

## CORPORATE TAX AVOIDANCE AND COST OF EQUITY CAPITAL OF LISTED MANUFACTURING COMPANIES IN NIGERIA

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### **Abstract**

*Corporate tax avoidance has been a significant concern for policymakers, investors, and the public. As companies seek to minimize their tax liabilities legally, the extent to which tax avoidance affects various aspects of corporate finance remains a subject of debate. This study aims to investigate the effects of corporate tax avoidance on the cost of equity capital in Nigeria's listed manufacturing companies. It is an empirical study with the goal of examining the relationship between tax avoidance and the cost of equity capital, a key indicator of the return investors in Nigerian listed manufacturing companies expect. The Study makes use of a quantitative research design, which entails collecting numerical data, to test hypotheses. Similarly, the study uses correlation design to ascertain the relationship between tax avoidance and the cost of equity capital in Nigeria's listed manufacturing companies. The study population consists of seventy five (75) quoted firms on the Nigerian Exchange Group (NGX) as at 31<sup>st</sup> December 2020. The study makes use of purposive sampling technique to arrive at a sample size of 42 manufacturing companies between 2011 and 2020. The study used multiple regression analysis to test hypothesis which states that tax avoidance is negatively correlated with the cost of equity capital. The study found that, while extreme corporate tax avoidance techniques significantly increase the cost of equity capital for listed manufacturing companies in Nigeria due to information asymmetry and agency issues, tax avoidance is a viable strategy for lowering the amount of taxes paid to tax authorities. This attract negative attention from stakeholders, including shareholders, customers, and the general public. The study's findings show that companies' extreme corporate tax avoidance strategies will force equity investors to demand higher returns. This is as a result of information asymmetry risk. This further suggests that measures to close tax law loopholes such as legislative reforms may need to be put in place by tax regulators and other stakeholders.*

**Keywords:** Tax avoidance, book-tax difference, effective tax rate, cost of equity, capital.

### **Introduction**

Businesses frequently engage in tax avoidance, which involves using legal strategies to lower their tax liabilities (Sikes & Verrecchia, 2016). Although tax avoidance is not against the law, it can significantly affect a company's cost of equity capital. Tax avoidance can lower the cost of equity capital for Nigerian manufacturing companies, which can have both positive and negative effects on the company's financial performance. On the one hand, a decrease in the price of equity capital can make it simpler for a business to raise money because investors are more inclined to do so when a business has lower financial costs. A lower cost of equity capital, on the other hand, may also indicate to investors that a company is not paying its fair share of taxes which could harm its reputation and undermine investor confidence (Dewiyanti & Burhan, 2020). Given the significance of tax avoidance and its effect on the cost of equity capital in Nigerian manufacturing companies, it is critical for businesses to comprehend the trade-offs between tax minimization and the long term financial health of the organization. In this situation, it's critical for businesses to carefully weigh the advantages of tax avoidance against the dangers of harm on their reputation and a decline in investor confidence.

According to Hutchens and Rego (2015), tax avoidance and equity cost are positively correlated. Tax avoidance is viewed by investors as a risky management strategy that raises the uncertainty surrounding their investment, increasing the cost of equity. Cook et al., (2017) demonstrates that investors react differently to the degree of tax avoidance. The cost of equity will decrease for businesses with low levels of tax avoidance as tax avoidance increases. And for businesses with high level of tax avoidance, a rise in this practice will raise equity costs. A company may experience bad press and brand damage if it is thought to be engaging in aggressive tax planning. This might result in a drop in the value of the company's stock,

which would raise the price of equity. Additionally, legal fees and fines may result from tax authorities challenging the company's tax planning, which could increase the cost of equity capital. Third, tax avoidance might lead to increased regulatory scrutiny. Governments all over the world are focusing more on corporate tax avoidance and enacting new laws and regulations to combat it. If a business is thought to be engaging in tax avoidance, regulators may be more vigilant, which may result in fines and other penalties. By raising the risk premium that investors demand, this may raise the cost of equity capital.

This research contributes to the body of knowledge that examines how taxes on individuals and corporations impact risk-taking by individuals and corporations as well as the price of equity capital. Findings from this study should be of interest to tax policymakers as it discusses ways to combat tax avoidance because they show a cost associated with aggregate tax avoidance that earlier studies such as Dewiyanti and Burhan (2020) have overlooked. This research is not advocating that businesses that engage in tax avoidance activities are always worse off. It's possible that the tax avoidance's cash tax savings outweighs the monetary externality that we describe. However, since these businesses do not benefit from any cash tax savings from not avoiding taxes, understanding the pecuniary externality is crucial for them.

The remainder of the study continues as follows. The next section reviews relevant literature on tax avoidance and cost of equity as well as the study's hypotheses. Next is discussion on the empirical methods used to test the hypotheses. Then the study presents the results of data analyses, finally, the conclusion.

## **Conceptual Review**

### **Cost of equity**

The return rate investors (equity holders) demand on the equity invested in a company is known as the cost of equity COE (Goh et al., 2016). It is influenced by the risk involved in purchasing a company's shares as opposed to other types of investments (Cooks et al, 2017). When the risk is high, equity investors demand a greater reward, which raises the COE. COE falls, however, when investors encounter low risk. The internal and external forms of equity exist (Goh et al., 2013). Retained earnings, which make up a portion of a company's distributable reserves, are referred to as "internal equity". Before calculating distributable profit in the income statement, the company shall determine the amount of distributable profit to be paid as dividends to common shareholders. The remaining amount will be added to the company's reserves on the balance sheet in the form of retained earnings (Ugwu et al., 2019).

### **Tax avoidance**

The idea of tax avoidance has drawn the interest of both accounting and non-accounting researchers for a long time (Agnes et al., 2012; Dyreng et al., 2016; Kim & Jang, 2018; Sikes & Verrecchia, 2020). The reduction of a firm's explicit tax liabilities is one way that Dyreng et al. (2010) defined tax avoidance, among other ways used by earlier scholars. Hanlon and Heitzman (2010) defined tax avoidance as a decrease in an organization's explicit taxes. Tax planning activities that are legal, that could be considered to be in the gray area, as well as activities that are illegal, are all included in Chen et al. (2010) definition of tax aggressiveness. In contrast to tax evasion, which refers to minimizing tax liabilities, including fraud, tax avoidance refers to minimizing tax liabilities within the confines of the law (Miller & Oats, 2014; Dover et al., 2015). According to Dalu et al. (2012) and Coulmont et al. (2018) tax avoidance is done to lessen the financial burden of taxes that a company must pay to the government through the tax authority.

Tax avoidance may result in a decline in the accuracy of the financial statement's information (Balakrishnan et al., 2018). Information allows investors to predict future cash flows, but when that information is of poor quality, it becomes less accurate. As a result, investors are led to believe that the company's future cash flows are uncertain (Cook et al., 2017). Tax avoidance, according to Hutchens et al. (2019), includes all of the transactions that lessen a firm's explicit tax liability. It can boost net cash flows, which can then be distributed to shareholders in the form of dividends or share buybacks or used to increase corporate investment. Dewiyanti et al. (2020) assert that when businesses avoid paying taxes, they have more cash available, which they can use for production or additional investment activities, increasing the firm's potential future cash flow.

Existing studies suggest several proxies used to measure tax avoidance activities in both economics, accounting and taxation research. To capture tax avoidance activities, Desai and Dharmapala, (2006) used book tax differences (BTD), which is the difference between the incomes reported to the capital market and that reported to the tax authorities while controlling for total accruals. Subsequently, Desai and Dharmapala (2009) introduced a new measure of tax avoidance, which is the modified book-tax differences (mBTD). Desai and Dharmapala (2009) argued that any measure of tax avoidance should control for other factors, such as earnings management, which may contribute to the measured book tax gap. By regressing book-tax difference on total accruals with firm effects control and predict residual, one can calculate the modified book-tax difference (mBTD). The effective tax rate (ETR) as defined by generally accepted accounting principles (GAAP) was one of two tax avoidance measures used by Dyreng et al., (2010). They calculated the ETR as total tax expenses (current plus deferred tax expenses) divided by pre-tax accounting income (adjusted for special items). The company's cash effective tax rate (Cash ETR), which is calculated as cash taxes paid divided by pre-tax accounting income (adjusted for special items), is their second metric (Dyreng et al., 2010).

### **Empirical Review**

Rego and Wilson (2012), who looked at the impact of corporate tax aggressiveness on equity risk investment, conducted one of the earlier studies that examined the empirical relationship between tax avoidance and the cost of equity. They used three existing measures of tax avoidance, including discretionary book tax differences, tax shelter prediction scores cards, and cash effective tax rates, based on a study of sampled data for S&P 500 and S&P 400 firms for the fiscal years 2007-2009 in the U.S. According to their findings, a high tax risk was linked to greater equity tax risk incentives. Additionally, the study only lasted for two (2) years, which is a very brief period of time. Koester (2011) used cross-sectional tests and a sample of S&P 500 composite index firms in the U.S from a period of 2007 to 2009 to investigate whether and how much equity investors value uncertain tax avoidance through uncertain tax positions. The stock price per share was regressed on net income per share and book value of equity shares in the study, which used a standard input to valuation research design based on Ohlson (1995) valuation model. According to the study, there is evidence that investors view uncertain tax avoidance favorably and that tax-related liabilities are treated differently from other liabilities. Additionally, this study only looked at the years 2007 through 2009.

Sikes and Verrecchia (2014) studied the externalities of corporate tax avoidance using a theoretical model, and they demonstrated that when a sizable percentage of businesses in an economy used tax avoidance tactics, it made no difference whether the tactics had certain or uncertain results. In an economy, firms' capital costs would rise. They looked at how tax avoidance strategies affect the cost of equity capital for businesses that use them as well as for businesses in an economy where such strategies are not used, using an economic model of

asset pricing that is an extension of Lambert et al. (2007) multi-security analysis. Their research demonstrated that, even for businesses that do not actively engage in tax avoidance, externalities are imposed on the entire economy when a sizable portion of businesses choose to do so.

Hutchens and Rego (2015) used a sample of all North American public firms from 2007 to 2011 to investigate the degree to which tax risk is linked to a firm's implied cost of equity capital. For each underlying construct, they used a number of proxies. In line with the findings of Rego and Wilson (2012), the study used three tax risk measures (tax reserves, discretionary book-tax differences, and a tax shelter prediction score) as proxies for a firm's exposure to tax risk. The study made use of a tax risk metric that accounts for the tax ramifications of a wide range of transactions with higher levels of uncertainty regarding future after-tax cash flows. They found that cash effective tax rates, a proxy for tax risk, did not significantly affect the cost of equity capital. The study, which lasted only five years and was completed in 2011, might be considered aged, and developments over time might lead to a new discovery.

Goh et al. (2016) examined the relationship between tax avoidance and the cost of equity in an empirical study. They used data from 1993 to 2010 from a sizable sample of Singaporean businesses. They used the implied cost of capital estimate as a stand-in for the cost of equity and cross-sectional analysis to capture three less extreme forms of corporate tax avoidance: book tax differences, permanent book-tax differences, and long-run cash effective tax rates. They discovered that a one standard deviation increase in their measurement of tax avoidance was connected to a 19 to 31 basis point decrease in the cost of equity. They looked at a cross-sectional variation in which the cost of equity was intended to be different for a subsample of firms in order to support their findings. Investors have been found to view tax planning more favourable for companies that have external oversight and for companies that probably realized higher marginal tax savings. According to their findings, tax planning is a value-adding activity that investors value because it is associated with a lower cost of equity.

Additionally, Sikes and Verrecchia (2016) used a sample of all US companies covered by Compustat for the years 1988 to 2007 to examine aggregate corporate tax avoidance and the cost of capital. When calculating the implied cost of capital, they used the internal rate of return to translate the stock price of a company into the present value of expected future cash flows while controlling for firm characteristics (firm size, book-to-market ratio, institutional ownership, leverage, and dividend yield). They calculated aggregate corporate tax avoidance as the sum of cash taxes paid for all US firms in Compustat scaled by the sum of pretax income for all firms. The findings of Sikes and Verrecchia (2016) are in line with those of Goh et al. (2016), who found a positive correlation between the cost of capital and total corporate tax avoidance.

Furthermore, Pulido and Barros (2017) used a sample of all the listed companies on the major stock indices for the years 2005 to 2014 to investigate the connection between corporate tax avoidance and the ex-ante cost of capital in 24 European countries. According to their findings, investors' perceptions of tax avoidance appeared to alter at various tax avoidance levels. They provided evidence that the ex-ante equity cost of capital appeared to decline as tax avoidance went from low avoidance to high avoidance, indicating that investors understand that the benefits of tax avoidance outweigh the costs.

Equally, Cook et al. (2017) conducted a study on tax avoidance and the ex-ante cost of capital with an initial sample that contained 45,360 firm year observation from 1993 to 2014, using firms in the USA. Their study used two proxies for investors' expectations of tax avoidance and also explored whether deviations from such expectations could result in a higher ex ante cost of equity. Their study provided the evidence of an indirect non tax cost and in ex ante cost of equity capital, which varies with investors' expectations of tax avoidance. Their

findings further supported the findings of Hutchens and Rego (2015), who noted that excessive tax avoidance raises the ex-ante cost of equity capital. Insufficiently aggressive tax avoidance, according to Cook et al. (2017) also led to higher ex ante costs of equity capital. It is possible that investors' response to a failure to reduce excess tax costs is what leads to the suggested outcome.

In their study, Igbinovia and Ekwueme (2018) examined the moderating effects of monitoring on corporate tax avoidance and shareholder returns for 54 non-financial companies listed on the Nigerian stock exchange between 2010 and 2016. The study made use of panel data, ex-post-facto research design, and ordinary least squares (OLS) regression. They claimed that the stock returns of quoted non-financial companies were significantly impacted by corporate tax avoidance. They also discovered that the relationship between corporate tax avoidance and non-financial quoted stock returns was significantly moderated by agency cost. The period was stopped at 2016, which is regarded as no longer current.

Manafova (2018) conducted research on the influence of tax avoidance on the ex-ante cost of equity from the period 2005-2015 using a sample of 32,386 firm-year observations containing companies from all over the world. The countries that had the biggest number of representatives are Australia, United Kingdom and Japan with mostly firms from the manufacturing, transportation, communications, electric gas and sanitary industry. The research found no significant relationship between tax avoidance and the ex-ante cost of equity. A major challenge of this work is that it used firms from all over the world lacking the same characteristics. Business environments are not the same worldwide.

Further, Heitzman and Ogneva (2019) motivated by the work of Goh et al. (2016) examined industry tax planning and stock returns with a sample that consisted of all US firms traded on NYSE, AMEX or NASDAQ for the period 1991 to 2014 based on a monthly cross-sectional ordinary least squares (OLS) regressions, which allowed them to have control for a wider range of factors associated with both stock returns and effective tax rates. The result indicated that equity returns increased with the propensity for tax planning in a firm's industry. They also found that the industry based risk premium coexisted with a firm-specific discount associated with active tax planning strategies that carried low systematic risk. The study shed light on the role of industry and firm tax planning in determining a firm's cost of capital. The result that may be obtained from similar studies in Nigeria could be different due to the differences in regulatory framework and economic development.

Chun et al. (2019) examined the association between firm's tax avoidance activities and the cost of equity capital with an empirical analysis based on a sample of cross-country firms from 2005 to 2015 within 17 countries. Theirs was the first international study on tax avoidance activities on the cost of capital using a regression analysis. They discovered that a firm's cost of equity capital in a country with weak investor protection was positively correlated with the degree of tax avoidance practiced by the firm. Their findings also suggested that in countries with weak investor protection, where agency conflicts affects a firm's tax avoidance activities more, investors imposed equity risk premium on those activities.

Sikes and Verrecchia (2020) conducted a research on tax avoidance and the cost of capital making their prediction on a sample consisting of all US firms covered by Compustat using the period 1988 through 2018. Their analysis examined the relationship between the annual implied cost of capital and a measure of aggregate corporate tax avoidance. They measured aggregate corporate tax avoidance as the sum of the cash taxes paid for all US firms in Compustat scaled by the sum of pretax income for all US firms in Compustat and identified lower values to greater tax avoidance. They used the implied cost of capital as the internal rate of return that equates a firm's stock price to the present value of expected future cash flows. Their results showed that the cost of capital was positively related to aggregate

corporate tax avoidance. However, similar studies in Nigerian manufacturing companies may produce different results due to the differences in operations and regulations.

Dewiyanti et al. (2020) investigated how tax avoidance and accrual earnings management affected the price of equity. Between 2012 and 2016, they employed all of the manufacturing firms listed on the Indonesian stock exchange. Purposive sampling with panel data regression analysis techniques were used to collect samples. Their research findings demonstrated that the cost of equity capital was significantly positively impacted by tax avoidance. Due to this correlation, the investor must bear a higher share of the cost of equity the more tax avoidance a company engages in. Due to variations in institutional settings, regulatory frameworks, and levels of economic development, similar studies conducted in Nigeria may yield different results.

## Theoretical Review

### Agency Theory

The company's daily operations may not always be under the control of shareholders, the true owners of the business. As a result, in accordance with a written contract, they appoint managers and grant them authority to decide critically important matters affecting the company's well-being. Creating wealth for the company's shareholders is one of their key objectives, but due to agency conflicts, managers occasionally pursue their own objectives in the process, making this objective unrealistic. The agency theory postulates that the principal (owner) and agent (manager) have a contractual relationship and that both have a stake in maximizing profits (Jensen & Meckling, 1976).

The agency theory also suggests that corporate tax avoidance can increase the cost of equity capital. According to this theory, managers may be incentivized to engage in tax avoidance to increase their personal wealth at the expense of shareholders. This creates an agency problem, where managers pursue their own interests rather than those of the shareholders. As a result, shareholders may demand a higher return to compensate for the increased risk associated with the agency problem.

### Signaling Theory

According to the signaling theory by Spencer (1973), the level of corporate tax avoidance can signal to investors that a company is taking on additional risk, which can lead to an increase in the cost of equity capital. A company that engages in aggressive tax avoidance strategies may be perceived as a higher risk investment than a company that pays its fair share of taxes (Manafova, 2018). This is because tax avoidance is often associated with a higher likelihood of regulatory scrutiny, reputational damage, and legal liabilities.

**Hypotheses 1:** Book tax difference has significant impact on the cost of capital of listed manufacturing companies in Nigeria.

**Hypotheses 2:** Effective tax rate have a significant impact on the cost of capital of listed manufacturing companies in Nigeria.

## Methodology

The study used correlation and descriptive research design on a sample of 42 manufacturing companies listed on the NGX from 2011 to 2020.

## Variables and Model

**Dependent Variable:** as used by Goh, et al. (2016), the dependent variable of the study is cost of equity which the capital asset pricing model is used to compute as follows;

$$COE_{i,t} = R_{f,t} + \beta_{i,t} (R_{m,t} - R_{f,t})$$

Where

COE: cost of equity (expected stock return rate) of firm I in year t.

$R_{f,t}$ : risk-free rate of return, which equals interest rate on government bonds in year t.

$R_{m,t}$ : market return rate, which equals changes in total market index in year t.

$\beta_{i,t}$ : the sensitivity of the stock return of firm I to the stock market return in year t

**Independent Variable:** tax avoidance is the independent variable of the study proxied by Book-tax difference (BTD) and effective tax rate (ETR). The book-tax difference measure is the difference between the incomes presented to the capital market and taxable income as used by (Desai & Dharmapala, 2009). While the ETR will be measured based on the cash ETR as the cash tax paid in year T divided by profit before tax in year t-1, as used by (Ftouhi et al., 2015; Aganyo, 2014).

$$BTD_{it} = FI_{it} - TI_{it}$$

$BTD_{it}$  -book tax difference for firm i in year t

$FI_{it}$  -financial income for firm i in year t

$TI_{it}$  - taxable income for firm i in year t

The financial income, which is the firm's pre-tax income reported in its income statement, is the income that businesses report to the capital markets. Due to its confidentiality, businesses do not disclose taxable income in the financial statements, Manzon and Plesko (2002) developed a method to calculate taxable income. Therefore, the taxable income of the company is estimated using tax information from the financial statements. According to Desai and Dharmapala (2009) estimation of taxable income is as follows;

$$\text{Taxable income } (TI_{it}) = \text{Tax paid/Tax rate}$$

#### Control Variable:

**Firm Size:** In this study, the control variable for firm size is determined using the natural logarithm of the firm's net sales (Huang et al., 2020).

**Firm Age:** Firm age is used as a control variable. It is proxied as the number of years since the firm went public (Chang et al., 2009 & Butt et al., 2020).

**Leverage:** Financial leverage is the last control variable in this study, it is calculated by dividing total debt by the book value of the firm's assets (Frank & Goyal, 2009; Chen & Zhoa, 2019).

The following multivariate regression models are used to test the research hypotheses: The model for testing the first hypothesis

$$COE_{i,t} = \alpha_0 t + \alpha_1 BTD_{it} + \alpha_2 ETR_{it} + \alpha_3 Age_{it} + \alpha_4 Size_{it} \varepsilon_{it} + \alpha_5 LEV_{it} + \varepsilon_{it}$$

Where:

$COE_{it}$  = cost of equity for firm i in year t (expected stock return rate).

$BTD_{it}$  = differences between reported revenue to the stock market and implied revenue derived from the tax payable and corresponding tax rate

$ETR_{it}$  = effective tax rate measured as the cash tax paid in year t divided by profit before tax in year t-1

$AGE_{it}$  = the duration of the company's existence

$SIZE_{it}$  = the natural logarithm of a company's total assets

$LEV_{it}$  = total debt (long and short term debt) divided by total assets

$\varepsilon_{it}$  = Error term of the model.

#### Techniques of Analysis

In this study, STATA software was used for the descriptive quantitative and regression analysis on a panel data set to examine the impact of tax avoidance on the cost of equity. Panel data are compared with cross section and time series to demonstrate their advantages in order to understand the heterogeneity of individuals, including the variation in individual

characteristics and the impact of many years of observed variable observations. The trend of corporate behavior samples can thus be effectively observed.

## Results and Discussion

### Descriptive Analysis

Here, the descriptive statistics for the study's variables are shown. The data's central tendency, spread, and dispersion are provided so that the data's nature can be understood in its entirety. The study variables' means, standard deviations, minimum and maximum values are shown in table 1.

**Table 1: Descriptive Analysis**

Variable	Obs	Mean	Std. Dev	Min	Max	Kurtosis	Skewness
COE	420	0.2819	0.2083	0.0023	0.9766	0.0013	0.0000
BTD	420	-0.0259	0.1710	-1.8125	0.6305	0.0000	0.0000
ETR	420	0.0329	1.7519	-30.4922	6.997	0.0000	0.0000
AGE	420	33.1428	13.3147	2	60	0.0174	0.0000
SIZE	420	10.1399	0.8227	7.7515	11.7897	0.0003	0.1395
LEV	420	0.2061	0.2627	0	1.9581	0.0000	0.0000

**Source: STATA 13 outputs based on the data generated (2022)**

From Table 1 it can be seen that the number of observations for COE is 420. It shows that COE has an average mean value of 0.2819 which is the ratio of equity of the sampled firms. When the mean value is compared to the value of standard deviation which is 0.2083, it shows how the spread the mean is. The standard deviation of 0.2087 indicates that there is a significant variation in COE between the sampled firms during the period of study. Furthermore, COE has a minimum value of 0.0023 and a maximum value of 0.9766. This indicates that during the study period there are firms with low cost of equity and some firms had a high cost of equity for the said period of time.

BTD shows a minimum value of -1.8125, a maximum value of 0.631, and a mean score of -0.0259 overall. This suggests that the taxable income of the listed manufacturing firms in Nigeria differs from the accounting profit. The highest value indicates a 63% difference between the two incomes of some publicly traded manufacturing companies. The data deviate by 0.171 from the main figure. This suggests that the sampled companies are highly dispersed.

The effective tax rate (ETR) has a mean of 0.0329, indicating that on average, taxes make up approximately 3.29% of the total taxable income. The standard deviation of 1.7519 suggests that there is a considerable amount of variability in ETR across the firm. The minimum ETR of -30.49 and maximum of 6.997 indicate that some entities engaged in aggressive tax planning strategies to minimize their tax liabilities, resulting in lower-than-average ETR.

### Correlation Analysis

The research presents the Pearson's correlation matrix of the dependent and the explanatory variable. Correlation matrix describes the extent of the association and the direction of the relationship among the variables of the study. The value of the correlation coefficient ranges from -1(perfect negative correlation) to 1 (perfect positive correlation). The sign of the coefficient indicates the direction of the relationship and the absolute value of the correlation coefficient indicates the strength of the relationship.



**Table 2: Correlation Matrix**

	COE	ETR	BTD	AGE	SIZE	VIF
COE	1.000					
ETR	-0.083	1.000				1.01
BTD	0.075	-0.069	1.000			1.11
AGE	-0.091	0.042	-0.029	1.000		1.04
SIZE	-0.001	-0.039	0.308	-0.012	1.000	1.11
LEV	0.016	0.008	0.038	-0.183	-0.019	1.000

**Source: Stata Output**

The correlation coefficient presented in Table 2 shows there is a negative association between Effective tax rate (ETR), Age (Age) and size (SIZE) with the cost of equity (COE) with coefficient of -0.083, -0.091, and -0.001 respectively. Table 2 also shows that book tax difference (BTD,) and Leverage (LEV) have a positive relationship with cost of equity (COE) with coefficient of 0.075, and 0.016.

From Table 2, the result suggest the absence of a multicollinearity problem, as the highest correlation coefficient is 0.075, which is less than the 0.8 threshold (Gujarati, 2004), This is further confirmed by the variance inflation factor (VIF) test carried out which showed a mean of 1.06, as the results of the test is within the acceptable range of less than 5. Hence, the data do not suffer from multicollinearity problems.

**Regression Analysis**

In order to determine which model to use, ordinary Least Squares (OLS) was carried out, random effects model (REM) and fixed effects model (FEM) tests were carried out. The results of the Hausman test, Prob > chi2 = 0.0181, shows that FEM is a better fit for the research model. However, the Wald test (Prob > chi2 =0.0082) result shows evidence of heteroscedasticity. This defect in the model is addressed using the linear regression, correlated panels corrected standard errors (PCSEs) method which is presented in Table 3.

**Table 3: Result of the Linear Regression (PCSEs) method**

Variable	Expected signs	Coef.	Std. Error	Z	p-value
ETR	+	-0.0099	0.0038	-2.16	0.009***
BTD	+	0.0965	0.0462	2.09	0.037**
AGE	+/-	0.0016	0.0008	1.98	0.048**
SIZE	+/-	-0.0068	0.0099	-0.69	0.491
LEV	-	0.0260	0.0344	0.76	0.449

Obs: 420

Number of groups:42

Time period: 10

Wald chi2(5): 15.55

Prob >chi2: 0.0082

**Source: Stata Output**

Effective tax rate (ETR) has a negative coefficient of (= -0.0099, p=0.009), which indicates that it has a negative and significant impact on cost of equity at a 1% significant level, according to the results of the regression analysis. While book tax difference (BTD) has a coefficient of (0.0965, p=0.037), which shows that book tax difference (BTD) has a positive and significant impact on cost of equity (COE) at 5% significant level. The coefficients for size (SIZE) and leverage (LEV) are (=0.0016, p=0.491) and (0.0260, p=0.449), respectively. While age (AGE) has a coefficient of (=0.0016, p=0.048) which indicates that age is positive and has a significant impact on cost of equity (COE) at 5% significant level, size and leverage remains both positive and insignificant.

## Discussion

According to the result in Table 3, effective tax rate (ETR) was found to have a significant impact with cost of equity. This result supports the findings from prior literatures such as Goh et al. (2016) and Ghelichli et al. (2017) who also indicated a negative and significant association. This result shows that firms that avoid taxes have a decrease in cost of equity. This is because the proceeds of tax avoidance can be used to increase the future expected cash flow. The result for book tax difference (BTD) has a coefficient value of (-0.0965,  $p=0.037$ ), which indicates that as tax avoidance activities rise, firms' cost of equity will also rise by 3.7%, raising COE. This finding suggests that corporate tax avoidance activities by firms are linked to higher COE because equity risk premiums are placed on these activities by investors, this result is in line with prior studies like Hutchens and Rego (2015), Cook et al. (2017), Chun et al. (2019) who all reported a positive and significant relationship between tax avoidance and cost of equity. Tax avoidance indicates risky behavior on the part of the company, which could reduce accounting transparency and heighten the agency problem-related information asymmetry. This outcome is in line with theories of agency and signaling. As a result, the finding is consistent with the study's first and second hypotheses.

The coefficient value for the effective tax rate (ETR) is ( $\beta = -0.0099$ ,  $p = 0.009$ ) indicating a negative and significant impact. According to this finding, the effective tax rate (ETR), unlike the book tax difference (BTD), does not raise the cost of equity capital for the company.

## Conclusion

This study looks at the cost of equity capital and corporate tax avoidance in listed manufacturing firms in Nigeria from 2011 to 2020. Fixed effect model (FEM) with linear regression, correlated panels corrected standard errors (PCSEs) estimation from STATA was used. The tax difference (BTD) and effective tax rate (ETR) as used in empirical works of Cook et al. (2017), Hutchens et al. (2019) and Dewiyanti et al. (2020) are used to estimate tax avoidance. While the capital assets pricing model (CAPM) was used to estimate the cost of equity. Therefore, this research adds to the body of knowledge on tax avoidance and cost of equity by providing unique insights into how the two ideas are related. The results of this study also contribute to the body of prior research on the negative effects of tax avoidance. This study might be helpful to tax authorities in figuring out the strategies that prevent corporate tax avoidance, and the call for greater corporate sector transparency to combat corporate tax avoidance.

The study found that, corporate tax avoidance significantly increase the cost of equity capital for listed manufacturing companies in Nigeria due to information asymmetry and agency issues, and therefore recommends that tax reform initiatives that simplify the tax system, close loopholes and reduce opportunities for tax avoidance. Reform efforts should aim to create a fair and equitable tax environment that encourages compliance and discourages avoidance.

However, the study has the following limitations: the use of only samples of listed manufacturing companies in Nigeria. Since the institutional landscape is distinct, the result might not apply to other economies. Future studies on tax avoidance and cost of capital could improve our comprehension of the relationship between tax avoidance and cost of capital comprising both equity and debt. Furthermore, the impact of tax avoidance may change due to changes in ownership structure, regulatory frameworks, firm life cycles, business strategies, etc.

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