesting that on average the sampled firms are from financial services industry firms.

Correlation Matrix

Table 2 presents the Pearson correlation matrix for the study variables. From the matrix, cuETR, cETR, and IND have positive coefficients with TR. However, ROA and Fsize are negatively associated with TR. Furthermore, the results of the correlation matrix show that the highest correlation coefficient between cuETR and cETR is 0.442. This is lower than the threshold of 0.8 proposed by Hair *et al*., (2014), suggesting the absent of multicollinearity problem. Furthermore, variance inflation factor test carried outestablished absent of collinearity problems as individual mean value is less than 5.

Table 2:
Correlation Matrix

TR	TR	cuETR	cETR	ROA	Fsize	IND	VIF
TR	1.000						
cuETR	0.156	1.000					1.41
cETR	0.232	0.442	1.000				1.26
ROA	-0.225	0.223	0.149	1.000			1.08
Fsize	-0.223	-0.156	-0.121	0.064	1.000		1.16
IND	0.121	0.331	0.196	-0.0311	-0.355	1.000	1.27

Source: STATA Output, 2026.

Regression Results

Table 3 report the regression estimates on the links between tax avoidance and tax risk. Nevertheless, being a combination of cross sectional and time series variant, we carried out a test for heteroscedasticity, autocorrelation and cross-sectional dependency to avoid biased of our statistical inference. The findings indicates that, our data is characterized with the problems of heteroscedasticity and first-order (AR1) autocorrelation (Table 3). Thus, we followed the recommendation of Moundigbaye et al., (2018) and adopt Panel data corrected standard error (PCSEs). According to them, PCSE has the power to handle the problems of heteroscedasticity and autocorrelation and produces best coefficient for hypothesis testing.

Table 3:
Regression Results

	Coeff.	z-value
Cons	0.747	9.51***
cuETR	0.155	2.05**
cETR	0.359	4.17***
ROA	-0.756	-6.86***
Fsize	-0.502	-8.13***
IND	-0.008	-0.92
R-Square		0.161
Wald Chi^2		152.61
Hausman		13.4**
Modified Wald		3.605***
Wooldridge test		476.852***

Source: STATA Output, 2026.

In Table 3, the regression estimate reveal that tax avoidance activities proxies by cuETR and cETR is positive and statistically significant related to TR (β0.155, p = 0.041) and (β0.359, p = 0.000), implying that tax avoidance activities increase tax risk of listed firms in Nigeria. The results agreed with positions established by Choi and Park (2022) and Mangoting et. al. (2021). However, contradict the work of Drake et al., (2019) and Sari and Etemadi (2019). Further, this finding supports our hypothesis that tax avoidance significantly relates to firm value.

As for the control variables, we find that ROA and Fsize arenegative and statistically significant to tax risk (β-0.756, P = 0.000; (β-0.502, P = 0.000), indicating that these variables decrease volatility of ETR. Further, Industry dummy (IND) isnegative but statistically insignificant with tax risk (β-0.008, p = >0.1). This indicates that tax risk is not determines by Industry different.

5.0 Conclusions, Limitations and Future Research

The results of this study provide evidence that tax avoidance proxies by current effective tax rate and cash effective tax rate have positive and significant impact on volatility of effective tax risk. Thus, tax avoidance activities increase tax risk of listed firms in Nigeria. the study recommends that management of listed firms in Nigeria should review tax avoidance strategies and implement more robust tax risk management process.

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