TAXES AND PROFITABILITY OF DEPOSIT MONEY BANKS IN SELECTED AFRICAN COUNTRIES

Clement O. OLAOYE[1], Ifeoluwa Odunayo FASANMI[2]
[1] *Department of Accounting, Ekiti State University, Ado- Ekiti, Nigeria,*
Email: asanmiifeoluwa8@gmail.com
[2] *Department of Accounting, Ekiti State University, Ado- Ekiti, Nigeria,*
Email: fasanmiifeoluwa@gmail.com

Abstract

This study examined the effect of taxes on profitability of Deposit Money Banks in selected African countries. Objectively, the study examined the effect of company income tax and education tax on profitability of DMBs in selected African countries in terms of return on equity and return on assets. Ex-post facto research design was adopted and the population covered all the 14 quoted Deposit Money Banks in Nigeria; out of which, 10 banks were purposively selected. Secondary data obtained from the audited annual financial statement of the selected banks for 10 years spanning from 2010-2019 was used. Panel regression of fixed and random effect estimation was to test the formulated hypotheses and this was carried out after descriptive statistics and Pearson correlation. It was discovered that corporate income tax exerts a positive but insignificant effect on profitability of deposit money banks in terms of return on equity and return on asset to the tune of 0.011(p=0.503 > 0.05) and 0.001(p=0.617 > 0.05) respectively. Education tax was found to have a positive and significant effect on return on equity to the tune of 0.006(p=0.047 < 0.05). However, it has a positive but insignificant effect on return on asset to the tune of 0.0005 (p=0.317 > 0.05). Based on the findings made, it was established that there was a statistically significant effect of taxes on the profitability of Deposit Money Banks in Nigeria. Thus, it was recommended that the tenets of the ability to pay tax on company income tax

and education should be upheld by the relevant tax authorities in Nigeria. This might afford firms with financial crises and low profitability to pay commensurate taxes.

Keywords: *company income tax; education tax; return on equity; return on assets.*

JEL Classification: G21, H71

1.1 Introduction

All over the world, the intermittent increase in the functions of the government in terms of the provision of structures and other important amenities capable of driving economic growth and development has engendered the formulation of different policies to increase the generation of internal revenue. Revenue is, indeed, one of the strongest determinants of the functionality of the government. It determines the magnitude of government expenditures and consequently the development of every segment of the nation. Therefore, for any government to function productively and provide the citizens with goods and services needed to satisfy their needs, it is crucial to generate adequate revenue from all the available sources, part of which is tax revenue which is the focus of this study.

Taxation means the mandatory payments made by individuals and corporations to the government through relevant tax authorities. Chude and Chude (2015) asserted that taxes are obligatory charges that are repeatedly enforced and as a law, not design for any special benefit for each taxpayer, they mainly contribute to the overall government revenue pool through which expenditures are funded. It is the civic responsibility of the citizens because it allowed them to contribute their quota to societal development. Taxes can either be paid directly or indirectly. Direct taxes are company income tax, education tax and withholding tax to mention just a few. On the other hand, examples of indirect taxes are value added tax and custom and excise duties.

These taxes, undoubtedly, are burdens to corporations whose constant aim is to maximize shareholders' wealth and contrarily, it is a revenue for the government for infrastructural development of the nation and other administrative activities. The focus of every shareholder is profit maximization that guarantees their expected returns as and when due since resources are pooled together for that definite reason. Profitability level unveils how efficiently and effectively the

management utilizes its total assets in order to generate earnings. Profitable firms find it easy to pay their shareholders and therefore attract the attention of more investors. Profitability of firms can be ascertained using different ratios, however, in the context of this study return on assets and equity shall be considered.

As much as profit maximization is germane for re-investment and the overall expansion of the private sector, the focus of the government revolves around generating more revenues for governance-related reasons. Therefore, Nnubia and Okolo (2020) argued that the fiscal policy of the country needs to strike the balance with the introduction of tax reliefs that could make a country productive for important economic investments. This has led to many empirical studies across the globe to find a bearable tax rate, based on jurisdictions, with which companies are taxed and the government still has adequate revenue to finance its activities. This might help the development of both private and public sector organizations since investors are interested in a conducive business environment with a reduced tax burden.

Higher rates might breed tax evasion and avoidance. According to Cordelia and Amah (2015), the high rate of education tax and corporation income tax has engendered the issue of tax avoidance in Nigeria. It is suspected that some companies are grievously burdened with the rate company income tax and education tax and therefore engage the services of financial specialists who are versed and highly knowledgeable to find loopholes in tax laws with a singular aim of avoiding the payment of tax. This does not only create a wide vacuum between the expected and actual tax revenue from organizations in Nigeria, but it limits the capacity of the government in terms of budget implementation.

The majority of the studies reviewed except Olaoye and Alade (2019) and Nnubia and Okolo (2018), examined only the connection between company income tax and firms' profitability. However, two major taxes that companies pay are company income tax and education tax. This is the crux of this study to examine how corporates' profitability is influenced by company income tax and education tax. The findings of this study might help the government to remodify their tax rates to ease the tax burden of existing firms and consequently induced more investors. The remaining parts of this study are in four sections. The second section covered the conceptual review, theoretical review and empirical review. This will be followed by the third section that centered on methodology. Section four covered results and discussion of findings while section, the last section, section five, centered on conclusion and recommendations.

2.0 Literature Issues
2.1 Conceptual Issues
21.1 Tax

Universally, the development of any nation solely depends on the availability of resources. Resources are required to satisfy the identified needs of the populace which could be delimited to the provision of infrastructures (such as roads, construction of bridges, schools, hospitals), security (empowerment of the security agency, security agency welfarism), basic needs of the citizen (provision of foods and shelters at a subsidized rate) among others. Out of all the diversified sources of revenue to the government, at various levels, taxation is the most reliable source (Nnubia & Okolo, 2020). Other sources include statutory allocations, rents and rates, royalties, foreign and domestic debts and so on. According to Benson (2018), taxes are the levies imposed by government authorities on individuals, groups and organizations to cater for the needs of the citizens.

Taxes are needed to meet up the need of the populace. However, as a result of the generational disease among the public office holders in Nigeria known as corruption and embezzlement of public resources, satisfaction of public needs had become an everlasting dream without reality. Taxes are imposed by the government on its citizens and failure to comply would result in several authorized penalties (Beigi, Rafat & Panah, 2018). In the view of Cordelia and Amah (2018), taxes are mandatory payments made by individuals, groups and organizations to the constituted authorities (Federal, State and Local). Taxes are paid by individuals (citizens) of a nation which could be indirect to the purse of the government. Also, the compulsory levy paid by groups or organizations includes corporate income tax and education tax, withholding tax and so on. These forms of taxes are paid directly from the profit made.

2.1.1.2 Corporate Income Tax (CIT)

This is one of the basic tools for the development of an economy. The higher the number of corporations/firms in an economy, the higher the revenue generated by the government. Of all the various forms of taxes to the federal government, CIT has the highest rate base on the profit earned by a corporation in a given period. Out of the profit earned at a time, 30% is charged to the government as corporate tax. To explain further, George (2018) defined CIT as one of the most reliable revenue sources to the government. It is the levy charged on the profits of all corporations functioning in a nation. The sudden death of a corporate entity would

end its contribution to the government revenue. As long as corporate firms keep operating in the competitive market, it is made compulsory to comply with the rules guiding CIT. Failure to comply might result in the closure of business activities which could be temporary or permanent. Though not all corporations are chargeable for CIT. There are some firms/corporations exempted from the payment of charges known as CIT (Chude & Chude, 2015). Some of such firms include waste recycling and management firms, petrochemical industry, oil refineries, regional shared service centers, food crop preservation industry among others.

2.1.1.2 Education Tax (EDT)

It is suspected that some Nigerians have not benefited from quality education. Although, public schools are affordable and free from elementary to middle school, the standards of public schools seem to decline due to the shortage of funds. In order to overcome the problem of insufficient funds in public schools, the introduction of an education tax was promoted. According to Cordelia and Amah (2018), education taxes are charges imposed on all registered firms across Nigeria to promote the educational system in the country. The educational tax decree no 7 of 1993 was promulgated to be used exclusively to upgrade the nation's educational infrastructures (Olaoye & Alade, 2019). Education tax is prepared and submitted with annual self-assessment of company income tax to the designated bank and it is charged at the rate of 2% of the corporate accessible profit. This tax is considered not good enough but not repealed. Migwi and Samson (2018) asserted that the following reasons why education taxes are considered not good enough for any tax system which are unnecessarily over burdens tax management. That is, it is capable of causing distortions in the economy.

2.1.2 Profitability

Profitability is the income of an organization that exceeds its expense. Every organization needs to earn sufficient profit in order to survive in the long run. It is the index of economic progress, improved national income and rising standard of living. Basically, profit is usually a measure in monetary terms whereas profitability is the measure of the generated profit on an ongoing basis (Beigi, Rafat & Panah, 2018). Profitability which is on ratio shows a firm's overall efficiency and performance. Profitable firms find it easy to pay their shareholders and therefore attract the attention of more investors. Profitability of firms can be ascertained using different ratios, however, in the context of this study return on

assets and equity shall be considered. The conceptual framework is depicted in figure 1:

| Company Income Tax | | Return on Asset (ROA) and Return on Equity (ROE) |
| Education Tax | → | (Dependent Variable) |

Figure 1: Conceptual Framework
Source: Authors' Design (2021)

2.2 Theoretical Underpinning

Theoretically, this study is underpinned with ability to pay theory and benefits to be received theory. Literature affirmed that ability to pay theory stems originally from the works of Adams Smith in 1776 when he asserted that people should pay tax based on their capacity and competence. Ability to pay theory denotes that the best way for government to acquire taxes is to levy taxes based on taxpayers' strength. In essence, it would be improper for tax authorities to impose high rates on taxpayers who do not have the ability nor resources to meet such levies. Taxpayers in relation to this study refer to companies. According to Oboh, Chinonyelum and Edeme (2018), the higher the profitability of a company, the higher their ability to pay tax and vice versa. Ability to pay theory emphasizes the fact that the best way to get tax from a company is to impose tax rates based on the profitability of the company.

This theory holds some strong connectivity to the study. However, like all good theories, it been criticized based on some limitations. Firstly, this theory does not explain the accountability and transparency of the government in spending tax revenue (Olugbemi, Bassey, Michael & Odu, 2020). It only focuses on the aspect of the taxpayers' ability, which is a limitation on its part. In the same vein, this theory was not founded on the premise of any empirical study but was based on strong observations and evaluations. Additionally, it is not far-fetched to assume that imposing taxes on companies based on their ability to pay tax would reduce the incentive for them to improve their performance. This theory holds some strong relevance to the study. Firstly, it equates ability to pay tax of a company to their profitability, which is a very solid point when rendering taxes. Thus, the profitability of a company corresponds with its ability to pay tax.

This theory is widely accepted to have been established by Eric Lindahl (1919). The basic assumption of this theory is that there should be a direct relationship between the tax paid by a citizen and the benefits enjoyed from public services. It appeared that this theory was spurned to cover up the criticisms that most taxes paid by taxpayers were not being enjoyed by them, due to the inconsistency of government to create policies and infrastructures that would benefit the general populace. Thus, this theory ignores the basic hypothesis that tax should be levied on income, and states instead that tax should be levied based on the benefits enjoyed by taxpayers. Uzoka and Chiedu (2018) accentuated that the benefits to be received theory affirms that companies should render tax to the government, based on what they enjoy from the government. This could be in form of public goods and services like stable power supply, good roads and adequate security. Deductively, if this theory is to be followed in Nigeria, it would be politicians that would pay the most tax, because they receive the highest benefits from the activities of the government.

This theory is very logical and straightforward in its assumptions. However, it has been plagued with criticisms based on some constrictions in its explanations. Firstly, this theory fails to explain how benefits received from the government can be calculated with respect to tax payable (Ali, Ali & Mohamed, 2018). In the same vein, this theory is not able to enlighten on how benefits received from the government are consumed. That is, there is no practical way to know if taxpayers are consuming the public goods provided by the government, what quantity they are consuming, and which public good they are consuming. This theory holds some significance to the study because it affirms that if the government would impose taxes on companies based on the benefits they receive from the government, then companies' profitability can easily be maintained in such a way that would make the company maintain its operations. The benefits to be received theory agreed that companies' profitability would be easily sustained if they pay tax based on the benefits they received from the government

2.3 Empirical Review

Available studies on the nexus between taxes and profitability of firms are not without ambiguities. Some of the studies reported a positive (significant/ insignificant) relationship and negative (significant/insignificant) relationship. To start with, Ezugwu and Akubo (2014) empirically investigate the effect of high corporate tax rate on the profitability of corporate organizations in Nigeria. The

study employed multiple regression statistical tool and the result found was that a positive relationship exists between corporate tax rate and realized profit of companies. Similarly, the impact analysis of tax policy and performance of small and medium scale enterprises in Nigerian economy was conducted by Stephen (2015). The study used descriptive and z-test and the result revealed that no significant relationship exists between tax policy and profitability of SMEs in Nigeria.

Chude and Chude (2015) studied the impact of company income taxation on the profitability of companies in Nigeria using Brewery Industry as a case study (2000-2014). The study carried out Augmented Dickey-Fuller (ADF) unit-root test and the result indicated that CIT affects the profitability of Nigerian Breweries significantly. Also, Bolboros (2016) investigated the impact of taxation on financial performance of firms in Vintila. The outcome of the study affirmed that tax rates exert a positive but insignificant effect on the performance of firms in Vintila using regression analysis method to analyze a data set that covered a period of 2009 to 2013.

In United States, Alm (2016) employed regression analysis method to investigate the effects of tax administration on financial performance of manufacturing firms with a data set spanning from 2001-2015. And revealed that changes in tax administration adversely affect the financial growth of manufacturing firms and other sectors of the economy. Pitulice, Nescu, Minzu, Popa and Niculescu (2016) evaluated the impact of corporate tax on financial performance of firms (2012 – 2014). The study used multi-regression for data analysis. The result showed that no significant relationship exists between corporate tax and financial performance of firms.

In the study of Rayler (2017) that examine effect of taxation on performance of micro, small and medium enterprises in Migori county, Kenya. It was shown that taxation significantly influenced the performance of MSMEs in Migori County. The study used correlation analysis method for data covering 1961 to 2015 in Migori County. In a similar study, Nekasa, Namusonge, and Makokha (2017) evaluated the effect of corporate income tax on financial performance of companies listed on the Nairobi Securities Exchange (NSE) in Kenya (2001-2015). The regression result revealed that corporate income tax had significant positive influence on financial performance of companies listed on the NSE in Kenya. The study supported the view that corporate income tax has a significant effect on financial performance and encouraged policies that could ensjure that firms promptly pay their corporate taxes to the government.

In Roman, Neghina (2017) investigated the impact of tax on the financial performance of companies listed on the Bucharest Stock Exchange (the Stock Exchange of Romania, the Sovereign State located in the Southeastern Europe). The regression analysis revealed a negative correlation between the effective tax rate, interest rate and performance, and a positive relationship between leverage, firm size, relative growth of the company and financial performance. By using panel regression ananlysis method, Mayende (2017) examined the effects of tax revenue on firms' performance in Uganda (2000-2014). The panel data analysis method revealed that taxes exert a negative effect on the performance of firms in Uganda under the period covered.

The relationship between business financial performance in East Asian Countries and tax awareness was investigated by SenHadji (2017) covering a period of 1991-2015. Panel data regression analysis model unveiled that a positive but insignificant effect exist between tax awareness and performance of business in most of the East Asian Countries. In United State, Gallemore, Mayberry and Wilde (2017) examine the nexus between corporation taxation and bank outcomes in terms of lending growth, liquid asset holdings and leverage. Multiple regression analysis method was used to analyse a data set that covered a period of 1996 to 2013. The result showed that tax rate had significant effects on specific banks especially during economic downturn and credit risk uncertainty. The study went further to reveal that corporate income tax affected bank outcomes, such as lending and leverage which subsequently affect the capital available for both individuals and non-bank corporations.

However, the study of Rajab, Rafat and Mozafari (2018) focused on the impact of taxation on profitability of firms in developing countries (2001-2015). The study employed panel regression analysis model and revealed a significant but negative effect on the different indices of profitability. Migwi and Samson (2018) conducted a similar study in Kenya covering a period of (1995-2014). The regression result revealed that a rise in taxation would result to a fall in the financial performance of firms. Cordelia and Amah (2018) empirically examine the influence of corporate tax on profitability of deposit money banks in Nigeria covering a period of 2006-2016. The multiple regression result revealed a positive significant impact of CIT on PAT and existence of a positive relationship between PAT and CIT.

In Kenya, George (2018) employed correlation and multiple regression to examine the relationship between taxation and performance of SMEs in Ugenya, Sub county, Siaya using a data set coveing a period of 2005-2014. The regression

Issue 1/2022

result indicated that VAT has a positive and significant effect on SMEs performance, Custom and Excise duty exert a positive but insignificant effect on performance of SMEs while corporate income tax posited a positive but insignificant effect on SMEs performance in Kenya. While, in Nairobi a study on the effect of taxation on performance of medium sized enterprises was conducted by Thoma (2018) using annual time series data from 1991 to 2017 in Nairobi. The result showed that a stable long-run relationship exist among the variables.

Empirically, Benson (2018) conducted a similar study to ascertained the effects of tax administration on the performance and growth of SMEs in Nigeria using time series data. The result from the OLS technique indicated that tax administration has negative effect on SMEs growth while tax administration showed positive effect on SMEs performance. Theoretically, Aoki (2019) investigated the nexus between tax awareness and financial performance in Nigeria. Having reviewed several literatures, the study revealed that high rates of taxes have a negative and insignificant effect on profitability of firms.

Olaoye and Alade (2019) conducted a study to examine the effects of corporate taxation on profitability of firms in Nigeria (2007-2016). By using OLS analysis method, the study revealed that corporate tax, value-added tax and withholding tax exert a positive significant effect on profit after tax. Similarly, Nnubia and Okolo (2020) analyzed the effect of corporate tax on profitability of business organizations in Nigeria. Using OLS, the study revealed a positive significant relationship between corporate tax proxied with marginal tax rate, effective tax rate and average tax rate and profitability proxied with ROE and ROA) in Nigeria Listed Banks.

2.4 Gaps in Literature and Formulation of Hypotheses

To have a common ground where organizations, like Deposit Money Banks, are moderately taxed and adequate revenue is being generated by the government, several studies have been carried out on the subject matter. Worrisomely, the findings reported by these studies are not consistent. Consequently, studies on the subject matter in Deposit Money Banks are relatively few in this part of the world and in fact, the periods covered by the available ones leave a gap to be filled. In the same vein, majority of these studies, except Olaoye and Alade (2019) and Nnubia and Okolo (2018), examined only the connection between company income tax and firms' profitability. However, two major taxes that companies pay are company income tax and education tax. This is the crux of this study to examine how

corporates' profitability is influenced by company income tax and education tax. Based on this, the following hypotheses are formulated and tested for the study:

H_{01}: there is no significant effect of company income tax on profitability of Deposit Money Banks in Nigeria;

H_{02}: there is no significant effect of education tax on profitability of Deposit Money Banks in Nigeria.

3.1 Methodology

Ex-post facto research design was adopted for this study and the population covered all the 14 quoted Deposit Money Banks in Nigeria; out of which, 10 banks were purposively selected because of their significant role in the Nigeria financial system and their size and capacity to avert the complete breakdown of the whole economy. These were First Bank of Nigeria Limited, Guaranty Trust Bank Plc, Zenith Bank Plc, United Bank for Africa Plc, Access Bank Plc, Eco Bank, Stanbic IBTC, Wema Bank, FCMB and Fidelity Bank. Secondary data obtained from the audited annual financial statement of the selected banks for 10 years spanning from 2010-2019 was used. The period covered comprised of the global financial and economic crises and the period of domestic economic recession that affected every sector of the economy, part of which is the banking industry. The independent variables were company income tax and education tax while the dependent variable was Return on Assets (ROA) and Return on Equity (ROE). The model used by Cordelia and Ameh (2018) to examine the impact of corporate tax on profitability of Deposit Money Banks in Nigeria was used. However, the model was modified to include other related variables that could affect the performance of banks. These include leverage and total asset. The functional and linear representation of the models are given in equation one and two.

$$ROE = \beta_0 + \beta_1 LCIT_{it} + \beta_2 LEDT_{it} + \beta_3 LTOA_{it} + \beta_4 LEV_{it} + \mu_{it} \ldots\ldots (1)$$
$$ROA = \beta_0 + \beta_1 LCIT_{it} + \beta_2 LEDT_{it} + \beta_3 LTOA_{it} + \beta_4 LEV_{it} + \mu_{it} \ldots\ldots (2)$$

Where ROA is Return on Assets, ROE is Return on Equity, LCIT is Log of Company Income Tax, LEDT is Log of Education Tax, LTOA is Log of Total Assets and LEV is Leverage, β_0 is the intercept, β_1 - - - - - β_4 are the slop parameters, subscript "it" represents the combination of time and individuality, μ_{it} means error term. The study comparatively adopts fixed effect model and random

effect model of panel data analysis. Before then, descriptive and correlation analysis were carried out. The fixed effect follows the form presented below:

$$Y_{it} = a_0 + \beta_1 X_{it} + \delta i + \mu_{it}$$

δi is a time varying intercept that captures all the variables that affect Y_{it} that very over time but are constant across firms. The random effect model follows the forms presented below:

$$Y_{it} = a_0 + \beta_1 X_{it} + W_{it}, W_{it} = \pounds_{it} + \mu_{it}$$

Where $\pounds_{it}$ measures the random deviation from the global intercept a, subscript "it" represents the combination of time and individuality. U_{it} means error term. The selection of the best suited model from the two is done following the Hausman test.

Table 1. Definitions of Variables

Dependent variables	Measurements	A-priori Expectation
Return on Assets	Net income/ total assets.	
Return on Equity	Net income/ Shareholders' equity	
Independent Variable		
Company Income Tax	30% of Profit before Tax	-
Education Tax	2% of Profit before Tax	-
Control Variables		
Leverage	Debt/equity	+
Total Assets	Logarithm of the total assets.	+

Source: Author's Computation (2020).

4.0 Results and Discussion
4.1 Results
4.1.1 Descriptive Statistics
Mean, standard deviation, minimum and maximum were used to describe all the variables covered by this study.

Table 1. Descriptive Statistics

	ROE	ROA	LCIT	LEDT	LTOA	LEV
Mean	0.272	0.026	15.55	12.842	17.042	1.907
Std. Dev.	1.182	0.029	1.651	1.651	3.356	7.564
Minimum	0.001	0.001	8.907	6.199	12.495	0.011
Maximum	10.750	0.227	17.911	15.203	22.566	62.072

Source: Author's Computation (2021). Where: ROE is Return on Equity, ROA is Return on Asset, CIT is Corporate Income Tax, EDT is Education Tax, TOA is Total Asset and LEV is Leverage

Table 1 depicts that the average value for return on equity is 0.272, with minimum and maximum values of 0.001 and 10.750 respectively. The standard deviation of 1.182 shows that the risk is higher, as it is relatively closer to its mean figure. In the same result, the mean value of return on asset is at 0.026, with minimum and maximum values of 0.001 and 0.227 respectively and a standard deviation of 0.029 which shows that the risk is higher, as it is relatively closer to its mean figure. Also, the mean value of corporate income tax is at 15.55 with a minimum and maximum values of 8.907 and 17.911. Unlike return on asset and return on equity, the standard deviation (1.651) shows that its risk is lower, as it is relatively far from its mean value. For education tax, the mean value stood at 12.842, with minimum and maximum values of 6.19 and 15.203 respectively. The standard deviation (1.651) shows that its risk is relatively low, because its standard deviation value is far from its mean. Also, the mean value of total asset stool at 17.042 with minimum and maximum values of 12.495 and 22.566 respectively. Like education tax, the standard deviation (3.356) shows that its risk is lower, as it is relatively far from its mean value. Finally, leverage's mean value is 1.907, with minimum and maximum values of 0.011 and 62.072 respectively. Its standard deviation of 7.564 shows that its risk is higher, as it is relatively closer to its mean value.

4.1.2 Correlation Analysis

As presented in table 2, there exists a positive relationship between return on equity, return on asset, corporate income tax, education tax, total asset and leverage with the correlation coefficient of 0.067 for return on asset, 0.287 for corporate income tax, 0.187 for education tax, 0.387 for total asset and 0.981 for leverage. This implies that the variables moved in similar directions across the deposit

Issue 1/2022

money banks in Nigeria for the period covered by the study. Similarly, there is a positive relationship between return on asset, corporate income tax, education tax and leverage with correlation coefficient of 0.102, 0.102 and 0.021 respectively. Contrarily, the result showed that there exists a negative relationship between return on asset and total asset with the correlation coefficient of -0.119. Also, a positive relationship between corporate income tax, education tax and leverage with the coefficient values of 0.163 for education tax and 0.079 for leverage. Furthermore, there exists a positive relationship between education tax and leverage with the coefficient value of 0.079. On the contrary, there exists a negative relationship between education tax and total asset with the coefficient value of -0.189 and a negative correlation between total asset and leverage with the coefficient value of -0.106.

Table 2 Correlation Matrix

	ROE	ROA	LCIT	LEDT	LTOA	LEV
ROE	1					
ROA	0.067	1				
LCIT	0.287	0.102	1			
LEDT	0.187	0.102	0.163	1		
LTOA	0.387	-0.119	-0.189	-0.189	1	
LEV	0.981	0.021	0.079	0.079	-0.106	1

Source: Author's Computation (2021)

4.1.3 Regression Analysis

Model I: Analysis of the effects of (corporate income tax, education tax, total asset and leverage) on corporate profitability (Return on Equity) in Nigeria.

Table 3 disclosed the Pooled estimation result which revealed that when heterogeneity effect across the deposit money banks in Nigeria covered in the study is not given any consideration, corporate income tax, education tax and total asset exert a positive but insignificant effect on return on equity of deposit money banks in Nigeria to the tune of 0.0101 ($p=0.505 > 0.05$), 0.001 ($p=0.434 > 0.05$) and 0.007 ($p=0.341 > 0.05$) respectively. Also, there exists a positive and significant effect of leverage on return on equity of deposit money banks in Nigeria with the correlation coefficient and probability values of 0.154 and 0.000 respectively. The

594

reported adjusted R-square showed that about 30% of the systematic variation in return on equity can be jointly explained by corporate income tax, education tax, total asset and leverage while the remaining 70% could be accounted for by other variables not covered by this study. The F-statistics of 85.04 along the probability value of 0.0011 revealed that the model is fit.

Table 3: Pooled OLS Estimation Result

Variable	Coefficient	Std Error	T-Test	Probability
C	0.292	0.287	1.02	0.310
LCIT	0 .0101	0.0151	0.67	0.505
LEDT	0.001	0.0006	0.55	0.434
LTOA	0.007	0.007	0.96	0.341
LEV	0.154	0.003	38.44	0.000

R-square=0.3624, Adjusted R-square=-0.3012, F-statistics=85.04, Prob(F-stat) =0.0011
(*) connotes significance at 5% level of significance

Source: Author's Computation (2021)

Table 4: Fixed Effects Estimates

Variable	Coefficient	Std Error	T-Test	Probability
C	0.091	0.421	0.22	0.829
LCIT	-0.002	0.022	0.09	0.929
LEDT	0.001	0.018	1.21	0.072
LTOA	0.086	0.021	2.31	0.009
LEV	0.155	0.004	42.83	0.000

R-square=0.5621, F-statistics=40.58, Prob(F-stat) =0.0000 (*) connotes significance at 5% level of significance.

Source: Author's Computation (2021)

The fixed effect estimation result was represented in table 4 which includes the cross-sectional estimation result. The results indicated that when the diversity of the operational activities and leadership skills across the deposit money banks in Nigeria are considered, education tax, total asset and leverage exert a positive relationship with return on equity across the sampled deposit money banks in Nigeria. However, the positive effect of education tax unlike total asset and leverage is insignificant to the tune of 0.001 (p=0.072 > 0.05), 0.086 (p=0.009 <

0.05) and 0.155 (p=0.000 < 0.05) respectively. On the contrary, corporate income tax exert a negative insignificant effect on return on equity across the sampled deposit money banks in Nigeria to the tune of -0.002 (p=0.929 > 0.05). The reported R-square revealed that about 56% of the systematic variation in return on equity can be explained by all the predictor variables while the remaining 46% could be accounted for by other variables not covered by this study. The F-statistics of 40.58 along the probability value of 0.000 revealed that the model is fit.

Table 5: Random Effect Estimation

Variable	Coefficient	Std. Error	Z-Test Values	Probability
C	0.292	0.287	1.02	0.307
LCIT	0.011	0.015	0.67	0.503
LEDT	0.006	0.016	0.79	0.287
LTOA	0.007	0.003	2.16	0.039
LEV	0.154	0.003	48.21	0.000

R-square=0.4624, Wald chi2(5) =23.13, Prob> chi2 =0.0034

Source: Author's Computation (2021)

From table 5 above, it was revealed that when the error term absorbed the heterogeneity effect across the sampled deposit money banks in Nigeria and over time, total asset and leverage have a positive and significant effect on return on equity to the tune of 0.007 (p=0.039 < 0.05) and 0.154 (p=0.000 < 0.05) respectively. Also, corporate income tax and education tax exert a positive but insignificant effect on return on equity across the sampled deposit money banks in Nigeria with the correlation coefficient and probability values of 0.011 and 0.503 for company income tax and 0.006 and 0.287 for education tax. The reported R-square revealed that about 46% of the systematic variation in return on equity can be jointly explained by all the explanatory variables while the remaining 54% could be accounted for by other variables not covered by this study. The Wald Chi of 23.13 along the probability value of 0.0034 revealed that the model is fit.

Table 6 reported chi-square statistic of 0.78 and probability value of 0.8553. The result revealed that there is no enough evidence to reject the null hypothesis that differences in coefficients of fixed effect estimation and random effect estimation are not significant. Therefore, the most consistent and efficient estimation is given by the random effect estimation as presented in table 5.

Table 6: Hausman Test

	Chi-square stat	Probability
Differences in coefficient not systematic	0.78	0.8553

Source: Data Analysis (2021)

Table 7: Other Post Estimation Tests

Wald test		
Null hypothesis	**Statistics**	**Probability**
Panel homoscedasticity	0.7437	0.587
Pesaran test		
Null hypothesis	**Statistics**	**Probability**
No cross sectional dependence	0.885	0.3760
Wooldridge test		
Null hypothesis	**Statistics**	**Probability**
No AR (1) panel autocorrelation	2.4343	0.0972

Source: Author's Computation, (2021)

Results presented in table 7 showed that there is no evidence to reject null hypothesis on panel homoscedasticity, null hypothesis of no cross-sectional dependence and null hypothesis of no AR (1) panel autocorrelation, given the reported probability statistics of $0.587 > 0.05$ for Wald test, $0.3760 > 0.05$ for Pesaran test and $0.0972 > 0.05$ for Wooldridge test. Hence it can be established in the study that assumptions of equal variance of residual terms, cros- sectional independence and absence of serial autocorrelation for the estimated panel-based model is valid.

Model II: Analysis of the effects of (corporate income tax, education tax, total asset and leverage) on corporate profitability (Return on Asset) in Nigeria.

Table 8 represented the pooled estimation result and it revealed that corporate income tax, education tax, total asset and leverage exert a positive but insignificant

effect on return on asset of deposit money banks in Nigeria to the tune of of 0.001 (p=0.437 > 0.05), 0.0005 (p=0.722 > 0.05), 0.001 (p=0.329 > 0.05) and 0.001 (p=0.975 > 0.05) respectively. The reported adjusted R-square showed that about 16% of the systematic variation in return on assets can be jointly explained by corporate income tax, education tax, total asset and leverage while the remaining 84% could be accounted for by other variables not covered by this study. The F-statistics of 6.65 along the probability value of 0.04040 revealed that the model is not fit.

Table 8: Pooled OLS Estimation Result

Variable	Coefficient	Std Error	T-Test	Probability
C	0.049	0.015	2.53	0.020
LCIT	0.001	0.002	0.78	0.437
LEDT	0.0005	0.0002	0.91	0.722
LTOA	0.001	0.001	0.98	0.329
LEV	0.001	0.0004	0.03	0.975

R-square=0.2108, Adjusted R-square=0.1611, F-statistics=6.65, Prob(F-stat) =0.0404
(*) connotes significance at 5% level of significance

Source: Author's Computation (2021)

Table 9: Fixed Effects Estimates (Cross-sectional and Period specific)

Variable	Coefficient	Std Error	T-Test	Probability
C	0.061	0.049	1.24	0.220
LCIT	0.001	0.003	0.41	0.681
LEDT	0.0003	0.005	0.38	0.792
LTOA	0.006	0.002	1.29	0.028
LEV	0.00003	0.0004	0.08	0.939

R-square=0.3171, F-statistics=18.56, Prob(F-stat) =0.0017 (*) connotes significance at 5% level of significance.

Source: Author's Computation (2021)

Table 9 indicated that when the diversity of the operational activities and leadership skills across the deposit money banks in Nigeria are considered, corporate income tax, education tax, total asset and leverage exert a positive effect

on return on asset across the sampled deposit money banks in Nigeria. However, the positive effect of total asset unlike corporate income tax, education tax and leverage is significant to the tune of 0.006($p=0.028 < 0.05$) for total assets, 0.001 ($p=0.681 > 0.05$) for company income tax, 0.0003 ($p=0.792 > 0.05$) for education tax and 0.00003 ($p=0.939 > 0.05$) for leverage. The reported R-square revealed that about 32% of the systematic variation in return on asset can be explained by all the predictor variables while the remaining 68% could be accounted for by other variables not covered by this study. The F-statistics of 18.56 along the probability value of 0.0017 revealed that the model is fit.

Table 10: Random Effect Estimation

Variable	Coefficient	Std. Error	Z-Test Values	Probability
C	0.038	0.019	2.28	0.037
LCIT	0.001	0.002	0.50	0.617
LEDT	0.0005	0.001	0.42	0.317
LTOA	0.004	0.0012	1.02	0.009
LEV	0.00001	0.0004	0.03	0.975

R-square=0.4197, Wald chi2(5) =38.39, Prob > chi2 =0.0170

Source: Author's Computation (2021)

Report from table 10 revealed that corporate income tax, education tax and leverage have a positive but insignificant effect on return on asset to the tune of 0.001($p=0.617 > 0.05$), 0.0005 ($p=0.317 > 0.05$) and 0.00001 ($p=0.975 < 0.05$) respectively. Also, total asset exerts a positive significant effect on return on asset across the sampled deposit money banks in Nigeria with the correlation coefficient and probability values of 0.004 and 0.009 respectively. The reported R-square revealed that about 42% of the systematic variation in return on asset can be jointly explained by all the explanatory variables while the remaining 58% could be accounted for by other variables not covered by this study. The Wald Chi of 38.39 along the probability value of 0.0170 revealed that the model is not fit.

Table 11 reported chi-square statistic of 1.15 and probability value of 0.7657. The result revealed that there is no enough evidence to reject the null hypothesis that differences in coefficients of fixed effect estimation and random effect estimation are not significant. Therefore, the most consistent and efficient estimation is given by the random effect estimation as presented in table 10.

Issue 1/2022

Table 11: Hausman Test

	Chi-square stat	Probability
Differences in coefficient not systematic	1.15	0.7657

Source: Data Analysis (2021)

Table 12: Other Post Estimation Test

Wald test		
Null hypothesis	**Statistics**	**Probability**
Panel homoscedasticity	2.067	0.0893
Pesaran test		
Null hypothesis	**Statistics**	**Probability**
No cross-sectional dependence	0.056	0.9552
Wooldridge test		
Null hypothesis	**Statistics**	**Probability**
No AR (1) panel autocorrelation	1.674	0.7541

Source: Author's Computation, (2021)

The post estimation test result presented in table 12 showed that there is no evidence to reject null hypothesis on panel homoscedasticity, null hypothesis of no cross-sectional dependence and null hypothesis of no AR (1) panel autocorrelation, given the reported probability statistics of $0.0893 > 0.05$ for Wald test, $0.9552 > 0.05$ for Pesaran test and $0.7541 > 0.05$ for Wooldridge test. Hence it can be established in the study that assumptions of equal variance of residual terms, cross sectional independence and absence of serial autocorrelation for the estimated panel-based model is valid.

4.5 Discussion of Findings
It was discovered that corporate income tax exerts a positive but insignificant effect on profitability of deposit money banks in terms of return on equity and return on asset to the tune of $0.011(p=0.503 > 0.05)$ and $0.001(p=0.617 > 0.05)$ respectively. The corollary of this outcome implies that an increase in corporate income tax would increase the profitability of deposit money banks in Nigeria

insignificantly. The salient point to note on these findings is that CIT charge on Nigerian Banks requires a thorough review. The theory of ability-to-pay tax states that firms and individuals should pay tax based on the income available to them which is in line with the principle of fairness and progressive principle of taxation. The application is that Banks who are under serious financial challenges should be given incentive if a thorough investigation is carried out by the relevant tax authority and it is confirmed. This outcome was in tandem with the findings of Cordelia and Amah (2015) and George (2018) that a positive insignificant effect exists between corporate income tax and profitability of deposit money banks in Nigeria. However, this outcome was not in line with the findings of Chude and Chude (2015), Rayler (2017), Nnubia and Okolo (2020) and Olaoye and Alade (2019) that a positive and significant effect exist between tax and performance of organizations.

It was discovered that education tax has a positive and significant effect on return on equity to the tune of 0.006(p=0.047 < 0.05). This implies that 1% increase in education tax of deposit money banks in Nigeria could engender a significant increase in their return on equity. This might be due to the effective and efficient utilization of education taxes which promote the growth and development of the nation. This finding gave credence to the conclusion of Olaoye and Alade (2019) that there exists a positive significant relationship between education tax and profitability of firms. Finally, education tax has a positive but insignificant effect on return on asset to the tune of 0.0005 (p=0.317 > 0.05). The corollary of this outcome is that an increase in education tax would bring about an increase in the return on asset across the sampled deposit money banks in Nigeria insignificantly. The implication of this discovery is that education tax has no capacity to independently improve the profitability of banks in terms of return on asset significantly. This outcome is in support of the findings of Rayler (2017) that a positive but insignificant effect exist between education tax and financial performance of manufacturing firms in Kenya.

5.1 Conclusion and Recommendations

An attempt has been made to unravel the effect of taxes on corporate profitability of Deposit Money Banks in Nigeria. Out of all the 14 quoted banks, only 10 were sampled based on the soundness and ability to withstand economic shock and as indicated by apex bank of the country. Data gathered from the audited and published financial statements was analyzed using Panel regression analysis. Based on the findings made, it was established that there was a statistical

significant effect of taxes on the profitability of Deposit Money Banks in Nigeria. Thus, it was recommended that the tenets of ability to pay tax should be upheld by the relevant tax authorities in Nigeria. This might afford firms with financial crises and low profitability to pay commensurate taxes. Therefore, new regulations to curtail excess corporate tax is necessary to enable them have enough liquidity to lend to firms. When firms are able to access capital, they will invest and the economic growth in the country will be enhanced. As a direction for future research, we suggest to conduct a survey to determine whether practitioners (investment bank analysts, financial managers, portfolio managers etc.) take into account corporate taxation aspects when measuring companies' performance and assessing their values.

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Issue 1/2022

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