



CORPORATE TAX SHIELD MECHANISMS AND THEIR EFFECT ON THE PROFITABILITY OF LISTED DEPOSIT MONEY BANKS

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Abstract: The multiplicity of tax system has made it very imperative for banks to take conscious effort to reduce tax liabilities by engaging in cost cutting strategies. This study therefore was carried out to ascertain the effect of corporate tax shield on earnings multiple of deposit money banks listed on the Nigerian Exchange Group for the period 2014 to 2023. The independent variable of this study being corporate tax shield was proxied by debt tax shield, depreciation tax shield and charitable donation tax shield while the dependent variable was earnings multiple. The research design adopted for this study was ex post facto, secondary data were used. The population of the study was 13 listed deposit money banks in Nigeria while the sample size of 11 deposit money banks was purposively selected. The data were analysed tested using the robust fixed effects generalized least square regression and the statistical package employed was STATA version 14.2. The result of the analysis revealed that debt tax shield has a significant positive effect on earnings multiple; depreciation tax shield has nonsignificant effect on earnings multiple; charitable donations tax shield has significant negative effect on earnings multiple of listed deposit money banks in Nigeria. Thus, it was concluded that tax shield has significant effect on earnings multiple of listed deposit money banks in Nigeria. Based on these findings, it was recommended among others that the management of listed deposit money banks in Nigeria should leverage debt financing to reduce their tax liability and increase their earnings multiple. This can be achieved by increasing debt financing in their capital structure and taking advantage of interest deductions on debt.

Keyword: Corporate tax shield, Earnings multiple, Debt tax shield, Depreciation tax shield, Charitable donation tax shield, Deposit money banks.

1.1 Introduction

Taxation and tax policy of any economy has a major implication on the growth and performance of the economy; and for successful business and economic growth, the tax policy of any economy is very important (Olurankinse

& Mamidu, 2021). However, in a country like Nigeria where the economic environment dominated by globalization and turbulences, governments and economic entities have opposite objectives (Kibari & Wahome, 2018). According to them, the government is interested in attracting resources to the state budget and investors, while companies are oriented toward financial performance and, implicitly, reduced taxes and duties. Thus, the tax system is the interface between governments and economic entities in their approach to create and improve performance; both at macroeconomic and microeconomic level (Ileana et al., 2016). The case is that on one hand, businesses typically want to pay the least amount of tax possible and even obtain tax savings on the total amount of tax due. This is because increasing profit after taxes and reducing tax costs are the only ways for profit-oriented corporations to achieve their ultimate goal of maximising shareholder value (Izevbekhai & Momodu, 2023). Thus, with this end in mind, many businesses implement tax planning strategies that will help them improve performance. On the other hand, the government (Nigerian government) also want to generate the highest possible revenue and a percentage of this revenue should be from taxes. This is the reason why there are cases of complexities of Nigeria's tax laws, lack of proper tax review, lack of skilled labour, government's use of harsh collection techniques, lack of accountability, lack of clarity, multiple taxation, and disputes over the jurisdiction of tax authorities and the judiciary in regard to tax payers' disputes which are just a few of the issues the country's tax system is currently dealing with (Hart, 2018). The loopholes in the tax system actually exist as tools for tax savings and are provided by the government they to encourage investment in particular sectors of the economy by using a variety of tax schemes to reduce taxpayers' tax burdens (Mahfoudh, et al., 2015). Taxpayers that are aware of efficient tax planning can take use of these tax reliefs by structuring their business operations so they can take advantage of them and therefore pay less tax (Izevbekhai & Momodu, 2023). However, the application of any strategies to achieve tax savings requires a thorough understanding of the relevant tax shelters and incentives in the tax laws, such as incentives given in recognition of pioneer status, rules applied to the start-up and termination of a business, allowances given in respect of the acquisition of an asset used for the purpose of a business, and so on. Earnings multiple, according to Udosen and Akpan (2024) is a measure that represents both the financial performance and market performance of a particular firm. This is because it considers both the earnings per share and the market price of shares in its computation. Tax savings proxies include debt tax shield which basically involves companies increasing their debt levels to minimize tax payments (Fischer & Jensen, 2017); depreciation tax shield entails investment in fixed asset as a good strategy that can be employed to achieve tax savings through capital allowance (Onaolapo & Kajola, 2020) and then charitable donations tax shield which proposes tax benefits to individuals and entities who make donations to qualified charitable organizations (Simon et al., 2016). By utilizing debt tax shield strategies, companies can reduce their tax liabilities, leading to higher after-tax profits. This increased profitability may result in a higher earnings per share (EPS) and, consequently, higher earnings multiple, as investors may perceive the company as more valuable due to its enhanced earnings potential. In case of depreciation tax shield, a positive relationship between depreciation tax shield and earnings multiple arises from the tax benefits associated with deducting capital allowance from taxable income. This tax-saving strategy can bolster a company's profitability by reducing its tax liabilities, which in turn may elevate its earnings per share (EPS) and contribute to higher earnings multiple (Ftouhi, et al., 2021). This scenario is especially appealing to investors, who tend to favour companies with greater profitability and growth prospects. This study therefore was carried out to ascertain the effect of tax savings on earnings multiple of listed deposit money in Nigeria.

1.2 Statement of the problem

The major challenge of corporate entities, and including deposit money banks is the burden of multiple and double taxation. Many of these taxes from the different levels of government overlap and are forcefully extracted from corporate organizations. While the issues of tax evasion have been a great challenge to government, multiple tax payment especially in Nigeria with ineffective tax system has remained an issue which companies seeks to deal with. In recent years, policies and reforms which include Federal Board of Inland Revenue Services Act 2007, National Tax Policy of 2017, Assets and Income Declaration Scheme (VAIDS) of 2017 and Voluntary Offshore Assets Regulation Scheme (VOARS) of 2018 have been adopted in Nigeria to deal with the problem of multiple tax issue and ineffective tax collection policy. Despite this, the Nigerian taxation system is presently experiencing series of problems among which include multiple tax system, complex nature of tax laws, unskilled manpower, and improper tax collection method which may posed challenges to business and economic growth. Due to these issues, managers of corporate entities have devised diverse strategies to fight multiple taxation and reduce their hefty tax liabilities; implying tax savings. Results from extant literature or past studies could not establish a consensus as per the actual effect of tax savings on earnings multiple or financial performance per se. It is evident that most studies in the past, example; those of Kennedy et al., (2023), Erasmus and Uwikor (2021), Olurankinse and Mamidu (2021), Maharani et al., (2020), Olamide et al., (2019), all considered tax planning and some of them tested tax planning against earnings management and also, firm value or other financial performance proxies. However, Izevbekhai and Momodu (2023) and Kibari and Wahome (2018) considered tax savings strategies but were tested against share price and financial performance respectively. Above all, these studies all neglected deposit money banks while focusing on other corporate entities. It is as a result of these problems and gaps that this study was undertaken to determine the effect of corporate tax savings on earnings multiple of listed deposit money banks in Nigeria.

1.3 Objectives of the study

The major objective of this study was to determine the effect of corporate tax shields on earnings multiple of listed deposit money banks in Nigeria. However, the specific objectives were to:

1. To examine the effect of debt tax shield on earnings multiple of listed deposit money banks in Nigeria.
2. To determine the effect of depreciation tax shield on earnings multiple of listed deposit money banks in Nigeria.
3. To examine the effect of charitable donations tax shield on earnings multiple of listed deposit money banks in Nigeria.

1.4 Research questions

The research questions for this study were to:

1. What effect does debt tax shield have on earnings multiple of listed deposit money banks in Nigeria?
2. To what extent does depreciation tax shield have on earnings multiple of listed deposit money banks in Nigeria?
3. What effect does charitable donations tax shield have on earnings multiple of listed deposit money banks in Nigeria?

1.5 Research hypotheses

The following hypotheses were formulated for this study;

Ho1: Debt tax shield has no significant effect on earnings multiple of listed deposit money banks in Nigeria.

Ho2: Depreciation tax shield has no significant effect on earnings multiple of listed deposit money banks in Nigeria.

Ho3: Charitable donations tax shield has no significant effect on earnings multiple of listed deposit money banks in Nigeria

2.0 Literature review and theoretical framework

Corporate tax shield

A tax shield otherwise called tax savings is the reduction in the taxable income resulting from deductible expenses or liabilities, which ultimately reduces the amount of tax liabilities. It also refers to the reduction in the amount of taxes paid by individuals or entities through various legal means and strategies aimed at minimizing tax liabilities while remaining compliant with tax laws and regulations (Green & Kerr, 2022). According to Undie et al. (2020), the background of tax savings is from the fact that businesses typically want to pay the least amount of tax possible and even obtain tax savings on the total amount of tax due (Izevbekhai & Momodu, 2023). This is because increasing profit after taxes and reducing tax costs are the only ways for profit-oriented corporations to achieve their ultimate goal of maximising shareholder value, and these can be achieved through tax savings (Izevbekhai & Momodu, 2023). Thus, with this end in mind, many businesses implement tax planning strategies that will help them improve performance. The authors added that the need for tax planning includes the legal alleviation of the tax burden, the reinvestment of tax savings, the promotion of investment and the achievement of economic development.

Earnings multiple

According to Huang (2008), earnings multiple or the Price-Earnings Ratio (P/E Ratio), which indicates the earnings multiple, is a measure of the price paid for a share relative to the income or profit earned by the firm per share. It was presented firstly in the famous text "Security Analysis" written by Benjamin Graham and David Dodd (1934). In Firth et al., (2018), one of the primary uses of the earnings multiple is to assess whether a stock is overvalued, undervalued, or fairly valued relative to its earnings. According to Udosen and Akpan (2024), a high earnings multiple suggests that investors are willing to pay a premium for the company's earnings potential, indicating that the stock may be overvalued. Conversely, a low earnings multiple may suggest that the stock is undervalued, potentially presenting a buying opportunity for investors (Kennedy et al., 2023). They also added that earnings multiple can also be used to compare the valuations of different companies within the same industry or sector. By analysing the earnings multiples of comparable companies, investors can gain insights into which stocks are relatively more expensive or cheaper based on their earnings profiles (Udosen & Akpan, 2024).

Debt tax shield and earnings multiple

Tax shield refers to the benefit obtained from the tax deductibility of business expenses (Samuel et al., 2023). According to them, tax shield represents a reduction in taxable income for individuals or corporations by claiming allowable deductions such as mortgage interest, medical expenses, charitable donations, amortization, and depreciation. These deductions effectively lower a taxpayer's taxable income for a specific period or defer income taxes to future years (Samuel et al., 2023). Debt tax shield basically involves companies increasing their debt levels to minimize tax payments. By leveraging debt, firms can deduct interest expenses from taxable income, thereby reducing their overall tax liability. In essence, debt tax shield is a strategy employed by companies to optimize their tax position by utilizing the tax-deductible nature of interest payments on debt. By utilizing debt tax shield strategies, companies can reduce their tax liabilities, leading to higher after-tax profits. This increased profitability may result in a higher earnings per share (EPS) and, consequently, higher earnings multiple, as

investors may perceive the company as more valuable due to its enhanced earnings potential. Conversely, a possible negative relationship could emerge if excessive reliance on debt financing to maximize tax benefits leads to heightened financial risk and increased leverage (Udosen & Akpan, 2024). This could negatively impact investor confidence and perceptions of the company's stability, potentially resulting in a lower earnings multiple as investors demand a higher risk premium for shares of the company. Results from extant literature lack consensus as per the actual effect of debt tax shield on earnings multiple. Samuel et al. (2023) found a significant positive relationship between debt tax shield and firm value. Inaya and Ekwueme (2016) also found that debt tax shield has a positive relationship with firm value. Similarly, Temitope et al., (2019); and Tsado and Gunu (2016) offered proof that businesses could reap significant tax advantages using debt tax shield thereby enhancing their share prices. On the contrary, Sritharan (2021); and Pandey (2004) all found that debt tax shield has a significant negative impact on firm performance.

Depreciation tax shield and earnings multiple

Depreciation is the process of allocating the cost of tangible assets over their useful lives, reflecting the wear and tear or decline in value of the assets over time (Lubis, 2019). Businesses typically use various depreciation methods, such as straight-line or accelerated depreciation, to calculate depreciation expense. In Susilawaty (2021), the deduction of income tax payments other than corporate debt is due to non-cash costs, namely depreciation and amortization. Besides shielding tax with debt or leverage structure, it has also been established that tax strategy could also involve using non-monetary saving such as depreciation to reduce the amount of taxes paid by corporation (Samuel et al., 2023). This tax-saving strategy can bolster a company's profitability by reducing its tax liabilities, which in turn may elevate its earnings per share (EPS) and contribute to higher earnings multiple. Conversely, a negative relationship may arise if excessive reliance on depreciation tax shield signals inadequate investment in future growth and asset sustainability. Investors may become concerned about the company's long-term viability and discount its valuation accordingly, resulting in lower earnings multiple (Sritharan, 2021). A positive relationship between depreciation tax shield and financial performance exists in Abbas et al., (2021); and Shaheen and Malik (2022). Similarly, Izevbekhai and Momodu (2023) established that depreciation tax shield has a positive impact on share price performance. On the other hand, Lee (2019) found a significant negative relationship between capital intensity and firm performance while Sritharan (2021) found an insignificant negative effect of non-debt tax shield namely; depreciation tax shield on financial performance; and finally, insignificant but a positive relationship was found in Samuel et al. (2023).

Charitable donations tax shield and earnings multiple

Similar to the tax shield offered in compensation for medical expenses, charitable giving can also lower a taxpayer's obligations (Ofurum & Okoye, 2021). All forms of charitable giving and allied activities fall under corporate social responsibility (CSR) which could be found in the Environmental, Social and Governance (ESG) report of most (if not all) listed companies in Nigeria. Corporate social responsibility integrates economic, legal, moral and charitable responsibilities into the business decision-making process of enterprises (Carroll, 2021). The relationship between the charitable donations tax shield and the earnings multiple can have both positive and negative implications. On the positive side, utilizing the tax shield signals the company's commitment to social responsibility, potentially enhancing investor perception and leading to higher earnings multiple. Brown et al. (2019) found that charitable donations on its own could boost company reputation and firm value thus; a positive relationship. Lee et al. (2013) were also of that same view. However, insignificant positive relationship exists in

Samuel et al. (2023); Teoh et al. (1999) found no relationship between CSR and financial performance while Temitope et al. (2019) found that CSR negatively affects EVA supported by Hasan et al. (2021).

Theoretical framework

Tax planning theory by Hoffman (1961)

Hoffman (1961) established the tax planning theory that supported firms redirecting corporate returns to other firm uses than flowing to government authorities. Due to the sophisticated nature of tax process and structures, loopholes in the legal system are inevitable enabling taxpayers to benefit on their tax positions (Kariuki, 2017). Tax planning is the first step in tax management to minimize the company's tax burden. Suandy (2021) divides tax planning into two, namely, national tax planning which is carried out based on domestic law and international tax planning which is carried out based on domestic law and takes into account international tax treaties and the laws of the countries involved. According to Osegbue et al., (2018), tax planning is distinguished from tax savings, although tax savings typically arise as a result of tax planning. Gita et al., (2021) assert that tax planning activities aim to minimize taxable income without negatively affecting accounting income, recognizing that firms' tax liability is based on taxable income rather than accounting income. Omesi and Appah (2021) suggest that this theory underscores the importance of tax planning in reducing tax payments without adversely impacting accounting income, ultimately enhancing the financial position and growth of organizations (Nwaobia & Jayeoba, 2016). According to this perspective, tax planning activities are beneficial and serve to minimize tax liabilities without compromising accounting income (Akintoye, et al., 2020). This theory is the anchor theory for this research and this is due to the fact that firms could only derive appreciable tax savings from their activities through a deeper understanding of the ambiguity of and loopholes in tax laws (Ogundajo & Onakoya, 2016). It explains the possible positive relationship that may exist between corporate tax savings and earnings multiple or financial performance as whole. This is because when tax savings exist and tax liability is reduced, it comes with a corresponding increase in net income and consequently, an increase in earnings per share as well as earnings multiple. Therefore, firms should deepen their efforts in the tax planning activities that shrink the income that is subject to taxation.

Empirical framework

Oluchi and Ufomadu (2024) examined the effect of taxation on Foreign Direct Investment (FDI) flows to Nigeria; using time series data from 2000 to 2020. Data for the study were sourced from the Central Bank of Nigeria Statistical Bulletin, Federal Inland Revenue and the National Bureau of Statistics and analysed using the Ordinary Least Squares (OLS) for multiple regression technique... The results showed that corporate income tax had a negative and significant effect on FDI flows to Nigeria; personal income tax had a negative and insignificant effect on FDI flows while value added tax had a positive and significant effect on FDI flows to Nigeria. Malenya et al. (2024) assessed the influence of tax shield on the capital structure of private manufacturing firms in Kenya. The results revealed that the higher the debt tax shield, the greater the tax advantage from debt interest to the firm. Moreover, it was found that with a high tax rate, the firm tended to use more debt and had more income to shield from tax. Sritharan (2024) investigated whether debt provides any tax benefits, such as debt tax shield and non-debt tax shield, through financing decisions, and to determine their contribution to the firm's value within the Sri Lankan land and property sector firms. The findings of the analysis revealed that both debt tax shield and non-debt tax shield showed a negative relation with the return on assets, although these relationships were statistically insignificant in both models, suggesting that neither tax shield had a significant impact on the firm's performance measure of return on assets. Izevbekhai and Momodu (2023) ascertained how corporate tax saving strategy affect

share price performance. It examined how debt tax shield, non-debt tax shield, and effective tax rate affect share price performance. Ordinary Least Square regression analysis was used in this study and the findings revealed that non-debt tax shield has significant effect on share price performance of listed industrial goods firms in Nigeria and that effective tax rate has significant effect on share price performance of listed industrial goods firms in Nigeria. Kennedy et al. (2023) scrutinised the effect of tax planning on earnings management. A descriptive and quantitative research method was employed, utilizing statistical techniques such as multiple linear regression analysis. The population consisted of non-manufacturing companies in the infrastructure sector listed on the Indonesia Stock Exchange (IDX) during 2014-2018. The findings indicated that tax planning and company size had a significant effect on earnings management, while leverage and interest rates did not. Furthermore, simultaneous analysis revealed that leverage, tax planning, and company size collectively influenced earnings management significantly. Samuel et al. (2023) investigated the effect of tax shield on firms' value of selected manufacturing companies in Nigeria from 2012 to 2021. The data for the study were analyzed using ordinary least square regression technique and the statistical tool package used was SPSS Version 20. From the result of the analysis, it was found out that debt tax shield, depreciation tax shield and charitable donation tax shield have significant effect on market value of selected manufacturing firms in Nigeria. Mumba and Marion (2023) examined the effect of tax incentives on financial performance of manufacturing firms in Kenya, taking manufacturing firms in Nairobi industrial area as a case study for 10 years. The findings indicated that tax incentives had a significant positive effect on financial performance, as they reduced the cost of capital for manufacturing firms, promoted innovation and competition, and led to increased productivity and efficiency. Undie et al. (2020) surveyed the impact of planning for tax incentives, as applicable in Free Trade Zones, on the profitability of companies in the Free Trade Zones (FTZs). The work was based on the influence of exempt company income tax, exempt education tax, exempt urban development tax, exempt import duties, exempt export duties and exempt excise duties on the profitability of companies in the FTZs. Profitability was considered in this research as a function of tax claims investment. The study employed ex-post facto research method where the simple random sampling technique was adopted to draw a representative sample for the study. The multiple linear regression model was used to determine the relationships between tax incentives and profitability. It was revealed that the incentives granted by the government have not propelled investment because there was little or no growth in earnings of companies in the Zone based on the incentives provided. The study equally revealed that tax incentives have improved corporate performances and thereby increased investments in the Zones.

3.0 Methodology

Research design

The research design adopted for this study was ex post facto design. Ex post facto design was used to determine the effect of the explanatory variables on the dependent variable. This design was suitable for this study because the data used were historical and the researcher had no direct control over the variables involved.

Population of the study

The population of this study consisted of all the deposit money banks listed on the floor of the Nigeria Exchange Group. As at 31 December, 2023 the total number of listed deposit money banks in Nigeria were 13 according to the Nigerian Exchange Group fact book, and this constituted the population of the study.

Sample and sampling technique

In order to derive a homogenous sample, the researcher adopted purposive sampling technique to select only those banks with complete accessible data. Therefore, 9 deposit money banks were selected as the sample size for this study.

Source of data and method of data collection

Secondary data were used in carrying out the analysis of this study. The secondary data were obtained from the annual financial report and accounts of each of the 9 banks for the period 2014-2023.

Method of data analysis

In examining the effect of corporate tax shield on earnings multiple of listed deposit money banks in Nigeria, panel least square regression analysis was used in analysing the data and STATA version 14.2 was the statistical package used to analyse the data of this study.

Model specification and variable measurement

The model for this study was adapted from the work of Samuel et al. (2023) and modified to suit our study. The econometric function of the model is given below:

Earnings multiple = f (Corporate tax savings) (1)

$$EMMP_{it} = \alpha_0 + \beta_1 DBPT_{it} + \beta_2 DEPT_{it} + \beta_3 CHTA_{it} + \epsilon$$

(2) Where:

- EMMP = Earnings multiple
- DBTS = Debt tax shield
- DEPT = Depreciation tax shield
- CHTA = Charitable donation tax shield
- α_0 = Model intercept
- β_{1-3} = Coefficient to be estimated, where $\beta_{1-4} > 0$
- It = Cross section of listed companies with time variant
- ϵ = Stochastic error term

Operationalization of variables

Variable	Measurement	Sources	A priori expectation
Earnings multiple (Dependent variable)	Market price per share/earnings per share	Izevbekhai and Momodu (2023)	
Debt tax shield (Independent variable)	Interest expense multiplied by statutory tax rate	Samuel et al. (2023); Izevbekhai and Momodu (2023)	+
Depreciation tax shield (Independent variable)	Depreciation expense multiplied by the statutory tax rate	Samuel et al. (2023); Izevbekhai and Momodu (2023)	+

Charitable donation tax shield	Charitable donation x Statutory tax rate (30%)	Samuel et al. (2023); Izevbekhai and Momodu (2023)	+
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Source: Author’s compilation (2024)

4.0 Analysis and discussions

Table 4.1 Descriptive statistics of corporate tax savings and earnings multiple of deposit money banks listed in Nigeria

Variable	Obs	Mean	Std. Dev.	Min	Max
emmp	90	7.531	9.299	-1.625	48.565
dbts1	90	27892259	22969356	0	1.234e+08
dept1	90	2911999	2508567.7	0	9420181.8
chta1	90	2.215e+08	3.288e+08	0	1.702e+09
mcap	90	3.095e+08	3.196e+08	0	1.209e+09
NETINCOME	90	83572335	1.227e+08	-14917938	6.769e+08

Source: Researcher’s computation (2024)

Table 4.1 shows that earnings multiple (emmp) presented an average of 7.531 times. This implies that in the Nigerian banking sector, the average bank’s market price is about 7.5 times its earnings per share (EPS). This was with a standard deviation of 9.299. It is closer to the mean so it can be said that there is average of medium level variation in the earnings multiples of sampled banks. Debt tax shield (dbts), maximum of N123, 400,000 and a minimum of N0. This means that the highest amount of tax a bank has ever saved by using more of long-term debts between 2014 and 2023 was N123, 400,000. For depreciation tax shield (dept), N9,420,181.80 was the highest Naira value of tax a company ever saved through the use of physical non-current assets in their asset structure; lowest was 0 (still Union Bank Plc’s 2023 entry). An average of N2, 911,999 and a standard deviation of N2, 508,567.70 were also the case; indicating that an average bank in the Nigerian banking industry saves about N2, 911,999 from taxes through depreciation tax shield, and that a moderate level of variation was present in the depreciation tax shields of these banks. Moreso, charitable donations tax shield (chta) which was the fourth independent variable of this study showed a minimum of 0 (Union Bank, 2023) and a maximum of N1,702,000,000. The implication is that the highest amount of tax a bank has ever saved in the sector through charitable donations is about N1.7bn.

Table 2 Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
emmp	90	0.685	23.593	6.967	0.000
dbts	90	0.978	1.626	1.072	0.142
dept	90	0.960	2.989	2.413	0.008
chta	90	0.981	1.292	0.562	0.287

Source: Researcher's computation (2024)

Table 2 shows the normality test for each variable in the study. From the result, it was observed that some of the variables followed a normal distribution and some did not. It was observed that earnings multiple (emmp) did not follow a normal curve marked by its Prob>z value of 0.000; debt tax shield (dbts), (Prob>z value of 0.142) follows a normal curve; charitable donations tax shield (chta) with Prob>z value of 0.287>0.05 did follow a normal curve and depreciation tax shield (dept) did not follow a normal curve (Prob>z value of 0.008). This suggested that the majority of the variables were normally distributed, thus meeting the normality assumption required for parametric tests.

Table 3 Spearman's rank correlation coefficients

Variables	(1)	(2)	(3)	(4)
(1) emmp	1.000			
(2) dbts	-0.068	1.000		
(3) dept	0.224	0.610	1.000	
(4) chta	0.264	0.536	0.701	1.000

Source: Researcher's computation (2024)

Table 3 shows coefficients for the spearman correlation. From the output, it was observed that each of the variables had perfect correlation with themselves with 1.000 as correlation coefficient. For the records, debt tax shield (dbts) has no association with earnings multiple (emmp) (-0.068). Depreciation tax shield (dept) has a weak positive correlation (0.224) with earnings multiple (emmp) of listed deposit money banks in Nigeria, implying that higher depreciation tax shield in these banks happen to come with increase in their earnings multiple to a low extent but does not necessarily cause it. For charitable donations tax shield (chta), 0.264 was the case, indicating a weak positive correlation with earnings multiple of listed deposit money banks in Nigeria. In summary, these results indicate the absence of multicollinearity since all the associations are seen to be weak.

Table 4 Regression output for the effect of corporate tax savings on earnings multiple of listed deposit money banks in Nigeria.

	(1) ols	(2)	(3)	(4)
		rem	fem	fem_ro
	emmp	emmp	emmp	emmp
dbts	-1.384 (0.460)	-1.384 (0.458)	4.432** (0.036)	4.432** (0.029)
dept	-1.903 (0.309)	-1.903 (0.305)	0.271 (0.876)	0.271 (0.781)
chta	2.357* (0.050)	2.357** (0.046)	-2.558 (0.110)	-2.558** (0.042)
Constant	2.764 (0.790)	2.764 (0.789)	-15.704 (0.124)	-15.704* (0.072)
R ²	0.341	0.341	0.515	0.515

N	90.000	90.000	90.000	90.000
F/W	8.415	33.660	14.879	24.996
p (F/W)	0.000	0.000	0.000	0.000
hettest	9.580(0.002)			
vif	1.91			
LM test	5.680(0.000)			
hausman	19.320(0.001)			

P-values in parentheses

* $P < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Stata 14 output (2024)

The result obtained from the multivariate regression analyses is presented in the table above. The fixed effects regression model with robust standard errors presented above shows an F-statistic of 24.996 with p-value of 0.000 indicating that overall, the regression model is fit for statistical inference and also that overall, the relationship between corporate tax savings and earnings multiple is statistically significant. The model gave an R-squared value of 0.515 which means that 51.5% of the changes in earnings multiple can be explained by the proxies of corporate tax savings in the model. However, the unexplained part (48.5%) is captured in the error term.

Test of hypotheses

Hypothesis one

H₀₁: Debt tax shield has no significant effect on earnings multiple of listed deposit money banks in Nigeria.

Results from the robust fixed effect regression showed that debt tax shield (dbts) with coefficient and p-value of 4.432 and 0.029 respectively, has a significant positive effect on earnings multiple (emmp) of listed deposit money banks in Nigeria. These warranted the rejection of the null hypothesis stated above and the acceptance of the alternate hypothesis. This was because the pvalue was significant at the 5% level.

Hypothesis two

H₀₂: Depreciation tax shield has no significant effect on earnings multiple of listed deposit money banks in Nigeria.

Output for the robust model in table 4.5 also presented 0.271 and 0.781 as coefficient and p-value respectively for this effect or hypothesis. It is evident that the p-value is statistically non-significant at the 5% level. Therefore, the null hypothesis was accepted and alternate hypothesis was rejected. This indicates that depreciation tax shield (dept) has no significant effect on earnings multiple of the sampled banks.

Hypothesis three

H₀₃: Charitable donations tax shield has no significant effect on earnings multiple of listed deposit money banks in Nigeria

Results from the robust fixed effect model showed that charitable donations tax shield (chta) with coefficient and p-value of -2.558 and 0.042 respectively, has a significant negative effect on earnings multiple of listed deposit money banks in Nigeria. These warranted the rejection of the null hypothesis stated above and the acceptance of the alternate hypothesis. This was because the p-value was significant at the 5% level.

Discussion of findings

Debt tax shield and earnings multiple

Results from the robust fixed effect regression showed that debt tax shield (dbts) with coefficient and p-value of 4.432 and 0.029 respectively, has a significant positive effect on earnings multiple (emmp) of listed deposit

money banks in Nigeria. This implies that increase in debt tax shield causes an increase in earnings multiple of listed deposit money banks in Nigeria. In other words, this implies that the higher the amount of money saved from taxes through the utilization of debt, the higher the earnings multiple of the sampled banks. The result also suggests that Nigerian Deposit Money Banks are effectively leveraging debt to achieve an optimal financial structure. The use of debt financing provides the dual benefits of tax savings and increased returns on equity, enhancing overall financial performance. This balanced approach signals prudent financial management, ensuring that the benefits of debt utilization outweigh potential risks. Consequently, higher earnings multiples reflect the efficient deployment of debt as a value-adding strategy in the capital structure of these banks. Evidence from past literature is both supportive and contrary to this finding. Supporting finding includes that of Samuel et al. (2023) which provided strong evidence of a significant positive relationship between debt tax shield and firm value, asserting that a high debt tax shield strengthens a firm's asset base and profitability by making interest expenses tax-deductible. Similar conclusions were reached by Inaya and Ekwueme (2016), Temitope et al. (2019), and Tsado and Gunu (2016), who found that debt tax shield can provide significant tax advantages, such as improved earnings and higher share prices, thereby boosting firm valuation. These studies align with the traditional Modigliani-Miller theorem with taxes, which posits that debt financing creates value by reducing corporate taxes. On the contrary, Sritharan (2021) and Pandey (2004) found a significant negative effect of debt tax shield on firm performance.

Depreciation tax shield and earnings multiple

Output for the robust model in table 4.5 also presented 0.271 and 0.781 as coefficient and p-value respectively for this relationship. This means that depreciation tax shield has non-significant positive effect on earnings multiple of listed deposit money banks in Nigeria. In one way, this can be attributed to the nature of bank assets, which are primarily financial instruments rather than physical or fixed assets. As a result, the potential for depreciation to create substantial tax savings is inherently limited. Additionally, market perception plays a role in this insignificant relationship. Also, investors and analysts typically prioritize metrics such as net interest margins, loan quality, and capital adequacy ratios when evaluating banks. These performance indicators are more directly tied to the core operations and profitability of banks, overshadowing the marginal effects of depreciation tax savings on earnings multiples. In extant literature, there is a supporting finding from the work of Samuel et al. (2023) which reported an insignificant but positive relationship between depreciation tax shield and firm performance. Also, Abbas et al. (2021) and Shaheen and Malik (2022) documented a positive relationship between depreciation tax shield and financial performance. However, on a very contradicting level, there exists the finding of Lee (2019) which observed a significant negative relationship between capital intensity (closely tied to depreciation) and firm performance.

Charitable donations tax shield and earnings multiple

According to the robust fixed effect regression analysis in table 4.5 above, it was observed that charitable donations tax shield (-2.558[0.042]) has a significant negative effect on earnings multiple of listed deposit money banks in Nigeria. This implies that as charitable donations tax shield increases in these banks, their earnings multiples decrease. The negative relationship between charitable donations tax shield and earnings multiple can be attributed to several factors. Firstly, while charitable donations may reduce taxable income and generate goodwill, they could also signal a diversion of resources away from core operations. Secondly, the tax shield effect from charitable donations may not be substantial enough to offset the opportunity cost of the donations themselves. Additionally, the negative effect might stem from the misalignment between the scale of charitable

donations and the banks' financial outcomes. This finding is in line with that of Schiessl et al. (2022) provided further evidence of the potential downsides, reporting that CSR activities negatively affect economic value added (EVA). On the contrary, Lee et al. (2013) found that well-executed charitable initiatives positively influence firm value.

5.0 Conclusion and recommendations

This study explored the effect of corporate tax shield on the earnings multiple of listed deposit money banks in Nigeria. From the findings of this study, it was concluded that corporate tax savings have significant effect on earnings multiple of listed deposit money banks in Nigeria. It was thus recommended that the management of listed deposit money banks in Nigeria should leverage debt financing to reduce their tax liability and increase their earnings multiple. Also, these banks should not adopt charitable donation as a form of tax shield or tax planning strategy but rather as a corporate social responsibility to give back to the society where they obtain their economic resources from.

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